Socio-Economic Sustainability, Regional Development and Spatial Planning: European and International Dimensions & Perspectives

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Preface

Current socio-economic developments, have renewed the interest for the role of regional development and spatial planning, underlining the interactions with socio-economic sustainability, technological change and socio-economic growth worldwide. The reason is that these new developments lead to increase productivity of factors of production, contributing in the long-term improvement of competitiveness, innovation and entrepreneurial spirit. Moreover, as currently, international financial markets are facing a serious sovereign debt crisis, as economic growth seems to stall in the face of budget tightening and uncertainty being abundant.

Socio-economic sustainability, through competitiveness and growth enhancement, upgrading the production infrastructure and organization through capital equipment, state-of-the-art knowledge, and human capital investment, combined with innovative and technology-based production processes are among the most important issues of today’s socio-economic analysis. The key elements for the sustainable development policy concern the efficient use of resources, encouraging the development of new productive technologies, extending the use of productivity and efficiency enhancement schemes and encouraging both innovative and productive activities. Within this framework, socio-economic development increasingly relies on information and knowledge, and creates value through their ability to manage these valuable assets.

One of the main aims of regional policy planning regards the encouragement of innovation, knowledge and research. Furthermore, encouraging investments in intangible assets and human capital is crucial, in order to maximize the efficiency of the current technology and its effects. Furthermore, supporting entrepreneurship and developing industrial sectors is an objective that goes beyond the limits of the regional policy, by joining actions of the educational policies, internal market, financial services and tax policy. Certain fields require specific intervention, in order to improve the internal market, such as the financial or services markets, where the technical barriers and the legislative differences limit the free trade, in order to improve the economic environment, with special attention in areas which present the fastest technological progress. However, the development objectives set at European or international level cannot be reached without a tight interconnection of the regional policy measures with those of some complementary policies, such as the commercial policy, the single market policy, transport and energy policies, research and development policies, competition policy, regional and macroeconomic policies, as well as environmental policies. While in these fields the policies are getting coordinated, the sustainable development requirements, with the three development pillars: economic, social and environmental, require supplementary measures for coordinating regional policy with the associated policies and requirements. Thus, the balance between the different policies must be insured. On the other hand, cohesion policies amount to an efficiency-based long-run strategy of ‘catch-up growth’, in which the interventions aim to accelerate catch-up growth and achieve cohesion policies, rendering regional policy aims into increased growth and employment and the improved international competitiveness.

Under these circumstances, a framework more reliant upon regional development has become an important policy objective in order to promote efficiency, effectiveness and competitiveness. The acceleration of structural reforms is a policy priority for restoring the fundamental disequilibria of the economy and for permanently increasing productivity. However, the social consequences of this financial crisis are one of the major aspects to be faced, particularly in need of a more coherent, more coordinated approach. However, the pressure on public budgets adds to the urgency of this matter in different policy areas, introducing a more focused strategy to facilitate the creation of areas for action, and in particular introducing a more focused strategy to facilitate the creation and marketing of sustainable regions, ensuring employment, social progress and cohesion.

An open, efficient and competitive policy planning environment is a crucial catalyst for growth in a global context. There need to be strategic approaches, which not only promote closer interaction among sectors but also among policy-makers (from different policy fields and different levels of government). For this, an environment which favours new ideas and new businesses is required, being the primary driver of a successful and sustainable regional policy, of central importance in finding solutions to socio-economic challenges, for spreading social progress, environmentally friendly technologies and innovations, worldwide.

A new generation of policies have to overcome the limitations and failures of past experiences, such as collusive practices between political and economic power, heavy bureaucracy, lack of accountability and obstacles of entrepreneurship. They have to be creative and selective, with decision-making mechanisms that are more democratic and inclusive of different social interests, pulling out of the current crisis. The politics behind such a new departure has to be based on a wide social consensus over the distribution of the productivity and efficiency gains deriving from new technologies and socio-economic activities.

This Book of Proceedings, based on the International Conference on ‘Socio-Economic Sustainability, Regional Development and Spatial Planning: European and International Dimensions & Perspectives’, 4-7 July, 2014, Mytilene, Lesvos, Greece, summarizes the debate for the future and prospects of socio-economic and regional development of the European Union, under the fields of European, Economic-Geography, Sociology, Regional Development and Spatial Planning. This Book of Proceedings identifies and examines relevant key research issues, building a conceptual framework drawing on the application of socio-economic development, regional
development and spatial planning in obtaining measures of growth and development, enabling a comparative analysis, both in European and international level, explaining also any related socio-economic consequences. Moreover, this Book of Proceedings explores and studies various dimensions of the interaction between regional development and spatial planning, along with links to socio-economic development. The important task is to relate social consequences to a number of factors that are likely to be determinants, and measure the extent to which they affect economy and society. This Book of Proceedings considers both an economic and social perspective to increase the information base and derive broader conclusions about the social consequences of the economic crisis, with this issue being of particular research relevance because evidence shows that even though economic crisis has been widely analyzed with respect to economic consequences, yet little attention has been paid to the evaluation of social consequences.

More specifically, this Book of Proceedings covers the following sections:

**Section 1: ‘Policies and Practices for Sustainable Growth’** aims to shed light on issues such as convergence and catch up and examines the major issues describing main Policies and Practices for Sustainable Growth, such as SMEs and Local Development, the investment in Human Capital, and its role in acquisition and absorption of new technology, skills and management, as well as the Performance of Manufacturing Firms estimation. Moreover, this section also focuses on the institutional aspects of Policies and Practices for Sustainable Growth, examining the effectiveness of the adoption of European Union policies with respect to innovation and entrepreneurship on the SMEs performance and their pace of recovery from the economic crisis, as well as development Strategies from the Institutional Perspective.

**Section 2: ‘Socio-Economic Sustainable Growth and Regional Development’** focuses on issues regarding regional policies planning, especially, European methodological approaches and practices for sustainable urban development, Theory of Innovation and Regional Growth, and Regional Planning Deficiencies and Counter-Sustainability. Moreover, this section also reviews the issues of Global Ethics and Economic Prosperity, as well as web-based evaluation system for participatory spatial planning.

**Section 3: ‘Regional and Territorial Governance: Economic and Social Policies’** develops and motivates new models and techniques of modelling socio-environmental issues, affecting sustainable development, mainly incorporating social indicators of sustainability in public policies for environmentally degraded areas, estimating the Willingness to Pay for Environmental Resources, as well as built-up area expansion assessment via soil Sealing Pattern Evaluation. Furthermore, issues regarding housing policies are also examined, such as Spatial Differentiation of Housing Problems in the European Union and reviewing the Housing Market- Submarkets from a demographic perspective.

**Section 4: ‘Social Economy Innovations and Sustainable Communities’** reviews major issues of social economy and citizens participation, incorporating Social Economy Innovation and Sustainable Local Development, Social Networking: Unemployed, their Employability and Social Support, Citizen’s Participation and the Crisis of Representation in Europe, models of Citizen Participation and the Quest for Local Democracy, and Work Participatory Regimes. However, the main focus is put on the International dimensions and challenges at the time of current financial crisis.

**Section 5: ‘Inclusive Recovery and Local City Governance’** studies governance issues and investigates the sources of inclusive development, such as flexible employment accounts and the neglect of the informal dimension during the crisis, and current trends in vocational development, contribution of e-mentoring programs to the professional development. Moreover, socio-psychological consequences of current economic crisis are also examined.

**Section 6: ‘Territorial Innovation and Planning Policies: Regions and Enterprises’** investigate the forces driving technological Abilities and Technical Efficiency towards Regional Growth, Spatial Planning in ‘Lagging-behind’ Peripheral Regions, Functional Urban Regions and Larger Urban Zones, as well as R&D, Patenting and SMEs, with empirical contributions based on aggregate cross-country or cross-region data, most of which focus on European Union regions and countries, used to study different topics including, among others, the existence of agglomeration economies, the evolution of productivity, the effect of knowledge spillovers and the existence of catching-up to the technological frontier.

**Section 7: ‘Local and Global social dimensions in Sustainable Development’** identifies issues of innovative urban and gentrification forms in the context of globalization, providing evidence as innovative paradigms for serving urban sustainability objectives, with emphasis on factors representing sources of regional growth. Moreover, issues of urban transport and mobility are also examined.

**Section 8: ‘Innovative Community and Social Development’** reviews issues of Social policy implementation, glocality of political cultures Uncertainty, subjectivity and group decision making processes, as well as case-studies on Decision Making Methods.
Section 9: ‘Entrepreneurship and Regional Development: Policy and Planning’ analyses Dimensions of Entrepreneurial Behavioural Beliefs, Attitude towards Entrepreneurship, Entrepreneurial Intention Incentives to Promote Entrepreneurship, Innovative Entrepreneurship, and business Model Innovation as Antecedent of Sustainable Enterprise Excellence and Resilience. Moreover, Relations Among Behavioural Beliefs, Attitude towards Entrepreneurship and Entrepreneurial Intention and managing corporate culture through socio-technical approach, are also analyzed, examining mainly the three facets of technology: its creation, dispersion and absorption.

Section 10: ‘Sustainable Communities: Social Development and Education’ focuses on education system planning, especially on measuring Efficiency in Education, School Bullying as a Social Construction, Intercultural interactions in compulsory education, as well as the Educational Policy Ideology and Disciplining. In particular, the estimates raise the possibility of improving the relative situation of the less efficient regions by means of policies. In any event, the relevance of spatial effects observed suggests that policy-makers should not consider the various regions as isolated units when designing any public intervention in this context.

Section 11: ‘Cultural Management, Local Heritage and Local Development’ studies issues of Cultural Tourism, Cultural Policy and Management of Cultural Organizations, Tourism Industry and Economic Growth, as well as Individual Bilingualism vis-à-vis Individual Mobility. The policy implications of the analysis are also discussed.

Section 12: ‘New Types and Policies of Sustainable Growth: Case Studies and Applied Research’ examines special policies towards Sustainable Development, such as Currency Areas, Communicating the Green Path to Sustainable Development, forms of voluntary participation in Non-Governmental Organizations, and issues of social stigma. Growth and competitiveness become contingent on the ability to compose, establish and maintain external interfaces, to choose the right mode of governance and to link these effectively to internal knowledge accumulation and capability development.

The findings of this conference aim to be of value for researchers, policy makers and academic community. For policy makers, the value stems for a better identification and understanding of the key elements and consequences of the current economic crisis. This will allow government entities to formulate and implement programs, which will leverage areas of social policy, which require further attainment. Last but not least, the value for the academic community mainly lies on an increased knowledge about the impacts of different determining factors on social consequences resulting from the economic crisis. Finally, at policy level, the findings of this conference suggest the need to establish assistance programs to develop social policies and programs, at all levels, along with the limitations and suggestions for further research.

To conclude, the Editors would like to thank all the participants of the International Conference ‘Socio-Economic Sustainability, Regional Development and Spatial Planning: European and International Dimensions & Perspectives’, who have contributed with their academic and research works, providing a platform for scientific dialogue, leading to knowledge creation and dissemination. The Editors would also like to thank all the Conference Committees for their enthusiastic, careful and punctual work and contribution. The Editors also recognize that this Conference would not have been taken place without the support of: a) the University of the Aegean, Department of Geography, b) Hellenic Republic, the General Secretariat of the Aegean and Island Policy, and c) Aegean Airlines.

Offering, once more, our thanks and gratitude to all the contributors, as well as the National Library of Greece, for making this edition possible, we strongly wish that this Book of Proceedings will act as a platform for further theoretical and empirical research, rendering a creative source for scientific dialogue and knowledge diffusion.

The Editors,
Prof. Dr. Hlias Kourliouros, Prof. Dr. George M. Korres,
Assoc. Prof. George O. Tsobanoglou and Dr. Dr. Aikaterini Kokkinou
Section 1: Policies and Practices for Sustainable Growth
Chapter 1:

Development Strategy in the Northern State of Jalisco from the Institutional Perspective

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Abstract: The regionalization process in Jalisco occurred in the nineties leading to the decentralization of regions and formulating a regional development plan for each of them. Currently, despite the measures taken to establish regional plans, it appears that there are disparities in regional development, being the most affected, the North Zone of the State. The aim of this paper is to analyze a key factor, the ratio of the institutions with the development of the Northern region of the State of Jalisco, with a brief analysis of the role of institutions from economic, political and social perspectives. The method used is a review of the existing literature on institutional theory and the development of the Northern Zone of Estado. It concludes by stating as a strategy to promote the development, evaluation and strengthening of the institutions involved in this process.

Keywords: Development, regional development institutions, region, northern state of Jalisco.

JEL: D02, O43, R11, R58

Resumen: El proceso de regionalización en Jalisco ocurrido en la década de los noventa, dio lugar a la descentralización de las regiones y a la formulación un plan regional de desarrollo para cada una de ellas. Actualmente y a pesar de las medidas tomadas al establecer los planes regionales, se observa que existen disparidades en el desarrollo de las regiones, siendo la más afectada, la Zona Norte del Estado. El objetivo de este trabajo, es analizar como factor clave, la relación de las instituciones con el desarrollo de la Zona Norte del Estado de Jalisco, haciendo un breve análisis del papel de las instituciones desde la perspectiva económica, política y social. El método empleado será la revisión de la literatura existente sobre la teoría institucional y el desarrollo de la Zona Norte del Estado. Se concluye señalando como estrategia para impulsar el desarrollo, la evaluación y el fortalecimiento de las instituciones que intervienen en este proceso.

Palabras clave: Desarrollo, desarrollo regional, instituciones, región, zona norte del Estado de Jalisco.

1. Introduction
The development of the regions has become a very important topic in recent years. It is that to talk about development, involves thinking about improvements in the quality of life and greater social welfare of a country or region. Formally, regional development is defined as a process of growth and structural change, using existing development potential in the area, leading to improve the welfare of the population in a locality or region (Diez, 2004).

It is well known that for historical background, development in Mexico has not been given in accordance with the expectations and needs of the country. Coupled with this, there are disparities in development between regions. For example, data released by the National Institute of Statistics and Geography (INEGI, 2010), Jalisco is the fourth state with more participation in the Gross Domestic Product (GDP), i.e., the fourth most productive in Mexico, only after the Federal District (DF), Estado de Mexico and Nuevo Leon. However if this is good economic indicator, in contrast is the Human Development Index (IDH, 2009), which places Jalisco in 14th place in relation to income ratio compared to other states of the country.

The HDI Jalisco also evaluated the 12 regions that make up the State of Jalisco. This is where it is noted that development occurs in a very heterogeneous form in Jalisco and where it can be seen the disparities in development, especially in the Northern region of Jalisco which the Jalisco HDI assessment puts this region in the last. For this reason, interest has raised an interest in this work to analyze disparities in the development of the Northern Zone of Jalisco, viewed from the influence of institutions on the development of the region.

2. Regionalization in Jalisco
In the mid 90s, political changes in the State of Jalisco brought a new way of organizing economic development plans, starting with the segmentation of neighboring regions with similar characteristics called regions. In 1997 it began a process of regionalization in the State of Jalisco. This process of regionalization was a result of the
opening of the country to look to take advantage of globalization and addressing regional inequalities. The regionalization strategy in Jalisco, led to the concentration of the 124 municipalities that make up the State into twelve administrative regions in order to promote decentralization and devolution to the regions, and promote the social planning process, comprehensive, participatory and strategic to develop regions within a framework of State Development Plan (PED, 2030, 16-17).

However, even though since 1995 it has implemented the State Development Plans in Jalisco to reduce disparities in development between regions, there are still regions with visible signs of backwardness. While national inequality could be reduced to 15% between 2000 and 2005, in Jalisco increased 62% in the same period (IDH, 2009). A clear example, when talking about regional disparities, is the case of the Northern Region of the State of Jalisco.

3. Overview of the Northern Region of Jalisco

The Northern Region of the State of Jalisco, is located on the northern tip of the state of Jalisco (ZNEJ). Its territory is equivalent to 10305.46 km2, which corresponds to 12.86% of the total area of the State of Jalisco. Jalisco is bordered on the North by the states of Nayarit and Zacatecas, to the East by the State of Zacatecas, on the West by the State of Nayarit and South, the state of Zacatecas and Municipalities of Jalisco Tequila and Hostotipaquillo. The region includes 10 municipalities: Bolaños, Chimaltitán, Colotlán, Huejúcar, Huejuquilla high, Mezquitic, San Martín de Bolaños, Santa María de los Ángeles, Totatiche and Villa Guerrero.

The Northern Region of Jalisco, is one of the regions of Jalisco with more potential and yet the most backward (Romero, 2009). On a very general overview, it is mentioned that the population of the region represents only 1.04% of the state population. The 60% of municipalities in Jalisco are classified as rural and semi-urban 40%. The Northern Region of the State of Jalisco (ZNEJ) has a strong presence of indigenous cultures. According to INEGI (2010) 4 of the 10 municipalities of the ZNEJ, have the highest percentage of indigenous-speaking population of the state, Mezquitic with 75.9% and Bolaños with 64.4%. It follows them the municipalities of Huejúquilla el Alto with 6.5% and Villa Guerrero with 5.5, prevailing culture of the Huichol people in Mezquitic and Bolaños mainly. As indices of marginalization, the North Zone 9f Jalisco (ZNEJ) is the most marginalized of the entity, and has a very high degree of marginalization. The marginalization index allows differentiating the shortcomings faced by the people, considering the lack of access to education, residence in inadequate housing, the perception of insufficient monetary income and residence in small towns (CONAPO, 2010). Although these figures are not very encouraging, the North Zone of Jalisco has large potential resources, mainly natural resources, which can be considered as a strategy to promote endogenous development of the Zone.

This area has water resources, provided by the rivers Bolaños, passing from North to South and West of the center, the river Camotlán, which plays the same direction west of the municipal area. There are also small springs. Among the main hills and mountains are La Palma, Violeta, El Caimán, El Aguacate, Pitacho of Patoles, The Sabines, The Link, Tapaisa, La Campana and Guajolotes. Among the main tourist and cultural attractions in the Northern Zone of Jalisco are shown in table 1.

| Table 1. Tourist and cultural attractions in the Northern Zone of Jalisco |
| Municipality | Touristic attraction | Description |
| Bolaños | La Casa de la Condesa | Baroque Mansion of late eighteenth century, located on 16th Street, # 39. Facade of two levels with engravings with scenes of daily life in their borders and fitomorfas figures in their cornices and graffiti decoration in their original enjarras. |
| Chimaltitán | Archeological zone "Los Cerritos" | On this site are found quarry stones embossed with some signs and drawings. |
| | Piedras Largas | Mountainous pine and oak with whimsical figures formed by nature in different sizes, in an area of approximately 2 hectares. |
| | Cueva de la Novia | Cave Colotlán Bride | It is a cave that is 8 meters high and 12 meters wide, from this site you can admire the Colotlán Township, St. Mary of the Angels, Huejúcar, Tlaltenango Momax and also: the road, Colotlán, San Nicolas, El Carrizal and the nozzle dam Perez. |
| | Archeological zone "Cerrito de Hiztle" | In the place are the remains of pre-Columbian cultures. |
| Mezquitic | Mirador Mezquitic | It is located approximately 5 hectares. |
miles away from the county seat of Mezquital, intended as a lookout site, overlooks a large canyon and valley Mezquital part, just as is also seen Bolaños River. Ideal to develop landscaping and meditation.

<table>
<thead>
<tr>
<th>San Martín de Bolaños</th>
<th>Mining plant &quot;El Pilón&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It's a silver processing plant, which could be found through guided tours showing the process is subjected to this beautiful metal, with hours from 8:00 to 17:00 pm Tuesday through Friday.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Santa María de los Ángeles</th>
<th>Presa &quot;Boquilla de Zaragoza&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dam &quot;Nozzle Zaragoza&quot;</td>
</tr>
<tr>
<td></td>
<td>It is located north of the center; it can be fished for bass, carp and catfish throughout the year. On this site can be watched silly duck, Papello. Also the landscape of rolling hills is covered with tropical forest. It features some camping areas in the North and West of the reservoir.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Totatiche</th>
<th>La Cueva de las Patas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Totatiche The Cave of the legs</td>
</tr>
<tr>
<td></td>
<td>It is a mysterious and ancient place nestled in the canyon of the community of El Canjilon, still preserved petroglyphs dating 8,000 years old.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Villa Guerrero</th>
<th>Waterfalls &quot;La Pila del Diablo&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It is located in the town of Patahua at 8 km dirt. They are natural pools formed by the rocks that they surround your sabino vegetation, and in the rainy season there are small waterfalls.</td>
</tr>
</tbody>
</table>

Source: Based on data from SEJAL (2012).

These are just some of the many tourist attractions, cultural sites that can be found. This area is rich in natural resources, privileged for its scenery, is an ideal area to promote ecotourism.

4. Importance of institutions in development
The big problem that plagues the current orthodox literature on institutions and development is their inability to distinguish clearly between the forms and functions of institutions (Chang, 2006). However, for this work, it is taken the definition of North (1990) who defines institutions as humanly planned restrictions that structure the interaction of people, and are known informally as "rules". Institutions are key to ensuring that development efforts are sustainable. The institutions regulate and manage the way of carrying out the actions that contribute to the development of a region.

Acemoglu (2003, p.27) found that the major factor that explains the root causes of the differences in the prosperity of the country are the institutions. The three key features of good institutions are the application of property rights to a broad segment of society, so that several people have incentives to invest and engage in economic activity, limits on the actions of elites, politicians and other powerful groups, to avoid expropriation of income and investment of others or create conditions that favor them, and some degree of equal opportunities for broad segments of society so that people can invest, especially in human capital, and engage in productive economic activities.

In respect of property rights, North and Thomas (1973, p. 8) indicate that the creation, specification and implementation of property rights are costly, and these costs depend on the state of technology and organization, the governments take the protection and enforcement of property rights because they can do so at lower costs than private groups could organize voluntarily.

As noted Bandeira (2009), after the appearance of the famous book of North on institutions and economic development in 1990, the failure of structural adjustment policies of the eighties and nineties, and contrasting the North thesis with empirical evidence, the new paradigm is that institutions are the key to the economic development of nations. Although the State is who is at the front of institutions is important that the actors within it do not abuse the power they have. In this sense, the institutions involved in the development, mainly the government, should be able to establish and implement the actions aimed at developing the sole purpose of promoting social welfare, without deviating from it.
Equal opportunities between members of society generate a proactive attitude towards the development of their community. This support is important as a basis for development policies in which it is essential to involve members of society. Finally, it must be emphasized that the strategic importance of institutions in development processes is that it allows reducing transaction and production costs, increase trust between economic actors, encourages entrepreneurship, promotes the strengthening of networks and cooperation between actors and stimulates learning mechanisms and interaction (Rodríguez-Pose, 1998).

5. The relationship of institutions in the development of the Northern Region of Jalisco
From the theoretical framework proposed earlier, it seems appropriate to make a brief analysis of the institutions of the Northern Region of Jalisco. To perform this analysis, it is classified the institutions from the standpoint of economic, political, and social.

6. Economic institutions
According to Jose Antonio Ramirez (quoted in Spiller, 2010) in the North of Jalisco, there is a very negative perception of institutions. Programs to improve the economic status are not supported by the population, and are not driven by the government. A dynamic economic growth must be accompanied by satisfactory margins of equity, equal opportunities and social protection. For this is important citizen participation in decisions through public consultations by the institutions. Not only must prepare a development plan based on figures and numbers but must include the assessed needs from the point of view of society to engage in the process and get better results.

To mention one case, one of the main problems of the North Zone (80% of municipalities) is excessive logging and second loss of vegetation by wildfires. Knowing that natural resources of the North Zone are potential resources to promote development, the loss of these is a major challenge for the authorities who lack more strongly authority to regulate this situation. The figures do not lie. The municipalities of Colotlán, Bolaños, Huejúcar, Huejuquilla, Mezquitic, San Martín de Bolaños, Totatiche and Villa Guerrero mainly are most affected (PED, 2030, p.95). It is important that the competent authorities consider the use of natural resources, as they may give rise to an endogenous development. That is, if the local community is able to lead the process of structural change, it is possible a local endogenous development process (Vázquez Barquero, 2000).

A proposal to promote economic growth from the perspective of endogenous development would be to promote ecotourism as a strategy for the promotion of natural and cultural tourism resources of the region. However, if the authorities are not strong to ensure the preservation of natural resources and vegetation will continue logging the forest, the eco tourist option would not be viable. In addition to natural resources, another alternative is to look at the cultural attractions such as the activities of the Huichol, mainly handmade crafts which are distinctive to their culture and customs.

The authorities should support the Huichol culture to harness the development and marketing of handicrafts from the perspective of the frame (VRIO) which is a resource-based view that focuses on aspects of value, rarity, imitation and organization resources and capabilities (Peng 2010). In this sense, the crafts have a competitive advantage because they are handmade products and rare by the fact that it is becoming less everyday in cities the presence of indigenous cultures. Here the authorities must act to ensure that these products have a decent payment because it is an activity that creates jobs and is the livelihood of many Huichol families.

8. Political institutions
For many years the academic field of economic theory that studies political systems is the social choice theory, argues that in democracies politicians tend to choose those policies that will bring greater electoral benefits and those that are pressured to take by interest groups with political power (Bandeira, 2009).

The literature indicates that there could be two reasons for inefficiency in meeting development objectives. The first is that the holding of elections every few years lead politicians to give priority to short-term results to the detriment of policy and institutional reforms necessary for economic development, which only produce results in the long term. The second is that stakeholders and interest groups have longer-term goals. They seek to ensure their future income, but also they seek very specific objectives, i.e. that do not benefit the whole society, to reduce costs and increase the benefits of their political action (Olson, 1965).

The governance of a region depends on the actors involved in this process, political parties, government (at all three levels, local, state and federal). So it is important to constantly evaluate the role played by these institutions in the development based on the political system ability to negotiate stable coalitions, strong policies or the strength of public institutions, the ability of government and social sectors to combine development policies adequately.

According to Jacoby (cited in Chang 2006) underlines the role of legitimacy in the process of institutional change. A new institution cannot function unless it gets some degree of political legitimacy among members of society. Hence the importance of creating a link between state and society is a matter to work together and strive to develop in the Northern zone of the State of Jalisco. In this regard, it must be recognized that some actions have been taken in order to integrate the inhabitants of the ZNEJ the political process.

For example, in this past political election is an important policy to encourage indigenous people living in the Northern Zone to join the political process. In an article in the Daily Reporter (Author Anonymous, 2012) announced that 2012 is an election year and Jalisco North Zone also would vote because the people do not vote in the traditional way, but with an electronic ballot box, or at least that's what was intended to do the Electoral Institute and Citizen Participation (IEPC).
A community benefited was the San Andreas Cohamiata, or Tateikie, in Wixarica language, which is in the North of the State and the municipality of Mezquítica. To access the community it is invested about 10 hours leaving from Guadalajara. However the IEPC will enable residents of this community and some other North Zone were trained in the use of electronic devices they intended to use on July 1. This is a major effort of the IEPC to help the people of the North, which has a high percentage of indigenous population that could elect their rulers and would be feeling that they are taken into account and also actively involved in the development process.

Finally, note that in the Northern Zone of Jalisco, 9 of the 10 municipalities that make up this area are governed by the National Action Party (PAN). This would imply homogeneity in the ideology of political thought, which should be a reason for the promotion of development within a new efficient administrative framework. It would also be important that the political institutions of the Northern Zone take advantage of shared political ideology and make intergovernmental relations between the municipalities of the region to ensure the joint development of the area.

9. Social institutions

Institutions and society behave dynamically, but at the same time must work harmonized to achieve development goals. As already mentioned, it is important that society is actively involved in development issues. An important form of participation is the evaluation of public policies and programs that are implemented in the Northern Zone with the aim of promoting the development of the region.

However, in the Northern Region there are low levels of education among the population of 15 years. It is known that the population of the Northern Region is one that has less competition for not having completed primary school. 28% of the population aged 15 and older, double the proportion in the state (which is 14.7%), did not completed primary. Furthermore, four of the municipalities are above the proportion of the region: Santa María de Los Ángeles, with 39.9%; Chimaltáin with 35.1%; Totatiche and Huejúcar with 32.5% and 31.3%, respectively (PED, 2030, p.53). These data give a slight overview of the situation in the Northern Zone of Jalisco. It is a high percentage of the population that did not complete primary even so it is unlikely that this proportion of the population with low education can engage actively in development issues in their communities.

However, the development of the Northern region of Jalisco is not of isolated interest. There are already organizations and academics who are constantly concerned about the development of this region. In fact, there is already a social movement that seeks and procures development in this area: On the 9 of June, it was created the Citizens Movement North of Jalisco, with the signing of a constitutive document that was signed by 54 people from different social, economic, cultural and political backgrounds created before the difficulties and with the further concern in the area, and concerned for candidates to local and federal deputies and municipalities mayors generate commitment to the region (Romero, 2009).

The creation of this movement is of vital importance for the development of the region and that NGOs can access the state program development and, in some cases, interact with the public in the development and implementation of policy (Arroyo, 2010).

10. Conclusion

It is important that in the Northern State of Jalisco takes place an institutional change, i.e., an interaction between institutions and organizations to meet the challenges of development in the region. Institutions understood as the rules of the game, are an essential factor in the development process. However, it must be complemented by the organizations. These organizations are political parties, businesses, families, universities, nongovernmental organizations (NGOs), civil organizations, among other actors that can contribute to the development of the region.

The institutions are not created for the sole purpose of instituting the development of society. Organizations also serve the purpose of distributing or consolidate political and economic power. However, the key for development is that institutions and economic policies promote the welfare of the citizens and not the satisfaction of particular political and economic interests (Bandeira, 2009).

It is important to strengthen the institutions and it must be procured the main objective that seeks the interests and welfare. To achieve this, it must be evaluated the effectiveness of institutions, programs and policies proposed by the government.

Society must be part of this process by actively participating in the evaluation and proposed development plans in the Northern Zone of the State, as it is the same society that meets the basic needs of their own region.

Political organizations such as political parties and governments in the region should strive to develop seeing for the interests of the region and not just issuing proposals in the short term that will guarantee votes and gaining power.

11. References


Chapter 2:

SMEs and Local Development: The case of Greece

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Abstract:
These days with the crisis affects the role of the SME is crucial for the development of the economy and the society as a whole. The following article illustrates the structure of the small and medium enterprises in the European Union. More specifically in the first part the paper highlights the relationship among innovation, space and SMEs. In the next three parts the academic study shows how the correlation between the SMEs and the local development can lead to economic development and decrease the crisis results. The article focuses in the area of Greece and more specifically in the island of Crete.

Keywords: (small and medium enterprises, economic geography, economic development, innovation, economic crisis, Greece, Crete)

1. Literature Review
According to Alfred Marshall study in 1890 the external factors in the business environment are creating the ‘industrial atmosphere’. This atmosphere allows the localized enterprises to create and share knowledge, the function of the workforce and the specialization of the employment (Lamprianidis L., 2004). Another economist Porter develops the theory of the clusters. Piore and Sabel (1984) argue that the network of specialized micro enterprises with specialized workforce and quality production after order can replace the massive production from the multinationals (Ford paradigm). The enterprises are following the succeed innovations. The transfer of innovation through the clustering of innovations can happen only in certain industrial sectors (Shumpeter J., 1935).

2. The structure of SMEs in the E.U
2.1 The structure of SMEs in the E.U: Cutting Edge Industries
The most recent and accurate studies such as European Commission (2013a), ECORYS (2012) and EIM Business and Policy Research (2011) are categorizing the SMEs according to four factors. These factors are (1) the competitiveness of a country (2) the innovativeness of a country (3) the size of the SMEs in the economy (4) the intensity of the technology (high-low tech intensity). The innovativeness of the Greek economy is the worst in the European Union. Greece ranked in the 96th position in a total of 142 countries (data for 2012) (Xirouchakis F., 2013). At the European Innovation Scoreboard (2013) Greece characterized as a moderate innovator. The size of the SMEs in the Greek economy has been categorized as a moderate cluster1. In terms of the technology intensity Greece is a low tech country (ECORYS-2012, European Commission-2013a).

After a careful consideration of the characteristics of various enterprises, countries and workforce the analyst has concluded that the employment growth rate is positively related to the innovativeness of individual enterprises as well as the innovativeness of countries (EIM Business and Policy Research-2011, Varum C. A. & Rocha V. C., 2013). Table 1 illustrates that innovation results analogue with the employment change and the size class of the enterprises. This means that the larger the size of the enterprise the bigger impact in the innovation and the increase in the employment (economy of scale).

There are a lot of reasons why innovations by enterprises can increase employment growth. Some of them are the following:

➢ Innovations that support the improvement of the production process can eliminate the production costs. This is a way to stimulate the demand for products.
➢ Product innovations can increase new demand from the customers.
➢ Last but not least innovations can support the internationalization of the enterprises. The internationalization of the enterprises can stimulate the performance of the firms. This performance has the characteristics of the employment growth and the turnover growth. Recent study of the European Commission confirms the above assumption (EIM Business and Policy Research-2011, Fritsch M., 2008).

The E.U categorizes the member states and partner countries in three main groups of clusters. These three clusters are the consistent cluster, the moderate cluster and the catching-up cluster. The consistent cluster includes twelve countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, Spain, Sweden and United Kingdom). The moderate cluster includes six countries (Cyprus, Greece, Italy, Malta, Portugal and Slovenia). The catching-up cluster includes ten countries (Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania and Slovakia) (European Commission, 2013a).

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1The E.U categorizes the member states and partner countries in three main groups of clusters. These three clusters are the consistent cluster, the moderate cluster and the catching-up cluster. The consistent cluster includes twelve countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, Spain, Sweden and United Kingdom). The moderate cluster includes six countries (Cyprus, Greece, Italy, Malta, Portugal and Slovenia). The catching-up cluster includes ten countries (Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania and Slovakia) (European Commission, 2013a).
Table 1: Share of enterprises with employment increase or decrease during 2009Q4-2010Q4 by size class and innovativeness, for the EU37 business economy

<table>
<thead>
<tr>
<th>Employment change</th>
<th>Innovative Share</th>
<th>Not Innovative Share</th>
<th>Innovative Share</th>
<th>Not Innovative Share</th>
<th>Innovative Share</th>
<th>Not Innovative Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease</td>
<td>26%</td>
<td>24%</td>
<td>28%</td>
<td>31%</td>
<td>29%</td>
<td>36%</td>
</tr>
<tr>
<td>No change</td>
<td>59%</td>
<td>68%</td>
<td>46%</td>
<td>55%</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>Increase</td>
<td>15%</td>
<td>8%</td>
<td>27%</td>
<td>14%</td>
<td>33%</td>
<td>29%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>


The knowledge intensive services (KIS) and the technology intensity in manufacturing are cutting edge industries for the E.U (Andersson M. & Koster S., 2011). The existence of these industries in Greece is in low levels. The following table illustrates the knowledge intensive services in the E.U. Table 2 provides information on the distribution of the core indicators for KIS SMEs and large enterprises. It is quite obvious that the large enterprises are stronger in the high tech group. The share of KIS for the SMEs is 18%. At the same time the share of the large enterprises is 26%. Greece performance is low as far as it concerns the export of KIS (European Commission, 2013a).

Table 2: Distribution of enterprises by size & knowledge intensity, EU-27, 2012

<table>
<thead>
<tr>
<th>Number of enterprises</th>
<th>Share (in %) of KIS</th>
<th>Share (in %) of Total Services Sector</th>
<th>Share (in %) of overall economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs</td>
<td>Large</td>
<td>SMEs</td>
<td>Large</td>
</tr>
<tr>
<td>Market services</td>
<td>3,433,896</td>
<td>5,049</td>
<td>78%</td>
</tr>
<tr>
<td>High-tech services</td>
<td>788,695</td>
<td>1,970</td>
<td>18%</td>
</tr>
<tr>
<td>Other services</td>
<td>164,656</td>
<td>575</td>
<td>4%</td>
</tr>
<tr>
<td>Total knowledge intensive services</td>
<td>4,378,853</td>
<td>7,594</td>
<td>100%</td>
</tr>
<tr>
<td>Total less knowledge intensive services</td>
<td>10,754,614</td>
<td>15,469</td>
<td>53%</td>
</tr>
<tr>
<td>Total services</td>
<td>15,133,467</td>
<td>23,063</td>
<td>100%</td>
</tr>
<tr>
<td>Overall economy</td>
<td>20,355,839</td>
<td>43,454</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: European Commission, (2013a), p.66

2.2 Small Business Act

The European Commission decided in 2008 to create the Small Business Act (SBA) in order to enhance the competitiveness of the European SMEs. Some of the basic principles of the SBA are the following:

- The creation of business culture not only in an individual but also in a social basis. The total goal of this principle is the development of the entrepreneurship.
- Reinforce the tasks of the workforce of the SMEs and all the types of innovation.
- Better access of the SMEs to the European Union market.
- Better finance for the SMEs (Korres G.-2010, Storey D. & Greene F.-2011).

2.3 SMEs and Local Development

The SMEs contribute to the local development. There are several reasons which support the socio-economic development. One important reason is that the SMEs support the technology transfer and the regional development. One example is the Start Ups. The Start Ups are usually innovative SMEs. The SMEs also help restructuring industries and support the regional trade. This is a way to boost employment in a regional basis (Fritsch M.-2008, Varum C. A. & Rocha V. C.-2013). In addition the micro enterprises can more easily access the niche markets. They can also create innovations that are more feasible. Therefore they increase the consumption and the production. The SMEs act as a source for competition for larger companies. Furthermore the SMEs accelerate structural strange. Newcomers replace old-established incumbents (Storey D. & Greene F.-2011, Xirouchakis F.-2013).
3. The Development of Greek SMEs in the Greek Regions

3.1 SMEs and Innovation

Important characteristics of the Greek SMEs compare to the other European SMEs are the lack of production of new knowledge and total competitiveness. The results of the above features are the loss of profit and further development of the Greek SMEs. There are a lot of strengths for the Greek SMEs as far as it concerns the introduction of technological innovations and process innovations. The same is happening for the Greek SMEs which are introducing marketing and organizational innovations (Innovators). The Greek SMEs are relative weak in finance and support intellectual assets. High growth is occurred in community designs. At the same time a slight decline is occurred for the venture capital investments and knowledge-intensive exports. The growth performance of open, excellent, attractive research systems and intellectual assets is well above the average of the E.U. The situation is clearly opposite in finance and support and economic effects (European Commission, 2013b).

Innovation Union Scoreboard (2012) highlights some arguments about the micro level of the SMEs and the quality factors of innovation. The most important of them are the following:

- The Greek SMEs innovate with the use of innovations that have nothing to do with technology and R&D. Greece ranks in a good position as far as it concerns the use of organisation innovations and non technology innovations in the SMEs.
- The Greek SMEs do not invest in R&D. In addition they do not collaborate with other firms in order to produce innovation. This is the reason that the Greek SMEs rank low in that field.
- Greece position is very low as far as it concerns the life long education (European Commission, 2012).

3.2 Greece in Time of Crisis

The sector of SMEs includes the 99.9 % of the enterprises in Greece and the 99.8 % in the EU 27 (table 3) (www.imegsevee.gr). However the micro-enterprises are more in Greece (96,6%) in comparison with the EU27 (92,2%). The large enterprises are more in EU27. It is quite obvious that in Greece the sector of the SMEs is the small bone of the economy. It also includes the 2/3 of the total employment. The countries of the E.U with similarities are Italy and Spain. In the international field Mexico is a country with a lot of similarities in the sector of SMEs (OECD, 2013). One of the crisis effects in the Greek sector of the SMEs is the closing down of twenty thousand SMEs in a year (the total number of SMEs for 2010 was 745.677).

Table 3: Number of Enterprises 2011

<table>
<thead>
<tr>
<th>Size</th>
<th>Number (Greece)</th>
<th>% (Greece)</th>
<th>% (EU27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small to Small</td>
<td>703.648</td>
<td>96,6%</td>
<td>92,2%</td>
</tr>
<tr>
<td>Small</td>
<td>21.586</td>
<td>3,0%</td>
<td>6,5%</td>
</tr>
<tr>
<td>Medium</td>
<td>2.649</td>
<td>0,4%</td>
<td>1,1%</td>
</tr>
<tr>
<td>SMEs</td>
<td>727.833</td>
<td>99,9%</td>
<td>99,8%</td>
</tr>
<tr>
<td>Large</td>
<td>399</td>
<td>0,1%</td>
<td>0,2%</td>
</tr>
<tr>
<td>Sum</td>
<td>728.282</td>
<td>100,0%</td>
<td>100,0%</td>
</tr>
</tbody>
</table>

(www.imegsevee.gr)

3.3 Spatial Policies for Innovation in Greece

The Greek spatial policy aims in the development of innovativeness of the local production systems. In order the Greek government to achieve this aim focuses in the following goals:

- The recreation of traditional forms of production.
- The transfer of technology.
- The achievement of synergies among regional bodies.
- The development of new technologies.
- The assistance of regional bodies which support the local entrepreneurship (Korres G., 2010).

3.4 The Geographical Distribution of the Greek SMEs

Table 4 illustrates the number of enterprises in every region for 2013. The total number of the enterprises is 202.983. Almost the half of the entrepreneur activity in Greece is occurring in the region of Attiki (40,28%). Second region is the region of Kentriki Makedonia with a share of 16,53%. The region of Kriti is third (5,98%).

The region of Voreio Aigaio is the last one with a share of 1,69% (Ministry of Employment & Social Security, 2013).

Table 4: Number of enterprises\(^3\) \(^4\) in every region, 2013

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of Enterprises</th>
<th>Amount (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatoliki Makedonia &amp; Thraki</td>
<td>9.789</td>
<td>4.82</td>
</tr>
<tr>
<td>Kentriki Makedonia</td>
<td>33.547</td>
<td>16.53</td>
</tr>
<tr>
<td>Dytiki Makedonia</td>
<td>4.552</td>
<td>2.24</td>
</tr>
<tr>
<td>Ipeiros</td>
<td>5.739</td>
<td>2.83</td>
</tr>
<tr>
<td>Thessalia</td>
<td>11.757</td>
<td>5.79</td>
</tr>
<tr>
<td>Ionia Nisia</td>
<td>4.269</td>
<td>2.10</td>
</tr>
<tr>
<td>Dytiki Ellada</td>
<td>10.620</td>
<td>5.23</td>
</tr>
</tbody>
</table>

\(^3\) Estimations for 2011 from the statistical base of Eurostat for the period 2005-2009.

\(^4\) Analytical correspondence of the total employments-workers in Greece (happened between 15.9.2013-15.11.2013) through the information system ERGANI.

The Greek government bodies have developed different interpretations for the counting of the Greek SMEs in this period. The researcher has chosen to show all the available data. Special focus has given to the interpretation of the current situation.
The region of Attiki is first in the R&D expenditure (225.7 million of euro) as far as it concerns the higher education sector (HES). The region of Kriti is forth (51.6 million of euro). The region of Ionia Nisia (3.8 million of euro). At the bottom of the table is the region of Ionisia (0.2 million of euro). The situation is quite different in the performance of the government sector (GOV). The region of Attiki is first in the R&D expenditure (174.2 million of euro). The biggest amount of the entrepreneurship activity is happening in the regional unit of Heraklion.

The Development of Innovative SMEs in the Region of Crete

4.1 The SMEs in the Region of Crete

Table 6 illustrates the number of enterprises and employees in the region of Crete (4 separate regional units) for 2013. The biggest amount of the entrepreneurship activity is happening in the regional unit of Heraklion. The

---

<table>
<thead>
<tr>
<th>Region (NUTS2)*</th>
<th>Total</th>
<th>R&amp;D Expenditure</th>
<th>R&amp;D Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sector of performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BES*</td>
<td>GOV*</td>
</tr>
<tr>
<td>ATTIKI</td>
<td>775.2</td>
<td>363.3</td>
<td>174.2</td>
</tr>
<tr>
<td>KENTRIKI MAKEDONIA</td>
<td>190.2</td>
<td>44.4</td>
<td>40.6</td>
</tr>
<tr>
<td>KRITI</td>
<td>106.1</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>DYTIKI ELLADA</td>
<td>72.1</td>
<td>11.3</td>
<td>4.3</td>
</tr>
<tr>
<td>ANATOLIKI MAKEDONIA, THRAKI</td>
<td>45.9</td>
<td>13.6</td>
<td>3.8</td>
</tr>
<tr>
<td>THESSALIA</td>
<td>45.2</td>
<td>1.1</td>
<td>3.8</td>
</tr>
<tr>
<td>STEREAE LELLADA</td>
<td>42.1</td>
<td>32.1</td>
<td>7.6</td>
</tr>
<tr>
<td>IPEIROS</td>
<td>38.4</td>
<td>1.2</td>
<td>5.6</td>
</tr>
<tr>
<td>PELOPONNISOS</td>
<td>37.5</td>
<td>9.9</td>
<td>6.8</td>
</tr>
<tr>
<td>VOREO AIGAIO</td>
<td>14.3</td>
<td>0.7</td>
<td>2.4</td>
</tr>
<tr>
<td>NOTIO AIGAIO</td>
<td>11.8</td>
<td>0.7</td>
<td>5.8</td>
</tr>
<tr>
<td>DYTIKI MAKEDONIA</td>
<td>11.6</td>
<td>2.8</td>
<td>2.6</td>
</tr>
<tr>
<td>IONIA NISIA</td>
<td>3.3</td>
<td>0.2</td>
<td>3.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13912.2</td>
<td>485.9</td>
<td>331.7</td>
</tr>
</tbody>
</table>

*regions are presented in descending order by R&D Expenditure


A useful result of the above analysis is that R&D expenditure is mainly from the government. In addition the higher education sector is investing a big share of the government funds in the R&D. Few enterprises in specific regions are investing in R&D. The capitals of the regions are the basis for the innovation activities. The region of Attiki is the basis for the 2/3 of the innovation activities in the area of Greece. Also in this region cutting edge industries of high tech intensity are based.

4. The Development of Innovative SMEs in the Region of Crete

4.1 The SMEs in the Region of Crete

Table 6 illustrates the number of enterprises and employees in the region of Crete (4 separate regional units) for 2013. The biggest amount of the entrepreneurship activity is happening in the regional unit of Heraklion. The

---

5 Statistical units are attributed to regions on the basis of the reported intensity of R&D performance of their regional units, rather than the postal address of the entity.
6 Differences between totals and components can be due to rounding
7 BES-Business Enterprise Sector
8 GOV-Government Sector
9 HES-Higher Education Sector
10 PNP-Private Non Profit Sector
11 FTE-Full Time Equivalent
region of Heraklion holds almost the half entrepreneurship activity in the island of Crete. The enterprises of Heraklion are 6,698 and they hold the 2,90% in the sum of Greece. The regional unit of Chania is second in the island of Crete. The enterprises of the regional unit of Chania are 3,699 (1,60% in the total of Greece). The regional unit of Chania holds almost the half entrepreneurship activity in comparison with the Heraklion. The regional unit of Rethimno is third with a share of 0.83% in the sum of Greece. Afterwards is the regional unit of Lasithi with a share of 0.71% in the sum of Greece. It is quite obvious that both of these units are quite the same. Basic feature of these two units is that they hold the 1/3 of the entrepreneurship activity in comparison with the regional unit of Heraklion and only 1/6 in the sum of the island of Crete (Ministry of Employment & Social Security, 2013).

Table 6: Number of enterprises & employees in the region of Crete, 2013

<table>
<thead>
<tr>
<th>Region</th>
<th>Regional Unit</th>
<th>Enterprises &amp; subsidiaries</th>
<th>Amount (%)</th>
<th>Number of employees</th>
<th>Amount (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crete</td>
<td>Heraklion</td>
<td>6,698</td>
<td>2,90</td>
<td>31,396</td>
<td>2,26</td>
</tr>
<tr>
<td></td>
<td>Lasithi</td>
<td>1,642</td>
<td>0,71</td>
<td>5,885</td>
<td>0,42</td>
</tr>
<tr>
<td></td>
<td>Rethimno</td>
<td>1,913</td>
<td>0,83</td>
<td>7,532</td>
<td>0,54</td>
</tr>
<tr>
<td></td>
<td>Chania</td>
<td>3,699</td>
<td>1,60</td>
<td>16,151</td>
<td>1,16</td>
</tr>
<tr>
<td>Sum of Crete</td>
<td>13,952</td>
<td>6,04</td>
<td>60,964</td>
<td>4,38</td>
<td></td>
</tr>
<tr>
<td>Sum of Greece</td>
<td>230,888</td>
<td>100</td>
<td>1,387,925</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>


4.2 Challenges for the Greek Regions: Entrepreneurship Activity and Innovation in the Region of Crete

Table 7 illustrates the challenges for the Greek regions. After carefully consideration of the above table the analyst grouped the regions in four types. The main features of the first type are the strong capabilities of research and innovation. The members of the first group are the regions of Attiki, Kentriki Makedonia, Kriti and Dytiki Ellada. The basic features of the second type are the average level of innovation and the high productivity skills. The members of the second group are the regions of Sterea Ellada, Dytiki Makedonia and Anatoliki Makedonia and Thraki. The third category characterizes by traditional sectors of production which are very innovative in the production of local products. The regions of this category are Ipeiros, Thessalia and Peloponnisos. Finally the last type has two important features. The first one is the strengths in the tourism sector. The second one is the low performance in innovation. The regions of the forth type are Notio Aigaio, Voreio Aigaio and Ionia Nisia (Jorge A. & Sanchez P., 2013).

Table 7: Challenges for the Greek Regions

<table>
<thead>
<tr>
<th>Region</th>
<th>RRSII-2006</th>
<th>Complicat Indicator of Innovatio n</th>
<th>Human resource in science and technology</th>
<th>Lifelong education</th>
<th>High-tech intensity in manufacture</th>
<th>High-tech knowledg e intensity services</th>
<th>Publi c R&amp;D</th>
<th>Privat e R&amp;D</th>
<th>License s in Patents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attiki</td>
<td>0,46</td>
<td>111</td>
<td>19</td>
<td>51</td>
<td>79</td>
<td>95</td>
<td>27</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Kentriki Makedonia</td>
<td>0,27</td>
<td>85</td>
<td>14</td>
<td>31</td>
<td>45</td>
<td>77</td>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Kriti</td>
<td>0,26</td>
<td>69</td>
<td>18</td>
<td>9</td>
<td>40</td>
<td>148</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Dytiki Ellada</td>
<td>0,23</td>
<td>73</td>
<td>14</td>
<td>17</td>
<td>40</td>
<td>126</td>
<td>9</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Ipeiros</td>
<td>0,19</td>
<td>80</td>
<td>28</td>
<td>10</td>
<td>39</td>
<td>130</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sterea Ellada</td>
<td>0,17</td>
<td>62</td>
<td>25</td>
<td>35</td>
<td>23</td>
<td>5</td>
<td>14</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Anatoliki Makedonia, Thraki</td>
<td>0,13</td>
<td>62</td>
<td>14</td>
<td>13</td>
<td>28</td>
<td>65</td>
<td>9</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Thessalia</td>
<td>0,10</td>
<td>74</td>
<td>27</td>
<td>19</td>
<td>18</td>
<td>36</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Peloponnisos</td>
<td>0,10</td>
<td>67</td>
<td>13</td>
<td>15</td>
<td>22</td>
<td>3</td>
<td>3/5?</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Dytiki Makedonia</td>
<td>0,07</td>
<td>74</td>
<td>-</td>
<td>15</td>
<td>33</td>
<td>11</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Voreio Aigaio</td>
<td>0,04</td>
<td>61</td>
<td>-</td>
<td>10</td>
<td>30</td>
<td>32</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Notio Aigaio</td>
<td>0,01</td>
<td>53</td>
<td>-</td>
<td>19</td>
<td>18</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ionia Nisia</td>
<td></td>
<td>0</td>
<td>-</td>
<td>18</td>
<td>18</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Avarage E.U</td>
<td>0,55</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Jorge A. & Sanchez P. (2013)

\[^{12}\] There are different results among table 4 and table 6. This is happening because table 6 is accounting the number of enterprises and subsidiaries. Table 6 includes among others and enterprises that operate economic activity in more than one regions.

\[^{13}\] Some of the employees are working at the same time in more than one regional units
5. Recommendations and Conclusions
Almost the half of the entrepreneurship activity in Greece is based in the region of Attiki (40.28%). Afterwards is the region of Kenteiri Makedonia with a congregation of 16.53%. Third is the region of Kriti with a sum of 5.98%. Last is the region of Voreio Aigaio (1.69%). The government bodies are mainly funding the R&D expenditures. The 2/3 of the innovation activities in Greece are based in the region of Attiki. The region of Kriti is a region with strong capabilities in research and innovation. The public spending in R&D is very high in this region. However the same is not happening for the private expenses in R&D. The region of Kriti is third in the national level as far as it concerns the development of SMEs.

In order for Greece to return to a growth path, additional policy reforms are required. Greece should develop further the cutting edge industry of knowledge intensive services. The same should happen for the technology intensity of the manufacturing sector. In these difficult times the Greek government should support the culture of the SMEs. European and National programmes should enhance the development of innovative SMEs in all the regions of Greece (not only in the regions of Attiki and Kenteiri Makedonia). The private sector should support the investments in R&D. The effect of this action will be the assistance of the competiveness of the Greek SMEs.

Conflict of interest and funding
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6. References
ECORYS (2012), ‘EU SMEs in 2012: at the crossroads, Rotterdam
EIM Business and Policy Research (2011), ‘Do SMEs create more and better jobs?’, the Netherlands
European Commission (2013b), Innovation Union Scoreboard 2013, Brussels

Internet References:
www.imegevee.gr
Investing in Human Capital
An Implication of Mincer Equation

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Abstract:
Human capital plays a crucial role for national economies throughout the world. Nowadays in the world human capital represents the key element for achieving and securing an inclusive growth that aims to improve the quality of life and share the benefits of increased prosperity more evenly across social groups. All this represents a new approach to economic growth. Moreover, education plays the most important role in the production process of human capital and at the same time in its remuneration, since the enhancement of human capital, through education, is a continuous process. In this paper we focus on human capital and its relevant theory together with an implication of Mincer equation, within the framework of the Greek labour market, which has been affected, by economic crisis. Specifically, we use data from the last census of Hellenic Statistical Authority (EL.STAT), and trying to investigate to what extent the characteristics of workers in Greece explain the dispersion of their earnings. The paper provides evidence of the role of education and experience in the changing structure of earnings/wages landscape in Greece.

Keywords: human capital, Mincer equation, Greece

JEL category: J31, J24

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1. Introduction
Human capital constitutes a valuable factor in the process of all aspects of global transformation, namely economic, political and social ones. However, the economic challenges because of the Eurozone and global economic crisis have wiped out years of economic and social progress and exposed structural weaknesses in the economy (European Commission, 2013a: p.3). All these have revealed a great need for all European economies and the relevant actors involved to go beyond the classical perception of economic growth and to focus more on the empowerment of human capital as a key element for achieving and securing an inclusive growth (a new approach to economic growth) that aims to improve living standards and share the benefits of increased prosperity more evenly across social groups (Figure 1) (OECD, 2014; Ostry et al., 2014; Pickett et al., 2014). Inclusive growth becomes a major challenge for many countries around the world, along with sustainable development, which is a fundamental and overarching objective of the European Union, enshrined in the Article 2 of the Treaty on European Union (Eurostat, 2013).

Figure 1. Relationship between human capital, sustainable development and quality of life

Source: Own analysis

The issue of development has been studied in many disciplines, but its economic aspect was investigated during the last decades, through the Human Capital Theory (HCT). Among the beginners of the theory were Schultz (1961) and Becker (1964) together with Mincer (1958; 1974) from Chicago School of Economics. Important was also the contribution of Ben - Porath (1967), through the creation of the relevant model of individual growth. Human Capital Theory can give even answers to questions related to the uneven development in countries, questions that are in the focus of research interest of economists. In this paper we focus on human capital together with an implication of Mincer equation, within the framework of Greek economy that has been affected since May 2010, by economic crisis. Specifically, we imply the Mincer equation using data from Hellenic Statistical Authority (EL.STAT), and trying to investigate to what extent the characteristics of workers in Greece explain the dispersion of their earnings, based on the theory of human capital. The main research question that has
been raised is: “what is the relationship between wage differentials of workers in Greece and its characteristics, expressed as: work experience or education?”

The above question becomes more salient, since the crisis transformed the labour market (Christopoulos & Monastiriotis, 2014; Papadopoulou, 2013; Ward-Warmedinger & Macchiarelli, 2013; Matsaganis & Leventi, 2014) and also its gendered character (European Commission, 2013b). Crisis can be seen as a crucial challenge where gender equality may be seen as an element only for good times. On the other hand, crisis can offer opportunities for change, including a potential to advance equality for women and men. These two options may lead to a paradox, which needs to be studied.

In what follows, we briefly outline the context of human capital and its relevant theory; we present Mincer equation and its extensive form; we introduce our method, data and some descriptive evidence; we present our results; and conclude by discussing their implications.

2. Concept of Human Capital
In the study of capital, one of the important contributions is that of Adam Smith, who introduced the term “capital” in the 18th century. Smith believed that economic activity is not only powered by the workforce, but also by the skills of all the members of society. The emergence of capital as an important economic concept took place in the late 1950s and 1960s. At that time, economists like Theodor Schultz began to use the term “capital” to interpret the role of education and to promote development. They argued that people invest in education and training, in order to achieve a stock of essential skills (capital), which can bring long-term returns. This investment can also benefit national economies and boost economic growth (OECD, 1998; 2001; 2007).

But what constitutes “human capital”? By definition, human capital includes the set of individual talents and abilities, (innate or acquired), such as physical characteristics, talent, knowledge and qualifications. In addition to physical abilities, human capital can be improved by training or experience (Borjas, 2003; OECD, 2007; Duflo, 2009). Moreover, the related term of human capital stock is described as follows:

\[ h = \sum \alpha_i d_i \times a_i \]

where \( h \) is human capital per worker, \( i \) the level of education, \( a \) educational attainments of the labour force and \( d \) is the educational expenditures for the \( i \) level of education, as share of GDP.

On the aggregate, human capital is a multidimensional concept (Bloom et al., 2004). In any case, human capital should not be understood as a homogenous and static set of skills and competencies acquired only once during individual’s lifetime. Moreover the abilities and skills included in the definition of human capital cannot be only general (reading and writing skills), but also specific to the relevant environment. Human capital is developed also through experience within and outside workplace.

2.1 The Human Capital Theory
According to Human Capital Theory (HCT) (Becker, 1964; Mincer, 1974), which is an extension of the neoclassical microeconomic theory, the role of education and employment is vital in the production process and gender differences, regarding behavior in the labour market. Each activity that increases the quality of labour and thus productivity could be seen as an investment in human capital. Therefore, investment in human capital includes not only expenditures on education and skills, but also the costs for job search. In particular, it is the investment in skills and knowledge that will determine the future profits from labour market activities (Mincer & Polachek, 1974). Moreover, two main characteristics of individuals, namely gender and ethnicity, are those that can lead to different levels of income and labour market participation.

![Figure 2. The human capital model](image)

Source: Own analysis.

It should be noted that investment in education is an activity that has costs in the present, but returns in the future, since it increases and improves individuals’ knowledge and skills. The cost of investment could be monetary and non-monetary, direct and indirect. For instance, direct costs include fees or the monetary difference in the cost of living of trained persons if there is need to move to another city or country for training purposes. On the other hand, indirect costs include the income that the person would have received from activities that yield income, instead of devoting part of the personal time for studying. The main contribution of human capital theory is the explanation of both income, which derives from labour, and the existence of wage gap among workers (Chiswick, 1978). In economic terms, the benefits from human capital are understood in relation with the individual welfare and the national economy. However, human capital is often associated with a wide range of (non) financial benefits and it is considered as the most important factor in the development process. Moreover,
education plays the most important role in the production process of human capital (Figure 2) and at the same time in its remuneration, since the enhancement of human capital, through education, is a continuous process.

But beyond the relationship between earnings and education, there is also a significant relationship between earnings and age (Mincer, 1974). More specifically, while earnings are increased with individual’s age, after a certain age, there is a decline, with attenuation of skills. At the same time there is the depreciation of the human capital and the gradual reduction of the investment in human capital. Consequently, as individuals approach the retirement age, the incentive to invest in human capital is declined. In particular, the increase of salary takes place at a decreasing rate, up to a point before the age of individuals’ retirement, after which the relationship becomes negative (Mincer, 1974).

Last but not least, human capital has also been found to play an important role in the economic growth (Li & Westlund, 2013), while also believed that “human capital can contribute to technological improvement and innovation which can help to advance economy” (Li & Westlund, 2013).

2.2 The Mincer Equation
Jacob Mincer developed a new extension of Human Capital Theory, in which the most significant innovation is the fact that individuals’ choices, through human capital, affect the level of earnings. Using education and employment opportunities as investment elements, he modeled the result of individual choices on investment opportunities. Assuming that people invest to the point where the cost of investment is equal to education benefits, Mincer (1974) assessed the basic logarithmic function of income, known as the famous Mincer Equation. This function is based on Becker’s model (1964) and in particular on the relationship of the natural logarithm of individual’s earnings, having as key variables, years of education and professional experience. Numerous studies have been conducted on Mincer Equation (Psacharopoulos, 1981; Psacharopoulos & Patrinos, 2004; Polachek, 2007). For example, the specific equation is used to estimate the performance of the quality of education (Psacharopoulos, 1981; Psacharopoulos & Patrinos, 2004; Willis, 2006), to measure the effect of work experience and wage differences by gender (Behrman & Birdshall, 1983; Card & Krueger, 1992). Also, it is used to analyze the relationship between growth and secondary education (Bills & Klenow, 2000; Heckman et al., 2006: p. 311). Other known studies are by Card (1995; 1999), by Heckman, Lochner & Todd (2003) and by Lemieux (2006). Specifically, Card focuses on issues of econometrics, in order to examine the causal relationship between education and earnings. On the other hand, Heckman, Lochner & Todd focus on the empirical support of Mincer equation, while Lemieux explored how Mincer Equation could be harmonized with modern research data.

The Mincer Equation is the expression of the relationship of individuals earnings with years of education and professional experience formed as (Heckman et al., 2006):

\[ \ln Y(S, X) = a + bS + cX + dX^2 \]  

where \( \ln Y \) the logarithm of earnings, \( S \) years of completed education and \( X \) years of professional experience. Usually, the data restriction is important, since it is used the potential experience instead of the real experience. Potential experience is calculated as age minus years of education minus the starting age of compulsory education. The parameter \( b \) is the private return of education, related with years of education.

The estimated parameters \( c \) and \( d \) give the performance of an extra year of work experience in different time points of individual’s working life. The quadratic term is used to indicate the relationship of professional experience and earnings, along with the parabolic form of earnings, since the effect of experience is reduced, as the experience increases. The main advantages of using Mincer equation are the ease and simplicity of calculation, with limited data requirements. The main disadvantage is that the parameter \( b \) is the expression of average earnings, so the actual returns might be different. Also possible disadvantage is the potential association of years of professional experience with years of education, because individuals with more years of education usually have limited working experience. In an effort to address the above problems, a set of methods is developed, with techniques that can contribute to the development and extension of Mincer equation.

2.3 Extension of Mincer Equation
The extension of Mincer equation is possible, by adding dummy variables on its basic expression, as described above. More specifically could be included variables, such as gender, ethnicity or marital status to name a few. These variables function as control variables, because they can justify the direction of the basic variables of the equation, revealing the existence of discrimination and proportional change in individual’s wage or earnings. Particularly interesting is the study of Kamalich & Polachek (1982), which applies the Mincer equation, not only in the total population, but also separately within racial groups and between men and women. Therefore it is identified the existence of gender wage gap by 35% (18% for men and 4.3% for women), while between racial groups identified by 13% (37% for whites and 29% for blacks). Also, human capital is used to justify also demographic wage differences (Polachek, 2007). At last but not least, significant is also the study of Barro & Sala-i-Martin (2004), which highlights the crucial role of human capital in the development process. Specifically, the research included the model of a standard set of production functions, together with a function of technological progress.

3. Literature Review
But what happens especially in Greece? At this point a short literature review is provided with a focus on Greek case. The first study by Psacharopoulos (1982) was focused on human capital and the structure of wages, according to the educational level for the years of 1960, 1964 and 1977, using microdata for 12,000 workers in urban areas. It was shown that human capital can explain about one third of income inequality.
The study by Kanellopoulos & Mavromaras (2000) investigated the labour market participation from 1988 to 1994, in paid employment and the differences in wages between men and women in Greece. The results showed that discrimination against women limits their participation in the labour market and their remuneration. Moreover, Asteriou & Agiormirgianakis (2001) examined the relationship between human capital and economic growth in Greece. According to their main research hypothesis, the formal education is the primary mechanism for the development of human skills. The results showed a relationship between education (enrollment rates in primary, secondary and tertiary education) and Gross Domestic Product, per capita. Particularly interesting are two studies by Prodromidis. The first one (Prodromidis, 2006) focused on the spatial distribution of income at 895 municipalities of Greece, with data from the 2001 census and the reported income for the year of 2002. The statistical model of the study included as independent variables professional, geographic and demographic factors and as dependent variable respondents’ declared income. The results suggest that regions with low population density present low incomes, due to limited capacity. Moreover, the high concentration of skilled labour is associated with high income, meaning that individuals can improve their income through an extension of their education (Prodromidis, 2006).

The second study by Prodromidis (2008) deals with the distribution of employment, unemployment and general non-participation in the labour market at the level of municipalities and communities in the Greek territory. Using data from the 2001 census, the study shows the population distribution in terms of gender, age, educational level, labour force participation and paid work. The study reveals the dispersion of the population by educational level and the heterogeneity of regions because of different employment levels. Crucial is the role of the population density, since it has a positive effect on employment, but a negative effect on the absence of women from the labour market, suggesting that urbanization might provide more employment opportunities. Also, the study shows that the proportionally higher than the average presence of men aged 20-64 affects the employment rate of men; while proportionally higher presence of women of the same age has a positive effect on alternative occupations of women. Finally, the presence of children ages 5-9 is associated with the decline of employment and the increase of unemployment of women, along with reduced rate of unemployment of men. On the other hand, the presence of children ages 10-19 has a negative effect on unemployment of women and thus in their participation in the labour market. Last but not least, Karagiannis & Benos’s study (2009) evaluated the relationship for the period from 1981 to 2003, between human capital and economic growth in Greece. Authors used as indicators of education, the records in primary and secondary education. The results show a positive correlation between enrollment rates of education and economic growth. Extremely notable is also the existence of a negative correlation between the high ratio of students – teachers and growth.

4. Specification of Model

Data and descriptive patterns

In the model (Figure 3) we run regressions, according to Mincer equation (1), having as control variable “gender”. All the microdata are from the Hellenic Statistical Authority (EL.STAT), collected during the last census of 2011. All in all, the working hypothesis is as follows:

Ho: “The characteristics of workers (human capital) in terms of education (school years) and training (work experience) are statistically significant and can explain the different levels of earnings and wage of workers in Greece.”

The variable “logIncome” is the logarithm of income of each individual.

The variable “education” is taken as a continuous variable indicating the total years that the individual has studied. In our case, it is implicitly assumed that the effect of having completed a year of education is the same for any year or type of education.

The variable “experience” is expressed as the individual’s potential experience instead of the real experience, because of the limitation of the data. Potential experience is calculated as age minus years of education minus the starting age of compulsory education, in our case 6.

The variable “experience squared” is used in order to introduce the idea that the individual’s earnings profile is concave. Age of respondents ranges from 15 to 64 years old.

Table 1 reports the descriptive statistics of the main variables.

Figure 3. The model of study
### Table 1. Statistics of variables in the study

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>LogIncome</td>
<td>375</td>
<td>10.1224</td>
<td>.78368</td>
</tr>
<tr>
<td>EducYears</td>
<td>375</td>
<td>15.1307</td>
<td>2.96981</td>
</tr>
<tr>
<td>Experience</td>
<td>375</td>
<td>-1.5200</td>
<td>4.13010</td>
</tr>
<tr>
<td>ExperienceSq</td>
<td>375</td>
<td>19.3227</td>
<td>71.09890</td>
</tr>
</tbody>
</table>

#### 5. Results

As results in Table 2 show, the estimated coefficient of Educational Years is significant, but negative. Keeping other things unchanged, a one year increase in Educational Years will result in a $0.033 \times 100\% = 3.3\%$ decrease in earnings. However, experience and its squared term found insignificant in Mincer equation of our sample (model 3).

Further regression shows that all the terms are insignificant in the extended forms of Mincer equations, when included variables related with the existence of children and gender of respondents. Consequently, it is indicated the influential role of years of education.

### Table 2. Regression Analysis of our sample

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Full Sample Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>LogIncome</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td>(.010)</td>
</tr>
<tr>
<td>EducYears</td>
<td>-.029*</td>
</tr>
<tr>
<td></td>
<td>(.014)</td>
</tr>
<tr>
<td>Experience</td>
<td>.071</td>
</tr>
<tr>
<td></td>
<td>(.087)</td>
</tr>
<tr>
<td>ExperienceSq</td>
<td>.224</td>
</tr>
<tr>
<td></td>
<td>(.208)</td>
</tr>
<tr>
<td>Existence of Children (0-5)</td>
<td>.224</td>
</tr>
<tr>
<td></td>
<td>(.208)</td>
</tr>
<tr>
<td>Existence of Children (5-13)</td>
<td>.071</td>
</tr>
<tr>
<td></td>
<td>(.087)</td>
</tr>
<tr>
<td>Gender</td>
<td>.069</td>
</tr>
<tr>
<td></td>
<td>(.081)</td>
</tr>
<tr>
<td>R^2</td>
<td>.012</td>
</tr>
</tbody>
</table>

Note: Standard errors are reported in parentheses. The symbol * indicates statistical significance.

#### 6. Concluding remarks

The paper provides evidence of the role of education and experience (human capital) in the changing structure of earnings/wages in Greece. Education plays an important role in wages, but its increase in years actually contributes to a decrease of wages. On the other hand, experience has appeared to be insignificant and non-influential compared to education in the research period. Moreover there are no findings showing either positive or negative significance of the experience squared term to wages in Greece. We think that experience would finally transform individuals’ preferences, in order to collect non-material benefits, such as experience. The existence of children in the family does not appear to influence the respondents’ earnings/wages and in general their work. This can be explained due to strong family ties that exist in Greece and the support by other family members. All in all, the hypothesis of the study is not confirmed, since only the education (school years) is statistically significant and not the experience. In other words, education can explain the different levels of earnings and wage of workers in Greece.

The implications for policy making lie in more even distributed labour market and the continuous investment in people’s education which may generate lasting effect on wages and thus economic growth and development. Last but not least the core effort in the labour market of the country should always be the elimination of the shadow economy.

#### 7. References

Behrman, Jere Richard & Birdsall, Nancy. “The quality of schooling: Quantity alone is


Duflo, Esther. Η Πώληση κατά της φτώχειας; [The fight against poverty], Athens, Polis Editions, 2010.


Papadopoulou, Olga. “The Gordian Knot of Labour Market in European Union and


Chapter 4:

The Impact of the Golden Quadrilateral Project on Performance of Indian Manufacturing Firms

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Abstract:
India's Golden Quadrilateral Program, a major highway project, aims for improving the quality and width of existing highways connecting the four largest cities in India. It affected the quality of highways available to firms in cities that lay along the routes of the four upgraded highways, while leaving the quality of highways available to firms in other cities unaffected. This feature of the project allows for a difference-in-difference estimation strategy, where status on and off the improved highways are used as treatment variable. This strategy is implemented using data from the 2002 and 2005 rounds of the World Bank Enterprise Surveys for India. Inventories stock holding and supplier relationship are the key parameters on which impact of highway project is studied. In addition to these two parameters, paper also focuses upon the spatial spillover effect between two time periods among the firms. The results indicate that firms in cities which are duly affected by the introduction of Golden Quadrilateral highway project reduced their average stock of input inventories between 6 and 12 days’ worth of production. Firms in cities where road quality did not improve showed no significant changes. Firms on the Golden Quadrilateral were also more likely to have switched to the supplier who provided them with their primary input, suggesting that they saw reason to re-optimize their choice of supplier after the arrival of better highways.

1. Introduction and Literature Review
Adequate transportation infrastructure is an essential ingredient for economic development and growth. Moreover Manufacturing Sector has inadequate share in India’s GDP while at the same time transportation facilities play an important role in the growth of manufacturing sector. Due to huge demographic diversities, India often face severe constraints on its transportation infrastructure hence it impacts the distribution of economic activity and development across regions. It is therefore no surprise that policy-makers argue that India's highway network acts as a constraint on higher economic growth: for example, the World Bank's country strategy for India identifies highway bottlenecks as one of the major constraints to poverty reduction and private sector-led growth (World Bank 2005).

In December 2000, the Government of India approved Phase I of the National Highway Development Program (NHDP), the most ambitious highway improvement program since independence in 1947. The key component of this phase of the NHDP was the Golden Quadrilateral Program, under which the four national highways most directly linking the four largest metropolitan cities in the country: NH2 (Delhi-Kolkata), NH8 (Delhi-Mumbai), NH4 (Mumbai-Chennai), and NH5 (Kolkata-Chennai) were to be upgraded to international-standard 4- or 6-lane dual-carriageway highways with grade separators, access roads, etc. Actual implementation of the Golden Quadrilateral Project began in 2002, by the end of which year contracts for most sections had been awarded. Initial progress was swift: by 2006, 70 per cent of the project had been completed. The latest status report on the website of the implementing agency, dated 30th April, 2011, lists 99.62% of the project (5,824 km) as having been completed, with small stretches totaling 22 km on the Delhi-Kolkata leg still being built. This dramatically improved the quality of highway transportation available to firms in cities that happened to lie along the routes of the four existing highways that were upgraded. However, firms in cities not on these highways did not directly benefit from comparable increases in the quality of highways available to them (see fig. 1 for the location of cities in the data relative to the upgraded highways). We wish to confirm the latter observation in this paper. The position of the city where a firm is located relative to the high- ways that were upgraded thus created variation in the extent to which a firm should have seen the quality of the highways available to it improve as a result of the Golden Quadrilaterial project.

This paper attempts to explain the impacts of an ambitious highway development program of India “Golden Quadrilateral” on the manufacturing sector of India. Paper tries to address this particular question “Is there any significant impact on manufacturing firms established near the proximity of GQ versus firms which is far away from GQ?” Also paper attempts to explain direct and indirect effect of highway development on the firm’s output growth. Firms in cities that gained better highway access were more likely to have switched the supplier who provided them with their primary input than firms in cities where road quality did not undergo a comparable improvement. Apart from direct impact of GQ this paper also focuses on the spatial spillover effect among the firms. Here we intend to investigate the relationship between output of firms and its location as most of firm’s production activities are highly influenced by geographic constraints like inventory holding, input’s supplier relationship.

Past studies on infrastructure investment in papers such as Michaels (2008), Chandra and Thompson (2000) and Fernald (1998) shows that infrastructure investment is essential for economic growth. Recently, for
example, the World Bank has argued that Africa suffers from an “extensive infrastructure deficit” (Foster and Briceño-Garmendia 2009). Its simulations suggest that bridging this gap could have large growth dividends. This paper contributes to the literature on the economic impacts of transportation networks in developing economies, which is quite small relative to its policy importance. The closest related study is Datta (2011), who evaluates the impact of GQ upgrades using inventory management questions contained in the World Bank’s Enterprise Surveys for India in the years 2002 and 2005. Even with the short time window of three years, Datta (2011) finds that firms located in non-nodal districts along the GQ network witnessed a larger decline in the average input inventory relative to those located on other highways. He also finds that firms in districts closer to the GQ network were more likely to switch their primary input suppliers vis-à-vis firms farther away. These results suggest improved efficiency and sourcing for establishments on the GQ network after its upgrade.

The first key issue that arises in trying to estimate the economic effects of infrastructure is that of the endogenous placement of new infrastructure, which makes it difficult to clearly quantify causal effects. This problem can be summed up as follows: do areas with better infrastructure show better economic outcomes because of the infrastructure, or is better infrastructure attracted by the better economic outcomes? For example, we may observe that areas with better roads grow faster. Simple correlations between road quality and growth are likely to overstate the impact of roads on growth (Qian et al., 2009).

In the case of highway construction, both Chandra and Thompson (2000) and Michaels (2008) use a feature of the US Interstate Highway construction program that allows them to treat it as a natural experiment that affected counties through which the new interstate highways passed differently from those it bypassed. The idea derives from the nature of the highway-building exercise. When a highway is built to connect cities A and B, it must pass through areas that lie in between the two, thus contributing to improved infrastructure in places that happen to lie in between the (possibly endogenously chosen) points that the highway is built to connect. If the precise route of the highway was not manipulated to include some intermediate areas—whether counties, districts, or cities—and exclude others based on factors correlated with the outcomes of interest, then the highway construction can be treated as exogenous to the areas that the high-way runs through. This paper approaches the issue of endogeneity using an identification strategy similar to that used by Chandra and Thompson (2000). The nature of the Golden Quadrilateral project enables us to get causal estimates of the impact of improved highways on firms in India. We do so using a differences-in-differences approach, where changes in relevant outcomes for firms affected by the Golden Quadrilateral are compared to changes in outcomes for other firms.

**Figure 1. Location of Cities in Data Relative to Golden Quadrilateral Highways**

2. **Model Specification**

Studies from EjazGhani, Arti Grover Goswami, and William R. Kerr (2013) show that GQ project affected the quality of highways available to firms in cities that lay along the routes of the four upgraded highways, while leaving the quality of highways available to firms in other cities unaffected. This feature of the project allows for a difference-in-differences estimation strategy. Theory suggests that firm-level variables (such as inventories, input costs, or supplier relationship) may respond to improvements in transport infrastructure (for example, Shirley and Clifford, 2004). However, the Enterprise Survey data contain firms' responses to questions that allow us to directly measure how the choices that firms make about.
General form of the model as follows \( Y = f (T, D, T^*D, X) \)

Where \( Y \) = output of firms
\( T \) = treatment, dummy variable for firm’s location which value is 1 if firm is on the GQ or suburban city and 0 if firm is off the GQ
\( D \) = control dummy variable for time state which value is 1 if time considered is after 2005 and 0 if time considered is before 2005 (Here it is for 2002)
\( T^*D \) = variable of interest
\( X \) = includes variables for choices made by firms about inventories and input suppliers

As there will be more positive impact on firms which is closer to GQ hence coefficient of interest would be positive for post and treatment group and numerical value would be higher relative to control group which is off GQ and there will be significant effect on inventories holding and input suppliers of highway development on treatment variable. Firm’s choices about inventories and input suppliers are affected by the quality of highway infrastructure hence coefficient of X would be positive.

As we will determine the impact of GQ on manufacturing firms in terms of two variables; first one is “Days of Inventory Held” and second one is “Length of Relationship with Supplier”. Theory suggests us that the microeconomic channels identified have received relatively little empirical attention beyond a small number of instructive case studies (Gulyani 2001 and Holl 2004) and a recent paper by Duranton et al. (2011), which explores the effect of highways on the volume, value and composition of trade. Hence inventory management became significantly leaner for treatment firms relative to control firms after the improved highways were put into place.

Past studies (Dutta 2011) also suggest that firms in cities that gained better highway access were more likely to have switched the supplier who provided them with their primary input than firms in cities where road quality did not undergo a comparable improvement. Since any supplier available to a firm before the change continues to be available after the change, the fact that more firms on the improved highways change their primary input supplier suggests that a better supplier becomes feasible after the highway construction. However, if switching cost is higher due to demographic constraints then firm would retain the suppliers for the long term benefits.

3. Estimated Model

For the estimation part we use one “Binary variable” to capture the degree to which a given firm is affected by the highway program. Binary variable, which takes the value 1 if the firm is located in one of the 19 cities in the data on an upgraded highway and 0 if it is located in one of the other 18 cities (See Data Summary) However, firms in “off-project” cities, whose cargo could also use the improved highways for at least part of their journey, were also affected by the project, directly or indirectly and to a smaller extent. This motivates us for the spatial spillover effect.

We also use two samples. The first (the “full sample”) includes all the cities in the sample, while for the other we exclude the four metropolitan cities (Delhi, Mumbai, Kolkata, and Chennai) and their contiguous suburbs (Gurgaon, Faridabad, Ghaziabad and NOIDA in the case of Delhi, and Thane in the case of Mumbai). This “restricted sample” thus includes firms off the Golden Quadrilateral and those in non-nodal Golden Quadrilateral cities. The rationale for excluding the nodal cities from the analysis is that their status as ‘on-Golden Quadrilateral’ cities was a matter of design since these cities formed the nodes of the new system of highways. The choice of sample makes no difference to the sign and significance of the results we find, though the magnitudes of the effects naturally vary by sample. We emphasize the restricted sample because the identification is cleanest in this case.

3.1 Spatial Autoregressive Model (SAR)

This model says that levels of the dependent variable \( y \) depend on the levels of \( y \) in neighboring regions. It is thus a formulation of the idea of a spatial spillover; for example, output of firm 1 in a zip-code region may depend on the number of firms in adjacent (neighboring) zip-code regions “Spatial Spillover Effect”. The formal model

\[
y = W_y + X + u
\]

With \( u \) assumed to be classical. Note that \( \lambda \)Wymakes sense since the diagonal elements of W are zero, which implies that we do not have the circular specification that \( y_j \) on the left is influenced by the same \( y_j \) on the right. For the study \( \lambda \) and \( \beta \) are the parameters which we need to estimate

\( W = \) Weight matrix (37x37) formed by Inverse distance Method
\( w(i,j) = \) An element of weight matrix \( W = \) Inverse of distance between city i and city j
\( X = \) Vector of dummy variables which have first 19 entries are 1 and rest 18 are zero

For the estimation we get reduced form equation and estimate it by MLE as we would not want to run OLS on this model, since the presence of \( y \) on both the left and right sides means that we have a correlation-between-errors-and-repressor’s problem, and the resulting estimates will be biased and inconsistent. Reduced form equation

\[
y = W Y = X + u
\]

\[
y = ([I \ W]^{-1} X + [I \ W]^{-1} u)
\]
The log likelihood function for the SAR model is

\[
\ln L_n(\lambda, \beta, \sigma^2) = -\frac{n}{2} \ln(2\pi) - \frac{n}{2} \ln \sigma^2 + \ln |S_n(\lambda)| - \frac{1}{2\sigma^2} (Y_n^T S_n(\lambda) X_n(\lambda) Y_n - X_n(\lambda) \beta).
\]

where \( S_n(\lambda) = I_n - \lambda W_n \).

Impact Analysis

\[
\tilde{M}(r)_{direct} = n^{-1} tr(S_r(W))
\]

\[
\tilde{M}(r)_{total} = n^{-1} tr(S_r(W) I_n)
\]

\[
\tilde{M}(r)_{indirect} = \tilde{M}(r)_{total} - \tilde{M}(r)_{direct}
\]

Where \( S_r(W) = V(W) I_n \) \( r \)

\[
V(W) = (I_n - l W)^{-1}
\]

3.2 Moran’s I Statistic

The most common test for the existence of spatial autocorrelation is due to Patrick Moran, and is usually referred to as Moran’s-I. The statistic is defined for a particular data (or residual) vector \( x \) with weight matrix \( W \) given by

\[
I = \frac{R}{\sum_i \sum_j w_{ij}} \sum_i \sum_j w_{ij}(x_i - \bar{x})(x_j - \bar{x})
\]

\[
E(I) = -1/(R-1)
\]

and there is a complicated expression for the variance:

\[
\sqrt{\text{Var}(I)} = \frac{R S_1 - S_3 (1 - 2R)}{(R - 1)(R - 2)(R - 3)(\sum_i \sum_j w_{ij})^2}
\]

where

\[
S_1 = \frac{1}{2} \sum_i \sum_j (w_{ij} + w_{ji})^2
\]

\[
S_2 = \sum_i \left( \sum_j w_{ij} + \sum_j w_{ji} \right)^2
\]

\[
S_3 = (R^{-1} \sum_i (x_i - \bar{x})^2)
\]

\[
S_4 = (R^2 - 3R + 3) S_1 - 3 R S_3 - 3 \sum_i (x_i - \bar{x})^2
\]

It can be shown that under the null hypothesis of no spatial autocorrelation, Moran’s statistic is asymptotically normal. So the statistic

\[
I^* = \frac{I - E(I)}{\sqrt{\text{Var}(I)}}
\]

3.3 Difference and Difference Estimation Method

Since the work by Ashenfelter and Card (1985), the use of difference-in-differences methods has become very widespread. The simplest set up is one where outcomes are observed for two groups for two time periods. One of the groups is exposed to a treatment in the second period but not in the first period. The second group is not exposed to the treatment during either period. In the case where the same units within a group are observed in each time period, the average gain in the second (control) group is subtracted from the average gain in the first (treatment) group. This removes biases in second period comparisons between the treatment and control group that could be the result from permanent differences between those groups, as well as biases from comparisons over time in the treatment group that could be the result of trends.

With repeated cross sections, we can write the model for a generic member of any of groups as

\[
Y_{it} = \alpha_{it} + \beta T + \gamma D + m(TD)
\]

Where \( Y \) is the outcome of interest, \( D \) is a dummy variable for the second time period. The dummy variable \( T \) captures possible differences between the treatment and control groups prior to the policy change. The time period dummy, \( D \), captures aggregate factors that would cause changes in \( Y \) even in the absence of a policy change. The coefficient of interest, \( m \), multiplies the interaction term, \( T^D \), which is the same as a dummy variable equal to one for those observations in the treatment group in the second period.

The difference in difference estimate is \( \hat{M} = (\bar{y}_{T,2} - \bar{y}_{T,1}) - (\bar{y}_{C,2} - \bar{y}_{C,1}) \) where \( \bar{y} \) is the average of \( Y \) over years.
It can be described from following table

<table>
<thead>
<tr>
<th>Pre</th>
<th>Control</th>
<th>Difference (Row)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$a_{it} + \beta$</td>
<td>$a_{it}$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Post</td>
<td>$a_{it} + \beta + \gamma + m$</td>
<td>$a_{it} + \gamma$</td>
</tr>
<tr>
<td>Difference (Column)</td>
<td>$\gamma + m$</td>
<td>$\gamma$</td>
</tr>
</tbody>
</table>

3.4 Data Preparation and Summary

The outcome data used in this paper are from two rounds of the World Bank Enterprise Surveys for India, carried out in the years 2002 and 2005. Total 1091 firms surveyed were a random sample of firms in India's formal sector stratified by sector of activity, firm size and geographical location so as to generate a sample of firms “representative of the whole non-agricultural private economy” of the country (World Bank 2009).

Of the cities covered in both survey years, 19 cities lay along the four highways that are part of the Golden Quadrilateral: NH2 (connecting Delhi and Kolkata), NH8 (connecting Delhi and Mumbai), NH4 (connecting Mumbai and Chennai) and NH5 (connecting Chennai and Kolkata), while the remaining 18 lay on other National High- ways and thus to classify the cities in the sample into on-Golden Quadrilateral (treated) versus off-GQ (control) cities. This is the basis for the binary treatment variable used in this paper.

Table 1 – Data Summary

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A: Cities On The Golden Quadrilateral</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>State</td>
<td>Nodal City/Suburb Nearest City on GQ</td>
<td>No. of Firms</td>
<td></td>
</tr>
<tr>
<td>Ahemdabad</td>
<td>Gujarat</td>
<td>No</td>
<td>Itself</td>
<td>59</td>
</tr>
<tr>
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<td>Karnataka</td>
<td>No</td>
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<td>West Bangal</td>
<td>Yes</td>
<td>Itself</td>
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</tr>
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<td>Gaziabad</td>
<td>U.P.</td>
<td>Yes</td>
<td>Itself</td>
<td>22</td>
</tr>
<tr>
<td>Guntur</td>
<td>A.P.</td>
<td>No</td>
<td>Itself</td>
<td>17</td>
</tr>
<tr>
<td>Gurgaon</td>
<td>Haryana</td>
<td>Yes</td>
<td>Itself</td>
<td>12</td>
</tr>
<tr>
<td>Hosur</td>
<td>Karnataka</td>
<td>No</td>
<td>Itself</td>
<td>21</td>
</tr>
<tr>
<td>Hubli</td>
<td>Karnataka</td>
<td>No</td>
<td>Itself</td>
<td>16</td>
</tr>
<tr>
<td>Kanpur</td>
<td>U.P.</td>
<td>No</td>
<td>Itself</td>
<td>44</td>
</tr>
<tr>
<td>Mumbai</td>
<td>Maharashtra</td>
<td>Yes</td>
<td>Itself</td>
<td>32</td>
</tr>
<tr>
<td>Noida</td>
<td>U.P.</td>
<td>Yes</td>
<td>Itself</td>
<td>13</td>
</tr>
<tr>
<td>Pune</td>
<td>Maharashtra</td>
<td>No</td>
<td>Itself</td>
<td>24</td>
</tr>
<tr>
<td>Surat</td>
<td>Gujarat</td>
<td>No</td>
<td>Itself</td>
<td>35</td>
</tr>
<tr>
<td>Thane</td>
<td>Maharashtra</td>
<td>Yes</td>
<td>Itself</td>
<td>15</td>
</tr>
<tr>
<td>Vadodara</td>
<td>Gujarat</td>
<td>No</td>
<td>Itself</td>
<td>66</td>
</tr>
<tr>
<td>Vijyavara</td>
<td>A.P.</td>
<td>No</td>
<td>Itself</td>
<td>45</td>
</tr>
<tr>
<td><strong>Panel B: Cities Off The Golden Quadrilateral</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bhopal</td>
<td>M.P.</td>
<td>No</td>
<td>Agra</td>
<td>25</td>
</tr>
<tr>
<td>Calicut</td>
<td>Kerala</td>
<td>No</td>
<td>Bangalore</td>
<td>8</td>
</tr>
<tr>
<td>Chandigarh</td>
<td>Punjab</td>
<td>No</td>
<td>Delhi</td>
<td>16</td>
</tr>
<tr>
<td>Cochin</td>
<td>Kerala</td>
<td>No</td>
<td>Bangalore</td>
<td>16</td>
</tr>
<tr>
<td>Coimbture</td>
<td>Tamilnadu</td>
<td>No</td>
<td>Bangalore</td>
<td>46</td>
</tr>
<tr>
<td>Gwaliour</td>
<td>M.P.</td>
<td>No</td>
<td>Agra</td>
<td>26</td>
</tr>
<tr>
<td>Hyderabad</td>
<td>A.P.</td>
<td>No</td>
<td>Vijyavada</td>
<td>56</td>
</tr>
</tbody>
</table>
Study also use two samples. The first (the “full sample”) includes all the cities in the sample; while for the other we exclude the four metropolitan cities (Delhi, Mumbai, Kolkata, and Chennai) and their contiguous suburbs (Gurgaon, Faridabad, Ghaziabad and NOIDA in the case of Delhi, and Thane in the case of Mumbai). This “restricted sample” thus includes firms off the Golden Quadrilateral and those in non-nodal Golden Quadrilateral cities. The rationale for excluding the nodal cities from the analysis is that their status as ‘on-Golden Quadrilateral’ cities was a matter of design since these cities formed the nodes of the new system of highways. The choice of sample makes no difference to the sign and significance of the results. Study emphasizes the restricted sample because the identification is cleanest in this case.

4. Results

4.1. Input Inventories: Days of Inventories Held

Table 2 presents the means and standard deviations of the inventory stock variable for three categories of firms: those in cities not on the Golden Quadrilateral, those in “intermediate cities” (i.e. not in one of the nodal cities or their suburbs), and those in the nodal cities/their suburbs. For each category, the table has the mean number of days of inventory held by firms in 2002 (the pre-period) and 2005 (the post-period). As mentioned earlier the cleanest comparison is between “non-GQ firms” and “Non-nodal GQ firms”. The former were not directly affected by the project, while the latter received its benefit by virtue of location. In contrast, the firms in the nodal cities and their suburbs also benefited from the project – but as a matter of design rather than fortuitousness. So the comparison here will be between “non-nodal on-GQ firms” and “off-GQ firms”.

A comparison between the 2002 and 2005 inventory holding result from Table 2 reveals a large reduction in the amount of inventory held by firms in non-nodal cities affected by the Golden Quadrilateral project between the two survey years, while there is no such change in the inventory holdings of firms in the “control cities”. Firms in cities that lay on the Golden Quadrilateral (but were not one of the nodal cities the project was designed to link) held approximately 10.56 days of production’s worth less of input inventories in 2005 than they did in 2002, whereas firms off the Golden Quadrilateral report virtually no change. (Firms in the nodal cities and their suburbs saw a much smaller decline of 2.47 days in their inventory holdings. This is insignificantly different from zero).

Table 2 - Days of Inventory Held

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2005</th>
<th>Change, 2002-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days of inventory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(S.E.)</td>
<td>(S.E.)</td>
<td></td>
</tr>
<tr>
<td>Non-GQ cities</td>
<td>23.13</td>
<td>22.27</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>(29.22)</td>
<td>(19.71)</td>
<td></td>
</tr>
<tr>
<td>Non-Nodal GQ cities</td>
<td>38.10</td>
<td>27.54</td>
<td>-10.56***</td>
</tr>
<tr>
<td></td>
<td>(52.36)</td>
<td>(31.33)</td>
<td></td>
</tr>
<tr>
<td>Nodal GQ cities (and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>their suburbs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days of inventory</td>
<td>26.78</td>
<td>24.31</td>
<td>-2.47</td>
</tr>
<tr>
<td></td>
<td>(35.68)</td>
<td>(21.35)</td>
<td></td>
</tr>
<tr>
<td>All GQ cities</td>
<td>33.44</td>
<td>26.18</td>
<td>-7.26*</td>
</tr>
<tr>
<td></td>
<td>(46.54)</td>
<td>(27.59)</td>
<td></td>
</tr>
</tbody>
</table>

4.2. Supplier Turnover: Evidence on the Length of Supplier Relationships

Table 3 summarizes the average length of time that a firm in each of the three groups non-GQ, nodal GQ, and non-
nodal GQ – reports having done business with its main input supplier. Both nodal and non-nodal GQ cities show small increases in the length of this relationship that are insignificantly different from zero. But firms off the Golden Quadrilateral show an average increase that is about 2.5 times that of non-nodal treated firms, and is significantly different from zero. Thus, control firms show a larger increase in the duration of their relationship with their main input supplier than treatment firms.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Years with Main Input Supplier (S.E.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-GQ cities</td>
<td>4.15</td>
<td>4.54</td>
<td>0.39**</td>
</tr>
<tr>
<td></td>
<td>(1.39)</td>
<td>(1.01)</td>
<td></td>
</tr>
<tr>
<td>Non-Nodal GQ cities</td>
<td>4.68</td>
<td>4.83</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>(0.94)</td>
<td>(0.61)</td>
<td></td>
</tr>
<tr>
<td>Nodal GQ cities (and their suburbs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.65</td>
<td>4.75</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>(0.80)</td>
<td>(0.73)</td>
<td></td>
</tr>
<tr>
<td>All GQ cities</td>
<td>4.67</td>
<td>4.79</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>(0.82)</td>
<td>(0.67)</td>
<td></td>
</tr>
</tbody>
</table>

*denotes significance at 90% level, ** at 95% and *** at 99%.

Table 3 Length of Supplier Relationship

As Table 3 shows, firms in cities on the Golden Quadrilateral showed a significantly lower increase in the length of their relationship with their main input supplier, with the point estimate change of 0.12 while Non GQ cities showed a significantly higher-increase in the length of their relationship with their main input supplier, with the point estimate difference of 0.39. Excluding the nodal firms from the sample does not alter these results substantially, either in terms of economic or statistical significance. These results suggest that firms in cities on the Golden Quadrilateral increased the length of their relationship with their main input supplier by around 3 months less than did corresponding firms in non-Golden Quadrilateral cities, thus implying that more firms in Golden Quadrilateral cities switched suppliers between the survey years than did firms in control cities.

4.3 Moran’s I Statistic

Moran’s I for Output 2005

<table>
<thead>
<tr>
<th>Variables</th>
<th>I</th>
<th>E(I)</th>
<th>SD(I)</th>
<th>z</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output(2005)</td>
<td>0.248</td>
<td>-0.028</td>
<td>0.036</td>
<td>7.679</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Moran’s I for Output (2002)

<table>
<thead>
<tr>
<th>Variables</th>
<th>I</th>
<th>E(I)</th>
<th>SD(I)</th>
<th>z</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output(2002)</td>
<td>0.138</td>
<td>-0.028</td>
<td>0.086</td>
<td>3.859</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Here we have calculated the Moran’s I statistic to check the spatial dependence between the output vector for two time periods pre (2002) and post (2005). It is evident from the result that there is spatial dependence among the firms’ output as statistic is statistically significant in both the time periods according to p-value or z-score but one thing we want to highlight here is that Moran’s I statistic in 2005 is almost double the 2002 value which shows that development of GQ has highly affected the firms’ performance so there is high spatial dependence among the firms output in the post period 2005.

4.4 Spatial Autoregressive Model Estimation (SAR)

\[ y = Wy + Xb + u \]

The SAR model can be interpreted as indicating that the expected value of each observation \( y_i \) will depend on the mean value \( \mu \) plus a linear combination of values taken by neighboring observations scaled by the dependence parameter. Interpretation of coefficients of SAR model is different from the linear regression model.
According to results dependence coefficient $\lambda$ is not equal to zero and it is also statistically significant. Numerical value of $\lambda$ is 0.6279, which shows high spatial spillover in the output of firms.

For a SAR model

$$ \frac{\partial y_i}{\partial x_{jr}} = S_r (W)_{ij} $$

Where

$$ V(W) = (I_n \ W)^{-1} $$

$S_r (W)$ expresses the impact on the dependent variable observation $i$ from a change in $x_{ir}$ as a combination of direct and indirect (neighborhood) influences. These spatial spillovers arise as a result of impacts passing through neighboring regions and back to the region itself. The magnitude of this type of feedback will depend upon: (1) the position of the region in space (or in general in the connectivity structure), (2) the degree of connectivity among regions governed by the weight matrix $W$ used in the model, (3) the parameter $\lambda$ measuring the strength of spatial dependence, and (4) the magnitude of the coefficient estimates for $\beta$. Since the impact of changes in an explanatory variable differs over all regions, it seems desirable to find a summary measure of these varying impacts. Pace and LeSage (2006) set forth the following scalar summary measures that can be used to average these impacts across all institutions.

4.5 Cumulative Impacts Scalar Summary Estimates

<table>
<thead>
<tr>
<th>SAR Effects</th>
<th>Std. Deviation</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Effect</td>
<td>0.1145</td>
<td>0.0207</td>
</tr>
<tr>
<td>Indirect Effect</td>
<td>0.1746</td>
<td>0.0620</td>
</tr>
<tr>
<td>Total Effect</td>
<td>0.2891</td>
<td>0.0827</td>
</tr>
</tbody>
</table>

The Average Direct effect – averaged over all $n$ regions/observations providing a summary measure of the impact arising from changes in the $i$th observation of variable $r$. From the result we see that Direct Effect is 0.1145 which means if we increase the output in region by 1 unit then average direct impact on the output of all other 36 cities firms will be 0.1145. This measure take into account feedback effects that arise from the change in the $i$th region’s output on the output of neighboring region firms in the system of spatially dependent regions.

The Average Total effect = Average Direct effect + Average Indirect effect. This scalar summary measure has two interpretations. Interpretation 1), if all regions raise production output what will be the average total impact on output of the typical region? This total effect will include both the average direct impact plus the average indirect impact. From the result we see that total impact is 0.2891 which means if we increase the overall production of firms by 1 unit then total average impact on the output of typical region firm would be 0.2891.

Finally, the Average Indirect effect = Average Total effect - Average Direct effect by definition. As for the study, this effect could be used to measure the impact of all other regions raising their output on an individual region output, again averaged over all regions. Study shows that indirect effect estimates is higher than direct estimates, which strengthens our spatial dependence result.

5. Conclusion

Firms in cities that lay along one of the four national highways connecting the four largest cities in India that the Indian government upgraded as part of its Golden Quadrilateral report holding about 10.5 days’ worth of production less of input inventories in 2005, when much of the project had been implemented, than in 2002, when work had just begun, while firms which lay in cities off the Golden Quadrilateral highways report no such change. Such firms also show a greater propensity to change suppliers between the two years, suggesting that a larger fraction of them found their existing arrangements sub-optimal than did firms not on the new highways. These pieces of evidence suggest that improved highways facilitated productive choices that firms may have wanted to make even earlier, but were constrained from being able to make by the quality of highways available to them.

Moran’s I statistic’s significant values show the spatial spillover effect on the output of firms and also nearly double value (0.248) for the Output 2005 relative to Output 2002 (0.138) indicates that spatial dependence has increased from 2002 to 2005 which shows the positive impact of Golden Quadrilateral highways project on the manufacturing sector.

Spatial dependence coefficient estimated value 0.63 for the SAR model shows that there is high level of spatial dependability among the output of firms.

Statistically significant value of Average total impact 0.29 shows that 29% output would be increased in single region if we increase the total output by 1 unit, which shows the spatial dependability.
6. References
L. Anselin, SpaceStat Tutorial: A Workbook for Using Spacestat in the Analysis of Spatial Data, National Center for Geographic Information and Analysis, University of California, Santa Barbara, CA, 1992
Chapter 5:
The effectiveness of the adoption of EU policies by Greece with respect to innovation and entrepreneurship on the SMEs performance and their pace of recovery from the economic crisis

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Abstract:
The Small Medium Sized Enterprises SMEs constitute the backbone of the Greek economy since they represent 99 % of the total number of existing businesses in the European Union. The Small Business Act SBA provides a comprehensive framework with principle and respective policies as a benchmark for the action applied by the various EU Economies. Applying this framework to the Greek SMEs it has been found that except from the principle of ‘Second Chance’ that Greek SMEs rated highly with respect to their EU counterparts, they rated well below average in relation to four significant SBA principles (State aid & procurement, Access to Finance, Internationalisation and Responsive Administration). Consequently, the action recommended include: policies that reduce paperwork required for Greek SMEs to operate efficiently, encourage Greek SMEs extroversion and internationalisation, monitoring of the Greek banks supplying with necessary funds for the Greek SMEs to operate and finally focusing on innovation and entrepreneurship progress achieved on a continuous scale.

Key words: SMEs, Innovation, Entrepreneurship, Small Business Act SBA, Economic recession and recovery.

1. Introduction
According to the official OECD definition, as Small Medium Sized Enterprises SMEs can be defined and recognised all the independent, non-subsidiary enterprises which employ fewer than 250 workers, present a turnover amount of less than 40 million Euros or an annual balance sheet total of less than 27 million Euros. (OECD, 2005). The impressive number of 23 million of SMEs that operate in the European Union EU represent 99 % of the total number of existing businesses and comprise the main driving force for economic growth, innovation1, employment and social integration in a number of EU member states2. In OECD countries SMEs provide employment to more than half of their labour force. Nevertheless, although access to finance seems to be one of the most important burdens-challenges that contemporary SMEs (especially the innovative ones) have to face in order to ensure their viability and growth, this challenge has become even more difficult to be faced due to the turbulence of the current economic and financial crisis that most European SMEs have entered (OECD,2009). This is because SMEs and their entrepreneurs have suffered a double shock: including on one hand a dramatic decrease in demand for their goods and services and a tightening in credit terms, on the other, that in turn affected severely their cash (OECD, 2010). Hence, the European Union (European Commission , 2013) has developed a policy framework in order to help them realise this potential , promote entrepreneurship and especially create and establish a sustainable business and friendlier environment for these companies to operate . Within this environment, the EU Member States are generally responding through the application of three main types of measures including: a) measures to support SMEs sales level preventing depletion of their working capital, b) measures to enhance and facilitate SME’s access to liquidity and c) measures taken in order to help SMEs maintain their level of investments.

The transition to an economy based on knowledge (knowledge-based economy) is the main challenge for the EU today. In a globalised and ever-changing environment characterised by continuous structural changes and competitive pressures, the role of SMEs is becoming increasingly important as creators of job and employment opportunities. (Commission of European Communities, 2010) having thus to make the most of their knowledge based capital KBC, to increase their productivity and competitiveness, they have to develop their entrepreneurial and innovative frameworks and skills. On the other hand, according to the Greek Ministry of Development and Competitiveness (2014) when designing policies for the development of SMEs two main axes should be taken into serious consideration :
- Provision of assistance to SMEs entrepreneurs to introduce innovative features into their activity and enable them to turn innovative ideas into practice.
- Creation of a micro as well as a macro operating environment conducive to

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1 OECD Review of Innovation Policy, 2019-2011
2 http://ec.europa.eu/enterprise/policies/sme/index_en.htm
the development of their entrepreneurship.

2. European Policies for SMEs

What constitutes the first comprehensive as well as cohesive policy framework for SMEs of the available EU policies that can be applied by its Member States, is the well known «Small Business Act» SBA (European Commission, 2012). Moreover, what contributes further to the significance of the SBA framework is the fact that its principles have been designed taking also into consideration the areas not addressed by the Lisbon Strategy (Europe, 2020) covering its gaps. Following the adoption of SBA policies by European SMEs in June 2008, there has been a significant progress in their relevant performance through the actions that these took with respect to SBA principles. It should be noted at this point that the SBA framework provides a clear classification of EU policies under its 10 discrete principles.3

2.1 Classification of EU policies under the SBA4 principles

The European policies for provision of support to SMEs in order for them to develop their performance in innovation and entrepreneurship can be classified under the ten SBA principles as follows (COM, 2011):

**Principle 1:** This principle is related to the creation of an operating environment that is conducive to and fosters entrepreneurial prosperity. The main areas of respective EU policies in place include: design and operation of development programmes for entrepreneurs, especially young entrepreneurs (i.e. Erasmus, Leonardo Da Vinci etc) aiming at a cross border diffusion of knowledge and exchange of entrepreneurial practices. Another area of respective policies relates to female entrepreneurship through development of mentoring programmes designed to provide them with the right and proper guidance towards establishment of their own SME.

**Principle 2:** Bankruptcies comprise the main cause for the closure of 15% of all the EU SMEs. About 700,000 of SMEs go bankrupt every year in Europe (Ecorys, 2012). Moreover, for an entrepreneur who has gone bankrupt in the past, the attempt for a ‘new’ start of their business is a rather complicated and lengthy process (taking from 4 months to 9 years). Within this context the EU is implementing policies that promote:

- opportunities for a second chance in business through the exchange of best practices
- a positive attitude of society to entrepreneurs wishing to retry doing business ensuring a fair and equal treatment

**Principle 3:** The biggest restriction faced by SMEs is their compliance with the relevant administrative regulations.

On this principle, the EU (European Commission, 2011) implements policies that:

- assess the impact of relevant regulations and legislation on the operation of SMEs and take the results of this evaluation into account when planning new proposals
- consult representatives of SMEs at least 8 weeks prior to the design and implementation of administrative regulations directly related to their operation.
- aim to implement policies that reduce administrative ‘barriers’ by 25% for SMEs by 2013...

**Principle 4:** With respect to modernisation and responsiveness of public administration, the EU in order to cover the requirements of these two principles implemented policies which include: the following

- Acceleration of the launch process of SMEs reducing and simplifying procedures
- Ensuring that the applicable EU Directive assign a ‘contact point’ for each new SME, where entrepreneurs can derive all the necessary information for the start of their business and the ability to completed all the necessary procedures electronically

**Principle 5:** The SMEs face obstacles when participating in public projects and assignments

The policies developed by the EU in this area include:

- Implementation of Best Practice Code for public authorities that manage and assign projects in a manner that develops a climate of transparency and reduces bureaucracy
- Design of websites for more transparency and information with easy access provided to SMEs, so that they can be informed about the opportunities that arise for undertaking projects related to supply and procurement to public authorities and services
- Establishment of Government Assistance policy (State Aid policies) in order for the relevant needs of SMEs to be met more effectively.

**Principle 6:** Access to capital and finance is the second main source of barriers to the operation of SMEs. In order to overcome these, the policies implemented include:

- Development of financing programmes designed to fill gaps between 100,000 and 1 million Euros.
- Arrangement of relevant legal and tax obstacles
- Ensure that the taxation of business profits, encourages investment.

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3 These include: business entrepreneurship and innovation through action in their micro, as well as their macro operating environment including: 1. entrepreneurship 2. second chance 3. think small first 4. responsive administration 5. state aid and public procurement 6. access to finance, 7. single market 8. skills and innovation, 9. environment and 10. internationalisation.

4 The reason why SBA framework has been selected to be discussed and used here in order to cover the purpose of the present article, lies in the fact that besides its comprehensiveness it also provides a well structured framework for comparison of Greek SMEs performance (with respect to their entrepreneurship and innovation) against their European counterparts.
Principle 7: With respect to this principle the policies that the EU has introduced include (European Commission, 2011):

- Increase financial assistance from the EU to SMES
- Remove the fragmentation of consumer protection regulations, so as to make cross-border trade between SMES easier and smoother with as fewer administrative burdens as possible.
- Create and establish ‘SME Helpdesks’ composed of representatives of SMEs associations and organisations.

Principle 8: Since SMEs particularly suffer from a lack of technical and managerial skills and trained workforce, the EU implements policies such as:

- A European Cohesion Policy of EUR 13.5 billion for the period 2007-2013 introduced to promote adaptation of employees as well as entrepreneurs themselves to the new and constantly evolving operating environment.
- A policy that provides guidance to SMEs for the management of their intellectual property through the so-called ‘e-government transactions’
- The Framework Programme FP7 which apart from other key factors also supports:
  - Research infrastructures for the benefit of SMEs
  - The integration of science in business
  - Horizontal transnational cooperation activities of SMES.

Principle 9: With respect to this principle EU has put the following policies in place:

- Eco-Audit and Management Scheme (EMAS) - Program Audit and management through simplified procedures and reduced costs
- Creation of an European network of business consultants who provide consulting services to businesses and funding opportunities for companies implementing environmentally friendly operations and procedure.
- Adoption of a fund of 2.5 billion for the Cohesion Program and to support green products and operational processes of European SMEs.

Principle 10: The policies implemented by the EU to help SMEs to exploit the opportunities offered within a globalised environment include:

- Establishment of the so-called ‘Market Access Teams’ to develop business synergy and reduce barriers to international trade in which they are or want to be active.
- Establishment of the European Business Centres in selected and rapidly growing markets (such as India and China).

3. A summary of the EU policies adopted and implemented by the Greek State to support SMEs to meet SBA requirements in terms of entrepreneurship and innovation.

With respect to the 1st SBA principle (Entrepreneurship), the Greek government introduced an action plan to support youth employment and entrepreneurship in January 2013. A budget of €600 million, including €517 million from the European Social Fund and the European Regional Development Fund was allocated to support this plan. Moreover, the Entrepreneurship Fund as part of Hellenic Fund for Entrepreneurship (ETEAN) in order to support Greek SMEs to improve their competitiveness through contributing around €540 million from the European Social Fund and the European Regional Development Fund was allocated to support more flexible SMEs legal form was designed and put in place, actual implementation was slow mainly due to the involvement of a number of different ministries (European Commission, 2013). In relation to the fourth SBA principle (responsive public administration) the Greek State through the Ministry of Development and the Law No 4072/2012 introduced a number of acts to modernise and simplify licensing procedures for SMEs.

With respect to the fifth SBA principle (State aid & public procurement) the measures taken by public authorities increasing the time span of payment to SMEs (from 66 days to 112 days in 2013) contributed to the deterioration of Greek SMEs performance.

As far as the sixth SBA principle (Access to Finance) is concerned a series of funding programmes have been put in place. Specifically, a new SME Guarantee Fund guaranteeing loans up to 1 billion Euros to SMEs via Greek partner banks has been established. Moreover, The National Fund for Entrepreneurship and Development (ETEAN SA), a financing institution launched in 2011, is improving SMEs’ access to finance, through Business Restart programs and the Fund for Island Entrepreneurship (IME, 2013). With respect to the seventh SBA principle (Single market) Greek SMEs do not exploit single market’s full potential, restricting their export activities to their neighbouring countries which have also been affected by economic depression.

As far as the eighth SBA principle (Skills & Innovation) is concerned Greek SMEs present a deteriorating performance, as this is reflected in the diagrammes 3 and 4 below (Klephantou, 2011). Also, in 2013, the Special Management Service of the Regional Operational Programme launched a measure to support SMEs operating in manufacturing, tourism, trade and services industries invest in innovation, the environment and ICTs. Nevertheless, the implementation of the initiative Venture Capital for Innovative Enterprises, announced by the government in 2012, is still pending. In relation to the ninth SBA principle (Environment), since Greek SMEs performed quite well in 2012 with nearly 50% of their turnover being generated by green
products and services the Greek State did not apply any supportive policies in this area (Kuczmarksi, 2011). Lastly, in terms of the tenth SBA principle a policy called ‘Business Competitiveness’ aiming to increase SMEs internationalisation was introduced by the Ministry of Development and Competitiveness (2014). Moreover, the same Ministry launched a programme in order to provide support to SMEs for their HR training on issues related to internationalisation of their operational activities (Mullins, 2005).

4. Performance of the Greek SMEs with respect to their European counterparts. The new developmental strategy designed and aimed to be achieved over the next decade is the well known “Europe 2020”. The mission statement of EU through the implementation of ‘Europe 2020’ strategy is that: “in a changing world, we want the EU to become a smart, sustainable and inclusive economy” (European Commission, 2013). Specifically, the EU has set five ambitious objectives - on employment, innovation, education, social inclusion and climate / energy - to be achieved by 2020. The policies and measures dictated by the SBA, comprise a very well structured framework that each Member State can apply in order to comply with the ‘Europe 2020’ requirements. Nevertheless, the main question posed in the current article is what have been the relevant outcomes achieved by the Greek SMEs with respect to the EU policies applied and the related action taken?

Diagramme 1: Greek SMEs Performance in 2012

Source: SBA Fact Sheet 2012, Greece-European Commission

Diagramme 2: Greek SMEs Performance in 2013

Source: SBA Fact Sheet 2013, Greece- European Commission
As it is reflected on the four diagrammes above, Greek SMEs profile with respect to the ten SBA principles present an overall weak profile, with a few relative strengths. Specifically, in the area of ‘Second chance’ Greek SMEs performance is well above the EU average, performance in ‘Entrepreneurship’ is on par with the EU average while in all of the rest areas their performance is below the EU average with “State aid & public procurement”, “Access to Finance” and “Internationalisation” well below the respective EU average.

This weak profile of the Greek SMEs notwithstanding, what seems to be more worrying is the trend of deterioration of their performance that becomes evident upon comparison of the diagrammes above. Specifically, if we compare diagrammes 3 and 4 depicting Greek SMEs progress with respect to the progress they made in SBA principles over the period 2012-2013, except from Entrepreneurship and Second chance, Greek SMEs performance in the rest of SBA principles ranged from a very low performance progress to a deteriorating performance rate. These results are in line with the views stated by the Hellenic Confederation of Professionals, Craftsman and Merchants of Greece – GSEVEE (2013) (ΓΣΕΒΕΕ) according to which:

- 75.4% of the Greek SMEs record a trend of performance deterioration in relation to the previous years of their operations. Specifically this deterioration consists of:
  - a decrease in the average turnover for 75% of the Greek SMEs
  - a decrease in demand for 74.6% of the Greek SMEs
  - a decrease in SMEs investments of about 35%
  - a reduction in orders up to 77.8%

The Greek economy is in a deep recession if not an economic depression. The structural reforms have not yielded any meaningful results. According to the financial data presented by the companies, the liquidity ratio and the investment activity remains historically low. This is a self-reinforcing vicious cycle of...
disinvestment and lack of liquidity, which essentially deprives the private sector of its potential to develop dynamic and autonomous ability to recover. All economic indicators of business retain negative values. 66.6% of businesses declined in turnover, with the highest recorded in very small businesses (81.7%). The average reduction in turnover for the second half of 2013 stands at 22.9%. Moreover, according to GSEVTEE 47.1% of businesses are at risk of closure in the near future with a net reduction of businesses for the next year estimated to be between 27,000 to 30,000 business units. One of the major issues that GSEVTEE research highlights, is the problem of SMEs accumulated debts especially with respect to insurance liabilities to OAAEE (about 40%). Finally, SMEs entrepreneurs disapprove the effectiveness of the recent proposals of OECD since the vast majority of them consider the release of the product market and the opening of professions, will neither result in price reductions nor will strengthen domestic business.

5. Conclusions and Recommendations
In the light of the above over the last five years the financial crisis that severely hit Greek economy and its SMEs led the Greek State to implement policies that actually addressed SBA principles and respective policies areas. Nevertheless, the policies and respective measures applied did not bring the expected results with presenting a performance well below the EU average in four main SBA principles. Evidently, the Greek SMEs are facing problems related to the state aid, access to finance, the degree of administration responsiveness and their capacity for internationalisation. As far as, the two main axes of SMEs performance that constitute the basis of the present article (innovation and entrepreneurship) Greek SMEs exhibit an average performance although Greeks’ Intellectual capital is conducive to innovative ideas and as a nation have always demonstrated a tendency for independent employment. Nevertheless, according to the results of the research that Hofstede (2011) carried out on national cultural principles of 66 countries worldwide, Greece rated very highly (Greece rate 112 vs. mean 65) with respect to the uncertainty avoidance principle, that indicates the extent to which a country’s people tend to avoid risk taken.

Although EU SMEs adopted SBA policies improved their performance, Greek SMEs (as it is reflected on the diagrams above) present a deteriorating picture. Firstly, because although a number of funding programmes are available by EU, Greek banks which have been the critical medium but also a significant party for the EU programmes to materialise, could not provide this allocated finance to SMEs due to their own limited cash flow. Internationalisation, as it is also reflected above, is well below the EU average. This reality could be attributed to a culture of introversion that the Greek SMEs developed over the last two decades with their main volume of business depending on contracts with public sector, establishing a high degree of confidence for their future, as well as a rather relaxed attitude for the future of their businesses, which in turn led them to avoid the uncertainty of exports. However, they have now realised that the public sector cannot act as a guarantee for their revenue through signing respective contracts with the Greek State. Moreover, even for the Greek SMEs wishing to expand their activities and go international, the required paperwork is cumbersome acting as a deterrent factor to Greek SMEs internationalisation.

Consequently, in order for this climate to be improved and Greek entrepreneurs to be motivated for efficient entrepreneurial effort and activity, the following actions could be adopted:
- Develop Greek SMEs extroversion by the Greek State subsidising those SMEs that add value to the Greek economy with their exportation activity and further potential.
- Design and implement programmes that will reinforce Greek SMEs entrepreneurial practice independent of the Greek public sector.
- Reduction of the required paperwork for the Greek SMEs to operate, expand and develop Internationalising activities.
- Reduction, where possible, the discharge time and debt settlement for honest Entrepreneurs after bankruptcy to three years and offer support services to companies for timely restructuring, tips to prevent bankruptcy and support SMEs in view of restructuring and their restart.
- Enabling effective restructuring of viable Greek SMEs with financial difficulties and provide honest entrepreneurs with a second chance, promoting in this way the entrepreneurship, investment and employment and contributing to reducing barriers to the smooth functioning of the internal market.

Finally, the Greek State should consider the following measures with respect to the taxation of SMEs:
- Simplification of tax laws and procedures affecting SMEs
- Create a more equitable and objective fiscal framework that takes into account the difficulties facing SMEs in the payment of taxes imposed on them, in this difficult economic climate.
- Create a task force in the Ministry of Finance from qualified staff that will offer taxation advice to SMEs.

Greek authorities are still viewed and perceived by entrepreneurs as authorities that impose more burdens for innovation and entrepreneurship than their European peers. Therefore, the above measures are very essential to be implemented in order to improve Greek entrepreneurs’ motivation for action and drive for innovation and growth.

6. References
Socio-Economic Sustainability, Regional Development and Spatial Planning

Small and medium sized Enterprises (SMEs) Available at: http://ec.europa.eu/enterprise/policies/sme/index_en.htm
OECD Reviews of Innovation Policy, 2010-2011
Section 2: Socio Economic Growth & Regional Development
Chapter 1:

Global Ethics and Economic Prosperity

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Abstract
Freedom and prosperity may be good and commendable for all human beings and it may augur wealth for western societies according to liberals (George Soros). But obsession with unbridled forces of liberalism has triggered the resurgence of religious and social values as a backlash in realists’ views (Barnard Lewis). Search and efforts for food and fodder are common among all the creatures on earth. However, human beings earn and spend not on securing food alone but utilize the resources for better living and enjoying comforts while other souls are immune from this very thinking.

Since the main objective of economic activities is to ensure that human beings are receiving what they really deserve, therefore, the socio-economic justice demands that all economic activities must be carried out in just manner so that none of the partners or partakers may be deprived of the share they are entitled to.

It is here that the concept of Globalization is pricking the minds of both the social and political scientists to explore the impact of the International Consumerism based on modern and western patterns of liberalism. This trend has infused a sense of insecurity in the minds of the youth population of developing countries. It is in fact polarizing of the non western societies by creating a state of chaos through liberal democratic practices. The Realists argue that security and existence of Nation States will remain at stake as these states will become extremely vulnerable to interventions by the western nations and international regimes forcibly or non forcibly. It is pertinent to mention that the present trends of Foreign Direct Investment though seems to be promoting the growing economies, are in disguise negatively changing the Ethical values of the Asian and African countries. The economic managers of these Newly Industrialized Countries (NICs) and Less Developed Countries (LDCs) find it difficult to differentiate between Market and Economy.

This paper will focus exclusively on the effects of globalizing trends on State’s Politics, Culture and Indigenous economies. It will also suggest certain measures to identify the limits of neo-liberalism so that independent values remain intact and peace and security of the global community is not jeopardized.

Key words: The concept of globalization, The western ideology of liberal democracy, Regime theory, LDCs, NICs Ethical values change in, liberals, realists, Economic prosperity at the cost of ethical values.

1. Objectives:
To identify the impact of globalization on the over-all culture and economy of the developing countries

Research Methodology
Both qualitative and quantitative approach will be followed. Data for the purpose of analysis will be collected through consulting various books and literature on the subject. Also use of questionnaire to collect primary data (in case of need) which will subsequently be processed for finding out the relationship and impact of globalization on the real economic prosperity of world community.

2. The Concept of Ethics
The concept of Ethics denotes and elaborates phenomena wherein principles of moral values that control and influence human behavior are evaluated. It states a system of moral principles or values of behavior or it is a branch of philosophy that deals with moral principles. The term is generally used for value assessment in the matter of beneficial effects on the human life in a community. It eventually extends and encompasses all the activities undertaken for a compensation or reward which are verified with tested criteria of cardinal virtues. Its bounds now extend beyond imaginary walls because of enlargement of the net which has knitted the world into a single community. The scope of the concept is eventually enlarged and taken the form of Global Ethics which is nothing but Necessary Minimum of Common Values, Standards and Basic Attitudes. 

Hans Kung (2005) while discussing “Human Rights and Human Responsibilities in the age of terrorism argued that consensus of values will be a decisive contribution to overcome the crisis of orientation which became a real problem. Economic Prosperity reveals a situation wherein an individual, group or society as whole enjoys all the necessities of life and to a reasonable extent the comforts which facilitate the individuals live a life free from dependence on others for their survival.

Such a situation enables the individuals to attain a stage of self sustaining and contribute towards the growth of the economy employing his / her faculties to the optimum level.
3. The Urge for Development

Seventeenth century industrial revolution in the west had brought blessings in its wake when increased production expanded and stretched the market to remote corners of the world. The economies became more monetized. The rate of employment increased which in turn increased both demand and supply for goods and services under the multipliers and accelerator’s effect. The Western world monetarily prospered because of increased amenities and comforts of life but a competitive race among the industrially advanced countries to capture markets put the human values at stake. Search for markets took the form of a craze among the manufacturing countries which went on increasing with an increase in the productivity and resultant quantum of production. The nature, type and quantity to be produced were decided by the western countries keeping in view their vested interest and the moral values had least consideration. Moving to other parts of the world as trader, the merchant of the affluent societies carried with them socio cultural values, the impact of which was much long lasting. A severe tussle for power snatching resulted in serious Human Rights violations. Like other backward countries the Sub Continent of India also fell prey. The search of market turned into search of land for rule. The traders brought with them the political infringement and the traditional life of the people of the backward countries lost its value because of non ethical practices later on exercised by the Western Masters. Loss of ethical values was apparent phenomena in the market based economies. Ever increasing mechanization and product diversification continued accelerating the human exploitation. Present business tycoons and industrial lords of the advanced countries strongly argue for globalization. The idea has the only objective to sell what they can not within their own boundaries. Admittedly the infant industries will die before survival. Even if it is presumed that some of them had succeeded in proving their existence but they could not heave a sigh of relief because of the cut throat competition by the industrially advanced nations.

The last two decades of the twenty century witnessed different phenomena of Global Ethics when the concept of globalization took the momentum. The Western and American states were the strong advocates of the concept of Global Economy primarily focusing on Free Trade among all the world communities. The theory of free trade eliminates all types of protections and barriers in the way of international movements of goods. Free entry of goods and services ultimately pushes the developing nations to the rear rows because of feeble infant industries on the one hand and free outflow of natural resources on the other hand. The idea was initially proposed to be materialized through World Trade Organization. One who signifies his willingness to adopt the rule of business will be bound to allow the free entry of goods disregarding the fact that their own industries can, in no way, compete and will definitely be abolished due to strong competition and in most cases Dumping by the Industrially Advanced Countries.

The decision will benefit the Industrially Advanced Countries at the cost of Developing Economies. It is interesting that violation of such an agreement will instead be un- ethical in terms of the Western philosophy and will, therefore, attract penalties in terms of sanctions. If such is the beauty of Ethics in the sense of Globalization the developing countries will continue lagging behind because of no advancement in the process of industrialization. Resultantly the dream of poverty reduction will remain a myth.

4. Foreign Direct Investment

To help grow fast and also further strengthen their hold in the developing countries, the institutions in the financially strong economies have since started establishing industrial and commercial units under Foreign Direct Investment portfolio. This might have been good omen had there been reasonable consideration for Ethics. The inflow of Foreign Direct Investment can add to the employment opportunities, current revenue and use of the available resources. The import of machinery by the foreign investor will save the foreign exchange which would have otherwise been paid for. In the manufacturing units there has always a ratio of the inputs for import. Major portion of the inputs are supposed to be produced indigenously so that the local manufacturers of the supplementary machinery can promote their business and subsequently add to the prosperity of the people. It however proved otherwise. The Suzuki company of Japan was licensed for Pakistan to produce automobiles with 20 % of the machinery to be imported from Japan but 80% parts were required to be produced or acquired from Pakistani suppliers or manufacturers. The idea was to not only expand the automobile industry but also enlarge the market for the indigenous producers of the auto parts. He covenant did not materialize and a very small quantity of the parts is being acquired from the local suppliers. Thus defeating the purpose of Foreign Direct Investment and the hence the fruits of globalization are being plucked by the Industrially Advanced Country alone. Global Ethics ignored for the absolute gain. Using another tactics shrewd Foreign Investors play differently. Technical personals are hired from investing countries, the country of origin, which are paid fabulous salaries and nominal is left for paying taxes. Small amount of retained earning the developing economy can not move forward.

5. State Sovereignty

During the last three decades the concept of Globalization has attained much attention of the scholars and academia. The term Global Village and Global Community prima facie knit the world into the net of friendship with strong sense of belongingness and close cooperation for promoting mutual interest. Incidentally actual phenomena has been depicting a different picture. Pakistan and India are at daggers drawn since independence of sub-continent of India in 1947. The dispute of Kashmir is an apple of discord between the two countries which has been tabled before the international communities for number of times but no solution has so far been devised which could bring Pakistan and India closure and turn them good neighbor.

Resolutions were passed but no concrete and sincere efforts were made to settle the issue and bury the discontentment once for all. Unjustified interference in the internal affairs of Asian and African countries by the Veto Nations on one or the other pretext disrespected the sovereignty of the independent states.
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War on terrorism has in no way proved to be a success. Rather it added to hatred against American and European Nations because it has taken away lives of thousands of innocent Muslims in Pakistan. Bureau of Investigative Journalism found that from June 2004 through mid-September 2012, drone strikes killed between 2,562 and 3,325 people in Pakistan, including 176 children.

Stanford International Human Rights & Conflict Resolution Clinic in their research work under the title of “Living Under Drones” while expressing their severe concern over the drone attacks wrote, “US drone strike policies cause considerable and under-accounted-for harm to the daily lives of ordinary civilians, beyond death and physical injury” The report further shows discontentment by writing that “current US targeted killings and drone strike practices undermine respect for the rule of law and international legal protections and may set dangerous precedents.” (3)

The Universal Declaration of Human Rights, no doubt, accepts the dignity of the people and it also advocates the inalienable freedom besides equality and liberty of solidarity with one and other but the veto powers least cared for such declaration when they see any nation moving towards the Economic Development. Massacre and street bloodshed in Iraq which took away more than 870000 lives during the period from March, 2003 to February, 20111 Libya lost nearly 30000 peoples within a period of eight months from February, 2011 to October, 2011 and Syria buried more than 70000 of its population including innocent citizens for their no crime. (3) Again subversive activities in Egypt and Turkey are still to be verified on the standard of Global Ethics

5. Human Trafficking: Globalization is a set of world-wide processes which emphasizes upon free movement of capital, openness of political borders, and free trade without tariff. This freedom on international level, no doubt, carries some advantages, but has complicated the life due to a number of factors which have been adversely affecting the socio-cultural life of developing countries around the globe. Free mobility of not only goods but also that of services has created another serious problem of Human Trafficking. Demonstration effect of the global culture has raised the expectation of better life in the minds of the people of both backward and developing countries. Consequently every effort is made to move to the advanced country to earn more and enjoy a better living. Lured by abundance of wealth most of the people searching jobs particularly the female folk is entangled in the carriage of drugs and Human Trafficking which eventually push them to slavery because once caught up in the hands of the exploiters they lose their will and live on the mercy of their so called masters.

The Sex Trafficking is another by-product of the Globalization. Kevin Bales (1999) in his work on “Disposable people „New slavery in the Global Economy” has made a good effort of fact finding by reproducing real story of young girl SEBA who was brought up in Mali but was forced to work as house maid in a French Countryside. Bales describe that “Men are lured in the region by promises of riches and gold dust and girls as young as of eleven years are offered jobs in offices and restaurants that serve the mines. When they arrive in the remote mining areas the men are locked up and forced to work in the mines, the girls are beaten, raped and put to work as prostitutes. Their recruiting agents are paid a small amount for each body, perhaps $150 /=. Local police acts as enforcers to control the slaves. If they flee, police go after them and if found either kill them or send them back to the brothels.”

Kevin Bales (1999) noted that “economic factors that encourage trafficking also provide fertile environment for bribery or collusion of police, military and customs and immigration officials”. (4)

The phenomena further aggravate the situation and adds to the moralism degrading the human being to slaves of the modern Era. Thus sending a severe set back to the civilization.

6. Foreign Debt Accumulation: Borrowing is the regular feature of developing economies since World War 11 because of weak infrastructure and backward rather absence of industrial base. It is also because of mass destruction due to long war. In order to reconstruct the damaged economies and bring the backward nations at par with the industrially advanced countries various international agencies were established to extend financial assistance to the economies under stress. The Britton Wood Conference played a very positive role in the constitution of such institutions which have been providing substantial financial help by way of loans and aid. The contribution of these agencies in the poverty alleviation can not be denied. However, the malady fell upon these borrowing countries is more than the beneficial effect. The borrowing nations have never been to throw the yoke loans because every dollar borrowed goes on multiplying with a day past. This mainly because of compound interest on the one hand and terms of the loan on the other hand. The loans are released not only by the lending countries but in most cases individual countries also extend such facilities but their own terms and conditions. One adverse effect is measured by the fact that every finance facility is allowed under Tied Loan Scheme wherein it is stipulated that the borrowing will invariably purchase the required machinery from the lending countries. The technical assistance is extended by the financing country which means that major portion of the loan amount is taken back by the lending countries while the interest is to be paid for the whole of amount of loan. The amount borrowed goes on increasing because of application of interest and debtor countries ultimately become unable to liquidate their liabilities which have increased manifold by now. Habib (2011) in his work on “The Problem of Foreign Debt Liabilities Management in Pakistan has traced the history of borrowing by the Govt of Pakistan wherein a very desperate situation has arisen because of accumulation of heavy debts due to application of interest. The Govt. of Pakistan borrowed from the various International agencies a sum of US $ 65.967 billions during the period from 1951 to March, 2011 and subsequently had paid back a sum of US $ 72.120 billions but in spite of repayment of so huge amount the country was still indebted
to the tune US $ 60.116 billions by the end of 2010-11 (7). This fact is evident from the perusal of Table No.1 &2 below.

**Table No.1** Govt : of Pakistan Borrowing at a Glance. (Amount in billions $) (8)

<table>
<thead>
<tr>
<th>Period</th>
<th>Loans/Grants etc Disbursement</th>
<th>Repayments- Principal /interest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Principal Loan amount</td>
<td>Others</td>
</tr>
<tr>
<td>Before Economic Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1951 – 55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1955-1956</td>
<td>0.192</td>
<td>0.650</td>
</tr>
<tr>
<td>2nd – Plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960 – 1965</td>
<td>1.232</td>
<td>1.162</td>
</tr>
<tr>
<td>3rd – Plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1965 -70</td>
<td>2.324</td>
<td>0.719</td>
</tr>
<tr>
<td>No – Plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970 – 78</td>
<td>5.083</td>
<td>0.634</td>
</tr>
<tr>
<td>5th – Plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978 – 83</td>
<td>4.418</td>
<td>1.375</td>
</tr>
<tr>
<td>6th – Plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th – Plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th – Plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No – Plan period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SubTotal</td>
<td>52.065</td>
<td>13.474</td>
</tr>
</tbody>
</table>

**Table No.2** (9)

<table>
<thead>
<tr>
<th>Year</th>
<th>Loans</th>
<th>Relief</th>
<th>Total</th>
<th>Principal</th>
<th>Interest</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2068</td>
<td></td>
<td>2068</td>
<td>2171</td>
<td>944</td>
<td>3115</td>
</tr>
<tr>
<td>2007</td>
<td>2884</td>
<td>0397</td>
<td>3281</td>
<td>1785</td>
<td>1091</td>
<td>2876</td>
</tr>
<tr>
<td>2008</td>
<td>2210</td>
<td>0869</td>
<td>3079</td>
<td>1935</td>
<td>1248</td>
<td>3183</td>
</tr>
<tr>
<td>2009</td>
<td>3640</td>
<td>0366</td>
<td>4006</td>
<td>3588</td>
<td>1159</td>
<td>4747</td>
</tr>
<tr>
<td>July,2009-March,2010*</td>
<td>1691</td>
<td>0139</td>
<td>1830</td>
<td>4632</td>
<td>1009</td>
<td>5641</td>
</tr>
<tr>
<td>July,2010-March,2011*</td>
<td>1409</td>
<td>-----</td>
<td>1409</td>
<td>6200</td>
<td>1600</td>
<td>7800</td>
</tr>
<tr>
<td>SubTotal</td>
<td>13902</td>
<td>1771</td>
<td>15673</td>
<td>20311</td>
<td>7051</td>
<td>27362</td>
</tr>
</tbody>
</table>

Grand Total 65967√  15245√  81212√  46957√  25163√  72120√

Source. Economic Affairs Division /Ministry of Finance, Govt. of Pakistan
*Source State Bank of Pakistan Annual Report 2006-7
*July-March 2009-10
*July-March 2010-11

It was because of the fact that very nominal amount has been actually transferred to Govt. of Pakistan and in some cases even the Govt. paid more than what it had received.
This disadvantageous transaction is evidenced from Table No.3. While looking at the Table the reader will definitely be astonished that during the year 2003-4 a sum of US $ 1.270 billions only was disbursed to Govt. of Pakistan but it paid back to its creditors more than a US $2.978 billions by way of debt servicing. Thus the net transfer to Pakistan was minus134% during this period. This was the very reasons that the Pakistan is continuously caught up in the whirlpool of indebtedness. The situation is really alarming but only for the debtor. The creditor will hardly reschedule or at the most Restructure but to its own interest. Least examples are available where the country’s financial health had been supported by waiving off the interest applied and the principle amount ever remitted for the inability of the country. Rather terms of financing are further tightened by putting sanctions when a country becomes unable to pay back as per schedule or defaults for reasons beyond its control. The world’s ethics must support those which for genuine reasons are unable to fulfill the commitment and need assistance instead of withdrawing the umbrella when it rains.

Table No.3. (Amount in billions $) (10)  

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Disbursements (Amount in billions)</th>
<th>Debt Servicing</th>
<th>Net Transfers (N.T.)</th>
<th>NT as % of Gross Disbursements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-91</td>
<td>2.045</td>
<td>1.316</td>
<td>0.729</td>
<td>36</td>
</tr>
<tr>
<td>1991-92</td>
<td>2.366</td>
<td>1.513</td>
<td>0.853</td>
<td>36</td>
</tr>
<tr>
<td>1992-93</td>
<td>2.436</td>
<td>1.648</td>
<td>0.788</td>
<td>32</td>
</tr>
<tr>
<td>1993-94</td>
<td>2.530</td>
<td>1.746</td>
<td>0.784</td>
<td>31</td>
</tr>
<tr>
<td>1994-95</td>
<td>2.571</td>
<td>2.042</td>
<td>0.529</td>
<td>21</td>
</tr>
<tr>
<td>1995-96</td>
<td>2.555</td>
<td>2.136</td>
<td>0.419</td>
<td>16</td>
</tr>
<tr>
<td>1996-97</td>
<td>2.231</td>
<td>2.265</td>
<td>-0.034</td>
<td>-2</td>
</tr>
<tr>
<td>1997-98</td>
<td>2.800</td>
<td>2.353</td>
<td>0.447</td>
<td>16</td>
</tr>
<tr>
<td>1998-99</td>
<td>2.440</td>
<td>1.638</td>
<td>0.802</td>
<td>33</td>
</tr>
<tr>
<td>1999-00</td>
<td>1.426</td>
<td>1.778</td>
<td>-0.352</td>
<td>-25</td>
</tr>
<tr>
<td>2000-01</td>
<td>1.599</td>
<td>1.546</td>
<td>0.053</td>
<td>3</td>
</tr>
<tr>
<td>2001-02</td>
<td>2.316</td>
<td>1.190</td>
<td>1.126</td>
<td>49</td>
</tr>
<tr>
<td>2002-03</td>
<td>1.553</td>
<td>1.327</td>
<td>0.226</td>
<td>15</td>
</tr>
<tr>
<td>2003-04</td>
<td>1.270</td>
<td>2.978</td>
<td>-1.708</td>
<td>-134</td>
</tr>
<tr>
<td>2004-05</td>
<td>2.278</td>
<td>1.461</td>
<td>0.814</td>
<td>36</td>
</tr>
<tr>
<td>2005-06</td>
<td>2.863</td>
<td>1.572</td>
<td>1.291</td>
<td>45</td>
</tr>
<tr>
<td>2006-07</td>
<td>3.232</td>
<td>1.748</td>
<td>1.484</td>
<td>46</td>
</tr>
<tr>
<td>2007-08</td>
<td>2.503</td>
<td>1.413</td>
<td>1.090</td>
<td>44</td>
</tr>
</tbody>
</table>

@ July-March  
Source: Economic Affairs Division

The above table tells us that during the whole period from 1990 to 2008 only in the year 2001-2 the net transfers reached to the level of 49% of the total disbursement which points at alarming situation under present economic conditions. With nothing to re-inject in the economy the development of the country is at a stake and the people of Pakistan will have to live with the same rate of growth in Gross Domestic Product.

7. Boundless liberty for feminine

The United Nations has been rendering meritorious services in the field of development through implementation of various humanitarian projects by their specialized agencies, and roster NGOs. Elimination of discrimination and promotion of harmony has been priority agenda. Gender discrimination has caused loss of various opportunities to the fair sex. Upholding the rights of females for their protection and promotion of status to the level of male, no doubt, worth appreciation but has it ever succeeded in providing them contentment as mother because of a single parent? Ethics aught to be for morality and that also in the positive sense.

8. Hans Kung (2005) said “I am all for morality (in the positive sense). But at the same time I am against the moralism (morality in the negative sense)” He further said that Moralizer makes the morality the sole criterion for human action and ignore the relative independence of various spheres of life like Economics, Law and politics. (11)

Culture of some parts of the world allows the single parent child but the question of responsibility remains unanswered. Is mother to bring the child up all alone? Bounds of the western Ethics extends to the giving of such birth but a criteria of Ethic fails to bound the anonymous father to share the responsibility which ultimately, instead, falls on respective state. Now this concept of Ethics has taken the form of women empowerment and being globalized to allow freedom to the female live the life of their choice free of traditional values.

Table No. 4 below gives us still another gloomy picture of the liberal societies. Here the reader finds an interesting information of the mind set of the people of the civilized societies where the concept of family life is fading away due to declining interest of the people in marriage life because on average 41% of their marriages end in divorce. Table depicts that in the year 1980 the marriage in USA was 15.9% and 7.9% ended in divorce which rapidly fell to 10.6% in the year 2008 with equal proportion of divorce of 5.2%. Out of the western countries the Denmark could improve the marriage rate from 8.00% in the year 1980 to 10.3% during the year 2008 with static divorce rate of 4.1%. This is the result of unbridled liberty which is one of major causes of family destruction. Joe Blow (February 6, 2013) said “Wow. Over 5 years, (5 * 2%) 10% of
marriages end in divorce. Over 50 years, (50*2%) 100% of the marriages end in divorce. So there’s no reason to get married."  

### Table No. 4 Per 1000 Population aged 15-65 Years (13)

<table>
<thead>
<tr>
<th>Country</th>
<th>Year 1980 Marriage</th>
<th>Year 1980 Divorce</th>
<th>Year 2000 Marriage</th>
<th>Year 2000 Divorce</th>
<th>Year 2005 Marriage</th>
<th>Year 2005 Divorce</th>
<th>Year 2008 Marriage</th>
<th>Year 2008 Divorce</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>15.9</td>
<td>7.9</td>
<td>12.5</td>
<td>6.2</td>
<td>11.5</td>
<td>5.4</td>
<td>10.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Canada</td>
<td>11.5</td>
<td>3.7</td>
<td>7.5</td>
<td>3.4</td>
<td>6.6</td>
<td>3.2</td>
<td>6.4</td>
<td>N/A</td>
</tr>
<tr>
<td>Japan</td>
<td>9.8</td>
<td>1.8</td>
<td>9.2</td>
<td>3.1</td>
<td>8.5</td>
<td>3.1</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Denmark</td>
<td>8.00</td>
<td>4.1</td>
<td>10.8</td>
<td>4.00</td>
<td>10.1</td>
<td>4.3</td>
<td>10.3</td>
<td>4.1</td>
</tr>
<tr>
<td>France</td>
<td>9.7</td>
<td>2.4</td>
<td>7.9</td>
<td>3.00</td>
<td>7.1</td>
<td>3.9</td>
<td>6.6</td>
<td>NA</td>
</tr>
<tr>
<td>UK</td>
<td>11.6</td>
<td>4.1</td>
<td>8.00</td>
<td>4.00</td>
<td>7.9</td>
<td>3.9</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Ireland</td>
<td>10.9</td>
<td>NA</td>
<td>7.6</td>
<td>1.00</td>
<td>7.6</td>
<td>1.2</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Italy</td>
<td>8.7</td>
<td>0.3</td>
<td>7.3</td>
<td>1.00</td>
<td>6.4</td>
<td>1.2</td>
<td>6.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Spain</td>
<td>9.6</td>
<td>NA</td>
<td>7.9</td>
<td>1.4</td>
<td>7.00</td>
<td>2.4</td>
<td>6.2</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Source: US Department of Commerce, United States Census Bureau

### 9. The Child Labour

The innocent children are often found indulged in drudgery in the local bazaars and households to earn their livelihood with their weak and fragile hands. The pitiable poor chaps with lovely voice but naked head and feet will be seen wandering in search of residual food in the restaurants not only to sustain him but also help the siblings left behind within their collapsing shelters, the rent of which is due but could not be paid because of inability of the parents. The UNICEF has done remarkable service to the down trodden layers of the societies of Africa and Asia but has it ever been aware of the causes of child labor which if known would definitely been recognized for the redress?

Ozmr Yuxel (2011) while discussing labour practices in the context of Global ethics disclosed an important aspect of the application of international labour standards across the countries when these standards can be regarded as “Basic Human Rights”

Which relates to fair working conditions and prohibition of child labour. (14)

Violation of or for that matter not following these standards attract serious penal action in the form of restrictions on the production of the countries where the producers are at all cost either not follow the standard or the industries are operating below the standards set as above.

The child labor is considered Un- Ethical by the world community. But world Ethics has probably not taken cognizance of the circumstances under which these children are constrained to work. The exponents of the modernism may pause and imagine the dreams of the parents these innocent children who instead of enjoying the youth will instantly step into their old age because of constant labor and malnutrition.

Global Ethics demands immediate attention to this agonizing aspect of human life in the backward as well as developing countries particularly in Sub-Continent of India and Afghanistan. Instead of wasting billions of Dollars to subvert, though slowing growing but peaceful economies, for promoting secularism in the garb of democracy, the affluent societies of the world must observe the Ethical values and put the resources at the disposal of destitute societies to enable their indigent layer of the society to enable her to sustain at least with bare necessities of the life..

 Needless to mention that asking for fulfillment and discharging responsibilities without recognizing the rights defies the concept of Ethics. World conscience must take note of the starving population of Africa who could not get even the bare necessities of life.

Hans Kung (2005) rightly said that if one proclaims a declaration of Human Rights one should combine it with a declaration of Human Responsibilities. He further says “Every human being must be treated humanely” He quotes the golden rule “What you do not wish to be done to yourself, do not do to others” (15)

The philosophy of liberal democracy has aroused a sense of liberty in the feminine of Asia which created awareness and developed courage to demand for, of which they had been deprived off till now. The liberty could have been benefited had it been within the socio cultural walls of the societies they are associated with. The socio cultural values of the Asians particularly Muslims of Afghanistan and Gulf States have their own code of Ethics. The philosophy of global Ethics turned other way round. The families scattered and the peace and tranquility lost because the working women either lost interest in the household management or denied their family responsibility. The children lost mother’s care and love as they are placed at the mercy of baby houses. The globalization of economies has in fact moved beyond the Bounds of Ethics and has brought in its wake the globalization of problems.

### 10. Conclusion

Prosperity comes from the increase in wealth with equitable distribution which results, besides others, from conducive environment. Peace and tranquility are pre requisites for an environment which may help in promoting economic activities especially industrial development. Peace monger communities are always ambitious to bring about economic change. Peace emerges out of the justices. The socio economic justice implies equitable distribution of resources with free will to utilize. Respecting Ethical Values and carrying out every socio-economic activity after having tested it on the criteria of Ethics is in fact the solution of many socio-economics ills. The Industrially Advance Country must take care of the poor economies which need immediate attention to tackle the most serious socio-economic problem the important one is poverty
alleviation. The industrial development in the developing countries can be accelerated only when they are allowed to operate independently and free of the fear of cut throat competition from industrially advanced countries. Peace and political stability is utmost important for economic development but present scenario evidences that foreign interference in the Asian and African states has again sent these countries to dark abyss of poverty because of political instability. Disturbances in the name of political freedom and so called empowerment of women have shaken the foundations of the developing countries. Global Ethics warrants that the sovereignty of each state be respected. Imposing cultural values on others without paying regards to their own traditions is really a serious offence in terms of Global Ethics. Discriminatory treatment by the Advanced Nations with developing countries negates the Global Value System. In the absence of respect for Ethics the process of economic development is retarded which deprives the humanity from the opportunity of availing the fruits of industrial growth which ought to be passed on to the world community through Globalization.

11. Suggestions
Every human being individually and collectively as nation has the right to grow by sowing the seeds of development and secure the comforts of life. This is possible only when justice prevails. The Global Ethics demands that Global Community must recognize the rights of the downtrodden layers and allow them opportunity to independently develop their economies instead of imposing sanctions and throwing threats of dire consequences if fail to follow the dictations of the Advanced Countries. The developed countries must respect Global Ethics and stop intervention in the internal affairs of the independent states of the developing world. Respect for socio-cultural values of the individual states is integral part of the Global Ethics. This fact must be recognized and states be allowed to live within their own norms and traditions.

12. References
13. IBD.  
14 Stephen R., & Shalom1, (2002), Confronting Terrorism and War, New Politics. vol. 8, No. 4.  
European methodological approaches and practices for sustainable urban
development.

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Abstract: The idea of participation is, at different levels and in different contexts, strongly present in Europe; modern urban design and planning projects are increasingly including local communities in urban development planning activities. Starting from the description of the results of a desk research carried out by ‘La Sapienza’ University of Rome, related to communities involvement strategies currently available in Europe, the research comes to envisage two different scenarios of possible application of an integrated methodology, in the territory of Rome.

Keywords: urban sustainable development, planning with communities, community consultation practices, community led approaches.

Jel classification: R1, R5, O 18

Introduction

Urban planning is enduring, actually, a phase of transformation across Europe, with special regard on increased urban competition, national deregulation and greater private sector influence [22]. It has been observed that “While it is possible to state that the concept of Community Planning is not new, planning with communities and certainly community-led planning is relatively recent. All over the world there is increasing demand from all sides for more local involvement in the planning and management of the environment. It is widely recognised that this is the only way that people will get the surroundings they want. And it appears as the best way of ensuring that communities become safer, stronger, wealthier and more sustainable” [22].

In this paper, we will drew a picture about the most popular and relevant community led approaches and community consultation practices currently available in Europe, then describing two hypothesis of integration and application of such methods, in the city of Rome.

1. Urban development participatory approaches in Europe

In the last year, starting from the first experimentations with the famous “Planning for real” method, born the ‘70s in the United Kingdom, a variety of techniques focused on the concept of planning with communities have been developed. Such idea is at the basis of community led practices and community consultation practices, the most interesting of which are described in this paper. Concerning the participatory planning, in Europe are currently available the following methods [7].

- EASW (European Awareness Scenario Workshop)
  This method was born in Denmark with the purpose of reaching agreement between the diverse interested parties (stakeholders) inside a local area or for consensual agreement on a larger scale. On a practical level, the EASW consists of a workshop, which lasts about two days, with the participation of thirty participants divided into four main categories of actors: politicians/administrators, traders, technicians/experts, users/citizens. The workshop is managed by a team of facilitators, involves two basic steps: the development of future visions and the development of ideas. In the first phase, each of the four categories of actors are invited to develop two hypothetical future scenarios, respectively oriented to a “catastrophic vision” that may pose more dangerous risks, and an “idyllic vision” able to identify a large number of ambitious objectives. A plenary discussion stage allows comparing the scenarios proposed by the various categories and identifying the four most important issues on which to focus the work during the second phase.
  With regard to future sessions of brainstorming techniques and negotiation, each group has a large number of ideas and possible methods of implementation, including a maximum of five to be presented at the closing plenary session of the workshop. The maximum number of the ideas presented is therefore equal to 20. During the closing plenary session, after the presentation of each idea a final vote from all participants will point out the five most significant ideas to be implemented through joint action plans.

- Future Search
  The Future Search approach is focused on a 2 or 3 days conference with the technique of visioning at its core. The conference explores the past, present and future of a community, with the aim of producing a strategic plan. Key element of this approach is to establish some common ground on which participants can build and
then develop a plan. The emphasis is on self-managed discussion and taking personal responsibility for implementation of actions. The ideal number of participants is 64 allowing for eight groups of eight people in each discussion group.

- **Planning for Real**
  This method was born in the UK in the 70s; since that time, it has been widely exploited in numerous countries, both European and non-European. At the centre of it there is the construction of a model of the area in question. Where possible, the model should be made by local people to build a sense of ownership and to ensure engagement from the outset. Cards with ideas or proposals are made available. People can select or write their own cards which reflect their interests and place them on the model where they think the idea should be implemented. Planners, designers and officials can answer questions but only if asked. During the event a picture emerges of the changes the participants would like to see. The cards are counted and their locations on the model noted. These details are then fed back to people, discussed further and prioritised at public meetings or small group discussions. After prioritisation, additional technical information (on feasibility, cost, policies etc.) can be provided and used to develop an action plan.

- **Interactive planning**
  This method has been developed in Italy by professors Alessandro Giangrande and Elena Mortola, and is inspired by the theories of Christopher Alexander. It deals with a forum and it exploits the ICT for consultation purposes. After reviewing the preliminary program design and the documentation already collected, members of the working group together with residents make a thorough inspection to identify the scope and represent on a map all the elements of “wholeness” – which is the deep structure that characterises every place, and helps to make it “living”.

  The next activity consists of the construction of the future, dynamic visioning scenario, which anticipates the changes that the relevant territorial actors want in their living spaces. This does not refer to a specific time horizon, but is a “vision” generally oriented in a distant future that can always be updated in the light of the environment changed situation. The final phase of the process consists in the unfolding process, meant as a process that transforms a context while preserving the deep original structure. In practice, in developing the project, the working group will take into account both elements represented on the map of wholeness and the proposed future scenario. The working group publish and regularly update the blog the partial results of the design process. The members of the Forum and all other citizens can at any time access the blog to post their comments, so this strategy is highly interactive.

2. **Community consultation practices**

Concerning the community consultation practices currently available and exploited in Europe, the most interesting are:

- **Action Planning**
  This is a method that allows identifying needs and defining problems in a local context, through the direct contribution of the local community, with the aim of formulating guidelines with those who know the problems concerned, because they have to deal with them every day. The process is divided into several phases; all opinions and ideas about the environment are expressed by each participant with the use of post-it notes to stick on large billboards.

  Post-its, appropriately re-organised (as in a metaplan), build the image that people have of their neighbourhood. Participants are then asked to make predictions about the changes that will affect the neighbourhood, as well as on the expected effects, both favourable and unfavourable.

- **Citizens’ Juries**
  A group of citizens who are representative of the general public meet to consider a complex issue by gathering evidence, deliberating and then reaching a decision. Jurors can ‘cross examine’ expert ‘witnesses’ who may offer differing perspectives on the issue or topic at hand before reaching agreement or producing a short report of recommended actions. An advisory panel with expertise in the area consider usually the jury’s findings or report and determine what actions should be taken. A high level of skill is required as participants (jurors) are often asked to analyse complex issues.

- **Citizens’ Panels**
  Citizens’ Panels involve ongoing panels of about 1.000 to 2.000 people who are representative of the local community. The panel is surveyed several times a year by post, telephone or online.

  A scaled down model of this consultation may be effective in attracting also those people who generally avoid going to meetings. Also people who cannot attend the meetings due to physical, social or psychological issues may be encouraged to take part in the process.

- **Community Mapping**
  Maps and photographs of an area or specific location are used to illustrate how people view their area: what they like or dislike or improvements they would like to see. Ideas are generated in small group discussions and recorded on post-its or pre-prepared cards. Discussions should be facilitated to help people explore issues, build consensus or identify areas of conflict. Community mapping is a useful way to engage people of all levels of capability. A variety of aspects can be mapped including land use, community assets, facilities, and transport options to develop a snapshot of an area. Mapping can be carried out using a variety of materials from chalk to sand depending on the situation.

- **Open Space Technology**
Developed by Harrison Owen in 2008, it is a methodology that allows, within any type of organisation, to create working groups (workshops) and inspired and productive meetings. This methodology can be regarded as innovative and pleasant: people, in fact, do get bored and in a relatively short time can produce a summary of all proposals/projects developed by the working group.

**Roundtable/Consensus Building**

Base on the idea of equality of all participants, roundtable discussions can be regarded as a tool for consensus building. They can generate co-operation to promote the environmental, economic and social sustainability of a community, involving also the local stakeholders. There is no leader, but there may be a chair or facilitator. Its key factors are: sectoral representation; selection and duties of members; size (usually between 16 to 24 members); facilitators; budget and the decision-making processes. Roundtables benefit from bringing people together as equals who engage in open discussions.

**Web-based Engagement**

Numerous are the web based engagement processes to choose, such as: online discussion forums, blogs, Facebook, online surveys, social networking, ratings and voting, digital interactive TV. Web-based activities enable people to choose where, when and for how long they want to participate.

### 3. Theoretical approaches and concrete applications. Hypothesis of an integrated methodology

The exploratory survey carried out, the results of which have been described so far, was aimed at the development of a participatory planning methodology, to be applied in two different contexts, both in the city of Rome.

**Case 1:** It will be carried out a thorough analysis about the possibility of moving a National museum located in the centre of Rome, which will be therefore de-territorialised and moved from a district to another, one.

The analysis will first seek to give light on the outcomes that the museum movement will have on the two Rome districts involved, with reference to:

- the district where the museum concerned has always been placed: a historical neighbourhood, at the centre of the city, strongly characterised by a multi-ethnic and multicultural reality, with a traditional market and the presence of numerous private homes;
- the district of destination: a completely different district, located in the suburb of the city, modern, characterised by the presence of numerous offices, shops and a low number of residential constructions.

Secondly, the research will analyse and evaluate the impact on the museum visitors, linked to the museum itself due to cultural interest or contiguity/physical proximity (that is the case of people living in the neighbourhood of the museum as well as of the tourists who gravitate toward the city centre).

Finally, the research intends to point out some ideas for re-planning the new spaces that will host the museum collections concerned.

To achieve such objectives, in the light of the outcomes of the preliminary investigation, they will be applied several methods for community consultation and planning with community, among the most relevant ones currently available in Europe. Such approaches are highly innovative as regards the planning of a museum. The “community” will be represented, in this case, by the museum visitors but also by the residents in the district that will host the museum, once moved. Among the consultation methods to apply, the most appropriate ones in view of the research objectives include suggestions from the Web-based engagement, with the use of an open and closed questions questionnaire. This method seems suitable to achieve the museum habitual visitors, through the use of its mailing list. To reach, instead, the audience of the new district that will host the museum and in order to assess in advance its opinions, it will be exploited the Roundtable consensus building methodology, also in order to draw a SWOT analysis related to advantages, disadvantages, opportunities and threats of the museum presence in the district concerned. As regards to the planning and setting up of the museum in its new context, they will be applied the Interactive Planning and the Future Search methods (particularly with regard to the use of the “visioning” technique), and of course the Planning for Real method.

The Interactive Planning could have greater importance: the method seems to be particularly appropriate as it is used after conducting an investigation and having identified a significant number of interested parties (stakeholders) or just people who want to work using participatory planning procedures. It intends, furthermore, to facilitate the participation of the inhabitants in a process whose goal is not to acquire more information and to promote the active participation of local actors, but rather to design new spaces, or retrieve existing spaces.

**Case 2:** We will focus on the birth of a shopping centre in a suburb/business park in the suburbs of Rome.

The modern shopping complexes are generally well developed, with large common areas and parking lots, dedicated to its customers; they are realities often refused by communities that reside in the places near such large commercial centres, due to their high impact, in social and environmental terms, on the areas in which they arise. As observed by Bergamaschi [5], in Italy, according to the Nimby Forum data, 320 centres have been contested in 2010, a number that is constantly growing; a shopping centre will undoubtedly generate the traffic problem, generating also a strong impact on the surrounding environment as well as on the landscape. Other side effects are related to the negative repercussion on the micro-territory employment and the existing local commercial reality. Furthermore, a not negligible aspect concerns the concept of “non-places”, strongly related to similar realities. “Non places” are those spaces where, according to Marc Augé [2], individuals and communities risk to lose themselves.
‘Sur-modernity’ places par excellence, shopping centres and the buildings that arise around them, are suffering from this pre-existent defect, being places of anonymity, of rapid, non-personal passage of people, in which individuality and the sense of humanity itself seem to fade and eventually disappear. As a consequence, it comes also the risk of generating new urban ghettos, not characterised by the degradation and the lack of services, but by the excess, as the still Marc Augé states, by too much visibility of things, people and goods.

On the other hand, the birth of shopping centres and business parks, is also generating a new urbanisation: around these poles, in fact, there are entire neighbourhoods, cinemas, sports facilities and a variety of other services, also related to public transport.

Given the high impact of such commercial poles, when scheduling the creation of similar structures, it is absolutely necessary to involve the community of residents and workers of the area concerned, both in the preliminary stages and in monitoring their impact: to make an example, as regards the case of Italy, the increasingly relevance of such phenomenon began to require more and more the strategic planning and the management of the territory, in order to answer to the needs of civil society; it is necessary to analyse the relevant factors, both economic and cultural, as well as the ones related to the growth and social cohesion: not surprisingly, the spatial and the environmental planning, as well as the design of transport and infrastructures, are currently at the centre of modern urban projects.

Rather than focusing on planning together with the community, in this case the research aims to assess the impact of a recently established shopping centre/business park, detecting problems and proposing models for the participatory management of socio-anthropological issues arising from and emerging in these new urban realities, so as to develop participatory models to manage criticalities and to generate services, practices and spaces more inclusive of the communities that reside around such commercial context, according to the diverse age groups.

Among the community consultation methods, in this case the most appropriate one that will be exploited is the Community Mapping, as a suitable methodology to generate a discussion that should help people to explore issues, build consensus or identify conflict areas; the method can be effectively combined with the Citizens’ Panel strategy.

In regard to the planning and the response to critical issues, it is worth to use the Interactive Planning method, the future search method with its “visioning” practice, as well as the Action Planning; such methodology has the goal to identify some guidelines which may facilitate the achievement of positive effects and fight the negative ones; this approach, in fact, is generally used to address urban regeneration projects in a neighbourhood or community.

4. Conclusions

Starting from the description of the results of a desk research on the urban development community planning currently available in Europe, the research has envisaged two different scenarios of possible application of an integrated methodology, in the territory of Rome. The idea of participation is, at different levels and in different contexts, strongly present in Europe; modern urban design and planning projects are increasingly including local communities in urban development planning activities. The community consultation practices and the participatory planning strategies can be profitably applied to small and medium scale contexts, even in an innovative way as in the cases discussed in this paper: the building of a new museum or the rearrangement of existing museums, or to the socio-anthropological analysis, especially aimed at pointing out and solving social problems related to circumscribed urban realities.

Acknowledgements

This study is part of an exploratory research started in the first months of 2014 by ‘La Sapienza’ University of Rome in view of a future, concrete application on field of an integrated, participatory methodology for the planning and the development of structures, services and solutions in two diverse quarters of Rome, with the involvement of local communities.

5. References


Chapter 3:

A Theory of Innovation and Regional Growth

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Abstract:
Innovation activities contribute essentially to the regional dimension and growth. The technological infrastructure and innovation capabilities affect not only the regional growth but also the whole periphery and economy. Technical change and innovation activities have an important role for growth and sustainable development. There is a huge literature for the role and economic impact of invention and innovation activities; many studies investigate the relationship between productivity, technical change, welfare, growth and regional development. Technology has two aspects, called “embodied” or “disembodied”. This paper attempts to analyze the theory and the effects of innovation in regional growth and in particular to review some of the main models on innovation and regional growth. Within this context, it is also aiming to emphasize and review the appropriate techniques, the most common methods and particular problems.

Key Words: Innovation, regional growth, knowledge, endogenous theory, catching-up, growth theory, neoclassical theory.

1. Introduction
Technological knowledge indicates the manner in which resources can be combined to yield outputs of goods and services. This paper attempts to review the theoretical foundations of models with growth theory and technical change. In addition, it’s also attempts to analyze the theory and the effects of innovation in regional growth and in particular to review some of the main models on innovation and regional growth.

2. Technical Change in Economic Theory
Economic theory is relatively clear about the positive long-term consequences of the introduction of new technologies which lead to increased factor productivity. It is argued that the introduction of new technologies may lead to job destruction for some industries and some skill categories without creating sufficiently offsetting new job opportunities in others. There has been a considerable debate about the economic consequences of technological progress over the last decades. At the macro-economic level however, the expected positive impact of new technologies on trend factor productivity has not been easy to identify. On the contrary, as underlined by the often-quoted "Solow paradox", most economies experienced a slowdown in productivity growth in the aftermath of the first oil shock and the subsequent pick-up in the 1980s, 1990 and early 2000s is, at best, modest despite significant changes in information technologies. Following the literature of economic theory the main forces of economic growth are:

- Capital accumulation including all new investment in physical equipment and human resources.
- Technological progress and
- Growth in human capital and labor force.

Technological progress results to increase applications of new scientific knowledge in form of inventions and innovations with regard to capital, both physical and human. Such progress has been a major factor in stimulating the long-term economic growth of advanced countries. There are three basic classifications of technological progress

- The world’s scientific neutral technological progress shifts outwards the production possibility curve, where the double of total output is conceptually equivalent to a double of all productive inputs.
- Labor saving technological progress where the higher level of output can be achieved with the same quantity of labour inputs. In other words, technological progress may be capital augmenting (or capital intensive) occurs when the quality of labor force or skills are upgraded.
- Capital saving (or labour intensive) technological progress where the higher level of output can be achieved with the same quantity of capital inputs Capital saving technological progress. is much rarer
phenomenon. In other words, technological progress may be labor augmenting (or labour intensive) occurs when the capital and technological research aiming to save capital and not labor. In labor abundant countries, capital saving technological progress is what most needed. Technology is generally represented graphically with the help of level curves or isentoquants. Technological progress in this simple framework is a shift upwards of the production function, or shift downwards of the representative isquant. An alternative way is to look at cost functions which relate levels of cost of production to level of output and to factor prices. In many cases, cost functions are easier to characterise production functions. Given input prices, we can view technological improvement as a downward shift of cost function. Technological change does not affect all factors equally. When it does, it is considered neutral technical change. Otherwise, it may have a specific factor using or factor saving bias.

3. The Growth Theory and the Growth-Accounting Approach

Growth accounting tries to explain changes in real product and total factor productivity based mainly on a comparison between the growth of inputs (capital and labour) and the growth of output. One part of actual growth cannot be explained and has been classified as ‘unexplained total factor productivity growth’ (or the so-called residual). In particular, following the decomposition analysis by Solow (1957), many alternative factors can explain the path of economic growth. According to Solow’s findings, technology has been responsible for 90 per cent of the increase in labour productivity in the twentieth century United States. The unexplained decline in productivity growth can thus be regarded as resulting from a collapse in technological activities. This may have happened because the availability of technological opportunities has been temporarily or permanently reduced.

The growth regressions approach (Bosworth and Collins, 2003) originates from the empirical literature on growth and convergence staring with the resurgence of the endogenous growth literature. This debate is related with the question of whether TFP convergence is taking place and under what conditions. One of the main controversies in the empirical growth literature is to identify how much of the convergence that we observe is due to convergence in technology versus convergence in capital—labour ratios, since convergence may be the result of three different mechanisms:

- Convergence due to capital accumulation;
- due to technology transfer and
- due to both.

Growth accounting methodology was theoretically motivated by Jorgenson and Griliches (1957) and put in a more general input-output framework by Jorgenson, Gollop and Fraumeni (1987) and Jorgenson, Hob and Stiroh (2003). Growth accounting allows one to assess the relative importance of labour, capital and intermediate inputs to growth, and to derive measures of multi-factor productivity (MFP) growth. MFP indicates the efficiency with which inputs are being used in the production process and is an important indicator of technological change. Under the assumptions of competitive factor markets, full input utilization and constant returns to scale, the growth of output in industry $j$ can be expressed as the (compensation share) weighted growth of inputs and multifactor productivity (denoted by $A_Y$):

$$
\Delta \ln Y_{jt} = \Delta \ln X_{jt} + \Delta \ln K_{jt} + \Delta \ln L_{jt} + \Delta \ln A_Y
$$

where $v_i$ denotes the two-period average share of input $i$ in nominal output and $v_L + v_K + v_X = 1$.

Each element on the right-hand side indicates the proportion of output growth accounted for by growth in intermediate inputs, capital services, labour services and MFP, respectively.

Growth accounting is looking at the same equation growth in output is attributed to labour, capital, intermediate inputs and residual changes in MFP. The theoretical framework for the growth-accounting approach is rooted in the economic theory of production. The standard model is based on the seminal work by Solow (1957) and its development, in particular by Zvi Griliches, Dale Jorgenson, and Erwin Diewert. The standard growth-accounting model is based on the microeconomic theory of production and relies on a number of the following assumptions.

- Production processes can be represented by production or transformation functions at various levels of the economy. Production functions relate maximum producible output to sets of available inputs.
- Producers behave efficiently, i.e. they minimise costs and/or maximise revenues.
- Markets are competitive, and market participants are price-takers who can only adjust quantities but not individually act on market prices.
- There exists a production technology that can be represented by a production function, relating gross output, $Q$, to primary inputs labour $L$ and capital services $K$ as well as intermediate inputs such as material, services or energy ($M$).
- The production function exhibits constant returns to scale.
- Neither labor nor capital inputs are necessarily homogenous. There are $N$ different types (qualities) of labor, $L_1, L_2,\ldots, L_N$, $M$ different types of capital services, $K_1, K_2,\ldots, K_M$, and $R$ different types of intermediate inputs $M_1, M_2,\ldots, M_R$;
- $Q = f(L_1, L_2,\ldots, L_N, K_1, K_2,\ldots, K_M, M_1, M_2,\ldots, M_R, t)$

- Productivity changes are of a Hicks-neutral type, i.e. they correspond to an outward shift of the production function, captured by a parameter $A$:
- $Q = A f(L_1, L_2,\ldots, L_N, K_1, K_2,\ldots, K_M, M_1, M_2,\ldots, M_R)$
• Factor input markets are competitive and for any desired level of output, the firm minimises the costs of inputs, subject to the production technology.
• Labour and intermediate inputs can be hired at any moment at the market rates \( w_i \) for labour and \( p_m \) for intermediate inputs.
• Provision of capital services requires investment in the different types of capital and there are no adjustment costs associated with investment.

Growth accounting and most other approaches to measuring productivity are firmly rooted in a standard neo-classical equilibrium concept. Equilibrium conditions are very important because they help to guide measurement of parameters that would otherwise be difficult to identify. Although its usefulness is generally recognised, it has been argued that an equilibrium approach sits uneasily with the notion of innovation and productivity growth. Evolutionary economists (Dosi, 1988; Nelson and Winter, 1982; Nelson, 1981), in the tradition of Schumpeter, argue that innovation and technical change occur as a consequence of information asymmetries and market imperfections. The point made by evolutionary economists is that equilibrium concepts may be the wrong tools to approach the measurement of productivity change, because if there truly was equilibrium, there would be no incentive to search, research and innovate, and there would be no productivity growth.

Solow (1956) expanded the work by John Stuart Mill and developed neoclassical growth models. Neoclassical growth theory as developed by Solow and his followers dominated over the literature of long term or trend movements in per capita income for more than three decades. The starting neoclassical growth models of Solow are important studies for economic growth and convergence. In these models, the rate of exogenous technical progress is the key parameter determining the steady state growth rate of per capita income. Since Solow 1956, technological change is regarded as one of the main sources of economic growth. According to the neoclassical models based on the assumptions of marginal productivity, technological change (or labour growth) is needed to compensate for the negative productivity effects of capital accumulation.

The recent debate about the determinants of output growth has concentrated mainly on the role of knowledge, typically produced by a specific sector of the economy. This approach considers the economy in a three sector framework (Romer 1990), where the R & D sector produces knowledge to be used as an input by firms producing capital goods. Output growth rate is indigenously determined by the allocation of human capital in research and manufacturing sectors and is not affected by other crucial variable such as the unit cost of production of new capital goods. Schumpeter and Schmookler supported that productivity growth is related to an economy’s structure and policies; from one hand, they tried to explain the links between industrial innovation and economic growth, while from the other hand, they also tried to explain the market conditions and innovation rates. Many of the early models treated technological progress as an exogenous process driven by time.

Romer (1986) discussed the possibility that learning-by-doing might be a source of sustained growth, maintained this treatment of technological progress as wholly the outgrowth of an external economy. Many others have followed his lead, such as, Grossman and Helpman (1991), Aghion and Howitt (1998) & Young (1993). However, the work developed by Harrigan (1995) shows that there are systematic differences across countries in industry outputs that cannot be explained by differences in factor endowments. While there are many possible explanations for this result, such an explanation is that technology is not the same across countries. This is a hypothesis which has gained greater attention from international economists recently, including Dollar & Wolff (1993) and Harrigan (1997).

4. The Approach of Endogenous Theory
The concept of endogenous technological change has resulted in the so-called “new growth theory”. Embodies technical change refers to the improvements in the design or quality of new capital goods or intermediate inputs. Disembodied technical change is not incorporated in a specific factor of production. (Rennings Klaus and Sebastian Voigt 2008). The literature of endogenous growth provide us with better insights in the causes and effects of technological change as a determinant of economic growth.

We can distinguish two different types of technological change. An increase in the number of technologies, (the embodied technological change, so-called, the product-innovation). On the other hand a quality improvement of existing technologies (the disembodied technological change, otherwise the process-innovation). In order to present the different approaches of endogenous technical change which can be found in the literature, we will essentially follow the exposition scheme proposed by Barro and Sala-i-Martin (1995) in distinguishing three main models of endogenous growth motivated by endogenous technological change:

- models based on expanding product variety;
- Schumpeterian models based on improvements in the quality of products; and
- models based on human capital accumulation.

Schumpeter and Schmookler supported that productivity growth is related to an economy’s structure and policies. On the other hand, they tried to explain the links between industrial innovation and economic growth, while, on the other hand, they tried to explain the market conditions and innovation rates too.

5. The Catching Up Models
Technological gap theories (Abramovitz, 1986, Fagerberg, 1987, 1988, 1994), relate the technological level and innovation activities to the level of economic growth. According to these theories, countries where more innovation activities take place tend to have a higher level of value added per worker (or a higher per capita
The size of the productivity factor differs substantially across countries with Japan and France having the highest rates for their respective time periods and the US and the UK having the lowest. Catching-up theory (Abramovitz, 1986; Fagerberg, 1987) starts with the investigation of growth performance. The main idea is that large differences in productivity among countries tend to be due to unexpected events (for instance wars). According to these studies, the only possible way for technologically weak countries to converge or catch up with advanced countries is to copy their more productive technologies. The outcome of international innovation and diffusion process is uncertain; the process may generate a pattern where some countries follow diverging trends or one where countries converge towards a common trend. In this literature, economic development is analysed as a disequilibrium process characterised by two conflicting forces:

- innovation, which tends to increase economic and technological differences between countries,
- and diffusion (or imitation), which tends to reduce them. Technological gap theories are an application of Schumpeter’s dynamic theory.

A higher level of innovation activities tends to have a higher level of value added per worker (or a higher GDP per head) and a higher level of innovation activities than others. Following technological-gap arguments, it would be expected that the more technologically advanced countries would be the most economically advanced (in terms of a high level of innovation activities and in terms of GDP per capita). The level of technology in a country cannot be measured directly. A proxy measure can be used to give an overall picture of the set of techniques invented or diffused by the country of the international economic environment. For productivity measure, we can use the real GDP per capita as an approximate measure. The most representative measures for technological inputs and outputs are indicators of patent activities and research expenditures. The three alternative models can be given as follow:

- **GDP (or PROD) = f(GDPCP, EXPA (or GERD), INV)** basic model
- **GDP (or PROD) = f(GDPCP, EXP (or GERD), INV, EXP)**
- **GDP = f(GDPCP, EXP (or GERD), INV, TRD)**

The first model may be regarded as a pure supply model, where economic growth is supposed to be a function of the level of economic development GDPCP (GDP per capita with a negative expected sign), the growth of patenting activity (EXPA with a positive sign) and the investment share (INV with a positive sign). However, it can be argued that this model overlooks differences in overall growth rates between periods due to other factors and especially differences in economic policies.

### 6. Summary

In economic literature, there are various explanations for the slow-down in productivity growth. One source of the slow-down may be substantial changes in the industrial composition of output, employment, capital accumulation and resource utilisation. The second source may be that technological opportunities have declined and furthermore the application of new technologies to production has been less successful. Technological factors act in long run and should not be expected to explain medium-run variations in the growth of GDP and productivity.

The so-called new growth theories argue that greater investment (both in physical and human capital) creates externalities and economies of scale effects. These theories emphasize the role of economy returns for scale, expenditure on R&D, human capital formation and the role of investment on diffusion and technical change. Higher rates of gross investment could raise the rate of growth of productivity by increasing the rate of substitution of the old by new capital. The new growth theories examine the way in which some countries been able to grow with no apparent tendency to slow down and try to explain why some countries exhibited medium or long term accelerations or decelerations in their growth. Romer makes technological change endogenous by assuming that technology is a public good and private investment in capital increases the level of technology available to entrepreneurs; higher investment rate will accelerate the economic growth.

Theoretical and empirical models of endogenous growth emerged in the 2000s. The approach of endogenous growth suggests that growth rates are not exogenous rather depend on internal allocation processes; this arises rather because of non-decreasing returns to scale or because of the production externalities. Endogenous growth differs from neoclassical growth models because it assumes that economic growth is an endogenous outcome of an economic system and not the result of forces that infringe from outside. Endogenous growth theory has the advantage of explaining the forces that give rise to technological change rather than following the assumption of neoclassical theory that such change is exogenous. Endogenous growth models emphasize the role of international trade; they suggest that high productivity growth is possible in poor countries as a result of the diffusion of knowledge already available in industrial countries. Since Solow (1956), technological change has been regarded as one of the main sources of economic growth. Neoclassical models are assuming marginal productivity, technological change (or labour growth) are needed to compensate for the negative productivity effects of capital accumulation. Technological gap models represent two conflicting forces: innovation, which tends to increase the productivity differences between countries, and diffusion, which tends to reduce them. In the Schumpeterian theory, growth differences are seen as the combined results of these forces. Research on why growth rates differ has a long history which goes well beyond growth accounting exercises. The catching-up hypothesis is related to economic and technological relations among countries. There are different opportunities for countries to pursue a development strategy that depends on resource and scale factors. In summary, we can say that the introduction of new technologies has influenced the economic growth.
REFERENCES


Regional Planning Deficiencies and Counter-Sustainability in 1980s’ Greece

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Abstract:
Greek regional planning has always been moving along counter-sustainable trajectories. During the early 1980s, however, some planning modernization initiatives seemed to open-up new grounds in the country’s prospects of sustainable spatial development. Just a few years later, however, it was realized that regional planning had remained largely ineffective and therefore it fell into disuse. Despite the ongoing European integration that was imposing additional strains, structural adaptation problems and new challenges upon the less developed Objective 1 Greek regions, the central and regional administrative agencies exhibited a remarkable inability to implement sustainable regional development policies in order to cope with existing problems and prevent future ones. A remarkable mismatch between the “economic” and the “administrative” aspects of regional development was raised: On the one hand economic restructuring caused by combined international and national forces was re-shaping the old spatial divisions of labour by imposing new patterns and processes of geographical inequality during the 1980s. On the other hand, central and regional administrative bodies were continuing to express an ill-developed response to territorial change and tried to cope with it by means of piecemeal measures lacking internal coherence and strategic vision during the same period. A crucial question, therefore, could be raised: what finally went wrong with Greek regional planning during the 1980s and why? This question will be addressed in this paper.

Key-words: Greece, regional planning system, counter-sustainability

1. Introduction:
During the last decades the Greek economy underwent substantial changes. The entrance of Greece as a full member in the European Communities (now European Union) in 1981 marked a turning point in the post-war development process (Kazakos, 1991; 1994; TCG, 1993; Carayannis and Korres, 2012; Korres, 2009). The impacts of the world economic recession of the 1970s/1980s along with this entrance have created a much demanding broader economic environment in which Greek firms were forced to adapt and operate. The past weaknesses of the Greek economy were immensely magnified and the “gap” between “winner” and “loser” firms and industries was broadened (Ioakeimoglou, 1997). A new form of economic polarization was created: On the one hand a thin layer of export-oriented modern firms undertaking “offensive restructuring” strategies and facing international competition successfully, and a majority of domestically-oriented traditional firms on the other, undertaking “defensive restructuring” strategies and failing to participate successfully in the international markets. The first group succeeded in introducing new productivity increasing technologies and re-organization strategies in order to produce high value-added quality products, while the second and major group followed the familiar and less risk-taking path; that is, reliance upon cheaper factors, intensification of labour exploitation and violation of relevant work legislation (ibid., pp. 15, 62-64).

Relocation of firms from high-cost urban centres into cheaper factors peripheral areas, has been part of that defensive restructuring strategy. As far as the large manufacturing companies were entering crisis during the mid 1970s-1980s (Leontidou, 1990, chap. 5; Kourliouros, 1995, chap. 3), relocation/decentralization strategies gained in importance aiming at reducing direct costs by: (i) relocating from large urban centres (mostly Athens and Thessaloniki) in cheaper-factor peripheral areas for reasons of exploiting informal and/or seasonal non-unionized labour, and cheaper land, (ii) benefiting from regional incentives and (iii) avoiding diseconomies of scale and other negative externalities prevailing in the large urban areas. A wave of
productive decentralization and diffused industrialization during the 1980s has caused a marked transformation of the past polarized economic geography of Greece (Hadjimichalis and Vaiou, 1987; 1990). In some successful cases, diffused industrialization was combined with other forms of economic activity, e.g. agriculture and tourism (Hadjimichalis & Vaiou, 1990) to produce zones of multiple work opportunities (pluriactivity) and income earning. Agricultural restructuring initiatives, although on a restricted scale, included (Miosidis, 1986): (i) Increased mechanization, intensification and diversification of production, (ii) increased commercialization of products, (iii) remarkable shift from traditional to new high demand products, and (iv) increased labour productivity.

The driving force underlying agricultural restructuring was the Common Agricultural Policy (CAP). CAP supported local incomes and contributed to the improvement of living conditions at many peripheral areas (Maravelias, 1992). Most peripheral and island regions were favoured by such developments and managed to increase their gross agricultural product at rates above the national average in 1981-1991. Such regions, have also witnessed a marked development of tourism and an associated rise of commercial and building activity (Tsartas, 1991). As special studies and reports have revealed (ibid.) the seasonal nature of agricultural work has made possible the emergence of multiple forms of employment at various peripheral areas in activities directly or indirectly linked to the tourism sector. Increasing employment opportunities in such areas, along with the rising costs and bad conditions of living in the large congested urban areas, have intercepted rural de-population which was the dominant trend in the 1950s and 1960s and have caused a relative stabilization and/or slight increase of peripheral populations.

All previous evidence points to a fundamental fact: The past spatial polarization and inequality between the large core regions of Athens and Thessaloniki on the one hand, and the rest of Greek rural territory on the other (Wassenhoven, 1980; Karagiorgas and Pakos, 1986), has given place to a much more complex configuration of spatial divisions of labour. As it has been underlined in a relevant study (Getimis and Economou, 1992), the aggregate result of the above changes was the creation of a more complex territorial configuration during the 1980s: the bipolar core-periphery scheme of the past was transformed into a spatial division of labour including four different types of regions; (i) the declining urban-industrial pole of Athens, (ii) the developing areas along the eastern “development corridor” of the country (transport axis linking Athens to Thessaloniki via Volos), (iii) the peripheral regions of the hinterland, and (iv) the island regions.

In such a complex spatial structure, what we used for decades to term as “peripheral space” connoting natural landscapes that surrounded agricultural cultivations, scattered towns and peasant villages, has ceased to exist any more in most peripheral regions. Peripheral space has been transformed into an extremely complex “product” of human economic activity and social interaction which has not been studied adequately yet from a geographical and planning point of view. The lack of a national land registration system and the long-lasting landownership-related juridical differences between citizens, the church, the local authorities and various public organizations, have added lots of problems in the already perplexed “scenery”. As an EU official report has revealed (EC, 1995), new complex forms of geographical inequality have emerged at the intra-regional and local levels during the 1980s: (i) inequalities between dynamic peripheral urban centres and towns having adequate University and research infrastructure, skilled human capital and inspired administrations supporting new forms of economic activity, on the one hand, and peripheral centres whose socio-economic and administrative structures have been of a more traditional character on the other; (ii) inequalities between agricultural areas with high productivity land on the one hand, and others with less favourable conditions on the other; (iii) inequalities between pluriactivity high-income zones on the one hand, and monoactivity lower income zones on the other; (iv) inequalities between overpopulated coastal zones and isolated mountainous areas; (v) inequalities between peripheral zones adjacent to major transport axes and others whose transport links presented major problems of natural fragmentation and isolation; (vi) inequalities between areas and

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1 Evidence assembled at the regional scale of activities does provide a rough account of relevant spatio-economic transformations: the peripheral regions increased their gross industrial product at rates above the national average during 1981-91 (Kourliouros, 1995). Industrial employment increases at rates above the national average were also remarked in most peripheral regions over the same period. In 1991, productivity of labour in industry (counted as gross industrial product per employee) presented a rather decentralized pattern.

2 These positive developments, however, were countered by persisting structural problems like: (i) the small size and spatial segmentation of holdings, (ii) the lack of information and skill in the use of mechanical equipment and chemical fertilizers, (iii) the lack of appropriate “hard” infrastructure - especially irrigation works (Miosidis, 1986, pp. 57-60), (iv) the lack of reform of existing land property rights hindering the growth of farm size and (v) the lack of innovative local climate and dynamic institutions capable of acting as “catalysts” in local economic processes (Kourliouros and Wassenhoven, 1997). These problems were significantly magnified in remote rural areas faced, additionally, with natural fragmentation, transport accessibility difficulties and aging populations.

3 It can be remarked that apart from the islands with the traditional 3S (sun-sea-sand) mass tourism, new tourism areas started to emerge in the 1980s. These areas combined zones of traditional tourism with interesting natural landscapes and historical monuments and settlements that attracted new forms of quality and high-income tourism (eco-tourism and agrotourism, archaeological and scientific tourism, residential tourism, etc).

4 Peasant settlements coexist with small and medium-sized urban centres and extended zones of diffused housing - especially along seashores, major transport axes, zones of natural beauty and other areas of existing or potential tourism development. Diffusion of tourism and housing land use with agricultural uses in various combinations, varying degrees of population density and overlapping zones of activities which have produced a highly perplexed economic landscape that has reversed the past polarization between urban-industrial core and agricultural periphery, as previously mentioned.
settlements endowed with favourable natural conditions and/or historical monuments presenting enhanced possibilities to attract qualitative high income tourism, and others with less favoured natural and/or historical endowments; (vii) inequalities between peripheral areas and localities with administrations capable of absorbing national and/or EU funding in innovative projects on the one hand, and others with less capable administrations on the other. In fact, if examined at more detailed spatial scales the above list could be even longer. The critical point, however, is that despite the multiplicity of regional development processes and challenges, the Greek planning system of the 1980s has failed to respond adequately to those changes, as it will be argued in the following section.

2. The Discussion
Discussions of the Greek regional planning system usually commence by addressing its historical origins and the inability or unwillingness of central governments to modernize it due to “political cost” considerations. It has been argued that the spatial planning system in Greece has been organized (based on 1923 legislation) upon the simplistic and naive dichotomy between areas “within ratified city-plan boundaries” and areas “outside ratified city-plan boundaries” (Wassenhoven, 1984a; 1995; 1995a). Each urban area had a ratified “City Plan” (Aravantinos, 1997, chap. 9) which was a detailed street lay-out blueprint that set on the ground the boundaries between private and public space and divided the urban area into various sectors with different building/plot ratios, and other technical and building regulations. All other areas were simply termed as areas “outside city-plan” without any further differentiation or special planning treatment as their complex economic geographical structure imposed.1 So, apart from urban areas all other regions and localities of the Greek territory were deliberately thrown “outside” the state’s planning concerns and their spatial organization was governed by an unbelievably fragmented and contradictory nexus of piecemeal statutes, building regulations and special amendments, not properly codified (Wassenhoven, 1995, p. 12).

The rise of the PASOK socialist party to office in early 1980s brought about a new planning rhetoric revolving around “citizens’ participation in decision-making”, “self-sustained development”, “democratic planning” etc. (see Kourliouros 1997; MNE, 1985). Although this rhetoric was rather indicative of a populist political climate than of an actual policy shift towards socialist change (Elefantis, 1991), it brought about some actual modernization developments in the way planning was conducted. At the urban scale, Law 1337/1983 formed the legislative framework for urban re-organization, development and city-planning. Under L.1337 provisions, much more sophisticated urban plans and programs ranging from the broader metropolitan to the local scales of urban neighbourhoods were drafted and ratified by Presidential Decrees (Economou, 1997). Athens and Thessaloniki metropolitan areas were covered by comprehensive “Structure Plans”2. Single urban municipalities were covered by “General Urban Plans”3 proposing land-use schemes, zones of urban expansion, technical and social infrastructure of the areas at issue; these plans were followed-up by more detailed ones at the implementation level (Urban Studies4 and Implementation Studies5).

Whereas legislation and planning tools covering urban areas were relatively well-developed during the examined period (1980s), legislation and tools covering supra-urban (regional) space remained ill-developed, lacking concreteness, comprehensiveness and strategic vision. Despite the ill-developed legislative framework at the regional level, however, various piece-meal policies and legislative measures affecting directly or indirectly the regional structure of activities were issued during the 1980s. These policies fell into two categories: Firstly, sectoral policies and measures affecting indirectly regional space, and secondly more spatially specific and explicit policies and measures having direct impacts upon regional space.

In the first category one can include: (i) the 5-year programmes of economic and social development,12 (ii) the regional incentives and industrial estates policies,13 (iii) hard infrastructure projects and works,14 (iv)
tourism development initiatives,\textsuperscript{15} (v) the environmental protection legislation (Law 1650/1986),\textsuperscript{16} (vi) legislative measures for the protection of archaeological sites and forested zones,\textsuperscript{17} and (vii) the Community Support Frameworks –Plan of Regional Development (S.P.A.) and Regional Operational Programmes (P.E.P.). All above policies were piecemeal in nature, lacked explicit spatial dimension and interconnectedness with spatial policies, hence their effectiveness “on the ground” was limited. In the second category one can include: (i) the regional plans at the prefectural scale\textsuperscript{18}; (ii) the “open cities” initiative; (iii) the “special planning studies” initiative; (iv) the “Zones of Development Control” (ZOE) legislation and (v) building regulations and statutes related to “out of city-plan” areas.

Regarding the above policies and measures, the following remarks can be made:

(i). The “prefectures’ regional plans”\textsuperscript{19}, had indicative character without imposing concrete land-use controls and implementation mechanisms. With reference to those plans, coordination problems between the economic, regional and urban scales have been reported (Wassenhoven, 1995, p. 13) and they were abandoned in practice.

(ii). The “open cities” initiative, which was part of the regional plans, aimed at uniting the geographically dispersed small rural communities and settlements into larger spatial units (“open cities”) providing basic urban services and infrastructure to local populations (Agelidis, 1991, pp. 180-183). The Ministry of Environment identified and mapped 555 such “open cities” covering a total population of about 5.5 million throughout the country (ibid., p. 182). The initiative, based upon Christaller’s theoretical model, presupposed the voluntary merging of small local authorities (at the level of separate settlements) into broader and much more effective administrative bodies (at the “open cities” level).\textsuperscript{20} However, these developments were not met with enthusiasm by the majority of peripheral local authorities and communities which believed that this administrative merger would restrict their autonomy. Just like the regional plans, the “open cities” initiative was abandoned in practice.\textsuperscript{21} A governmental initiative undertaken in the late 1990s under the heading: “Ioannis Kappodistrias program”, raised the issue again, but this time the administrative “merger” infrastructure. The contribution, therefore, of transport and communications networks to the development of regional space was rather selective in that it favoured certain areas at the expense of others, creating varying degrees of centrality/peripherality relationships.

\textsuperscript{15} Tourism development investments were encouraged or discouraged by a system of regional incentives and disincentives. Just like industrial incentives the tourism ones had a macroscopic orientation lacking concrete spatial dimension. Due to lack of concreteness, measures undertaken during the 1980s for disappointing further investments in overcrowded tourism areas have been removed so far, and relating activities continued to concentrate in already densely built tourism zones. This continuing concentration resulted in extended environmental degradation of such areas that undermined their natural comparative advantages and reinforced a “counter-sustainability” tendency at the long run (Kourliouros, 1998; Kourliouros and Soulakellis, 1998).

\textsuperscript{16} The Environmental Law (L. 1650), ratified in 1986 along EU guidelines (directives 84/360/84-7/1984 and 85/337/7/1985), was a positive governmental effort towards imposing certain development controls in peripheral areas under strict environmental protection criteria. The notion of “environment” was broadened in order to include not only the natural but also the human-made environment (article 2). Activities and works should be controlled according to the degree of their potential impacts upon the environment (article 3) and environmental impact assessment studies for any project or initiative of the public and/or private sectors were required. A ministerial circular No. 69209/5387 (Official Gazette 678B/25-10-1990) issued along the Environmental Law lines, provided some details about: (i) the classification of various works and activities in categories according to their potential impact upon the environment, (ii) the content of the “environmental impacts assessment studies”, (iii) the procedures regarding the approval of “environmental conditions” and “site selection” for the location/relocation of any work or activity in space and other related issues. Industrial, agricultural, mining-quarrying, tourism, commercial etc. investments and works should be subject to environmental and location controls before given implementation permission (approval of environmental conditions and approval of site selection) (article 4). Zones for the development of productive activities (ZAPD) would be mapped and listed by presidential decrees. Building and other development restrictions within those zones would be imposed (article 24). However, there was not clear how these zones would relate to other productive areas (industrial estates, zones of existing activities, etc.) and to the settlement system; there was no connection with broader regional development and land use plans, infrastructure programs, incentive assisted areas etc. The measures remained piecemeal, lacking complementarity and the ratification of the development control zones (ZAPD) by the Ministry of Environment Spatial Planning and Public Works was, as a matter of fact, frozen in practice.

\textsuperscript{17} Legislative measures concerned with the protection of archaeological sites and forested zones (Getimis and Economou, 1992, pp. 30-31) were relatively successful in controlling the spontaneous sprawl of economic activities in peripheral areas. However, a large amount of dispersed archaeological sites were not subject to specific protection legislation by presidential decrees and building controls in them were less rigid. Forested zones, on the other hand, were subject to continuous pressures aiming at changing their legal status. Extended forest areas set particularly during hot summer periods and the lack of a national land registration system were the two sides of the same coin: the effort of land-based interests to appropriate public land for agricultural, tourism and housing development purposes (Kourliouros, 1995, p. 83).

\textsuperscript{18} (“plans of structural interventions”, as officially termed)

\textsuperscript{19} Carried out by the Ministry of Environment in the mid 1980s.

\textsuperscript{20} Relevant legislation was issued in order to support the “open cities” initiative: (a) L. 1416 issued in 1984 provided for the creation of “development leagues” (anaptyxiakoi syndesmoi) in Greece between local authorities in order to support coordinated action at broader spatial scales. (b) L. 1622 issued in 1986 on “Local Authorities, Regional Development and Democratic Planning”, gave a new push to the merging initiative. The broader administrative bodies would have enhanced responsibilities in carrying out annual local development programs and in financing economic and social infrastructure works (article 15 of L. 1622).

\textsuperscript{21} Law 2218/94 provided for the creation of elected broader administrative bodies (area councils –symvoulia periochis in Greek), which, however, raised confusion regarding their relation to the “development leagues” and the sharing of responsibilities between them (Beriatos 1993, pp. 12-13).
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was going to be compulsory. However, this initiative, just like the previous one, raised considerable local resistance which was reflected even within the government itself (Newspaper Eleftherotypia 8 Sept. 1997).

(iii). The “Special Regional Planning Studies”22, carried out in late 1980s-early 1990s under various EU initiatives,23 have tried to remove the previous problems. The areas, however, covered by those plans were geographically restricted (insular, coastal and environmentally sensitive ones) (Wassenhoven, 1995, p. 13) and the plans’ proposals relating to land use controls and implementation mechanisms were effectively blocked by local landed interests which managed to postpone their ratification by law. Furthermore, these studies were faced with many other problems such as: (a) lack of specific policy orientation for the development of various economic sectors (e.g. industry, tourism); (b) lack of codified data that could support comparative analyses and assessment of trends; (c) lack of appropriate participatory processes among local authorities.

The “Zones of Development Control” (ZOE) introduced by L. 1337 in 1983 article 29 (see Christophilopoulos, 1990, pp. 190-191), was the only “practical tool” available during the 1980s for imposing restrictions and controls upon spontaneous sprawl of activities in rural areas; ZOE restrictions were compulsory for both public and private actors but lacked appropriate co-ordination between the “general” spatial development level and the “concrete” level of settlements (ibid., p. 191). Furthermore, they were not accompanied by concrete implementation and monitoring mechanisms that should secure their effectiveness. Hence, ZOE controls were never implemented “on the ground”.

(v). In the context of ill-developed and ineffective regional planning, the spatial structure of activities in the “out of city plan” regional areas, was basically governed by piecemeal building regulations and statutes which related to the minimum plot size and to other technical details without any connection to broader economic or land-use development guidelines in the areas at issue.24

The uncontrollable sprawl of activities in regional space, led to the emergence of serious structural problems associated with: an unreasonable waste of land that undermined the territorial base of future generations (counter-sustainable spatial development); lack of infrastructure and concomitant environmental degradation due to intensive agricultural, tourism and housing activities; serious land use-related conflict that undermined local social cohesion and communal spirit; excessive pressures upon sensitive ecosystems and areas of historical significance or of special natural beauty; increased congestion of population and activities in certain sub-zones, especially along seashores, and aesthetic degradation of the broader regional landscapes.

The above counter-sustainable planning problems were maintained by two major deficiencies of the Greek administrative system: Firstly, the striking lack of substantial collaboration between Ministries responsible for policies and programs having explicit or implicit impacts upon the territorial organization of activities. Planning responsibilities have been traditionally divided between the “economic” (developmental) and the “spatial” (land use) dimensions, represented by two Ministries -the Ministry of National Economy and the Ministry of Environment, respectively (Wassenhoven, 1993a, p. 8).25 Secondly, the fact that the Greek administrative and planning system was, and continues to be nowadays, highly centralized despite recent decentralization attempts (EC 1992, p, 151; 1994, p. 148-9; Newman and Thornley, 1996, pp. 57-60). Local initiatives and projects should be approved by the central government in order to be enforced. On the other hand, central government’s priorities were in most cases driven by political calculations and various macro-forces (being permanently in flux), and not by the specific problems peripheral areas were confronted with. Regional development initiatives had to cope with an inflexible and authoritarian state bureaucracy and extended patron-client networks.26 Local and prefectural authorities had neither the economic means nor the legislative power to provide services and infrastructure in order to support local initiatives; they operated rather as local agencies of the central state in building-up clientelistic relations and in supervising the implementation of central decisions. The agricultural collectives and other non-governmental organizations (NGOs) established in peripheral areas, operated rather as means of promoting party politics at the local level, than as broader institutions aiming at strategic priorities towards endogenous regional development. In that context, a widespread climate of disbelief and mistrust between the state apparatus and the citizens was built and reproduced (Mouzelis, 1978; 1978a; 1990; Wassenhoven, 1984a; Haralabis, 1989; Demertzis, 1990; Kazakos, 1991; Kioukias, 1994; Kourliouros, 1995). This climate had a twofold negative effect: On the one hand it averted central government from implementing plans and programs under the fear of

22 *eidikes chrotoskeis melles* in Greek
23 like e.g. the Integrated Mediterranean Programs, the Envireg Program or the Community Support Framework
24 The only restrictions imposed upon private landownership were: (a) the plot size should be at least 4,000 sq. meters in order to be given building permission by the local planning authority, and (b) the plot should adjoin a public transport (road or rail) axis. In such a plot could be built: (i) 200 sq.m. of floorspace for residential use, or (ii) 800 sq.m. of floorspace for tourism use, or (iii) 3,600 sq.m. for industrial use (Getmis and Economou, 1992, p. 27). It is therefore apparent that the land-use structure in non-urban regional areas was determined by conjunctural fluctuations in demand for the one or the other use, and not by a strategic development scheme or a broader economic development program.
25 Even within the Ministry of Environment, the section of Public Works tended to impose its own projects without taking into account the other sections’ priorities (Wassenhoven, 1993a, p. 8). The same “communication gap” was remarked between other governmental agencies with “spatial” responsibilities like e.g. the Ministry of Agriculture, the Ministry of Tourism, the Ministry of Transport, the Ministry of Industry and so forth.
political cost, and on the other it averted citizens from accepting change and abiding by public interest objectives by driving them to adopt “free rider” behaviours (Tsoucalas, 1993).

3. Conclusions
In concluding, it can be said that during the 1980s a counter-sustainable type of regional “planning” was maintained and reproduced, although many efficient tools and legislation had been at the state’s disposal. The state’s planning apparatus was unable to tackle with the new development challenges that the Greek space economy was facing, or to deal effectively with specific issues such as the organized location/relocation of production, economic restructuring, technological change and social inequality in space, transport reorganization and energy saving, economic and environmental regeneration of downgraded urban and peripheral areas, etc. The counter-sustainable nature and ineffectiveness of the Greek regional planning system, has not been only or solely a problem of “technical” inadequacies or “improper” operation of the state’s planning apparatus, but a much broader one: the Greek civil society and the political system as a whole had been quite unable to accept major change, because such change tended potentially to challenge the long established nexus of socio-economic interests across space and the associated “free-rider” mentalities and attitudes.

4. References


A Web Based Evaluation System for Participatory Spatial Planning

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Abstract:
During the recent decades great emphasis is placed on the development of new tools promoting the participation of citizens in the public decision making process, that involve a variety of participatory tools. More precisely, participatory systems, both traditional and e-based, have been enriched with a range of tools such as Multiple Criteria Decision Analysis (MCDA) methods and geovisualization tools, in order to promote efficiency and provide useful input to the decision making process. The objective of the present paper is to develop a web-based participatory evaluation system, using MCDA and geovisualization tools, for public decision making processes, dealing with urban planning and cultural management issues. In the first part concepts and types of methods for public participation are presented, while in the second a short description of the evaluation process is given. In the third part the Web Based Evaluation System (WESP) is presented, focusing on the evaluation module of the planning process while in the fourth the application of the WESP system for the Plaka area is provided. Finally, some interesting conclusions are drawn on the use of WESP in cultural management and urban planning.

Keywords: Public participation, Decision support tools, multicriteria analysis, scenario analysis, urban cultural management

Introduction
During the recent decades great emphasis is placed on the development of new tools promoting the participation of citizens in the public decision making process. The implementation of participatory tools, so far, is marked by a number of problems relating mainly to cost and time issues, which in the present times of economic crisis greatly hamper the successful implementation of any participation process. The introduction of e-participation, in the recent years, has resolved to a great extend the time and cost relating issues, introduced by the requirement of the physical presence of the previous decades and paves the road to an unimpeded participation of citizens in the public decision making process.

What remains nowadays is the enrichment of these participatory systems with tools enabling transparency, flexibility and efficiency in the implementation of the participatory process, such as Integrated Assessment Models, Multiple Criteria Decision Analysis (MCDA) methods, geovisualization tools etc., that provide useful input to the decision making process and promote consensus.

The objective of the present paper is to develop a web-based participatory evaluation system, using MCDA and geovisualization tools, for public decision making processes, dealing with urban planning and cultural management issues.

In the first part concepts and types of methods for public participation are presented, while in the second a short description of the evaluation process is provided. In the third part the Web Based Evaluation System (WESP) is presented, focusing on the evaluation module of the planning process while in the fourth the application of the WESP system for the Plaka area is provided. Finally, some interesting conclusions are drawn on the use of WESP in cultural management and urban planning.

1. PUBLIC PARTICIPATION
The focus of this section is on providing the definition of public participation and the categorization of participatory methods in order to outline the context of public participation in spatial planning. Several definitions of public participation have been given in the literature, in the last decades. According to van Asselt et al. (2002, p. 168) public participation ‘[…] refers to involvement in knowledge production and/or decision-making of those involved in, affected by, knowledgeable of, or having relevant expertise or experience on the issue at stake.’

Public participation is introduced in a wide range of disciplines. According to van Asselt et al. (2002, p. 168) public participation: ‘[…] is referred as interactive or deliberative method, is used as an umbrella term, embracing a variety of methods and approaches employed to enhance participation in assessments as means of different ends.’
A broad range of public participation methods appears in the literature, which can be classified, after van Asselt et al. (2002), according to two basic axes/attributes of the ‘targeted output’ axis and the ‘aspiration/motivation’ axis.

The first axis classifies public participation methods according to the goal of their application. More precisely, the axis comprises the direction/group of ‘process as a goal’, where the goal is the empowerment of stakeholders and ‘process as a mean’ where public participation methods target to enrich assessment and decision making.

The second axis classifies public participation methods according to their targeted output. The directions/groups of the second axis are those of ‘mapping of diversity’ and ‘reaching consensus’, where in the first is revealed the different views of stakeholders and in the second the reaching out of one strategy or one option.

In Image 1.1 that follows is shown the classification of participatory methods presented above.

1. Targeted output axis
2. Aspiration/motivation axis

Image 1.1: Categorization of participatory methods according to the goal of application
Van Asselt (2002); Bousset et al. (2005)

2. Evaluation Process in Spatial Planning
In this section a short description together with the steps of the evaluation process are presented in Image 2.1.

Image 2.1: Stages of Evaluation Process Voogd, 1982;

- Problem definition
  The evaluation process in spatial planning should take into consideration all aspects relating to the planning goals and objectives, such as economic, social, environmental but also spatial, which are set at the stage of problem definition. These aspects can be presented with maps or other types of geo-visualization tools.
- Setting of criteria
The setting of criteria is an essential stage of the evaluation process since it contributes to the selection of the most appropriate solution for the fulfillment of the planning goal pursued. These criteria can be selected by both experts and stakeholders, incorporating thus all the important concerns of the community.

- Definition of alternatives
  At this stage of the process the scenarios are structured by experts with special knowledge and skills on the study problem.
  With the support of geo-visualization tools, the alternative scenarios can be presented in a fascinating environment, shedding light on hidden aspect of the proposed spatial interventions.
- Application of the evaluation method
  The evaluation process has the following three steps: ranking of alternatives; attaching of weights and evaluation.
  - Ranking of alternatives
    At this step either experts or stakeholders rank the alternative scenarios, by attaching scores to each criterion. According to Voogh (1982, p.74): ‘the scores reflect to which degree an alternative meets a certain criterion.’
  - Attaching weights
    The weights defined in this step reflect the priority attached to each criterion by the decision maker.
  - Evaluation
    At this stage various evaluation methods can be applied such as cost benefit analysis, ELECTRE, PROMETHEE, REGIME etc., depending on the type of problem under consideration.
- Choice of Alternatives
  The output of the evaluation process is the selection of the best possible alternative, which will be presented to the stakeholders.

3. WEB BASED EVALUATION SYSTEM in spatial planning (WESP)

In this section is presented the Web Based Evaluation System (WESP), focusing on the evaluation module of the planning process, in order to provide a useful tool for public participation purposes in spatial planning.

3.1. Web Tools of WESP

WESP is a web based decision support system that embeds several modules, focusing on the involvement of stakeholders in the evaluation stage of scenarios for spatial planning. Towards this end a separate web page is created for each step of the evaluation process, enriched with special information. The computational packages used in WESP are the following:

- Google Earth Geovisualization Tool
  The first tool is the geo-visualization platform of Google Earth used at the stages of problem definition; structuring of scenarios and presentation of alternative scenarios. The future interventions in the area are designed in the system of coordinates of the Google Earth platform followed by the incorporation of the Google Platform in a web page (Atzmanstorfer et al., 2014, Resch et al., 2014, Tiede, 2014).
- Web Questionnaires
  The web questionnaires are constructed using the Google available applications and are attached to the evaluation stages of: ranking scenarios and attaching weights to the criteria. The questionnaires embed the web dimension and aim at receiving the stakeholders’ feedback on the proposed planning interventions. The web questionnaires are also used at the presentation of alternatives scenarios stage, where stakeholders express their opinion on the output of the evaluation process (Lidskog, 2013).
- Multicriteria Evaluation Methods
  The WESP system is designed to incorporate multicriteria methods such as ELECTRE, PROMETHEE, EVAMIX and REGIME, in order to evaluate alternative scenarios of future intervention in the area under study.
  ELECTRE I method is selected for application in the system developed, based on a pair wise comparison of the alternative scenarios, incorporating the choice problematic (a). Choice problematic (a) refers to the selection of the prevailing scenario without classification of the scenarios under evaluation.
  The pair wise comparison of alternative scenarios, based on the criteria selected, structures the Concordance and Discordance matrices that express the level where the first alternative (a) is superior or inferior to the second one (b). These matrices, by taking into account the Concordance Threshold (\( \hat{c} \)) and the Discordance Threshold (\( \hat{d} \)) - that introduce the threshold of superiority or inferiority between alternatives-formulate the Core matrix that contains the prevailing scenario.

Hence, alternative ‘a’ is preferred to alternative ‘b’ (\( aSb \)), according to the following:

\[ aSb \iff C(a,b) \geq \hat{c} \quad \text{and} \quad D(a,b) \leq \hat{d} \]

Finally, by comparing the available alternatives, the preferences among alternatives are extracted. By modifying the threshold levels, the prevailing alternative is identified.

In Image 3.1 is presented the site map of the web site presenting the way the evaluation system is applied via web.
3.2. Description of the WESP system

In this paragraph is presented the structuring of the web tools in the evaluation process of the WESP system and the interaction with stakeholders (see Image 3.2 below).

In the first step, the most important aspects of the problem under study are identified, followed by the formulation of the alternative scenarios and the definition of the evaluation criteria by the experts or stakeholders with special knowledge on the study problem.

![Image 3.1: Web Dimension of WESP](image)

The spatial aspects of the study problem and the alternative scenarios are presented to the stakeholders through the geovisualization process. All relevant comments on the presented alternative scenarios are taken into account and the revised scenarios are presented to the stakeholders. The geovisualization tool selected for the presentation purposes is the Google Earth platform.

At this stage the stakeholders are ready to rank the alternatives and attach weights to the criteria. In the following step, for the case study purposes, is selected the multicriteria analysis method **ELECTRE I**, for ranking the alternatives for the selection of the prevailing scenario. In the WESP system the results of the multicriteria method, **ELECTRE I**, are presented to the public, in order to become clear the way the various views, have affected the choice of the prevailing scenario. Finally the prevailing scenario is presented to the stakeholders using the geovisualization tool of Google Earth. The stakeholders express their views and formulate the scenarios in a cyclical process until consensus is reached.

![Image 3.2: WESP in Evaluation Process](image)
4. Application of the WESP in the Plaka Area

In Plaka area, change of the land uses is planned in a viable and functional way. In order to fulfill the case study objectives several alternative scenarios have been structured. It follows the implementation of the evaluation steps via web for the selection of the prevailing scenario, in respect to the criteria that have been introduced during the evaluation process. In the developed web site the flowchart of evaluation process that was presented in Image 3.2 has been attached, informing the web users for the procedure that is followed. Next in line the web implementation of the evaluation system in the study area of Plaka is presented.

4.1. Description of the Plaka Area

The Plaka area is one of the oldest parts of the city of Athens with a vast number of monuments of all ages that coexist with present day activity. This creates a conflict among the various authorities involved in the cultural management and planning process of the area. According to Giaoutzi et al (1993) ‘The case of Plaka can be presented in outline as a problem of both an archaeological and urban planning – architectural nature’ (Giaoutzi & Vassiliadou (1993, p. 185).

The two different approaches can be seen in the following arguments. The archaeological argument claims that given the historical importance of the area, priority should be given to the conservation of the monuments of both the Classical and Roman periods, in order to create a continuous archaeological site around the Acropolis. This implies the demolition of monuments of later periods in the area which is in conflict with the next approach (Giaoutzi & Vassiliadou, 1993).

The urban planning – architectural argument, claims that the architectural treasures of the cultural heritage in the area, reflecting the styles of many periods, and the unique style and scale of the area, should be preserved as living part of the historical city centre, both functional and human at the same time (Giaoutzi & Vassiliadou, 1993).

As a consequence, the following problems remain, which have to be taken into account in all cases of planning and management for the study area: architectural monuments exhibit problems as to their level of comfort and safety; huge number of high-rise buildings, spoiling the urban landscape; high concentration of ageing people; ownership patterns: private (90%) and public (7%); Employment patterns: service sector (26.9%) commerce (27.8%), leisure (21.1%) and manufacturing (17.7%), (Giaoutzi & Vassiliadou, 1993). The present study follows on the urban design – architectural argument and aims to resolve the land use conflicts resulting from the urban change patterns, but also to protect the cultural heritage in the Plaka area, promoting the concept of “Plaka as a living monument”.

4.1.2 Land Use Patterns in the Area

The Plaka area is delimited by the following roads: Mitropoleos, Filhellinon and Amalias, Dionysiou Areopagiou, Pouloupolou, Adrianou and Ermou. The most common land uses in the area are: residential, commercial, cultural and religious. In the process of urban change certain conflicts appear among land uses as the planning legislative framework does not work on reducing competition among them. The Table 4.1 presents the existing land use patterns in the Plaka area:

<table>
<thead>
<tr>
<th>Commercial</th>
<th>Religious</th>
<th>Education</th>
<th>Cultural</th>
<th>Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>sq.m.</td>
<td>sq.m.</td>
<td>sq.m.</td>
<td>sq.m.</td>
<td>sq.m.</td>
</tr>
<tr>
<td>34142</td>
<td>8132</td>
<td>3285</td>
<td>20819</td>
<td>160367</td>
</tr>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>30.40</td>
<td>2.96</td>
<td>1.19</td>
<td>7.52</td>
<td>57.94</td>
</tr>
</tbody>
</table>

For the needs of the study the existing situation in the Plaka area is presented by using the interactive 3-D environment of Google Earth geovisualization tool, which helps the designers/experts to communicate the information on Plaka, to the public, in a better way compared to the traditional 2-D maps.

Image 4.1: Land uses of Plaka Region – 2-D map

Image 4.2: Land uses of Plaka Region in Google Earth Platform
The Google Earth platform was enriched with additional information on the area, in a textual form, inside the visualized environment. Visiting the web site users are capable not only to navigate freely inside the 3-D environment but also to read detailed information on the area, e.g. land use percentages. The following image shows the textual information added inside the geovisualization environment.

**Image 4.3: Textual information inside the Geovisualization Platform**

### 4.1.3 Transportation Networks and Cultural Infrastructure

Plaka is a very well accessed area located at the center of Athens and surrounded by a dense road network. Together with the four metro stations around, the area can be reached quite easily from almost all parts of the Greater Athens Area. In Image 4.4 below are presented the metro stations in the vicinity of the area.

**Image 4.4: Metro Stations in the Area**

One of the most important sites in the study area is the new acropolis museum, located in the eastern part of Plaka. The site of new acropolis museum is presented in the Image 4.5 below.

**Image 4.5: New Acropolis Museum -3D Google Earth Representation**

### 4.2. Structuring of Alternative Scenarios

The pursued goals for the structuring of the scenarios are the following:
- *Reduction of land use conflicts*, and
- *Preservation of the architectural treasures* of the cultural heritage in the area, and the unique style and scale of the area, as living part of the historical city centre.

The proposed scenarios are the following: Baseline scenario; Socio-Economic Scenario; Historic-Cultural Scenario. The ‘baseline’ scenario proposes no intervention in the area; the ‘socio-economic’ scenario emphasizes the expansion of commercial land use; and finally the ‘historic-cultural’ scenario proposes the
location of a museum in the area, increase of the residential and decrease of the commercial land uses in the area. These scenarios are presented with the support of the geovisualization tool of Google Earth integrating videos describing the existing situation.

- **Baseline scenario**
  The baseline scenario is presented in the Images 4.2 and 4.3. According to this scenario there are no planning interventions in the area. The baseline scenario is introduced in order to act as a frame of reference and enable the impact assessment for the proposed 2 and 3 scenarios that follow. According to the baseline scenario, the land use patterns keep the existing distribution in the area (see, Table 4.1.)

- **Socio-Economic Scenario**
  The focus of the socio-economic scenario is on the economic revitalization of the historic centre of Athens, by attracting enterprises to invest in the area. For this purpose a plan for increasing commercial land use is suggested, where five blocks of residential land use are turning into commercial. The socio-economic scenario aims at increasing the economic base of the area that will increase its economic turnover. The selected blocks are located to the North-Eastern part of the Plaka area as it is close to the Syntagma metro station and Vasilissis Amalias Avenue. It should be noted also that the area is very close to the Temple of the Olympian Zeus, which implies that tourist flows will easily reach the proposed market. It is important to notice that the expansion of the commercial segment of Plaka intends to decongest the traditional part from the activity pressure that threatens, at present, the character and scale of the area. This will be pursued through strict planning regulations defining the type of enterprises to be attracted so that the cultural character of the area not to be altered. Special information relating to the socio-economic scenario such as distribution in square meters of changing land use, present and previous patterns, is provided to the web users via the geovisualization platform of Google Earth. In Image 4.6 the visualization of the socio-economic scenario is presented.

  **Image 4.6: Geo-Visualization of Socio-Economic Scenario**

- **Historic – Cultural Scenario**
  The historic-cultural scenario aims at promoting the historic and cultural profile of the Plaka area. This scenario focuses on increasing the residential land use in parallel with strengthening the cultural identity of the area. The land use changes concern four blocks of commercial land uses which turn into residential in the Eastern part of the Plaka area, in order to protect the traditional character of the study area. In Image 5.7 these changes can be seen in Google Earth. Moreover the historic-cultural scenario proposes the creation of a cultural center at the western part of the Plaka area. More precisely a museum is placed in a close distance from the significant archeological places of Roman Agora and Adrian’s Library. This museum will integrate remnants of old buildings, where the rehabilitation process will upgrade their traditional architectural characteristics and create a building complex appropriate for cultural use. In a short distance from the proposed museum the metro station of Monastiraki is located providing good access to the networks. In contrast to the socio-economic scenario the historic-cultural scenario attempts to attract people to the area by improving the cultural environment of the historical center of Athens.

  **Image 4.7: Geo-Visualization of Historic-Cultural Scenario**
4.3. Definition of Criteria
The evaluation of the alternative scenarios is based on the following three groups of criteria: a) environmental, b) economic and c) socio-cultural (Bizzarro and Nijkamp, 1996).

- **Environmental Aspect**
  Under the environmental aspect is applied the criterion of the availability of natural environment and open spaces, that is defined by the level of square meters of open spaces and natural environment per capita.

- **Economic Aspect**
  Under the economic aspect is used as criterion the index of consumers/tourists attraction to the Plaka area that is translated into several dimensions such as, average income per capita, percentage of unemployment, etc.

- **Social-Cultural Aspect**
  The social-cultural aspect is comprised of the following criteria: a) accessibility of the historical city center and b) cultural amenities per capita.

4.4. Ranking of Scenarios and Attaching Weights
One of the most important steps of the evaluation process is the formulation of the matrices of ranking of the alternatives and attaching of weights. This is a very demanding process and several indicators and factors are adapted by experts to the evaluation process for the construction of these matrices. The values of the matrices are presented in Image 4.8.

![Image 4.8: Scores and Weights](image)

It is also important to underline that the ranking of the alternatives and the attaching of weights are a procedure open to the public that was formulated in the system under development and was presented via web. In Image 4.9 the ranking of scenarios and the attaching of weights are presented.

![Image 4.9: Ranking Scenarios and Attaching Weights by Stakeholders via Web](image)

The scores and weights set by the stakeholders involved in the process of ranking are presented to the public via an open web page. The scores and weights are gathered automatically in the form, shown in Image 4.9, and are presented to the stakeholders after a few seconds. In such a way a stakeholder is able to see what scores have been used by the other stakeholders. It is also possible for the stakeholders to check the average of the scores and weights that are going to be used in the evaluation process.

![Image 4.10: Scores and Weights gathered in a form and open to the broad public via Web](image)
4.5. Evaluation – ELECTRE I Application
The matrices completed in the previous step, provide the basis for the selection of the most appropriate scenario. In Image 4.11 the output of the evaluation process is presented.

Image 4.11: Evaluation implementing the Multicriteria Method ELECTRE I

The prevailing scenario that was selected by the stakeholders as the most appropriate for the goals of our study is the historic-cultural scenario, which proposes the increase of the residential land use, in parallel with the cultural intervention of building a museum.

4.6. Presentation of the Best Alternative
The best alternative scenario is presented in the final page, using the geovisualization tool. The web users are able to express their opinion about the output of the evaluation by following the relative link.

Image 5.12: Presentation of the Best Alternative Intervention

5. Conclusions
The proposed Web Based Evaluation System for Spatial Planning (WESP) provides an appropriate decision support tool that can be used for the promotion of public participation in spatial planning. It is designed so that all stages of the evaluation process are incorporated, adding in each step, the appropriate tools for the involvement of the broader public in the decision making process. The WESP is a fully autonomous, open access and low cost tool that enables stakeholders to: interact with the planning proposals; rank the alternative scenarios; attach weights; evaluate the proposed scenarios and finally see the results of the evaluation. The WESP is designed for web implementation and can be used by decision makers as a communication platform that validates their decision making process by involving, at a low cost, a large number of stakeholders. The proposed system promotes the participatory concept in spatial planning as it incorporates tools that facilitate citizens’ involvement in the decision making process. The geovisualization tool of Google Earth, the web questionnaires and the multicriteria evaluation method ELECTRE I, enable the participation of the public in each stage of the process. Finally the case study in the Plaka area is a useful application of the WESP, indicating the weak points of the system such as the user friendliness of the WESP mainly as it relates to the data input of the ELECTRE I multicriteria evaluation method.

6. References
Busset, J.-P., C. Macombe and M. Taverne (2005), Participatory Methods, Guidelines and Good Practice
Guidance to be Applied Throughout the Project to Synthesis and Dissemination, System for Environmental and Agricultural Modelling; Linking European Science and Society - SEAMLESS Report no 10.


Section 3: Regional and Territorial Governance: Economic and Social Policies
Chapter 1:

Incorporating social indicators of sustainability in public policies for environmentally degraded areas: The case of the Asopos river

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1. Introduction
Sustainability has become a crucial term in the environmental and social sciences over the past decades (United Nations, 1987). Through this incorporation the need to find a balance between economic, social and environmental goals in public policies is emphasized. An important challenge in this context is to create indicators which will measure the level of sustainability and formulate policies around these measures. These indicators can help decision makers to monitor environmental change and formulate sustainable environmental policies (Shen et al, 2011; Rametsteiner et al, 2011). Another important issue is to develop techniques which will use these indicators in participatory decision-making processes. These are processes which aim to include citizens and actors from the civil society in deliberation techniques in order to assist in the creation of public policies which take into consideration local needs.

Despite the wide development of sustainability indicators in the past decades (UNCED, 1992; Boulanger, 2004), social aspects of sustainability are often neglected. This can be attributed, to a significant extent, to the difficulty of quantifying social indicators and make them comparable to other indicators from the economic and environmental sciences. The present paper will discuss the incorporation of sustainability indicators in the formation of public policies. We will focus specifically on policies which aim to tackle environmental degradation from the industry sector with subsequent socio-economic consequences for the local community and we will analyze as a case study the area of the Asopos River in Greece.
Several studies have highlighted the importance of measuring and reporting SSI’s in public policies based on the principles of sustainable development (Devuyst, 2000; United Nations, 2011). Through assessment processes, policy makers can establish the base of a policy and even increase public resilience to environmental change (Dalal-Clayton and Bass, 2002). The implementation of sustainability assessment, especially when conducted at a local level, assists in selecting the best suited policy actions and providing tangible results in specific localities (Rametsteiner, 2011). Locally based indicators are mainly shaped by the political, cultural and normative elements of a locality, so that they remain relevant to the policy objectives (Rametsteiner, 2011). They should also clearly indicate clear sustainable actions or goals, so as to align public interests and evaluate potential environmental impacts in pressured communities (Dalal-Clayton and Bass, 2002). Therefore, well designed indicators assist in the development of alternative and bottom-up policy choices toward sustainability (Layke, 2009; Mc Cool and Stankey, 2004). Furthermore, in order for SSI’s to be effective in the local term they should support the sharing of policy strategies among local practices (Herzi and Dovers, 2006).

2.1 Proposed Social Sustainability Indicators
There are no universally agreed SSI’s in the context of environmental policies. In the following paragraphs we describe three specific indicators which we regard as essential for the formation of sustainable environmental policies, especially in environmentally degraded areas. These are: social capital, place attachment and public participation. The focus on the specific indicators is based on the rapidly increasing literature around these concepts. However, additional social indicators are important such as demographic characteristics and institutions.

2.2.1. Social Capital
Social Capital has been introduced as an indicator of sustainability in the past decade (Magis, 2010; Jones et al, 2012). It refers to political cohesiveness by cooperation (Putnam, 2000; Jones et al, 2011). A society needs high levels of trust, strong relationships and networks that function as a glue between members of a community in order to promote collective beneficial activities (Jones et al, 2009). Networks act in multiple social stages and widen their operation by collaborating with agencies and stakeholders (Jones et al, 2012). Moreover they mobilize the public as they give greater access to environmental information, offering wider choices of policy practices to adapt for. In this way networks encourage the grass-root participation stage in a policy procedure (Bender, 2011).

2.2.2. Public Participation
Public participation is an important parameter in achieving social sustainability in contaminated environments (Aitken, 2011) and as a result it is considered an important indicator. It permits variability in community’s goals and enhances welfare, especially in areas which face significant environmental degradation (World Bank, 2001). This indicator is connected with co-management approaches that offer flexibility among stakeholders and communities. However, it should be noted that this policy approach can be challenging, as it involves the public’s interests that are often against industrial’s or stakeholder’s directions (Schaefer, 2011). The public participation indicator provides a link to bring local issues in the forefront and build consensus between different stakeholders. In conclusion, this participatory indicator plays a pivotal role as it helps policy makers to adapt local bylaws and regulations in their decisions (Steneke et al, 2008).

2.2.3 Place Attachment
Another important social indicator that policy makers should take into account is the level and type of place attachment. This factor is highly correlated with the development and the identity of an area (Samson and Goodrich, 2009). It has the ability to increase the environmental responsibility, depending on the demography and specific aspects of a contaminated area (Lee, 2011). It also depend on the factors such as “place dependence and self-others” (Schuster, 2011; Devine-Wright, 2009). The notion of this concept is highly linked with the emotional bond of a place and the perceived strength of a specific natural setting. Therefore it is also linked with the needs of a community and the quality of life of an area (Williams and Vaske, 2003). The notion of “self-others” has in turn been constructed with the value attached to neighborhood, the feeling of belonging and the familiarity sense as well (Hammit, Backlund and Bixler, 2006). The “self” as a pole, refers to specific places that have high personal meaning (Gustafson, 2001). This term in conditions of environmental degradation has a high impact on public behavior (Bogac, 2009). It is also linked with the impact of public actors and their interpersonal interactions that occur in a local base (Hidalgo and Hernandez, 2011).

3. The case study Area of the Asopos River and the use of these indicators
We will now discuss the use of social indicators, such as the ones mentioned above, in public policies focusing on the Asopos river area. The Asopos River runs through the regions of Viotia and Attiki in Greece, and empties into South Evoikos Bay (Attiki (Figure 1). Due to the operation of approximately 700 industrial companies the water table of the river in the north and east receives environmental impacts on soil sediments, underground and surface waters in the surrounding area (Bakos, 2009). Furthermore, agricultural activities are also developed in the area. Over its entire length the river runs through farm land while the other zone it’s heavily industrialized (Bacos, 2009).

In the last years there has been an increased scientific and political interest concerning the environmental degradation of the Asopos area with an emphasis on the direct impacts on human health, social well-being and the development activities of the area (Loizidou, 1998; Linos et al, 2011). Some regulations have been initiated by the state concerning mainly penalties on industries which did not comply with existing regulations. However, these have proved unsuccessful to a significant extent. Also, there was no policy...
planning focusing on social aspects, in order to assist in the social welfare of the communities. It should be noted that due to the inadequate state actions, part of the local community have been organized in order to exercise pressure on the state for the implementation of environmental regulations.

The specific case study allows us to explore social aspects of sustainability in an area which faces environmental degradation due to industrial activities, but at the same time is highly depended from these activities. Thus, apart from measuring environmental indicators it is also important to explore the socio-economic aspects of sustainability and find ways to use them in decision-making processes. The measurement and integration of both environmental and socio-economic sustainability indicators in the area of Aspos River, such as social capital, public participation and place attachment, is the first step to define the most important management objectives based on which effective environmental policies can be built. This kind of integration will give an insightful analysis with a further emphasis on social aspects of a vulnerable community, rather than the more common targets of environmental protection and economic improvement of an area (Fin and Mc Cormick, 2011).

In particular, sustainability in environmentally degraded conditions is related to multiple types of externalities and disruptions that need specific policy instruments to be implemented (Huppies and Simonis, 2009). In this term, policy processes have to deal with diffuse impacts, complexity at systemic level and among different actors and sectors (Kemp et al, 2005). Due to this, it is necessary that the above proposed social sustainability dimensions are incorporated in a centralized sustainability policy system. SSI’s can provide the required information in order to contribute to public policy formation within a multifaceted environmental system (Hamin et al, 2007). Particularly the under studied social indicators could bridge social values and needs and integrate them in a participatory approach within sustainability’s administrative decision making processes. This participatory approach is an instrument of change and gives a clearer knowledge of the actual conditions and the needs of a community (Olshansky et al, 2012).

Therefore, the proposed sustainability dimensions could be integrated into an ex-ante regulatory system, which will promote political stability and provide incentives of precaution and control in order to face extensive environmental changes (European Commission, 2002; Runhaar and Driessen, 2007). These efforts should be based on bottom-up policies, in which stakeholders and the public bring their opinion forward and have the willingness to share this and its possibly social changes (Van Essen, 2012). Moreover in this framework, decision makers have the ability to bridge the short term choices and decisions and the long-term policy directions and give a sight to policy decisions (Van Essen, 2012). These acts should be done under a flexible policy co-management framework, as it is the one that can provide resilience in the on-going environmental degradation (Evans, 1991:72).

Such co-management frameworks, especially in environmentally degraded areas such Aspos region, should be based on bottom-up policies, in which stakeholders and the public bring their opinion forward and have the willingness to share the possibly social changes (Van Essen, 2012). Moreover it is important that there is a consensus by the local community and the local NGO’s for public policies (European Committee of Social Rights, 2011).

Therefore, decision makers under the formulation of the proposed SSIs will be able to bridge the short-term choices and the long time direction and give a sight to the first policy decisions, as the most effective and applicable (Huppies and Simonis, 2009). These actions should be done under flexibility notion, as it is the one that provides successive and temporary resilience in the ongoing environmental impacts of a pollution event (Evans, 1991:72). In reverse with the initial reaction of the political parts of the state, policy actors should make small steps that should be adequate, effective and best applicable to socio-ecological dynamics of the studied area. The whole bottom-up process is characterized by trust and transparency, as the vulnerability of representatives and personal networks lead to uncertain conditions (Armitage et al, 2009). However, sometimes this policy direction failure to coordinate the environmental management across all sectors of the community and has slowed down the response efforts in it (Henstra, 2010). Therefore, the extent to which a degraded community, valuing collective views and formulate ideas, embraces the value of bottom-up approach and community –led initiatives (Armitage et al, 2009).

Regarding the three indicators of sustainability that we focus on, the measurement of social capital can reveal weak characteristics of a society, such as low levels of trust and weak social networks. The identification of these parameters can significantly contribute to the formation of policies by incorporating the increase of such social factors through the application of public policies. Furthermore, place attachment can be seen as an indicator which focuses on the value that individuals place to a specific area. This type of indicator should be seen as a fundamental concept in environmental policies, as the value of land for a community will influence their level of support for a policy. In additional, depending on the value they people have on a specific area, different approaches in public polices can be achieved. Finally, concerning the public participation indicator this mainly refers to the level of participation of the local communities in different levels of public policies, such as policy decision-making and policy implementation. Indicators measuring participation should be incorporated in policy planning irrespective of the source encouraging this engagement which could be due to state actions or bottom-up mobilization of communities. Although public participation should always be part of the policy process, by measuring the levels of public engagement in advance, the type of deliberation techniques needed and the intense of such initiatives can be revealed.
4. Conclusion
In conclusion, this paper aimed to highlight the importance of incorporating social sustainability indicators in decision-making processes. We emphasized three sustainability indicators (social capital, public participation and place attachment). We also highlighted the importance of incorporating these indicators in decision-making processes for public policies taking as an example the Asopos river case study. A very important challenge in this process is the measurement of such indicators. Indicators measured in social surveys can assist in the development of accurate measures. For example, in the case of social capital, there are plenty of indicators developed by international surveys (e.g. European Social Survey) which could be used in order to quantify these social factors. An additional challenge is the development of deliberation techniques where such measures can be incorporated and used. These refer to seminars, conferences, distribution of questionnaires, and other means which increase consultation with the local community. Especially in the case of the Asopos river no deliberation has been conducted with the local community to our knowledge. Thus it is important that participatory decision-making processes become part of the policy process. The application of such actions will highlight the socio-economic aspects that need to be taken into consideration when forming environmental policies. In this effort, measuring SSIs will provide useful information which could be presented at the deliberation processes while at the same time will reveal the type and level of socio-economic targets that need to be achieved.

5. References
Bacos, A. “Qualitative analysis of the surface and groundwater in the hydrological basin of Asopos River supported by the direction of carcinogenic substance hexavalent chromium”. Thesis, Department of Natural Resources Management and Agricultural Engineering, Agricultural University of Athens, 217p. plus Annexes, 2009.
Bender, S.O. “Progress in natural hazard risk reduction. What has development wrought?” Environmental Hazards, 10, 2011, pp. 69-79. 1
Boulanger, P.M. 2006 “Political Uses of social indicators: overview and application to sustainable development indicators”. In proceedings of International Conference on Uses of Sustainable Development Indicators. Montpellier, France, 3rd-4th April, 2006.


Devuyst, D. “Linking Impact Assessment and Sustainable Development at the local level: The introduction of sustainability assessment systems. Sustainable Development, 8, 2, 2000, pp. 67-78


Chapter 2:

Built-up Area Expansion Assessment via Soil Sealing Pattern Evaluation: Evidence from the North & South Aegean Islands

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Abstract:
Soil sealing dispersion in non continuous urban areas is considered as an important environmental degradation factor with many different impacts. It is widely characterized as an almost irreversible environmental threat. Here we shed light on soil sealing patterns characteristics in the North & South Aegean Regions islands by applying simple metrics. These islands are particular socio-spatial systems, with varying degrees of tourism development, which is one of the principal drivers of urban expansion pressures according to the findings.

Keywords: Soil Sealing; North & South Aegean islands; Greece

1. Introduction
Greece is an insular country, with roughly 20% of its total surface being islands of various sizes. Islands are characterized by spatial fragmentation and geographical discontinuity, where fragile and in many cases unique ecosystems are encountered, while also small size and isolation result in small economies, isolated populations and societies and accessibility difficulties in terms of regularity, cost, time etc. (Spilanis et al. 2012, European Parliament and Council 2007, Bavoux 1998). These characteristics of islands constitute “insularity” or “islandness” (Spilanis et al 2009), a shared identity of islands. At the same time, Greek islands are also characterized by “Mediterraneanity” which involves factors such as the Mediterranean climate (dry and hot summers, mild winters and high variety in precipitation patterns); the intense geomorphology with small valleys and level areas and steep hillsides which result in what Horden and Purcell (2000) call “micro-ecologies” of the Mediterranean. Finally, human presence in the Mediterranean has been shaping the landscape for millenia.

North & South Aegean Regions, the islands of which are the case study of this paper, are two of the 4 insular Greek Regions and share the above insular features. Tourism is the key economic activity for most islands (along with primary production) and decisively contributing to the organization and functions of local socio-spatial systems (Karatzoglou, Spilanis 2010). Concerning land cover and especially artificial cover, two features of tourism have important impacts on land use intensity. The seasonal nature of tourism is one, which increases people and goods movement seasonally and creates increased pressures for a limited period of time, typically the summer. For instance the island of Kos of 40,000 people receives 910,000 visitors each year more than 60% of which come in July and August. The high land value of tourism uses compared to other uses of land on islands is the second impact. For instance, a grazing land of 10 ha yields a few thousand €/year when used for sheep husbandry, but if sliced in 0.4 ha plots for second homes or tourism facilities it can yield hundreds of thousands € or even millions overnight. This fact makes tourism a particularly competitive activity for land in comparison with less profitable and traditional productive activities of the primary sector (Spilanis et al 2009).

It is therefore no surprise that tourism development is an important driver for the growth of built-up areas on islands. Spontaneous, self promoted housing strategies are dominant for Greek cities on islands. These practices frequently lead to building dispersion into rural areas (Economou 2004). Ex-urban built-up clusters are generally located: (a) in peri-urban areas, (b) around rural settlements, (c) in agricultural areas, including grazing lands, (d) in littoral and forest areas and (e) along roads. This urban sprawl had negative effects on islands (Salvati 2013) not only because of its volume, that in certain cases is excessive, but mostly because of the character of the areas it has developed upon, which constitutes a critical environmental threat for many islands, while for human time scales it can also considered as an irreversible change.

In this context, the paper addresses the quantitative evaluation of soil sealed areas for the North and South Aegean Regions islands along with an analysis of principal causes and results. We use the soil sealing
layer provided by the European Environmental Agency (EEA, 2006) as the key source of data, i.e. geospatial datasets that derive built-up and non built-up areas including continuous degree of soil sealing ranging from 0 - 100% in aggregated spatial resolution 20 x 20m. Soil Sealing or imperviousness is here considered as the loss of soil resources, due to the covering of land for housing, infrastructures or other man-made constructions. It can be used to characterize the human impact on the environment. In the following section the concept of soil sealing and its assessment is presented, followed by the presentation of the case study islands, the discussion of methodological issues on the spatial metrics used. Then, the results are presented and discussed.

2. Data

The soil sealing geospatial data-sets used in the study were produced as part of the Global Monitoring for Environment and Security (GMES) as a Fast Track Service on Land Monitoring (FTS on LM) in 2006-2008. Soil Sealing is the first high-resolution LM layer provided by the EEA with European coverage. The main deliverable was a raster data-set of continuous degree of soil sealing in full spatial resolution (20*20m) (Maucha et al. 2010). The soil sealing raster layer contains continuous values ranging from 0 - 100% of cover representing different degrees of soil sealing. Sealed cells represent impervious surfaces from artificial structures “...such as pavements e.g. roads, sidewalks, driveways and parking lots that are covered by impenetrable materials such as asphalt, concrete, brick, and stone and rooftops” (Maucha et al. 2010). The degree of soil sealing or imperviousness is estimated in relation to the pixel area cover. Built-up areas are impervious, artificially covered surfaces that account for 80 to 100% of the total cover. We use only the “sealed cells and built-up area” category (Table 1). The data are available in raster format and they are provided in a Lambert Azimuthal Equal Area (LAEA) coordinate reference system which is used conveniently in maps for the European continent. A useful property of this projection is that it does not distort areas; therefore a comparative analysis in greater scale is possible. Soil sealing geospatial data-sets are also chosen as the derived datasets are in a compatible spatial resolution (20*20m) with the questions the paper addresses. It is also important to stretch that soil sealing data is covering 38 countries of Europe (32 EEA Member States and 6 West-Balkan countries) (Kopecky, Kahabka, 2009). Although it is not explored in this paper, the general lack of standardized cross-site comparisons of land change is recognized as an important gap in land systems study. In this respect, the use of international data-sets that cover greater areas is a contribution towards a uniform cross-site methodology that will allow a direct comparison between international or regional cases.

Table 1: Soil sealing raster data categories

<table>
<thead>
<tr>
<th>Raster value</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Non-sealed cells</td>
</tr>
<tr>
<td>1-79 %</td>
<td>Sealed cells &amp; Non-built-up area</td>
</tr>
<tr>
<td>80-100 %</td>
<td>Sealed cells &amp; Built-up area</td>
</tr>
<tr>
<td>254</td>
<td>Unclassifiable pixels</td>
</tr>
<tr>
<td>255</td>
<td>No data</td>
</tr>
</tbody>
</table>

Source: Maucha et al. 2010: 5

3. Method

3.1 Case study area

Historically, geographically, politically and economically, islands are very important for Greece. Their distinctive geographical features (many islands of various sizes, many at considerable distances from the Greek mainland and scattered in space) and unequal development patterns make the North and South Aegean islands municipalities well-suited to study them (Karampela et al. 2014). In this paper, all the 43 distinct cases of municipalities of inhabited islands in the North and South Aegean archipelago are selected (in the North Aegean Region 9 islands municipalities’ and in the South Aegean Region, 34 municipalities, Figure 1).

The case study islands municipalities are of various sizes in terms of surface and population (mean population value 13,154 people and mean area of 213.12 km²). Despite this diversity, as e.g. the biggest town (Rodos) has 152,538 people and the smallest (Agathonisi) 186 people, while the biggest surface area (Lesvos) is 1,639.11 km² and the minimum (Megisti) 11.71 km², the case study area is considered as one geographical unit, studied in its entity. Nineteen international airports operate having domestic or international airports (the latter for charter flights) and at least one port on each island.

1. Agios Efstratios, Fournoi, Ikaria, Lesvos, Limnos, Oinouses, Psara, Samos, Xios
3.2 Scale effect
Scale is a critical parameter with important effects in soil sealing representation (Maucha et al. 2010: 17). Here, we choose a scale compatible with the resolution of the data and the question the paper addresses, the quantitative assessment of urban expansion with the use of soil sealing. In this respect, the working scale is 1/25,000. It is significant to stress that this scale is a common scale for physical planning or local development plans. Geospatial raster dataset of soil sealing provided by the EEA 2006 derive from the aggregated spatial resolution of (100*100m) and of (20*20m). The geographic accuracy of (20*20m) is chosen, as suitable. Spatial particularities according to the study question can be represented in detail in this resolution. In Figure 2, a typical example of soil sealing for Mykonos is presented.

3.3 Indicators
The indicators used to assess quantitatively soil sealing and its impacts are (Table 2); (1) Population of the island, with data from the Population Census for de facto Population (P) in Municipality-level (Hellenic Statistical Authority, 2011); (2) Surface area, which is calculated at the Municipality-level, in some cases it concerns proximate islets of the same municipality; (3) sealed cells raster layer containing continuous values ranging from 1-79 %; (4) Built-up area raster layer containing continuous values ranging from 80-100 % data (for both EEA, 2006); (5) Island soil sealing cover, which represents the percentage of sealed cells the plus Built-up areas that cover the surface area of the islands; (6) Island population density, which represents the
population per km$^2$; (7) Island tourist density, an important index of tourism environmental impacts, which is estimated by the tourist arrivals by sea and air per km$^2$ (Coccossis & Parpairis 1992); (8) Built-up areas compactness Standardized Value, which represents the Build-up surface per Soil Sealing surface. The values have been standardized to provide comparable and more “comprehensible” results, based on the following formula:

$$\text{standardized value} = \frac{\text{value} - \text{mean}}{\text{standard deviation}}$$

4. Results

Island soil sealing cover (Table 2), represents the percentage of both sealed cells and built-up areas. Highest values mean increased percentage of island areas covered by impenetrable material, here considered as an index of man-made pressure. Overall, the values are low for most of the islands, as only for 14 of the 43 studied islands the values of soil sealing cover more than 1% of the total island area. But, for those with high values, important environmental pressures are expected (see also Salvati 2013, Spilanis et al. 2009). The highest values are for Mykonos (11.25%) and Santorini (6.15%), unsurprisingly, since both islands are important touristic destinations and second home locations. The difference seems to be related mostly with second homes, which are much more important for Mykonos than they are for Santorini, as indicated by the tourism density indicator values, which is 13 times greater for Santorini than Mykonos. This extra pressure from second homes appears to be very important for the overall pattern of soil sealing on the case study islands.

For island population density (Table 2), the highest values occurred in Syros (209.79 P/km$^2$), and in Santorini (196.17 P/km$^2$), both relatively small islands (102.37 km$^2$, 90.49 km$^2$ respectively) with different specializations. Syros is an important economical and administrative center as well as a tourism destination, while Santorini a very important tourism destination globally.

Tourist density figures on Santorini (8,690) and Mykonos (5,115) are very high, while even though Rodos receives the highest number of tourists, (1.95 million), the island municipality has a relatively low value of the indicator because of the size of its land area (1,408 km$^2$), reaching similar values with islands such as Symi (1.300 approximately) despite their different absolute numbers (Karampela et al. 2014). On the other hand, islands such us Folegandros and Lipsi, have relatively high indexes values because of their small area size (32.38 and 17.22 km$^2$) despite relatively low number of tourists (32,888 and 8,295 respectively).

Last developed and applied indicator is the standardized “Compactness”, which represents the build-up surface per sealed cells surface. Higher values mean compact settlements. The results illustrate two different cases for high values: on one hand islands such as Agios Efstratios (2.59) and Megisti (2.60), both very small (42.1 km$^2$, 11.71 km$^2$ respectively) and thinly populated (5.91 and 42.37 respectively) with one central compact settlement. On the other hand islands such as Mykonos also with high values (2.20) for a different reason; excessive urban sprawl (Salvati 2013) that have compact created sealed patterns that spread in rural areas.

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<tbody>
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<td>Agathonisi</td>
<td>186</td>
<td>14.42</td>
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<td>0.0168</td>
<td>0.25%</td>
<td>12.90</td>
<td>158.63</td>
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<td>249</td>
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<td>5.91</td>
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<td>0.258</td>
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<td>0.0744</td>
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<td>7.24</td>
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<td>381.40</td>
<td>1.5268</td>
<td>0.9036</td>
<td>0.64%</td>
<td>23.93</td>
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<td>Antiparos</td>
<td>1,196</td>
<td>45.36</td>
<td>0.1776</td>
<td>0.2384</td>
<td>0.92%</td>
<td>26.36</td>
<td>no data</td>
<td>0.67</td>
</tr>
<tr>
<td>Astypaleaia</td>
<td>1,270</td>
<td>113.37</td>
<td>0.1728</td>
<td>0.2032</td>
<td>0.33%</td>
<td>11.20</td>
<td>297.46</td>
<td>0.43</td>
</tr>
<tr>
<td>Folegandros</td>
<td>787</td>
<td>32.48</td>
<td>0.0556</td>
<td>0.0996</td>
<td>0.48%</td>
<td>24.23</td>
<td>1,012.45</td>
<td>1.34</td>
</tr>
<tr>
<td>Fournoi</td>
<td>1,343</td>
<td>45.88</td>
<td>0.1088</td>
<td>0.032</td>
<td>0.31%</td>
<td>29.27</td>
<td>259.29</td>
<td>-0.89</td>
</tr>
</tbody>
</table>

2. The calculation of tourist arrivals by sea and air was based on annual statistics data of disembarked passengers (2011), obtained from the Hellenic Statistical Authority and the Civil Aviation Authority, with the assumption that residents (and not tourists) travel mostly during February, which is one of the months with the lowest peak seasonality of tourism activity. These figures were subtracted by the number of passengers from each month to provide an indication of the number of tourist arrivals, assuming that the number of residents traveling is roughly the same the whole year round (Karampela et al. 2014).

3 Passengers disembarked on ferry-boats, cruise ships and yachts are not included.
## Islands Municipalities

<table>
<thead>
<tr>
<th></th>
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<td>Ikaria</td>
<td>8,431</td>
<td>254.69</td>
<td>0.5672</td>
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<td>0.37%</td>
<td>33.10</td>
<td>230.62</td>
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<td>Ios</td>
<td>2,084</td>
<td>109.77</td>
<td>0.3044</td>
<td>0.1616</td>
<td>0.42%</td>
<td>18.99</td>
<td>916.79</td>
<td>-0.54</td>
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<td>Kalymnos</td>
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<td>134.28</td>
<td>1.0192</td>
<td>1.0544</td>
<td>1.54%</td>
<td>119.70</td>
<td>65.91</td>
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<td>6,748</td>
<td>323.83</td>
<td>1.0032</td>
<td>1.25</td>
<td>0.70%</td>
<td>20.84</td>
<td>270.21</td>
<td>0.53</td>
</tr>
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<td>Kasos</td>
<td>1,070</td>
<td>70.18</td>
<td>0.1268</td>
<td>0.068</td>
<td>0.28%</td>
<td>15.25</td>
<td>83.59</td>
<td>-0.53</td>
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<tr>
<td>Kea</td>
<td>2,480</td>
<td>148.78</td>
<td>0.558</td>
<td>0.6452</td>
<td>0.81%</td>
<td>16.67</td>
<td>455.12</td>
<td>0.40</td>
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<td>901</td>
<td>55.81</td>
<td>0.1412</td>
<td>0.0292</td>
<td>0.31%</td>
<td>16.15</td>
<td>445.60</td>
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<tr>
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<td>0.32%</td>
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<td>159.99</td>
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<td>Leros</td>
<td>7,925</td>
<td>75.62</td>
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<td>1.26%</td>
<td>104.79</td>
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<td>0.98%</td>
<td>52.66</td>
<td>125.71</td>
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<td>Limnos</td>
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<td>478.55</td>
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<td>1.69%</td>
<td>34.99</td>
<td>129.01</td>
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<td>Lipsi</td>
<td>784</td>
<td>17.22</td>
<td>0.1108</td>
<td>0.054</td>
<td>0.96%</td>
<td>45.52</td>
<td>481.63</td>
<td>-0.6</td>
</tr>
<tr>
<td>Megisti</td>
<td>496</td>
<td>11.71</td>
<td>0.042</td>
<td>0.1108</td>
<td>1.31%</td>
<td>42.37</td>
<td>277.46</td>
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<td>167.63</td>
<td>0.846</td>
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<td>29.62</td>
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<td>14,189</td>
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<td>3.532</td>
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<td>11.25%</td>
<td>134.12</td>
<td>5,115.59</td>
<td>2.20</td>
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<td>Naxos</td>
<td>19,303</td>
<td>498.34</td>
<td>1.2524</td>
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<td>0.46%</td>
<td>38.73</td>
<td>655.54</td>
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<td>Nisiros</td>
<td>1,003</td>
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<tr>
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<td>796</td>
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<td>0.1136</td>
<td>0.056</td>
<td>0.95%</td>
<td>44.71</td>
<td>155.81</td>
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<tr>
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<td>198.43</td>
<td>1.7468</td>
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<td>1.47%</td>
<td>69.01</td>
<td>1,211.17</td>
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<tr>
<td>Patmos</td>
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<td>44.93</td>
<td>0.3444</td>
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<td>1.13%</td>
<td>77.39</td>
<td>797.78</td>
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<tr>
<td>Psara</td>
<td>412</td>
<td>44.76</td>
<td>0.096</td>
<td>0.0724</td>
<td>0.38%</td>
<td>9.21</td>
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<td>108.28</td>
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<td>480.05</td>
<td>3.6828</td>
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<td>69.45</td>
<td>424.90</td>
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<td>6.15%</td>
<td>196.17</td>
<td>8,690.61</td>
<td>0.74</td>
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<td>Serifos</td>
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<td>0.0232</td>
<td>0.20%</td>
<td>18.09</td>
<td>623.73</td>
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<tr>
<td>Sifnos</td>
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<td>78.33</td>
<td>0.3904</td>
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<td>0.88%</td>
<td>32.47</td>
<td>969.50</td>
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<td>Sikinos</td>
<td>270</td>
<td>43.27</td>
<td>0.0844</td>
<td>0.0208</td>
<td>0.24%</td>
<td>6.24</td>
<td>163.92</td>
<td>-0.96</td>
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<tr>
<td>Simi</td>
<td>3,070</td>
<td>65.30</td>
<td>0.1812</td>
<td>0.0608</td>
<td>0.37%</td>
<td>47.01</td>
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<td>Syros</td>
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<td>1.1608</td>
<td>2.25%</td>
<td>209.79</td>
<td>1,186.15</td>
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<tr>
<td>Tilos</td>
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<td>0.0336</td>
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<td>0.07%</td>
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<td>-0.81</td>
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<tr>
<td>Tinos</td>
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<td>1.2164</td>
<td>1.0076</td>
<td>1.13%</td>
<td>44.16</td>
<td>1,625.48</td>
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<td>Xalki</td>
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<td>0.14%</td>
<td>19.42</td>
<td>96.12</td>
<td>-1.23</td>
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<td>Xios</td>
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<td>3.7956</td>
<td>1.18%</td>
<td>60.70</td>
<td>128.59</td>
<td>-0.41</td>
</tr>
</tbody>
</table>

Source: Hellenic Statistical Authority (2011), Soil Sealing geospatial data sets: EEA (2006), Civil Aviation Authority (2011), processed by the authors

## 5. Conclusions

The approach presented here on soil sealing is exploratory and provides an overview of “artificialization” on islands. It presents very important advantages and some drawbacks. The advantages include the uniformity of the method that is relatively easy to use and replicate, while providing a very useful tool to map and monitor a number of processes. Exactly here lies an important drawback: it provides only a description of the state and does not shed any light on the processes and their interplans. More data especially spatial, on a number of processes are required, in our case related with second homes - tourism intensity but also with urbanization patterns, size of buildings, type of sprawl etc.
In our case study, tourism is the principal activity developed in the most of the Aegean islands, while expected second homes growth seems to be of importance. Built-up areas expansion, to meet the demand for second houses, hotel investments, tourism infrastructures etc. can be considered as an important environmental, irreversible threat and certainly a more detailed local approach is needed to confirm or reject the results. Obviously the phenomenon does not have the same intensity for all islands. The inability of the spatial planning framework to provide a holistic development answer contributes to the degradation of the local territorial systems with important environmental effects.

6. Acknowledgments

The soil sealing geospatial data sets used is owned by the EEA 2006 (last update 2013) and its use is permitted for commercial or non-commercial purposes free of charge according to the standard re-use policy of content on the EEA. Part of this work is supported by the project: The Integrated Programme for Insularity Research (IPIR) of the programme “The University of the Aegean, the prominent and driving factor for the economic and social growth of the wide Aegean area” of the Operational Programme “Education and Lifelong Learning”, which is co-funded by European Union (‘European Social Fund’) and National Resources.

7. References


Chapter 3:

Spatial Differentiation of Housing Problems in the European Union

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1. Introduction
The housing needs have undoubtedly an overriding importance and are placed at the top of the hierarchy of human needs. Being satisfied with the conditions of living has a huge impact on life satisfaction in general. Unfortunately a few per cent of citizens living in the EU Member States are currently suffering from, so called, housing deprivation, and therefore it means they are dissatisfied with their living conditions. There can be a lot of reasons of this discontent, however, in the authors’ opinions all of them can be divided into two categories: internal (interior) and external (surrounding). The first category concerns the problems connected with the floor area/living space, technical conditions and furnishing, whereas the other one encompasses problems stemming from the location of the dwelling, thus is connected with the residential area.

The reflections on the topic of this elaboration are mostly focused on achieving one goal which is to depict the differences between particular EU Member States, namely, to what extent the people of certain countries dealt with the selected housing problems in 2012. Those problems were presented taking into consideration the classification by causes (direct reasons – internal dissatisfaction with the living conditions and indirect ones – external reasons of discontent with regard to the living conditions). Moreover, in the elaboration the relation between the escalation/intensity of the considered problems in particular countries and the level of economic development in these states was described and suggestions what actions might be taken in order to limit housing problems.

2. Scope of data and methodology of the research
In the research, which embraced 28 EU Member States, the used data comes from the website of Eurostat, the office providing statistics at European level (Population and social conditions – Income, Social Inclusion and Living conditions and social protection).

The severity (degree of intensity) of the direct, namely interior housing problems in particular EU Member States, was determined through calculating the mean value of four selected variables:

- \( X_1 \) – share of total population whose dwelling is in poor condition (leaking roof, damp walls, floors or foundations, damaged window frames and crumbling floors),
- \( X_2 \) – share of total population whose dwelling is not equipped with a bathtub or a shower,
- \( X_3 \) – share of total population whose dwelling is not equipped with an indoor flushing toilet for the sole use of their household,
- \( X_4 \) – share of total population considering their dwelling as too dark,

making use of the following formula:

---

1 There is a range of aspects and different issues which have an impact on the level of life satisfaction. Apart from the housing conditions and the place of residence, among others, the following things have a particular influence on it: career, financial situation and income, family situation, relationships with other people, staying healthy, leisure activities, education and its level, etc. Compare: Jakość życia, p.11; Polacy o swoim szczęściu, p. 3.
2 See in details: The European Platform against Poverty and Social Exclusion, p. 10.
3 Compare: Housing conditions in Europe in 2009.
4 See: Comparative EU statistics on Income and Living Conditions, p. 200.
for \( i = 1, 2, \ldots, n \) where:

\( X_{ij} \) – the value of the \( j \)-variable in the \( i \)-country,

\( m \) – number of the variables,

\( n \) – number of countries.

The severity (degree of intensity) of the indirect housing problems, namely connected with the residential area in particular EU Member States, was determined through calculating the mean value of three selected variables:

- \( Y_1 \) – share of total population whose dwelling is situated in a noisy neighborhood (the noise is made by neighbors or caused by traffic - comes from the street),
- \( Y_2 \) – share of total population whose dwelling is located in a polluted area (messy and filthy surrounding, environmental problems),
- \( Y_3 \) – share of total population whose dwelling is situated in a dangerous area (crime, violence, vandalism),

making use of the following formula:

\[
\overline{Y}_i = \frac{1}{m} \sum_{j=1}^{m} Y_{ij}
\]

for \( i = 1, 2, \ldots, n \) where: \( Y_{ij} \) – the value of the \( j \)-variable in the \( i \)-country.

All of the above variables are destimulants, which means that their higher values translate into worse living conditions (the severity of housing problems is more intense in this respect) and vice versa. In the calculation the selected variables were treated as equivalent (of the same importance).

The results of made calculations allowed to determine the general severity (intensity) of the housing problems in the EU Member States with the use of the following formula:

\[
\overline{Z}_i = \frac{\overline{X}_i + \overline{Y}_i}{2}
\]

for \( i = 1, 2, \ldots, n \) where:

\( \overline{X}_i \) – the severity (degree of intensity) of the direct housing problems in the \( i \)-country,

\( \overline{Y}_i \) – the severity (degree of intensity) of the indirect housing problems in the \( i \)-country.

Pearson’s correlation coefficient (r)\(^6\) was used in order to establish the linear relationship between the particular variables and the coefficient of determination (R\(^2\)) to assess the strength of variables’ impact on the severity (intensity) of housing problems. The coherence of positions of the EU Member States with regard to the severity of direct and indirect housing problems was validated by the value of Spearman’s rank correlation coefficient (\( r_s \)), whereas the differences between them were determined by the variation coefficient (V).

3. Direct housing problems

While analyzing the variables which describe the severity (degree of intensity) of the direct housing problems it can be stated that in 2012 the EU Member States were differentiated mostly by sanitary facilities, namely an indoor flushing toilet \( (X_4) \). The worst situation people faced in Romania and Bulgaria (respectively 37% and 22% of flats were not equipped with a flushing toilet). The best situation was observed in Sweden and the Netherlands where such an installation was a standard facility, therefore all the flats had that kind of toilet. In the analyzed countries the differences also occurred with respect to having either a bathtub or a shower \( (X_5) \). The best situation in this regard took place in Germany, Luxemburg, the Netherlands and Spain (all of the dwellings were equipped with one of these sanitary facilities) and the worst was in Romania where 35% of dwellings did not have a bath or a shower. Relatively the smallest differences could be spotted as concerns the share of population considering their dwelling as too dark \( (X_6) \). The difference between the country in which the percentage of people living in too dark dwelling was the highest (Latvia – 10%) and the states where this percentage was the lowest (Belgium and the Czech Republic – 3%) accounted for 7 per cent points. Among the variables which characterized the severity of direct housing problems, the variable \( X_2 \) had the strongest correlations with others. Thereby, it meant that a higher share of population whose dwelling was not equipped with a bath or a shower was accompanied by a higher percentage of people whose places of living did not have an indoor flushing toilet \( (r=0,978) \). On the other hand, the correlation of the variable \( X_2 \) was the weakest with other variables, and it only had a significant correlation with \( X_4 \). The results of calculations indicate that in 2012 the direct housing problems occurred to the highest extent in Romania \( (23,55\%) \), whereas to the least extent in Finland \( (3,05\%) \). Generally speaking, the higher severity of direct housing problems was observed in

\(^{6}\) The determined correlations were statistically significant (while \( n=28 \) and the level of statistical significance \( \alpha=0,05 \)), when \( |r| \geq 0,374 \).
the ‘newer’ EU Member States and in contrast less intense in the ‘old’ EU Member States (Fig. 1). Nevertheless, it is worth paying attention to Slovakia where the situation was really good and Portugal where surprisingly the situation was relatively poor. In the case of Slovakia it was due to the fact that almost all the dwellings were equipped with either a bath or a shower and an indoor flushing toilet. As far as Portugal is concerned the reasons why the situation was perceived as bad was connected with the significant number of too dark dwellings. The disparity between all the examined countries, measured by the coefficient of variation, accounted for 60%.

**Figure 1.** The severity (degree of intensity) of direct housing problems in the UE Member States ($X_i$)

Source: Own independent elaboration on the basis of Eurostat data.

The severity (degree of intensity) of direct housing problems was primarily conditioned by equipping the dwellings with either a bath or a shower ($R^2=0,855$) and an indoor flushing toilet ($R^2=0,823$) and relatively the least important was the darkness in the dwelling ($R^2=0,203$).

4. Indirect housing problems

The statistical analysis of the variables used to describe the severity (degree of intensity) of indirect housing problems allows to arrive at the conclusion that in 2012 the biggest differences were observed with regard to the location of the dwelling in the area affected by pollution ($Y_2$). The share of population whose dwelling was situated in such an area ranged from 4% in Ireland to 40% in Malta. On the other hand, the smallest differences (the lowest variability) were spotted as concerns the location of the dwelling in the noisy area ($Y_1$) – the share of population whose dwelling was situated in the noisy neighborhood fluctuated between 9% in Ireland and 30% in Malta. Among the variables which characterized the severity of indirect housing problems, the variable $Y_2$ had the strongest correlations with others. Thereby, it meant that a higher share of population whose dwelling was located in the polluted area was accompanied by a higher percentage of people whose place of living was situated in the noisy neighborhood ($r=0,634$). Moreover, the correlation of the variable $Y_3$ was the weakest with other variables.

The results of the conducted analysis allow to state that in 2012 the indirect housing problems primarily occurred in Malta (27.30%) and were the least severe in Croatia (6.73%). The fact that deserves attention is the lack of bigger differences between ‘new’ and ‘old’ EU Member States with respect to the severity (degree of intensity) of indirect housing problems (Fig. 2). It means that in the group of countries where the indirect housing problems were not intense there are both ‘new’ and ‘old’ EU Member States. The disparity between all the examined countries, measured by the coefficient of variation, accounted for 31%.

The severity of indirect housing problems was mostly conditioned by the location of dwellings in the polluted area ($R^2=0,758$), whereas relatively the least important was the location in the dangerous residential area ($R^2=0,376$).

**Figure 2.** The severity (degree of intensity) of indirect housing problems in the UE Member States ($Y_i$)

Source: Own independent elaboration on the basis of Eurostat data.
5. Housing problems in general

Comparing the positions of particular EU Member States with respect to the severity (degree of intensity) of direct and indirect housing problems it can be noticed that there were significant differences between them. The biggest divergence took place in the case of Malta, Lithuania and Germany, whereas the smallest in the following countries: Belgium, Italy, Portugal and Sweden. The coherence of positions of the particular countries, measured by Spearman's rank correlation coefficient, accounted for 0.128. The general severity (degree of intensity) of housing problems in 2012, obtained by calculating the mean value of $\bar{X}_i$ and $\bar{Y}_i$, indicates that the hardest situation was observed in Romania (21.51%), whereas the lowest intensity was noted down in Croatia (6.33%). Taking into account the division of countries into ‘new’ and ‘old’ EU Member States it can be stated that among ‘new’ countries the housing problems in Croatia were the least intense and by contrast, the housing problems in Greece, which belongs to the ‘old’ EU Member States, were the most severe (Fig. 3).

Figure 3. The general severity (degree of intensity) of housing problems in the EU Member States ($\bar{Z}_i$)

Source: Own independent elaboration on the basis of Eurostat data.

The general severity (degree of intensity) of housing problems was primarily conditioned by the higher intensity of direct housing problems ($R^2=0.592$) and to a lesser extent by the intensity of indirect housing problems ($R^2=0.577$).

6. The ways of reducing and limiting housing problems

Limiting housing problems is undoubtedly one of the most crucial socio-economic challenges, which many EU Member States will face in the upcoming decades. It should be signaled here that the relation between the general severity (degree of intensity) of discussed problems in the analyzed countries and the level of their economic development, measured by the value of GDP per capita in 2012, was negative ($r=-0.375^7$). It means that simultaneously with improvement of economic situation, housing problems concern smaller and smaller share of population. Nevertheless, the analysis of distribution of particular countries allows to notice some irregularity and exceptions from the general rule (Fig. 4). Namely, in Slovakia (SK), the Czech Republic (CZ), Poland (PL) and Croatia (HR) the severity of housing problems in general is rather slight comparing with the value of GDP per capita, which is relatively low there. On the other hand, the intensity of housing problems in Luxemburg (LU) seems to be inadequate and disproportionate to the high economic development of this country.

Figure 4. The relations between the value of GDP (in thousand Euros) per capita (x-axis) and the general level of housing problems (y-axis) in the UE Member States*

Symbol ● means newer EU Member States and ▲ stands for old UE Member States

Source: Own independent elaboration on the basis of Eurostat data.

Keeping in mind that a negative correlation between the level of economic development and the severity (degree of intensity) of housing problems is statistically significant, the conclusion can be drawn that unfortunately overcoming the ‘housing distance’, which is a key condition of diminishing differences with regard to quality of life, will be a very difficult task. It does not absolve governments, regional and local

\[7^By contrast, the correlation between a housing standard, measured by a usable space (floor) of a dwelling per capita, and the level of economic development is positive. See in details: M. Gorczyca, p. 98.]
authorities from an obligation and responsibility for seeking adequate solutions and taking appropriate steps, which could lead to limiting and reducing housing problems. The range of possible actions seems to be extremely wide, however, it is really important to find and use such solutions that are feasible, applicable and adequate to current socio-economic and demographic situation in particular countries.

Among others, there are the following proposals: introducing tax incentives (a housing investment break) for companies investing in residential structures in order to boost house-building; zoning (land-use planning) – regulating the use of various areas for particular purposes in order to increase the supply of areas designated to housing construction; creating reasonable legal regulations with regard to granting mortgage loans by banks to the households in order to make these credits accessible to the households with real creditworthiness; increasing government housing (housing projects – a group of homes for poorer families funded and controlled by the local governments) and the number of council flats in order to provide certain households (those which cannot fulfill requirements and apply for a mortgage loan) with a dwelling; housing assistance, for example, in the form of housing allowance for households to help them cope with covering the relatively high and growing housing expenses; housing benefits - the money given by the government to people with no income (or very low income) to help households to pay for the rent (or part of it); introducing various financial instruments, especially different kinds of bonuses and subsidies granted by the government and local authorities in order to improve housing situation and therefore conditions of living of households (e.g. a bonus for saving for a dwelling making use of building societies and savings banks, interest subsidies on mortgage loans, subsidies in the form of redemption of a part of the credit taken for improving the standard of a dwelling, a lump-sum subsidy paid temporarily in order to encourage people to change a cheap and older rental council flat into another, but more expensive one, subsidies covering partly the costs of ventures leading to saving heat in the dwelling, etc.).

7. Conclusions
The results of the conducted analysis indicate that mostly the population of the newer EU Member States struggled and grappled with housing problems in 2012 (the only exception in plus was Croatia). However, apart from a clear division into Western countries and Central and Eastern European ones, it can be also noticed that countries located in the south of Europe (Malta, Greece, Cyprus, Portugal) had more severe housing problems than those situated in the north of the continent (Finland, Sweden, Ireland).

Deliberating on the analyzed direct and indirect housing problems, the conclusion might be drawn that the severity (degree of intensity) of direct housing problems was primarily conditioned by equipping the dwellings with either a bath or a shower and an indoor flushing toilet, whereas the severity of indirect housing problems was mostly conditioned by the location of dwellings in the polluted area. Generally speaking, the positions of particular countries with respect to the mentioned housing problems were similar, although in the case of some countries, namely Malta, Lithuania and Germany, significant differences (divergence) were observed (+/- a dozen or so positions).

Taking into consideration the fact that more serious housing problems are connected with a lower level of economic development in the analyzed countries, the main and comprehensive way of solving the discussed problems, in spite of many possible specific isolated solutions, in the authors’ opinion, should be elaborating and implementing pro-housing policies being the part of country development strategy – especially in those countries where, in the light of conducted analyses, the housing problems are the most serious and severe.

8. References

Dominiak, W. „Intervencjonizm w sektorze mieszkaniowym w krajach Europy Zachodniej,” Sprawy Mieszkaniowe 1993, No. 4.


Gorczyca, M., „Rozwój mieszkaniwstwa w Polsce na tle wybranych krajów, Wiadomości Statystyczne 2009, No. 5.


Polacy o swoim szczęściu, pechu i zadowoleniu z życia, Komunikat z badań, Warsaw: CBOS (The Public Opinion Research Center), January 2014.


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9 It is worth mentioning here that consumption expenditure of households on housing and electricity as a percentage of total household consumption expenditure is in the ‘new’ EU Member States slightly lower than in the ‘old’ ones. Own independent elaboration on the basis: Europe in figures, p. 230.
Chapter 4:

Reviewing the Housing Market- Submarkets from a demographic perspective

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Abstract:
A large volume of European studies exist in relation to future demographic change and the housing market. In these studies it is explained quite clear that housing prices will be significant affected by a decreasing population. In all of these studies however it is supposed that the housing market is single and unitary. At the same time, the existence of housing submarkets is supported by numerous studies but the main interest was in the definition process. Housing submarkets are considered important in the understanding of different social phenomena. This paper is an attempt to review the relationship between housing prices and demographic change and reveal the theoretical gap that currently exists in relation to demographic change and its effect on housing submarket prices.

Introduction
There are a growing number of studies related to the future demographic development of the European continent. Authors do not look very optimistic, and they all agree that by the year 2050 the European population will decline in total numbers (see Kligholz R., 2008; Bermingham J.R., 2001; McMorrow and Roegers, 2004).

Decreasing total population, birth and fertility rates and immigration inflow are only some of the future demographic developments that are expected to affect the economic performance of many European countries. Many social aspects will feel the impact of this change such as the pension, health and nursing care insurance systems. To that respect numerous studies have been conducted. On the other hand, little attention has been given to other areas, such as the real estate market at the regional level. Real estate market and the demographics are two areas highly related. Their relationship was first acknowledged in the seminar work conducted by Mankiw and Weil (1989).

Housing prices differ considerably between countries and regions\(^{57}\). These differences have been attributed to the general economic performance and the conditions of the country. But prices also differ between municipalities, cities and even between neighborhoods that are closely attached to each other. On the local level, price variations have been attributed to income, demographic variables, governmental policies, the house quality and living standards. On the regional level, price variations have been attributed to travel distance, travel costs, the transportation system etc. The literature however reveals that when the relationship between demographics and the housing market is examined, the real estate market is assumed to be a coherent market. In reality, the real estate market is composed from a set of different housing submarkets (Pryce, 2005).

There are studies dealing with housing prices and their relationship to socio-economic and geographic variables, but they suppose that the housing market is coherent. There are also studies that attempt to investigate housing prices and housing characteristics and the end goal is the definition of the submarket. The existing economic and geographic literature highlights the existence of housing submarkets. At the same time, the same literature has stressed the importance of socio-economic variables as significant controlling factors in the interpretation of housing price variations.

In this paper we argue that the housing market should not be considered as a coherent market. We argue that the housing market is composed by a set of smaller submarkets with different dynamics and characteristics. Housing market indicators tend to be at their least meaningful when highly aggregated (at the national or regional level) and their least reliable when disaggregated to the local level. At the highest levels, the indices suffer from aggregation bias associated with pooling prices from different markets. At the local level, where sample sizes are smaller, price changes are often a result of differences in what has been sold between reporting periods rather than any substantive change in underlying market conditions. This practice exemplifies a more general problem in housing market analysis.

Talking about the housing market is actually rather unhelpful. This masks the fact that, even in a buoyant market, there are some neighborhoods where prices have remained flat or have fallen, in some neighborhoods in some parts of the country prices continue to rise. The reality is that there are many markets and that the geography of the housing market (markets) is extremely complex. We make an attempt to review all the known bibliography related to the relationship between changing demographics and the housing market as well as to the definitions of submarkets.

\(^{57}\) It has been noted that housing prices differ more than prices of commodities (see for example Tabuchi (2001) for Japan). A considerably big volume of studies have investigated price disparities and concluded that in recent years these disparities tend to become larger (Ley and Tutcherener, 2001).
1. One Housing Market or Many Housing Markets?
The analysis and the definition of housing submarkets at varying spatial levels had always been the basic starting point in the investigation of socio-economic related phenomena (Lees, 2008). Social aspects that are investigated based on the theory of housing submarkets are social inclusion or exclusion, regeneration of neighbourhoods, neighbourhoods-attitude with people from varying ethnic background and neighbourhood dynamics. Ultimately, these studies and empirical works provided a basic framework for the adoption of policies from local governments (Lees, 2008; Lupton & Tunstall, 2008). Studies related to housing prices and their effect on the economy, as well as the socio-economic impact on prices has never been more apparent since neighbourhood and cities in general are constantly changing. This last point is supported by a big volume of literature (Kaplan, 2009; Lindh & Malberg, 2005).

At the same time and following the early literature, the relationship between real estate prices and social change is well established and to that respect there is a rich theoretical background (Grigsby et al., 1963; Rothenburg et al., 1991). However housing submarkets must be defined, because they provide a very strong framework based on which researchers and policy makers can better understand the processes that lead to segmentation, and shape the fundamental structure of modern cities (Maclennan, 1982; Meen & Meen, 2003; Galster et al., 2000).

2. Theoretical Background
Two basic explanations are given for the existence of housing submarkets. One suggests that, submarkets exist because the real estate market exhibits multiple states of equilibrium (Goodman, 1978). In other words, each submarket is located at a specific time, which is different from that of another submarket, at its equilibrium state. This assumption works in accordance with the mainstream and dominant economic approach. On the other hand, the second approach that explains the existence of housing submarkets suggests exactly the opposite, and that is housing submarkets tend to exhibit different disequilibrium stages (Maclennan et al., 1987). Two variables that are dominant among those which affect housing prices are search and information costs. Both variables, tend to be absent from most models that have been employed by researchers in the academic literature and not only. These variables make the concept of equilibrium inappropriate to be assumed in an analysis of the housing system. Furthermore, the hypothesis regarding the stage of equilibrium is that the housing market “clears” very quickly but this does not occur for a number of different reasons. One of these reasons is the durability characteristic of the housing stock, which makes the adjustment process very slow. Another reason is the financial or psychological costs that come with the relocation of the household.

Households have the desire to relocate near friends or family, near schools or to workplace and this brings costs associated with the collection of information and time since the procedure of comparing residencies which are quite different is really time-consuming and costly. As a result the characteristic of individuality prevents the housing market from “clearing” quickly (Pryce, 2005).

Regardless the reason, housing submarkets exist because there are many factors that have an effect on prices. These factors affect prices differently and have as a result the creation of groups of residencies that respond similarly to the same attribute change (due to heterogeneity) (Bourassa et al., 1999). Each group includes households who share common characteristics. On the other hand, a similar categorization and segmentation can be achieved for the housing stock based on the characteristics and the attributes of each house. The housing stock is then segmented into groups and each group includes houses that are considered to be close substitutes.

Following the prevailing theory of access-space and the theory of supply and demand, each house has a bundle of attributes that make it more or less desirable among households. It’s not the house itself, but the different attributes that are entailed in the house the reason that makes it more or less desirable (Muth, 1969; Jones et al., 2005a; Pryce, 2005). Based on this assumption, Maclennan et al. (1987) states “the housing stock is subdivided into distinct product – groups”. In these groups however it is assumed that the houses are homogeneous which in reality is not true. Grigsby (1963) in his early analysis of housing submarkets identified this difficulty related to the definition of the submarket and its spatial boundaries.

There are a number of different constraints regarding market adjustment. Neighbourhood attachment is one of these constraints as Munro&Lamont (1985) noted. In a study conducted for Glasgow, Jones et al., (2005a), analyzed the intra-urban relocation trends and concluded that many people choose to live in the same submarket after relocating. Only the city centre which gathers mainly ‘executive’ flats inside warehouses had more than 50% of its buyers from outside. This is one of the basic characteristics of housing submarkets and its attractiveness to buyers who are new to the city. Furthermore, it gives evidence of the existence of housing submarkets based on prices. These factors affect prices differently and have as a result the creation of groups of residencies which are quite different is really time-consuming and costly. As a result the characteristic of individuality prevents the housing market from “clearing” quickly (Pryce, 2005).

Another constraint is related to the fact that consumers always seek to benefit from lower prices (Kauko, 2001). This occurs because the act of purchasing a house is both consumption and an investment act. Households seek to benefit from the dwelling purchase and have future capital gains expectations. However, due to transaction, information and search costs an adjustment is quite difficult to be achieved. In general, buyers are poorly informed regarding the dynamics of the market and even less informed regarding the available options they have in dwellings. This disadvantage can be overcome if they start gathering information regarding the market but this process is quite expensive and time consuming (Maclennan et al.,

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56 Based on the economics definition, equilibrium is state which is achieved when economic forces (supply and demand forces) are balanced and factors that can alter this stable relationship do not change (Sheffrin M.S., 2003, ‘Economics: Principles in action’).
1987). This is the reason for which households do not relocate to a new submarket. Instead they prefer to stay in the same submarket. To that event, significant is the role of agents. Agents are responsible to distribute information for dwellings while at the same time they contribute in the real estate segmentation (Palm, 1978).

Another contribution of agents, in collaboration with professional groups of the real estate market and plan pricing strategies for the sellers and consumption strategies for buyers (Smith et al., 2006). The contribution of agents in the development and definition of housing submarkets, their role in the demand and supply curve as well as the effect on future housing prices is missing from the academic literature (Evans, 1995).

Housing submarkets can also be divided based on administrative boundaries. In the academic literature two distinctive kinds of boundaries have been identified (Clapp & Wang, 2006; Maclennan et al., 2006). The two distinctive categories are “hard” boundaries and the “soft” boundaries. “Hard” boundaries are boundaries set based on political and administrative boundaries. They help in gaining knowledge about the quality of public services and their significance in future housing price dynamics (Cheshire & Sheppard, 2004a). On the other hand, “soft” boundaries are set by market interactions. They reflect the influence of information and agent activity as well as other economic shifters to housing prices. (Clapp & Wang, 2006).

In conclusion, the above described difficulties make the definition and understanding of housing submarkets a very hard process. The basic assumptions stated in the mainstream housing theory are halted by social, cultural and institutional factors. Since societies are constantly changing in every spatial level, submarkets are changing accordingly. This brings new challenges to further explore them. Submarkets can reveal information regarding the asymmetries in adjustment to local shocks (migration, environmental shocks etc), interact with variables such as employment, transportation and criminality and provide information regarding the value of amenities and the consumer behaviour (Bates, 2006; Fryce, 2005). For all the above reasons, submarkets definitions is considered important and a valuable tool in policy maker’s hands.

3. Reviewing the effect of demographic change to Housing Market Prices

“Capitalism has never flourished except when accompanied by population growth and it is now languishing in those parts of the world where population is stagnant” (Longman P., 2004). The relationship between housing prices and demographic variables has attracted a lot of interest in the past. A correlation has been identified between specific age cohorts and real housing prices in the U.S. by Engelhardt & Poterba (1991) with the use of time series data. Later on, Bergantino (1998) establish the same relationship by using data from the Survey of Consumer Finances. More specific, he managed to establish the link between real stock prices and aggregate demand for financial assets. Similarly, Brooks (1998) presented evidence that there is a positive correlation between stocks, bonds and people that were currently at middle-age.

In the field of housing demand, Ermisch (1996) found out a strong correlation between the demographics and the housing services demanded while Lee et. al. (2001) in his study for the housing demand in Austria proved that demand is affected by demography. It is one study related to housing demand from Neuteboom and Brounen (2007) predicted that there will be an increase in housing demand which is strongly affected by the household age. Same results were presented by Eichholtz and Lindenthal (2007) about demographics and housing demand. Their study area was English households while their research showed that human capital is strongly correlated to the housing demand. Another important conclusion reported in their study was that variables like education affect the demand positively and that variables like chronic illnesses have a negative effect.

Based on the above studies the question born is how future housing prices can be estimated, how prices are affected by demographic changes, in what direction and of course what other factors must be taken into account in such an analysis. Theoretically, real housing prices are shaped by the willingness of households to pay for a quality house to the willingness of suppliers to supply the same quality house (Green & Hendershott, 1996).

To that respect milestone study on the analysis of housing prices investigating at the same time the relationship between housing prices and population was the seminal work from by Mankiw and Weil (1989).

The two researchers from Harvard analysed the relationship between house prices and age structure based on the households of age 25-40 which they considered to be the basic variable that shapes the owner-occupied housing. Their study showed that after 1990 the U.S. housing demand will be affected negatively because the total population in U.S. is ageing and this will cause housing prices to drop dramatically. Mankiw and Weil (1989) prediction over the decline of housing prices never occurred and this created a big debate among researchers which continues till today.

Some suggest that other factors appeared which affected the model that couldn’t be foreseen. Others suggest that in a model very strictly specified, the age construction variable disappears. Such an argument was supported mainly by Engelhardt and Poterba (1991). Peek and Wilcox (1991) in their study suggested that interest rates and construction costs are more dynamic variables than income and population although there is

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59 “The housing markets of Poland, Russia, Hungary, Germany and Austria, for instance, are exposed to declines in population of up to 20% in the coming 40 years” (United Nations (2007) cited in Eichholtz and Lindenthal (2007)).

60 Eichholtz and Lindenthal (2007) made use of the model proposed by Green and Hendershott (1996) concerning future housing demand. Their additions were that they used their variables more carefully and they separated them in life-cycle variables and cohort – variables. They also made use of a very detailed micro-dataset which included over 900 variables (two thirds of the variables were describing house characteristics while the rest one third described household characteristics). Finally, their data was describing English houses and households, something that is very important since the European empirical studies are quite limited and also the European environment is very different from the one that exists in the U.S.
an obvious correlation with housing prices. Others suggest that with a few adjustments the predictions can be quite decent. Such an adjustment was made by Swan (1995) who claims that the variable of demographic demand of the model is problematic because it doesn’t measure the actual demand but double counts the U.S. population. Moreover, the model ignores the real income growth.

Wallace (2001) found similar trends for the housing market in UK in the late 1990s. Again, the housing market in UK recovered showing that despite the ageing population there are other factors that should be considered in order to extract as much as possible reliable results. The same year, Barclays Capital (2001), made a report for the U.S. interest rates and how they are affected by the different population age groups. Their study showed that interest rates are affected positively by demographic change and specific age cohorts. But in Booth et al. (2000) the Barclays model is seen with scepticism. More specific, Barclay’s model considers certain that an increase in interest rates occurs because of demographic changes (Booth, et al., 2000).

A great number of models have been developed for the analysis of the housing market something that reveals the complexity of the market itself while at the same time these models gave birth to a number of different debates (e.g. Barclay’s model). In addition, there are plenty variables that affect the housing market and each variable importance depend on the results and the researcher’s point of view. The housing market as an overall has been quite extensively investigated on the local or the country level. Studies related to housing submarkets, on the other hand, are very rare on the local or regional level.

A number of studies exist to support the idea that ageing population combined with the low fertility rate will cause house prices to decrease. Myers (1987) made the argument that ageing Baby Boomers will push housing values to lower levels than before in the U.S. His study was based on the fact that real housing prices are highly correlated with the existence of a sufficient number of bidders to support prices. Myers (1987) also suggested that lower housing prices would occur eventually but this is not a fact. Fact was that lower demand would occur with great certainty and this will probably lead to lower housing prices.

Braus (1995) noticed that real housing prices increased dramatically during the 70s and the 80s due to the Baby Boom generation. Also Hendershott (1991) suggested that real housing prices due to the forthcoming demographic changes will fall unless we see a significant growth61. Last but not least, a similar study on the Japanese housing market conducted by Ohtake & Shintani (1996) suggested that in the long term the ageing population is going to have a major effect on the housing stock and not on the housing prices but in the short term housing prices will be affected until the market starts its mechanism to stabilize the impact.

In addition, in a study made by Hamilton (1991) it was suggested that population ageing is only capable to affect rental prices and not real prices. Hamilton’s (1991) study, concluded that rental prices and housing prices may move to opposite directions because housing prices depend on user costs and future capital gains while rental prices depend only on user costs. Finally income is a factor strongly correlated with the housing values and must be thoroughly explored. But Swan (1995) disputed the income importance. Swan in his study examined other studies that supported the first notion (house prices will fall) and concluded that demand was not calculated as it was supposed to and by using overall population numbers that are closely correlated with adult population, leads researchers in establishing a connection with income as a determinant factor.

4. Conclusion

In conclusion, it can be easily understood that theoretically as well as in reality, housing submarkets do exist while at the same time a large amount of techniques have been developed in order to define them. However, the relationship between housing submarket prices and demographic change haven’t been analyzed at least to the author knowledge and based on the literature available. In the papers previously mentioned only in some cases is reported that the sample based on which the analysis was conducted are detached houses. Taking into account the benefits of an analysis on housing submarkets that have already been mentioned previously, we believe that the impact on housing submarket prices from the demographic change should be further investigated.

5. References


Booth P., Cooper D., and Stein G., 2000, “The Impact of demographic change”,

61 Hendershott (1991) was also one of the first critics in the much debated article published by Mankiw and Weil (1989). He questioned the model of Mankiw and Weil (1989) and its results while he challenged the datasets used and specifically their quality. Hendershott (1991), recalculated the model using subsets of data from the U.S. Census and found out that future prices does not fit the house price trends (R-squared = 0.03). He concluded that in-sample forecasting power can’t give reliable results and these results cannot be generalized for the total population.
European and International Dimensions & Perspectives


Section 4: Social Economy Innovations and Sustainable Communities
Chapter 1:

Social Economy Innovation and Sustainable Local Development

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Abstract:
Social innovation has a crucial role in addressing some of the most pressing issues of our time (Murray R. et al, 2010), such as poverty alleviation, financial literacy, human rights, education, access to clean water, renewable energy and many other important matters. Stimulating innovation as well as entrepreneurship and the knowledge-based society are at the core of the Europe 2020 Strategy. Nowadays, social issues are being brought to the fore, as the EU currently is engaged in a new growth strategy for a smart, sustainable and inclusive Europe by 2020.

The current attractiveness of social innovation stems from the fact that it can serve as a context for inventing and incubating solutions to social challenges in a creative and positive way (European Commission, 2013). It covers wide fields which range from new models of childcare to web-based social networks, from the provision of domestic healthcare to new ways of encouraging people to exchange cars for bicycles in cities, and the development of global fair-trade chains.

The aim of the present work is to provide an overview of the literature regarding the crucial notions of social innovation and social economy innovation, their linkages with sustainable local development and the main processes for identifying and fostering innovation in the social economy. The application of assessment and measurement methods is also examined, as well as the emerging perspectives from the current EU policies.

1. Introduction
Innovation in the social economy is expected to play a central role in the future covering the significant gaps/problems which capitalism has created during the last 30 years in local communities of even “wealthy” countries of Europe. Especially in the last decade we see that the common definition of economic growth leaves outside the phenomenon of increasing poverty in many parts of the social community. More and more people even if they are in the official statistics registered as employed are living at the limit of poverty. At the same time in many countries the provided social services of the government are becoming reduced with the argument of “flexible economy” and “corporate competitiveness”.

Social innovation approaches are notably innovations in the internationally recognized Oslo Manual62 by OECD, but whose primary goal is to create social change. Compared to mainstream innovations, ‘social innovations’ are critically driven by an extra motive: a social mission, and the value they create is necessarily shared value, at once economic and social. Similar to the life cycle model of the classic innovation, we can distinguish between the different stages: novelty, dissemination, maturity, decline (Bouchard M., 2013).

Another approach of defining the process of social innovation is made by the TEPSIE consortium. They describe six stages, which are: Prompts – proposals – prototypes – sustaining – scaling and systemic change. Social innovation is both a business and societal opportunity, based on the fact that the most important sectors for growth in the next decades are linked to the development of human and social capital. For example, health already represents a large share of GDP in most countries. The European Union has an important role to play in accelerating the field of social innovation.

2. Defining Social Innovation
Schumpeter (1934) referring to economics, put forward the idea that: “the main driving force behind economic development is innovation, i.e. qualitative change endogenously generated in the economic system, which has inspired thinking along these lines for generations”. Social innovation is an emerging field; which remains ill-understood and poorly researched in comparison to its counterparts in business, science and technology. Much of the literature on social innovation draws from economics (especially around public finance); management studies (especially in the US); business and technology innovation (especially with regards to knowledge diffusion and the process of innovation); and social anthropology, sociology and politics (especially as relates to social movements and power). Social innovation does not have fixed boundaries; it cuts across all sectors (the public sector, private sector, third sector and household) and cuts across fields as diverse as energy, health and housing (Young Foundation, 2010).

62 Oslo Manual: Guidelines for collecting and interpreting technological innovation data comprised by OECD
The emerging field of social innovation is rich and varied – from new models of learning and eldercare to new ways to reduce waste, empower communities and transition to a low carbon economy – and there are many organisations and individuals engaged in the development and use of social innovation across Europe.

According to Gaulier-Grice et al. (2010): “Social Innovations are innovations that are social both in their ends and in their means. Specifically, we define social innovations as new ideas (products, services and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations”. However, further specification is needed in order to determine the attributes of social needs (which we consider as approximation of innovation demand) and social means (considered as innovation supply) in order to ensure a good level of understanding of what social innovation can achieve – and how it can be developed competently.

Westley and Antadze (2010) define social innovation as “a complex process of introducing new products, processes or programs that profoundly change the basic routines, resource and authority flows, or beliefs of the social system in which the innovation occurs. Such successful social innovations have durability and broad impact.” In line with this approach and in representing the evolution of a single innovation from idea to maturity, the concept of adaptive cycle is used, providing a heuristic for understanding the dynamics that drive both continuity and change, and includes release (through creative destruction), conservation, growth, and reorganization stages (Young Foundation, 2010). The key aspect for innovation success is the capacity of innovators (individuals and organizations) for moving through all stages continuously in a loop, without being trapped (locked-in) in transitions.

Based on the survey of current approaches, the TEPSIE63 consortium (2012) defined a set of core elements, which is regarded as important to be present in any social innovation: 1) The goal of social innovation is to meet a social need defined as (potentially) causing serious harm or socially recognizable suffering 2) Social innovations are new to the field, sector, region, market or user (but not necessarily unique or original), or are applied in a new way 3) Social innovations are practice-led from idea to implementation, i.e. not only promising changes but actually making them happen 4) Social innovations are process innovations, they enhance society’s capacity to act, empower beneficiaries by creating new roles and relationships, developing assets and capabilities and/or better use of assets and resources. Dimensions of social innovation include: modes of participation in the innovation process, e.g. bureaucratic (through formal channels), interactive (through events), new values promoted through the innovation (equality, freedom, integration), creativity, or the techniques used to develop new ideas (design thinking, brainstorming), learning, its mechanisms and assessment tools used (evaluation experts, participatory evaluation), knowledge aspect, i.e. mechanisms to accumulate information and share knowledge (computer systems, regular meetings, sporadic meetings), structure of cooperation, which can be through organizational proximity (types of partners) or geographic proximity (regional, state, international), financing and the sources of funding (public, private, mixed, own resources). Modes of social innovations are differentiated according to the primary tools of change such as technological: new technologies introduced, political/ institutional: new regulatory frameworks (laws, regulations), organizational: changes in organizations or new organizations, cultural: changes in behavior, attitudes or perceptions of target groups. Social innovations typically go through stages and the process of innovation should follow specific paths in order to be established in a systematic and controlled way to achieve concrete results.

2.1 The process of social innovation

A representative depiction of the innovation process flow according to the European Commission (2013) comprises the following steps: They start as ideas, which may then be piloted or prototyped. If successful, there is a process of sustaining the new model in the implementation stage – perhaps as a new venture or as a new policy within an existing institution. The final stage is to scale up so that the new approach makes a real impact and becomes part of the norm.

The development of social innovation ideas into the actual implementation of innovative processes to address social challenges is not linear and requires different types of support along the way, so the life cycle of social innovation is another important issue to take into consideration if frameworks and support structures are to be effective (European Commission, 2011).

Research on the development of social innovation has identified six different stages from the realization of the need for change to the production of systemic changes. First the idea emerges, the problem is diagnosed and the question is framed in such a way that not only symptoms (e.g. battered women) but root causes (e.g. gender inequalities) are tackled. The second stage is to generate ideas on ways to deal with the identified problem (e.g. brainstorming with stakeholders, examples from other regions or sectors). The third stage involves validating the ideas through pilot projects with feedback from users and experts (e.g. test integrated programmes for schooling assistance in a small number of schools with high rates of early school-leavers and for violence in classrooms in deprived neighbourhoods). The fourth stage is about moving from the pilot to a securely established social innovation by identifying a legal and fiscal form and income streams to ensure the long-term sustainability of the social enterprise, NGO, charity or community that will carry the innovation forward. The fifth stage concerns the spreading of the social innovation with documented results to

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63 TEPSIE is a research collaboration between six European institutions aimed at understanding the theoretical, empirical and policy foundations for developing the field of social innovation in Europe. The project explored the barriers to innovation, as well as the structures and resources that are required to support social innovation at the European level.
a larger group or to other communities or countries. The sixth and last stage is when entirely new ways of thinking and doing are put in place. It usually involves many elements (social movements, business models, laws and regulations, data, research and infrastructures) and actors from all sectors (public, private, profit and non-profit, informal), e.g. the reduction of CO2 emissions has been driven by the green movement, upheld by politicians and governments through regulations and rules and the development of new services, research and development of clean technologies, the development of pilot projects, businesses measuring their carbon footprint and creating environmentally friendly products, and citizens changing their ways.

3. Measuring Social Innovation
The measurement of social innovation activities and their impact stand out as one of the key dimensions for advancing Social Innovation, both at a regional and organizational level (European Commission, 2012). Determining indicators of Social Innovation is a complex task due to the fact that are no explicative models of Social Innovation, yet, from which variables and indicators could be derived that permit the estimation of causal relationships. There is also no statistical set of data available, and without that, no robust or reliable indicators results of Social Innovation can be obtained, either. Till now, the development of indicators of Social Innovation is an experimental task that requires adjusting approaches and concepts, serial measurements (e.g. annual), comparative studies with other regions and case studies to consolidate a system of regional indicators of Social Innovation.

The RESINDEX\(64\) (Regional Social Innovation Index-2013) is a social innovation measuring model at a regional scale, a pilot experience in Europe in this field which identifies the capacities of the organisations to develop social innovation projects. All type of organisations may take part in these projects (businesses, non-profit organisations, universities and technological centres). The problems addressed by social innovation are multi-causal and therefore require different agents for their solution. The model is built around three indices:

- a) Potential Capacity for Innovation Index: This index is a synthetic unit of measure made up of five capabilities for innovation: knowledge, learning, internal socialisation, external association and development.

  **Table 1: Potential Capacity Index by agent**

<table>
<thead>
<tr>
<th></th>
<th>Capacity for Knowledge</th>
<th>Capacity for Learning</th>
<th>Capacity for Socialisation</th>
<th>Capacity for Development</th>
<th>Capacity for Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Businesses</td>
<td>MEDIUM</td>
<td>HIGH</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>LOW</td>
</tr>
<tr>
<td>Non-profit Organisations</td>
<td>MEDIUM</td>
<td>HIGH</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>Universities</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>Technology centres</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>REGIONAL</td>
<td>MEDIUM</td>
<td>HIGH</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
</tr>
</tbody>
</table>

*Source: RESINDEX 2012 Survey, SINNERGIAK – INNOBASQUE (2013)*

- b) Social Orientation Index: This index is a synthetic unit of measure made up of four factors in the implementation of social projects: knowledge acquisition, development of social projects, impact of social projects and governance on social projects.

- c) Social Innovation Index: This index is a synthetic unit of measure made up of four factors in the implantation of innovative social projects (projects that have generated new or improved products, processes, methods and/or services): knowledge acquisition, development of innovative social projects, impact of innovative social projects and governance of innovative social projects.

  **Table 2: Social Orientation Index by agent**

<table>
<thead>
<tr>
<th></th>
<th>Acquisition of Knowledge</th>
<th>Development of Social Projects</th>
<th>Impact of Social Projects</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Businesses</td>
<td>LOW</td>
<td>LOW</td>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>Non-profit Organisations</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>LOW</td>
</tr>
<tr>
<td>Universities</td>
<td>LOW</td>
<td>LOW</td>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>Technology centres</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>REGIONAL</td>
<td>LOW</td>
<td>LOW</td>
<td>LOW</td>
<td>LOW</td>
</tr>
</tbody>
</table>

*Source: Source: RESINDEX 2012 Survey, SINNERGIAK – INNOBASQUE (2013)*

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64 RESINDEX is a pilot project, as part of a larger initiative to evaluate innovation in the Basque Country by INNOBASQUE (Basque Agency for Innovation), and which was directed and developed by SINNERGIAK Social Innovation (UPV/EHU) in collaboration with INNOBASQUE.
3. Defining Social Economy Innovation

The innovative potential of social economy is justified generally on two factors (Young Foundation, 2010): 1) The constraint of limited distribution of financial benefits and assets which leads the organizations to develop products (including services) which have a strong public good component and 2) The wider functions of social economy in relation to social principles such as connected with market based components (cooperatives and mutual societies). The social economy can be an important vector for the different types of innovations developed by Schumpeter (Bouchard M., 2013). Community housing and domestic help services are areas where such innovation can be illustrated, as in the following Table:

Table 4: Examples of Social Economy Innovations

<table>
<thead>
<tr>
<th>Innovation</th>
<th>Domestic Help</th>
<th>Community Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Products and Services</td>
<td>Household cleaning services and domestic help offered to the entire population</td>
<td>Private rental housing at an affordable price</td>
</tr>
<tr>
<td>New Openings</td>
<td>Creation of qualified jobs with good working conditions, Poorly served clientele to date (e.g. the elderly, those with limited autonomy)</td>
<td>Collective overseeing of housing needs in decaying neighbourhoods, Mixed or marginalized clientele (single-parent families)</td>
</tr>
<tr>
<td>New Organizations</td>
<td>Creation of cooperatives and non-profit organizations with a board of directors composed of volunteers</td>
<td>Cooperatives that are the collective property of tenant-users, Non-profit organizations that are administered by citizen members of the local community</td>
</tr>
<tr>
<td>New Procedures</td>
<td>Partnership with the public health sector and social services price setting according to household revenue, tax credits for the elderly</td>
<td>Joint construction of offer and demand by the users of housing and by professionals of the sector, Co-construction of public policy with public authorities</td>
</tr>
</tbody>
</table>


According to the work of Murray R. et al (2009), three basic approaches are considered for generating social economy innovation: social economy as a hybrid economy (the sphere of the economy directed at social needs and aspirations not adequately met by the market), dynamic not static and multidimensional innovation. In the context of multi-dimensional innovation four dimensions of social innovation are mainly applicable: i) innovation in spheres of social economy and inter-relationships, ii) innovation in organisations of social economy, iii) innovations in the process of social innovation and iv) transformative social innovations.

5. Social Economy Innovation and Local Development

Social Economy Innovation sustains an important field of social innovation which is directed linked to sustainable local development (Xavier G, 2008).

The social economy offers an approach to local development, which provides potential for a new vision and additional elements compared to traditional approaches. The innovative social economy practices enhance the local economy and labour market by addressing unmet needs and producing different products/services. As a result, the social capital grows stronger contributing in the widening of the local development process focus by taking into consideration the variety of its dimensions.

The added value which stems from the diffusion of social economy in a certain community is linked to:

- Its neutrality in relation to the interests in place and therefore its capacity to introduce elements of sustainable transformation
- Its capacity to pursue several objectives simultaneously and thus to assume an essential multidimensional development strategy
- Its ability to correct biases in certain sectors
The engagement of local partnerships, associations and social enterprises in tackling unemployment, which at the same time support local service provision, contributed in a new generation of inefficient and dependent organizations where support structures are as only slowly come into force.

The connection of theories that shed light on the dynamics of social innovation in local development to specific experiences of resistance against social exclusion, movement dynamics and innovative emancipatory strategies is a significant step in the analysis of human development at the local level (Moulaert F., 2005). The combination of institutional and strategy analysis allows for the mobilization of the analysis of structural change towards a specific social innovation strategy. This approach also allows for the use of multidimensional approaches to human development and explains the need for economic variety in territorial development. In doing so, it helps overcome the existential unilateralism in which territorial innovation models for local development such as the learning region are rooted.

6. Challenges and Barriers of Social Innovation

The new European strategy, EU 2020, which replaced the Lisbon Strategy in 2010, recognizes the importance of ‘empowering people in inclusive societies’ and ‘creating a competitive, connected and greener economy’ and ‘creating value by basing growth on knowledge’ (Sullivan C, 2012).

Table 5: Unemployment, Youth Unemployment and NEET indicators 2013

<table>
<thead>
<tr>
<th></th>
<th>Unemployment rates in %</th>
<th>Youth unemployment rates in %</th>
<th>Youth unemployment (thousands)</th>
<th>NEET rates 15-24 in %</th>
<th>NEET 15-24 (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>10.4</td>
<td>23.4</td>
<td>5 611</td>
<td>13.0</td>
<td>7 345</td>
</tr>
<tr>
<td>BE</td>
<td>8.4</td>
<td>23.7</td>
<td>97</td>
<td>12.7</td>
<td>168</td>
</tr>
<tr>
<td>BG</td>
<td>13.0</td>
<td>28.4</td>
<td>65</td>
<td>21.6</td>
<td>167</td>
</tr>
<tr>
<td>CZ</td>
<td>7.0</td>
<td>18.9</td>
<td>69</td>
<td>9.2</td>
<td>104</td>
</tr>
<tr>
<td>DK</td>
<td>7.0</td>
<td>13.0</td>
<td>57</td>
<td>6.0</td>
<td>43</td>
</tr>
<tr>
<td>DE</td>
<td>5.3</td>
<td>7.9</td>
<td>356</td>
<td>6.3</td>
<td>358</td>
</tr>
<tr>
<td>IE</td>
<td>8.6</td>
<td>18.7</td>
<td>11</td>
<td>13.3</td>
<td>17</td>
</tr>
<tr>
<td>IT</td>
<td>13.1</td>
<td>26.6</td>
<td>37</td>
<td>16.1</td>
<td>86</td>
</tr>
<tr>
<td>PT</td>
<td>27.5</td>
<td>55.5</td>
<td>176</td>
<td>20.6</td>
<td>219</td>
</tr>
<tr>
<td>ES</td>
<td>26.1</td>
<td>55.5</td>
<td>951</td>
<td>18.6</td>
<td>832</td>
</tr>
<tr>
<td>FR</td>
<td>10.5</td>
<td>24.8</td>
<td>699</td>
<td>11.2</td>
<td>818</td>
</tr>
<tr>
<td>HR</td>
<td>17.2</td>
<td>48.7</td>
<td>74</td>
<td>18.6</td>
<td>96</td>
</tr>
<tr>
<td>IT</td>
<td>12.2</td>
<td>20.0</td>
<td>655</td>
<td>22.2</td>
<td>1 557</td>
</tr>
<tr>
<td>CY</td>
<td>15.0</td>
<td>38.9</td>
<td>18</td>
<td>18.7</td>
<td>20</td>
</tr>
<tr>
<td>LV</td>
<td>11.9</td>
<td>25.2</td>
<td>32</td>
<td>15.0</td>
<td>51</td>
</tr>
<tr>
<td>LT</td>
<td>11.8</td>
<td>21.9</td>
<td>27</td>
<td>11.1</td>
<td>44</td>
</tr>
<tr>
<td>LU</td>
<td>5.8</td>
<td>17.4</td>
<td>3</td>
<td>5.0</td>
<td>3</td>
</tr>
<tr>
<td>HU</td>
<td>10.2</td>
<td>27.2</td>
<td>94</td>
<td>15.4</td>
<td>175</td>
</tr>
<tr>
<td>MT</td>
<td>6.8</td>
<td>12.6</td>
<td>4</td>
<td>9.9</td>
<td>6</td>
</tr>
<tr>
<td>NL</td>
<td>6.7</td>
<td>11.0</td>
<td>157</td>
<td>5.1</td>
<td>104</td>
</tr>
<tr>
<td>AT</td>
<td>4.9</td>
<td>9.2</td>
<td>34</td>
<td>7.1</td>
<td>70</td>
</tr>
<tr>
<td>PL</td>
<td>10.3</td>
<td>27.3</td>
<td>407</td>
<td>12.3</td>
<td>547</td>
</tr>
<tr>
<td>PT</td>
<td>10.3</td>
<td>27.3</td>
<td>148</td>
<td>14.2</td>
<td>194</td>
</tr>
<tr>
<td>RO</td>
<td>7.3</td>
<td>23.6</td>
<td>107</td>
<td>17.2</td>
<td>442</td>
</tr>
<tr>
<td>SI</td>
<td>10.1</td>
<td>21.6</td>
<td>16</td>
<td>9.2</td>
<td>20</td>
</tr>
<tr>
<td>SK</td>
<td>14.2</td>
<td>32.7</td>
<td>73</td>
<td>17.7</td>
<td>87</td>
</tr>
<tr>
<td>FI</td>
<td>8.2</td>
<td>18.9</td>
<td>66</td>
<td>9.3</td>
<td>59</td>
</tr>
<tr>
<td>SE</td>
<td>6.0</td>
<td>25.4</td>
<td>154</td>
<td>7.5</td>
<td>92</td>
</tr>
<tr>
<td>UK</td>
<td>7.5</td>
<td>20.5</td>
<td>924</td>
<td>15.5</td>
<td>1021</td>
</tr>
</tbody>
</table>

Source: European Commission Services

The Commission has set out a 10-year strategy for reviving Europe, casting a vision of ‘smart, sustainable, inclusive’ growth rooted in a greater coordination of national and European policy. The Union has set five ambitious objectives to be reached by 2020, with each Member State adopting national targets in each area, underpinned by concrete actions at EU and national levels. Social innovation can create solutions that contribute to achieving all five key targets:

1. Employment: 75% of the 20-64 year-olds to be employed
2. R&D/innovation: 3% of the EU’s GDP (public and private combined) to be invested in R&D/innovation
3. Climate change / energy - greenhouse gas emissions: 20% (or even 30%, if the conditions are right) lower than 1990; 20% of energy from renewables; 20% increase in energy efficiency
4. Education - reducing school drop-out rates below 10%; at least 40% of 30-34-year-olds completing third level education
5. Poverty / social exclusion: at least 20 million fewer people in or at risk of poverty and social exclusion.

In order to implement innovations and/or design effective policies, a clear understanding of the main barriers to development is important. There are numerous barriers, including: the idea that for-profit organisations and/or an active state can efficiently satisfy overall demand for neighborhood and social services; the slowing down of the public social budget traditionally mobilized for the development of the social economy organisations; the lack of a legal definition/framework for social economy organisations which is implemented substantially; the unfair competition by the informal economy; the lack of managerial and professional skills and the lack of systems of quality control on the services (Xavier, 2008). The following are the latest figures from the European Commission (2014 Semester Report) on unemployment, Youth
Unemployment and NEET\textsuperscript{65} indicators in the Member States, as well as the stated targets per country in key social indicators:

<table>
<thead>
<tr>
<th>Table 6: Overview of Europe 2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Member States target</strong></td>
</tr>
<tr>
<td>------------------------------</td>
</tr>
<tr>
<td>AT</td>
</tr>
<tr>
<td>BE</td>
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<tr>
<td>BG</td>
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<tr>
<td>CY</td>
</tr>
<tr>
<td>CZ</td>
</tr>
<tr>
<td>DE</td>
</tr>
<tr>
<td>DK</td>
</tr>
<tr>
<td>EE</td>
</tr>
<tr>
<td>EL</td>
</tr>
<tr>
<td>ES</td>
</tr>
<tr>
<td>FI</td>
</tr>
</tbody>
</table>

As shown in the above Table, young people have been particularly affected by the crisis. The EU youth unemployment rate increased sharply – more than 7.5 percentage points between 2008 and 2013 (from 15.6% to 23.3%) – and it is currently nearly 2.5 times higher than the adult rate, affecting 5.6 million young people aged 15-24. There is also a large number of young people neither working nor studying: in total, in 2013, 7.3 million people in the age group 15-24 were neither in employment nor in education or training, an overall share of 13% of this age group. Important efforts have been initiated at EU level and national levels to fight youth unemployment.

In order to support the development of social protection systems and labour market policies and to promote a high level of quality and sustainable employment the European Commission has formed social innovation instruments such as the Employment and Social Innovation (EaSI) programme. It brings together three EU programmes managed separately between 2007 and 2013: PROGRESS, EURES and Progress Microfinance and it aims at guaranteeing adequate and decent social protection, combating social exclusion and poverty and improving working conditions.

According to the recent 2014 EC Report, it is concluded that the EU’s growth potential is still relatively low. This means that high unemployment levels and the difficult social situation will only improve slowly and that the large investment gap will take time to be filled. The Commission has emphasised in a number of recommendations the need for policies to take more steps in good times to build up resilience for bad times. Given the need for higher, more sustainable levels of growth and employment, the Commission highlights the need for more determined effort in key policy areas and social innovation is one of its main focuses.

6. Conclusion
In its recent usage, the social innovation approach encompasses not only a new governance mode working across traditional fields of responsibilities with an active involvement of citizens, which is effective in addressing the challenges of climate mitigation, social justice, ageing, etc., but also the culture of trust and risk-taking which is needed to promote scientific and technological innovations.

According to the EU 2020 country specific targets, Greece -and Spain, as well- have a significantly high target of reduction of population at risk of poverty or social exclusion. The absolute number of persons at this risk which should be diminished for Greece is 450,000 when at the same time for example Germany shows a target of 320,000 people, while having an approximately 8 times larger population. Considering on

\textsuperscript{65} NEET: Youth neither in employment nor education and training indicator
the economic power of Germany which is a social market economy, this relation proves the immense challenge for countries like Greece to decisively implement social innovation and especially social economy innovation strategies.

Another fact is that the percentage of youth unemployment in Greece is tremendously high (58%) in comparison to all other EU States.

Therefore, social economy growth with specific focus in the participation and engagement of young people has to play a catalytic role for the social and economy recovery of Greece.

It is important, therefore, for Greece to tap the opportunities resulting from the social economy innovation, to take advantage of the EU initiatives and available funds for social innovation in order to establish not only the development but also its survival on strong foundations.

7. References

Websites
http://ec.europa.eu
http://www.ekt.gr
http://www.net4society.eu
http://www.tepsie.eu
Chapter 2:

Social Networking: Unemployed, their Employability and Social Support

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Abstract:
Purpose–The current paper discusses findings from an exploratory study concerning the type, frequency of use and the impact of social networking sites on unemployed. The study’s objectives were to assess participants’ under training: usage of social networking sites, and the degree to which these helped increase their opportunities for employability, educational enhancement, and contributed to their psychological uplift and social support.

Design–Purposive sample was used with a response rate of 83%, 108 responded. Of the sample 60% were females, the age ranged, from 20 to 50+, of them 56% were at 21-30 age range, 68 were single, 76% had a college/university degrees. Their unemployment ranged from 2 months to three years. Of them 96% use the internet every day in order to access and exchange information for new job vacancies, and also to exchange information for additional opportunities in the hope to improve their educational background and thus become more marketable. Furthermore, they use the internet to find stress relieving ways, and networking opportunities. The participants were given a free 12 week university course. Qualitative and quantitative research methodologies were used. A focus group was formed and a survey instrument was administered.

Findings - The results of the present study provided a good indication of the high satisfaction levels of the participants for the course, the information they gained, for the lecturers and the electronic notes. They all agreed that the program contributed greatly to the enhancement of their academic knowledge. The majority expressed the need for more courses related to technology and longer seminars on topics such as: Labour Law, EU and employability and entrepreneurship. Moreover, the majority stated that they would have preferred hands-on experience on IT related topics additionally they suggested hosting guests from industry.

In addition, there were various comments on their psychological status, sharing that they felt demotivated and psychologically down, with low self-esteem because of their long unemployment. Continuing they affirmed that the course has helped them improve their interpersonal communication skills, and that they were leaving the program more hopeful and optimistic for successful employment opportunities. Furthermore, 80% use social networking sites from 1-4 hours per day for both, job hunting and networking, 72% use laptop, 60% use face-book at all times. The vast majority also expressed the belief that they would have been employed if they lived outside Cyprus. Additionally, 90% stated that unemployment deeply affected them and that they were financially dependent on their parents or others, and 70% stated that they needed extra qualifications to become more marketable, being trained in technical vocations was one option they would like to explore, such as diplomas in computer technician, culinary arts and car mechanics.

Originality–The paper contributed to the research on social networking and the education of the unemployed in a country where similar research is sporadic.

Keywords: Social networking, unemployed; educating the unemployed, adult education and workability

1. Introduction
The recent global economic crisis is affecting humanity negatively. Evidently, it is the major factor that prevents the countries mostly affected, to develop. As investors and entrepreneurs suffer economically along with their governments, jobs are dramatically being reduced. Large numbers of companies have declared bankruptcy and consequently employees by the thousands are losing their jobs. Thus, unemployment is escalating, subsequently creating multiple societal problems.

Recently, digital technology was the main factor for increasing unemployment in the public and private sectors in southern European countries i.e. Greece and Cyprus. (Gantzias, 2014). Within that context,
the economic crisis has hit hard large numbers of people, of varying age groups, gender and educational backgrounds. However, university graduate, and high school graduate unemployment appears to be a very serious problem in various European countries. The unemployment rate for these groups of people referred to as ‘young people’ appears to be twice as high as the overall unemployment rate. Furthermore, these high levels of unemployment will continuously have adverse effects to the unemployed both psychologically, socially and economically. Additionally these individuals appear to suffer psychologically while the society they live in faces increased criminal activities. Conversely, governments face economic hardship as the unemployed depend on them. Nonetheless, to increase employability, enhance marketability and obtain social support, numerous unemployed individuals living in countries deeply affected by the world economic crisis, find themselves dependent on social networking sites for job searching, locally and internationally, and often for attaining educational, social and psychological support.

Cyprus, where the study took place, has not been left intact with what is happening globally. The Cypriot economic activity is based largely on external demand, and thus it has been immensely affected by the economic crisis with severe consequences. Cyprus had experienced a period of prosperity, even in the years preceding the global economic crisis, fuelled by a booming construction industry, establishing itself as a regional financial center. The country provided an effective service tax, the lowest corporate tax in Europe, a seemingly solid banking system, and a highly trained professional group of people to provide accounting, legal and other fiduciary services.

Nonetheless, due to the recent economic crisis and the 2013 ‘haircut’ (of Bank accounts) in Cyprus, the tourism industry, financial services and the real estate sector have suffered heavily. Additionally, Cyprus has been heavily affected by the ‘contagious’ stock drop which makes it difficult to secure funds from companies. Kaoura (2013), stated that as expected, Cyprus could not come out ‘unscathed’ from the financial chaos which prevails.

The fact that economies do not generate enough employment is reflected in the employment rate (the proportion of working age population in employment), in January 2014, the EU had a total of 24.325 million unemployed, of which 16.925 million in the euro zone. Additionally, Cyprus is also faced with a unique problem in the EU: the unemployment rate for young graduates (25%) is higher than among the lowest skilled groups (22%). This partly reflects its high level of tertiary graduates but is equally due to the skills mismatch. In contrast, the unemployment rate in the EU is less than 11% on average for graduates and 27% for those with only lower secondary qualifications or less (Financial Mirror, 2014).

Ensuring that young Cypriots have the skills employers are looking for is vital if the country is to reduce its youth unemployment rate, which has increased from 9% in 2008 to more than 40% today among under 25s. The need to address the ‘skills mismatch’ was the focus of a speech by Androulla Vassiliou, European Commissioner for Education, Culture, Multilingualism and Youth, at the European University Cyprus Forum on Youth and Employment tomorrow.

The conclusion at the World Economic Forum for the European economy, in which the average unemployment rate was 12.1% at the end of 2013, it was clear that the economy will not return to sustained growth if the European Union does not regulate social issues such as high unemployment which has assumed dangerous proportions for the long-term unemployed, young and temporary workers with flexible work conditions. As can be seen, approximately 50% of the unemployed are people that are out of labor market for more than 1 year, while the quarter of Europeans aged under 24 threatens to become jobless. Based on the IMF, noted that the first hit by the crisis and came out of the market were temporary workers. (Christina Kpopsni, 2014).

Unemployment in Cyprus reached 17.5 per cent of the active workforce, and in absolute numbers 78,000 people were jobless in December, data released by Eurostat showed (2013). Kristian Wahlbeck and Mareik Awolin (2009), support that covering the period of economic crisis, psychological stress and occurrence of mental illness come to the surface. Changes in life which are undesirable, such as unemployment, can lead to depression, anxiety disorders and even to suicide. Some of the effects when someone is losing his/her job are the shame and the sense of inability to provide income or goods to itself and his/her family. To some extent, economic growth has been at the expense of mental well-being of populations. Thus, the economic crisis can also bring welcome changes, such as increased leisure time leads to an increase in time spent with family members and their activities. ILO (2010), draw attention to the issue that it would be an inadequate tendency to deal this problem only with labor market aspect and that perspective devoted to multi dimensional social results is crucial. It can be asserted that the literature developed between political marginality and young unemployment has two different concerns. First tendency of these is interested in psychological dimension of the unemployment and remarks on the relationship between individual dissatisfaction and radical system criticism. Gaskell and Smith (1985) asserted that the political effects of the unemployment could be set apart as internal and external. Internal reactions can be defined as an attitude that unemployment is about individual inadequacies or features and causes results like in confidence, alienation and political irrelevance. External reactions, on the other hand, could cause tendency towards opponent political parties or support and attendance for political violation acts. The research referred to here has shown that the unemployed were more subject to external reactions, differences due to economical and social conditions.
Effects of Career expectations and Risk of Unemployment

Arlampalam, Gregg and Gregory (2001) suggested that the risk of unemployment is higher for the ones who have experienced unemployment previously. Hence, unemployment is the problem of disadvantageous groups and these groups could be expected to be close to political social groups. Pfeifer (2009), on the other hand, suggested that the groups with social risks such as the risk of unemployment, support the public to make more social expenses. Glenn, Felstad and Burchell, (2000) refer to the factors shaping the expectations of people which could be divided into two. The first one arises from the structural qualities of the labor market. For example factors like: high employment rates and the dignity of the job in the labor market, are the basic elements according to the above mentioned researchers, to determine these lawful qualities. Thus, during high unemployment the risk of unemployment is high for the active work forced. It could also be stated that the expectations for unemployment (or potentially high) in the sectors which are in decline. Additionally, the second factor relates to the judgment associated with the individual requirements of quality and talent. These judgments are usually about: education and experience. Under circumstances of weak competence one can conclude that expectations of unemployment are high.

The perspective related to individual competence is dealt with in the frame of a career concept. Springer et al. (2001) suggested that career expectations have an “essence” including both individual competence and external conditions, based on the opportunities of the “social cognitive theory” (individual expectations come out as a result of individual evaluation criteria such as physical consequences for example financial conditions, social consequences for example approval and appreciation and the feeling of individual competences). Springer et al. (2001) believed that occupational expectations which usually become manifested at the end of higher education are an important indication. It is believed that these expectations would not only appraise the skills gained during higher education but also would be useful in explaining the labor market choice that will be effective in a professional occupation. Taking these views into account, it can be stated that environmental conditions are related to individual expectations—career expectations which can develop an outlook for the problems of specific groups. At the same time work experience can contribute to giving individual sense of security and self-confidence.

Most people know that the best way to find a job is through networking, with the Internet offering social media options, there are similarly many ways to network, and eventually find a job. According to Owyang article in DMNews social networks allow all parties involved to better search for and reach their target. (Owyang 2009).

Various social networks are being used to fight unemployment, by millions of people such as Facebook, MySpace, Twitter, Delicious, Flickr, LinkedIn, and Live Journal. Discussion forums, blogs, wikis, chat-rooms, networking and numerous cloud applications Users, actually, create profile pages and groups with common interests who socialize, upload pictures, video, music, comment on events, and so on. Shrinky (2003) supports that all the above mentioned tools support communication, interaction (Shirky, 2003) and Boyd-Franklin, (2003) that feedback by groups, the creation of social networks and collaboration.

The concept of social networking is becoming even more popular, “invading” people’s everyday private and professional lives. Additionally, a part of President Barack Obama plan of action to tackle unemployment in 2009, social media can help as it is influencing individuals and the way they look for and get jobs, with Facebook and Twitter to be employers favorite place to post their job openings.

Using social media, to follow companies in an interested industry for posted job opportunities gives opportunities to be the first to know of a good job (SociallyStacked, 2009). Companies seem to realize the significance of being present online and therefore, prefer to hire those who are keen with social media. Specifically, regardless of a person’s location, demographics, social status or income level, everyone can be reached through social networks. Even job interviews can be conducted through social networking giving unemployed opportunities at their own pace voice their opinions, ask questions and give input. Finally, social networking can facilitate the process of the companies to post their job opening and reach a wide range of people and for the unemployed to get informed at the fastest pace.

Continuous developments in ICT-Information Communication Technologies resulted in the development of the evolutionary Web 2.0 were users were Contributing, Collaborating, Creating - the 3C’s (Ala-Mutka, et al., 2009; Hargadon, 2009; Murugesan, 2009; Richardson, 2009). Web 2.0 sets the foundation of a new era of dynamic writing and participating, a revolutionary way to use the Web. As described in Eteokleous and Kiorioud (2011), Anderson (2007) relates the Web with the group of web-based services and applications like: blogs, wikis, multimedia sharing services, content syndication, podcasting and content tagging service, which facilitate a more socially connected Web where everyone is able to add to and edit the information space. The above mentioned Web-based services and applications are the basis of the Web 2.0 concept, and they are already being widely used in our everyday personal and professional lives. Web 2.0 is alive since 2004 with most of it’s tools employed within social networks are intruding in our everyday lives: Blogs and Vlogs, Wikis, Podcasts and vodcasts, Social networking, Photosharing, Communication, Collaboration, and Content sharing.

Examples of social networking sites that millions of people use is: Facebook, MySpace, Twitter, Flickr, LinkedIn, Live Journal. Social network examples have long been used for developing personal and professional connections online and with the changes in the role of the users the social networking can be transformed to a path towards job opportunities.

Numerous schemes are globally being put forward amid a worsening job market, in an effort to increase the employment prospects for those leaving education. One such scheme is further educating
unemployed or underemployed graduates. This is one of the numerous measures taken by some countries in order to rescue the unemployed graduates. This educational rescue measure was implemented in the Cypriot society, which is further examined in the present study.

**RESEARCH METHODOLOGY**

**Research Aim and Objectives**

The aim of the study was to assess the impact of the use of social networking sites on young unemployed, and examine whether they contribute to the increasing of their possibilities of entering successfully the labor market.

The study’s objectives were to measure participants’: usage of social networking sites, increased opportunities for employability, educational enhancement, psychological and social support. The participants were 108, who were surveyed after attending a 12 week course on ‘Special topics in Business Administration’.

**Research Design**

Qualitative as well as quantitative research methodologies were used. Semi structured interviews were conducted and a survey instrument composed of twelve items, were administered (after the completion of the educational program).

Qualitative Research: a focus group was formed of four individuals, selected through Snowball sampling. This enabled the face to face interaction and thus disclosed thoughts, emotions and suggestions that might not have been feasible to obtain from a questionnaire. Through the focus group, the individuals were prompted to share their experiences with social media. They were also able to express employability as well as give ideas and useful information on their use of social media and the degree to which they were helped in finding employment and suggestions were given in redesigning the program. The focus group attended a two hour meeting under the coordination of one of the researchers. These methodologies enabled for the results to be generalized to the population of the unemployed in Cyprus.

Quantitative Analysis: The instrument used was a short questionnaire designed by the researchers. This consisted of 12 questions some with yes/no options and some with multiple answers related to their assessment of their job hunting tactics the usage of social networking sites and the impact of their unemployment, on their economic and psychological well-being; reasons for not getting a job; an evaluation of the program all together and a general comment question, about the course they attended.

**Population and Sampling Method, data analysis**

Purposive sampling was used, with anonymous questionnaires which were returned in sealed envelopes, on the last day of the program, with a research assistant responsible for the survey collection box.

The survey respondents were 108, however, the total response rate when adding the qualitative research sample was 113, representing 80% of the entire population under study. The quantitative analysis was done by the use of excel; and the qualitative analysis by content analysis.

**2.4. Research Limitations**

The results extracted from this research were 80% of the targeted population. The reasons leading to a smaller sample size than expected were firstly due to the fact that the survey participation was voluntary and secondly that the survey was in English, which might have discouraged some members to participate. The qualitative part of the research took place in the form of a focus group, but it might have given more in-depth information if one-on-one interviews were conducted. Moreover, since similar studies conducted in Cyprus using the unemployed are limited the results of the current research can be compared with caution.

**RESULTS**

**Qualitative study results**

The results of the study as reflected by the focus group provided a good indication on one hand of the high degree of reliance on technological means for job hunting and the extended use of social networking for support and on the other hand of the high satisfaction levels with the program.

The great majority of the participants expressed the need for another program exclusively on IT. Furthermore, and in terms of specific courses they commented on the need for having longer seminars related to: Labor Law, EU and employability more details about the EU funded projects and entrepreneurship. Moreover, they strongly suggested that the program under investigation should serve as a link between the business world, as the prospective employers and the groups of the unemployed participating in the program as prospective employees. Furthermore, when asked about the lectures they responded unanimously that they were “extremely good, dynamic, interesting, knowledgeable, inspiring and helpful”. Furthermore, when referring to their quality of life while being unemployed, they denoted the following: “although trying to stay optimistic…the prospects for employment look very gloomy”, “quality of life is rather poor”, “forced to depend on others such as parents for financial support”, “rather de-motivated”, “quite often feeling psychologically down”. Moreover, they stated that the course helped them raise their self-esteem and self-confidence”; that it had helped them “improve their interpersonal communication skills”, and their computer skills that via the social networking sites (Facebook, my Space, Twitter, H5, Google+, Linkedin and MSN) they were able to expand their horizons in the hope that they will be able to get employed faster. Finally they concluded that “the course made them seriously consider their future education in a different way”. Interestingly enough of the participants, those who were younger in age (20-30 who composed 56% of the participants) stated that they started planning for further studies in technical professions (mechanics, culinary arts, floral design and other).
3.2 Quantitative study results
In the sample taking part in the quantitative study, 60% were females. Of them 68% were single, and 56% were in the 23-30 age group. Of the sample 32% had a high school diploma and the rest had an undergraduate degree.

Furthermore, 36% were unemployed for one year or more: As far as the sources used in their job search as can be seen from the data collected 96% use more than 10 times per month Internet, 56% use the internet every day to use the e-mail and instant messages, 64% used the internet on a daily basis to check the news, 48% to make financial transactions two times per month, 20% to play games, 64% shopping two times per month and to study 28% use the internet every day. As far as examining the profile of the participants’ utilization of social networking sites, when prioritizing (multiple answers): 92% use Facebook, additionally 72% Google+, 32% LinkedIn, Twitter & MSN 24%, lesser 4% Myspace.

Furthermore, 80% of the participants use social networking sites from 1-4 hours per day for both, job hunting and networking, 72% use laptop, 60% use face-book at all times.

In the multiple answers question whether they are a member of any interest groups within any social networking sites, the over 50% of the participants are members of educational groups, followed by entertainment groups, sports groups and ethnic groups.

Additionally in the supplemental question on the usability of these groups, on the top was “Keeping up with topics of interests”, followed by “meeting new people with similar interests” and “exchanging information on educational issues related to their field”. Additionally they use these groups to “keep their mind away from the unemployment problems” and also “meeting other unemployed people”. Interestingly, 60% of them are interested in formulating an interest group of the unemployed.

The vast majority also expressed the belief that they would have been employed if they lived outside Cyprus and that they would leave Cyprus if they found a job abroad. Additionally, 90% stated that unemployment deeply affected them and that they were financially depended on their parents or others, and 70% stated that they needed extra qualifications to become more marketable, being trained in technical vocations was one option they would like to explore, such as diplomas in computer technician, culinary arts and car mechanics.

Moreover, of the sample, 90% believed that their unemployment was due to the economic crisis, and 98% of them strongly believed that the current economic crisis has increased their unemployment duration. Furthermore, 83% said that they would have had a job if they were out of Cyprus because they felt that the economic crisis affected Cyprus stronger than anticipated, as new openings of companies are very limited and also several existing companies are in deep financial problems.

Additionally when asked if they would continue to further their education would they continuing along the same field of study, 70% would change their field of study. Moreover, of the participants 80% of the respondents stated that unemployment has had a great impact on their personal lives specifically it has affected them both psychologically, emotionally and economically.

Furthermore, most of the unemployed (70%) responded that, as their job hunting experience has shown, they feel they need extra qualifications for getting a job. Similarly, (70%) of the unemployed surveyed responded that the program they attended was extremely helpful inspiring them to search for jobs. The most dominant one was technology courses.

Lastly, most of the respondents noted that the training program was beyond their expectation; also they would like among other suggestions to attend more similar programs in the future with specific seminars such as new technologies, starting new businesses, Labour law, EU funds, personalized sessions on CV writing and interview skills.

In closing, as they shared with the researchers during the semester and during the final class, they were able to express their feelings and emotions which were brought about by their unemployment status, some were able to share their depressed moods which affected their lives on a daily basis.

Notably they developed friendship groups and lasting relationship which will be kept alive either with personal contacts or through social media.

4. CONCLUSIONS
4.1 General conclusions
As has been seen from this paper the economic crisis has hit young people hard and graduate unemployment appears to be a very serious problem in many European countries. The unemployment rate for young people is twice as high as the overall unemployment rate. High levels of unemployment will always have adverse effects to the unemployed. To conclude all stake holders should ensure that they minimize the number of unemployed persons in the country.

In accordance with the literature and research findings, the researchers came up with the following:
1. One of the main reasons for the unemployment is current economic crisis. According to the literature and the research findings the economic crisis has affected Cyprus. Numerous companies closed down and tourism which is the back bone of the Cyprus economy has dropped.
2. To partly eliminate this problem, many more programs with related seminars should be offered to the unemployed.
3. As suggested by the respondents, it would be advisable if some employers could be invited to participate in the seminars to talk about their expectations, what they expect from a prospective employee in terms of skills, abilities and academic competences.
4. Awareness of Euro Social Fund which helps to enlarge the labor market, and all other funding sources offered within the EU.
5. From the study the researchers realized that most of the respondents limit their job search only through mainly the internet and the newspapers. Also they should become aware of the EURES program (European Job Mobility Portal)
6. Attending the Educational training programs as specified in the literature will help to reduce the rate of unemployment.
7. More occupational opportunities are there in the IT field, Medicine, Accounting or other technical fields, but most of the respondents were not from these fields. If the current unemployed want to diversify, they can do so in mind the professions which are more likely to safeguard you employment.

The acquisition of soft skills or social skills would enhance their job prospects these could include general communication skills, presentation skills, financial management skills, time management skills or creative thinking skills, to play a very important role in the ability of unemployed people to adapt a professional working environment. Many graduates lack soft skills when they start their careers. Thus it is suggested that unemployed people urgently acquire these skills by attending seminars (such as the program presented in this paper) and educational training programs to increase their employment prospects.

In summary, the program itself was quite helpful, encouraging and forceful. What was exceptional was that it was designed to address a variety of topics which responded quite well to the reality both for Cyprus and in the EU. As for the faculty, who were members of educational institutions, were intriguing and stimulating. All of them tried to transfer a sum of their knowledge and experience to the participants and enabled them to confront life and its challenges in a different manner.

It can be concluded from the present study that the educational program designed for the unemployed graduates had in general a positive impact on the participants. The study managed to educate and coach the participants, it enhanced their knowledge with issues related IT, entrepreneurship and management, but it also boosted their self-esteem and helped them feel more confident and energetic in their job hunting process.

5. References
s in unemployment at a European and Member State level.
Furnham, A. (1994). The Psychological Consequences of Youth Unemployment. Youth Unemployment and
OECD (2009), Employment Outlook Report, New York: OECD
Richardson W. (2009). Becoming Internet Wise: Schools can do a far better job of preparing students for their connected futures online, Educational Leadership, pp 26-31.


http://www.bbc.co.uk/news/business-15747103
http://www.bbc.co.uk/news/business-16342072
http://www.iiea.com/blogosphere/the-eu-unemployment-infographic/?gclid=Cle2157J67tECFagmtAodUSAALg
http://www.newstt.co.uk/news/uk-unemployment-total-falls-to-2-58m-637435.html
http://www.scribd.com/doc/88397268/Euro-Area-Unemployment-Rate
http://www.tradingeconomics.com/euro-area/unemployment-rate
Chapter 3:

Citizen’s Participation and the Crisis of Representation in Europe. Models of Citizen Participation and the Quest for Local Democracy

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Abstract:
Civil society encompasses social institutions such as churches, social movements, associations, public interest groups such as consumer associations which are considered as social partners. Civil society organisations include churches, NGOs, legal and political advocacy groups, social movements. One important dimension of civil society organisations is their political role. This is connected with direct participation of individual citizens and associations, participatory democracy and active citizenship. Additionally Social Movement organizations have become institutionalised and are increasingly connected to other parts of organized civil society.

Civil society engages in several roles. The main ones are service delivery, advocacy, and activities in the public sphere. Here we will mainly focus on advocacy expressed by various systems of representation currently in place in many countries. Involvement is seen as linked to institutional performance and effective democracy, new forms of participation and the ‘crisis of politics’. Civil society systems of participatory communication can help to address distrust in social and political institutions by: Improving the information base, Enhancing deliberation in a public sphere, Increasing political legitimacy through monitoring of political actors and events. In this paper we present various systems of representation in practice in the world such as: Referendum/legal popular initiatives; Enquiries/opinion polls/surveys; E-democracy; cyber-democracy; interactive policy making; Roundtable/local dialogue/community planning/ Perspektivenwerkstatt/ Zukunftskonferenz/planning for real, future search, hearings etc.; Consensus Conference/Planning Cell’s/Citizens Juries/The Worlds’ Café/Charette; The Citizen Panels/Planungszelle/Núcleos de Intervención Participativa. The presented methods of local democracy present us with a real challenge, the challenge of application in the Greek topos.

Key words: Civil Society Representation Methods, Local Participation Systems, Citizen’s Juries

1. Crisis of Representative Democracy – the Need of Citizen Participation
1.1 Civil Society
Civil society is constituted by the set of individuals and linking institutions which connect the public sphere and the state. It encompasses social institutions such as churches, social movements such as environmental movements and public interest groups such as consumer associations. Civil society organisations include churches, NGOs, think-tanks, legal and political advocacy groups, social movements. One important dimension of civil society organisations is their political role. This is connected with direct participation of individual citizens and associations, participatory democracy and active citizenship. Additionally Social Movement organizations have become institutionalised and are increasingly connected to other parts of organized civil society. Civil society engages in several roles. The main ones are service delivery, advocacy, and activities in the public sphere. Here we will mainly focus on advocacy expressed by various systems of representation currently in place in many countries. Involvement is seen as linked to institutional performance and effective democracy, new forms of participation and the ‘crisis of politics’. The potential importance of civil society expressed at different territorial levels is important here. The growth of associationism and institutionalization expressed by the phenomenon of socio-political movements are an accepted part of organized civil society.

Issues of democratic governance advocate for a system of political, multicentric and changeable steering of all the partners. Social and political institutions communicate with civil society in order to address:
- aggregate interests
- formulate efficient and accepted policies
- to monitor outcomes
- help with implementation
- to enrich decision making with new policy ideas and promote policy learning
- to stimulate forms of active citizenship
- as an alternative channel of representation
- for legitimacy reasons

As the field becomes increasingly organised and institutionalised the political system increasingly steers its modes of operation. In a democracy, conflict is an essential feature of effective decision-making, but
it needs to be expressed and elaborated in a variety of fora, not just the agonistic fora of representative institutions and processes. Associations contribute to periodically redefine the political space in terms of the ideological conflicts that it processes. Civil society systems of participatory communication can help to address distrust in social and political institutions by: Improving the information base, Enhancing deliberation in a public sphere, Increasing political legitimacy through monitoring of political actors and events. Civil society is embedded in a welfare state which provides such goods as: Basic Income maintenance and welfare guarantees linked to job security as well as unemployment insurance and health coverage on a family basis. In providing these goods the state becomes an active part in a process of social regulation. Different types of state interventions enable and penalise different social groups – contribute to creating and redefining social stratification. To the extent that there is a crisis of the welfare state and increasing reliance on New Public Management (NPM) ideologies and organisational structures, civil society replaces the state in affecting social stratification. The state can establish different models of relations with civil society.

Currently representative democracy is in an acute crisis. The recent electoral events in France, the UK, Austria and Greece (the European as well as the general elections) demonstrated an increasing tendency towards abstention and the strong appearance of radical right-wing parties as well as anti-system groups. The confidence in the political representatives and the political parties seems to be declining. In this situation it is getting more and more difficult to carry out reforms or to take political decisions with a certain social impact. The interests of powerful lobbies, but also the defence of acquired rights of certain groups of citizens, hinder the necessary changes. The policy no longer dares to handle certain subjects and, if it does, it becomes ineffective. This blockade of sometimes urgent and necessary decisions has as affect the transfer of the social impacts to the coming generations. But it is obvious that this condition has its consequences. The currently dramatic situation among youth in Greece (over 60% at present in 2014) is a case in point whereby the majority of the new generation is being excluded from work participation. The great majority of us are considering democracy as the best formula of government but, on the other hand, there seems to be mistrust to our political representatives and their parties. While in all social, professional and cultural fields the changes in the last years have been drastic, in the present modern democracies seem to have remained behind the times. This current asymmetry between the technical environment and the political relations of governance creates serious discrepancies in our societies.

Bernard Manin states in “The principles of Representative Government” that what we today call ‘representative democracy' has its origins in a system of institutions (established after the English, North-American and French revolutions) which – initially – was not considered as democratic or a government of citizens.... while at the end of the XVIIIth century a government organised following representative guiding principles was considered radically different to democracy, today we accept it as one of its performances 1. The argument used against a more “democratic” system in the 18th and 19th century was that the normal citizens didn’t have the time and the intellectual capacity to deliberate about complex political problems, which was at those times and taking in to account that more than 60% of the population were illiterates an adequate decision. But times have changed since than and these arguments are completely obsolete nowadays. So it seems that finally time has come to return to the essence of the concept of democracy, or to say it with Pierre Calame: “L’art de la gouvernance serait donc non pas l’art de faire fonctionner des procédures mais l’art de concevoir et de faire vivre des processus collectifs d’élaboration de réponses pertinentes aux défis de la société.”, and the ex-French minister Bernard Kouchner: “No important reform can be imposed without the direct participation of the citizens.”

What we need is therefore to recreate the citizen, to create and to offer settings in which the people of today, obsessed by their national and -over all- personal interests, defending their acquired rights, pass through an ethical-educational process which enables them to defend the interests of the common weal at a long term properly and which allows them to foment a genuinely European perspective. The mechanisms that would allow this transformation exist. The question is to apply them. Many political parties no longer fulfil this function and probably will never regain this capacity.

Normally, the roll of the citizens is limited in these decision making processes to the one of mere spectators or, in any case, beneficiary or victim of the decisions legitimised by administrative procedures. But it is getting more and more obvious that if we want to take the political decisions which are necessary to guarantee a sustainable development, defending the common weal in the long term, this is only possible with and not against the citizens. There is a lack of structures and institutions which guarantee that the basic problems and issues, especially the long-term issues and topics of our societies, are present on the political agenda and are adequately discussed. In order to achieve this, we have to change the process of administrative decisions to make them more transparent and open for citizen participation. The administrative process of preparing and making decisions have to respond at the same time to growing social and technical complexity. In these complex situations, the need for a participatory decision-making process is often as - or more - important than the decision itself. In other words, the validity of a decision is often judged by the rationality and appropriateness of the decision-making process. Only public participation transforms decisions that are technically sound into those that are socially sound as well. The problem of the structural irresponsibility of

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our representative democracies obliges us to take into account the long-term consequences of political decisions and to introduce new mechanisms of political control. This requires the involvement of the public. The uninterested citizen must have a way of assuming his role in forming political judgements in order to provide new possibilities of common-sense participation. Common-sense participation by citizens - not increasing the bureaucracy - can make politics more human and more humane. And – just to avoid misunderstandings- the participation of citizens in the decision making processes is not seen as an alternative to representative institutions but a complementary element which facilitates these processes, making them more transparent, giving them more legitimate, including more information and points of view, restoring the confidence of citizens into their institutions etc. So it is not surprising that political parties and other institutions are getting more and more interested in this mode of social dialogue. Some of the best and more comprehensive citizen-participatory systems of local representation have been elaborated by institutions which can hardly been considered “anti-system”, as for example the World Bank, the Belgium Foundation Roi Baudouin and the German Ministry of the Interior.

The methodologies and mechanisms investigated and evaluated are not identical but the development of experiences during the last years can almost be described as an explosion and – astonishing enough – although we live in the era of internet and globalisation, many experiences (sometimes almost identical) have developed in a parallel manner in different countries and cultural contexts without knowing each other (for example: Planning Cell’s, consensus conferences in Germany and the system of Citizen’s Juries in the United States). Publications describing and evaluating participatory methodologies can be found in this note. However one has to be careful in order to address the local issues to be dealt with needs to identify the appropriate method for participatory technology. The following must be observed:

1. A participatory-for-all principle must be considered at all times. The new mechanisms should not be designed just for special cases or “qualified persons” (experts and stakeholders). The citizenry at large deserves opportunities to take part in social decisions.

2. The process shall be deliberative. The participants should not debate on the (lacking) information they bring in but be widely informed about the pros and cons, different interests and options. To offer partial opportunities for participation in social decisions cannot mean having more and more people decide more and more often on more and more issues about which they do not know enough (for example: referendums). The mechanism has to make the necessary information available to the ordinary citizen to enable him to catch up with the information advantage held by the experts. To select, to understand and to apply this information requires time. People making public decisions as civil servants, planners, or judges usually have this time at their disposal. The ordinary citizen, however, is expected to use leisure time to obtain this information. New modes of participation should set the citizen free from the stress of his or her daily job and should grant him or her sufficient time to carry out this kind of social responsibility.

3. The participants should be motivated to take part. Many people obviously do not have the time, money, or interest to be present. The new mechanisms should encourage participating in working out solutions to public issues. One way to secure such participation is to guarantee the seriousness of the project. We need mechanisms that cannot be misconstrued as a simulation game or just another form of adult training for its own sake. Participants should be aware that their efforts are taken seriously and will not remain on paper but will be channelled into the decision-making processes. This is how their influence will be exercised.

4. The participants should support the common good. New ways of decision-making frequently serve as an invitation to relevant pressure groups to step in. While everybody takes care of its own interests first it is crucial for social decisions to find the general mean. The structure of the desired mechanism should offer participants a chance to identify themselves with the perceived common good. By randomly distributing the right to take part in the decision process, one insures that all organised interests are excluded and included in the same way. By limiting this right to one specific subject and to a short period of time, individual interests, like pursuit of a career or re-election, can be curbed if not neutralised. In the same way the group that makes the decision is prevented from developing any organisational group interest. All this create a situation in which participants can support the common good.

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1 The World Bank Participation Sourcebook: www.worldbank.org/wbi/sourcebook/shome
Tickner/Ketelsen: Democracy and the Precautionary Principle www.sdearthtimes.com/et0501/et0501s5
Joan Font (coordinator): Ciudaddanos y decisiones publicas, Ariel Ciencia Politica, Barcelona 2001
Expériences i propostes de participació ciutadana, in:Mª Angels Alió/Marti Olivella: Per viure bé nosaltres i les generacions que vindran, Guia per participar en l’aplicació de l’agenda 21 local, Barcelona 1999
Taking into account these criteria we’ll undertake a short presentation of the existing mechanisms of citizen participation in order to evaluate their appropriateness for our purposes here:

1.2 Referendum/legal popular initiatives

What a referendum is has not to be explained whereas legal popular initiatives are not common in all countries. It is an instrument which enables citizens to incite a referendum (Switzerland) or a parliamentary legislative procedure by collecting signatures of a determined number of citizens (Spain). In spite of the referendums about the Maastricht Treaty in Ireland, Denmark and France there are political parties and social movements which try to reinforce this mechanism for a more direct participation of the citizens. The weak points of these methodologies are that most of the raised questions are too complex to respond just with a ‘yes’ or ‘no’ and therefore requires more information than the normal citizens have at their disposal. Another problem pertains to the fact that many legal initiatives are initiated often by powerful pressure groups and lobbies (as in the US and EU) which normally do not defend common interests. And last but not least in most of the referendums organized recently, participation was very low.

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<th>Characteristics of referendum/legal initiatives</th>
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<td>Requirements</td>
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<td>Integration of all social groups and classes</td>
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<td>Immunity against the proper interest of the organisation</td>
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* The classification in (+) and (-) only represent tendencies

1.3 Enquiries/opinion polls/surveys

This type of direct citizens participation has become more important recently. No important political decision is being taken without considering the pulse of the citizens by surveys and enquires. The problem of these methodologies is again the lack of information regarding the participating citizens. It is not at all a deliberative process in which they receive information and have the chance to engage in a dialogue with others.

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<th>Characteristics of Enquiries/opinion polls/surveys</th>
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1.4 E-democracy; cyber-democracy; interactive policy making

These types of methodologies have come up during the last years with the diffusion of computerised technologies into more households while a stream of publications and technical software and hardware on this topic have been promoted as the solution to local democracy due to its high level of penetration to homesteads. But on the other hand they suffer the same deficiencies such as the lack of possibility of dialogue with other participants. The second point is that actually there is and will probably always be an important part of the population which has no access to it and these are those people who are usually marginalized in other mechanisms of participation as well.

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6for example: World Wide Direct Democracy
7Interactive Policy Making (IPM) is a project of the European Union: [http://europa.eu.int/yourvoice/ipm/](http://europa.eu.int/yourvoice/ipm/)
Another possible problem is the possibility to abuse this methodology by special interest groups.

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<tr>
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2. Roundtable/local dialogue/community planning/ Perspektivenwerkstatt/ Zukunftskonferenz/planning for real, future search, hearings etc.

Of course everyone of these methodologies is different and has its special characteristics and spheres of application. But for our purpose it seems to be legitimate to put them together because they have something in common: the participants in these panels are not your average citizens. They are either experts or stakeholders. These methodologies are quite successful.

<table>
<thead>
<tr>
<th>Characteristics of Roundtable/local dialogue/community planning/ Perspektivenwerkstatt/ Zukunftskonferenz/planning for real, future search, hearings etc.</th>
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2.2 Open space/open house

Open house and open space are events where the public is invited by the mass media to participate. Their principle “whoever comes are the right people and the right number” does not convince, especially dealing issues which touch the interest of important pressure groups. The main argument against these types of methodologies is again the lack of representativeness.

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2.3 Consensus Conference/Planning Cell’s/Citizens Juries/The Worlds’ Café/Charette

These methodologies are means for obtaining informed citizen input into policy decisions. The juries/panels/cells/groups are composed of 12-25 randomly selected citizens, who are informed by several perspectives, often by experts referred to as ’witnesses’. The participants then go through a process of deliberation and subgroups are often formed to focus on different aspects of the issue. Finally, they decide and

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*more details about these methodologies can be consulted again in: www.wegweiser-buergergesellschaft.de

* see Open Space Technology: New Perspective for Organizing and Perceiving Change - a description of Open Space and Self-Organizing Systems, by Linda Olson in: www.openspaceworld.org
register their recommendations by producing a ‘Citizen’s Report’. The sponsoring body (e.g. government department, local authority) is required to respond to the report either by acting on it or by explaining its disagreement. This is a 3-5 day process in which the participants are intended to provide a means for more democratic decision-making.

The Charette and World Café methodologies developed in the U.S. The Citizens’ Juries have two origins: one developed by Ned Crosby at the Jefferson Centre in Minneapolis, and the second, as an english version of the German Planungszelle (Planning Cell) which was developed by Prof. P. Dienel, University of Wuppertal, Germany, by the Institute for Public Policy Research (IPPR) in London10. Consensus Conferences and Planning Cells were initiated in Europe, the Consensus Conferences have been developed by the Danish Institute for Technology Assessment.

Differences between these systems pertain to questions of technical performance, starting with the way: a) participants are recruited, b) how time is distributed (the whole process in one block Planning Cells), during several weekends (Consensus Conference) or a longer ongoing process (Charette), c) the number of participants and/or d) more emphasis on the input of information or on time dedicated to deliberation between the participants etc. But as none of them is a fixed package, these items can change form one project to another, or subject to another, adjust in different countries or alter by the team working with them.

2.4 The Citizen Panels/Planungszelle/Núcleos de Intervención Participativa
For the purposes of this paper we will focus on the application of the participation model developed by P. Dienel of the University of Wuppertal and which has been applied with success to very diverse subjects in numerous projects on local, regional, national and international levels. The purpose of these “Citizen Panels” is simple and direct as it aims to the citizen from spectator into a participant. It is grounded on a genuine respect for the common man and permits a “government of the people, by the people and for the people”.

The Citizen Panel operates as follows:
1. In order to envision solutions to a problem (for example, locating a new industry, construction of a highway etc.) a legally supervised random selection is made. The resulting group reflects the population of a geographical district so that minorities are also included.
2. Those selected are invited to prepare recommendations to solve a specific problem. For a limited time - from three to five days - participants are given leaves of absence from their employers or businesses. They receive compensation.
3. Those elected by lot are made familiar with the problem for which a solution is sought by means of discussions, lectures and consultations. Information is provided so that all aspects of the issue are covered.
4. The participants outline the steps to be undertaken in small groups of five.
5. The limited life-span of each decision-making process prevents the creation of organized interests. The groups offer no career, no re-election and no advancement. The citizens are independent advisers and see themselves as such.
6. According to all our experiences, the groups are full of well-formulated and realistic ideas, something that always surprises the specialists. The results are drawn up as “Citizens’ Advisories” and presented to the agency that has asked for help. The identification of realistic plans has the advantage of avoiding legal disputes that otherwise could last a long time.

During the numerous experiences with this methodology in different countries it has been shown that participation promotes two values in a way as a side-effect which seems to be very important when facing the problems of the future:
- **Sustainability.** - In contrast of other organisations (political parties, interest groups, social agents), citizens tend to defend the common, long term interest of their organisation becoming this way authentic agents for a sustainable development. Tomás Rodríguez Villasante (1996) speaks in this context of the necessity to create spaces of shared decision that raise a re-balance of powers, necessary for sustainability and the integration of the perspective and interests of groups that historically have been completely marginalised socially and politically. This in itself represents a common obstacle to sustainability. If we do not empower the poor, the handicapped, women, youth and ethnic minorities, that is to say, if social integration is not an explicit objective of these processes, we’ll hardly be able to solve the problems we are confronted with.

- **Social Cohesion.** - The most important advantage of this model is that the three involved interest groups (social agents, experts and normal citizens) contribute to the process of decision making in a way that makes the most of their positive potential and simultaneously respects their legitimate rights. The citizens as potential victims and/or beneficiaries of planning measures are the best judges to evaluate the different options based on the information of diverging interests, worries, effects and consequences, facilitated by the representatives of interest groups, administration, organisations, groups of affected etc. and by neutral experts. The common work in the Citizen Panel integrates socially the different districts, social classes, age-groups... etc., and this way becomes a vehicle for the “creation of community”, jeopardising the citizens in a common project of development of their municipality (or region, quarter, enterprise etc.).

10 more details about them can be found in there corresponding web-sites:
http://home.att.net/~visualizer/Charette.html
www.theworldcafe.com
www.jefferson-center.org
www.planungszzelle.de
2.6 Advantages of the Planning Cell methodology compared with others

Although the Planning Cell methodology is probably the oldest and more experienced (the first projects were realized at the end of the seventies in Germany) in the meantime there are lots of different mechanisms and experiences and in recent years some Universities started to evaluate and experience them in the context of studies on “innovation of democracy”. It’s not possible and necessary to present here the outcome of all these studies but they are very helpful to have a general view on the growing offer of methodologies and to develop criteria for their comparison and appropriateness which might differ depending on the issue to be dealt and other circumstances.\(^1\)

The reason why we prefer to work with the Planning Cell methodology is mainly two criteria which are indispensable and which exclude most of the others.

1. Obviously we insist very much on the necessity of deliberation as an important criterion for a useful mechanism in public participation. That means that citizens should be widely informed about the pros and cons of the raised issue and have the possibility to debate among themselves. As said before it makes no sense that more and more people decide on more and more issues lacking the necessary information. And the issue of local participatory democracy in Europe is complex that citizens involved in a debate on this subject need more information than just everyday knowledge. Consequently this requirement disqualifies an important part of the existing mechanism in citizen participation such as: referendums, opinion polls, surveys and the so-called cyber-democracy that means the use of new technologies like the internet.

2. The second criteria in which we insist very much for the reasons specified above and which excludes automatically another important group of methodologies is the representativity of the selected citizens. If the participants are volunteers there is a high probability that—at least—part of them do not represent the common interest but special interest and pressure groups. This is especially probable if the issue to be dealt touches the interest of well organized pressure groups and lobbies which in our case is obviously the case.

This excludes again all forms of “cyber-democracy”, which means the use of computers, web and e-mail, because so far an important part of the population does not have access to it and although in the future the number of users will probably grow rapidly, an important part of the population will not use this medium, because they don’t want to—or especially elder people—because they don’t have access to, particularly due to economic reasons. That means this technology excludes again those who are always excluded.

The planning-cell methodology has been the pattern for other methodologies like consensus conferences, citizen juries, panels de citoyens and others\(^1\)\(^2\), although there are slight but significant differences in there application.

The decisive difference of the Consensus Conference is again the way participants are being selected. This is done by selecting a “representative” group of persons out of a sample of people who responded to announcements in newspapers, which is obviously an important filter which excludes important social groups.

The difference with Citizen Juries\(^13\) are mainly two: a. whereas the Planning Cell works with several cells of 25 persons, normally no less than four, even in local projects, the Citizen Juries are normally limited to only one group of about 15 to 20 participants; and b. the Planning Cell works only if there is an assignment by a public cancellor, whereas Citizen Juries select there topics independently (although in the English case there are also public assignments).

The second criteria have been seen by some authors\(^14\) as a disadvantage of the Planning Cell, because the issue is defined by the local authority which might lead to a bias in the input of information. But
this can be seen just the other way: the public assignment guarantees the commitment of the administration to take the solution and proposals of the participating citizens into account because they assigned and financed the project. Not to do this is absolutely counterproductive.

The amount of participants is as well important. Although the about with one group might be the same than with several groups (which is normally the case) the legitimacy and the diffusion is not the same.

Another point is that the participation of several groups permits the evaluation of the process and the information input by the first group (pilot group) and possible changes for the following ones, if necessary, and this way diminishes the danger of a “sponsor bias”. The last advantage which makes the Planning Cell definitely the most feasible is that it is already known and experienced and several European countries and we are in contact with the institutions and persons which realized these projects, which makes it much easier to work with this mechanism than any other.

3. Conclusive Remarks: Crisis of Representative Democracy – the Need of Citizen Participation

In this quest for the participatory forms of local government we explored a number of methods for citizens participation which actually work in Europe and America and have spread to other countries of the world and present us with a challenge, the challenge of application of these in the Greek situation whereby local government needs to practice subsidiarity at all levels in order to enhance service provision and establish local democracy based on service delivery. The final presentation seems to be a challenging prospect for all community forces and democratic political parties but also local civil society agencies to engage on when they decide to tackle real issues associated with endogenous and local employment development in a transparent social economy.

4. References


Font, J., (coordinator): Ciudadanos y decisiones públicas, Ariel Ciencia Política, Barcelona 2001

Experiencies i propostes de participació ciutadana, in: Mª Angeles Alió/Martí Olivella: Per viure bé nosaltres i les generacions que vindran, Giua per participar en l’aplicació de l’agenda 21 local, Barcelona 1999


Tickner/Ketelsen: Democracy and the Precautionary Principle www.sdearthtimes.com/et0501/et0501s5


More details about them can be found in there corresponding web-sites:

http://home.att.net/~visualizer/Charrette.html

www.theworldcafe.com

www.jefferson-center.org


www.planungselle.de


Roi Baudouin: Participatory Methods Toolkit: www.kbs-frb.be or www.viWTA.be or www.unu.cris.edu


Interactive Policy Making (IPM) is a project of the European Union: http://europa.eu.int/youvoice/ipm/

Newspaper

El Mundo, July 3, 2002
Chapter 4:

International dimensions of fisheries co-management

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Abstract:
Currently, there is an international shift towards a holistic and more inclusive management plan for fisheries resources. Many countries are turning towards the adoption of the Ecosystem Approach to Fisheries in order to achieve sustainable exploitation of their fish stocks. The EAF centers around the participation of stakeholder groups, and more significantly the fishermen, in the decision-making process for the adoption and implementation of local management plans. In Japan, based on the long local history of decentralised marine management, various management methods have been developed, in all of which the fishermen maintain a central role. The implementation of these methods has produced satisfying results and would prove important lessons for countries like Greece that have not yet adopted participation and a holistic views in their management plans.

1. Introduction
Internationally, there is little doubt about the importance of fisheries management for the sustainable exploitation of fish stocks, the most important source of protein intake source in many regions of the globe (UNEP 2006). Nonetheless, since G. Hardin (1968) introduced the idea of the “Tragedy of the Commons” and H. Scott Gordon (1954) made the connection between common property resources and fisheries, the public perception of fisheries management has changed drastically. As fisheries constitute by definition one of the most profound cases of common property resources (Ostrom 1990, Ostrom, Gardner, and Walker 1994, Scott Gordon 1954), they face the type of mismanagement that derives from the Tragedy of the Commons: each user of the fishery is compelled to fish increasingly, pursuing their own self-interest, reducing thus the amount of fish available to other users continuously until the limited amount of catch is depleted (Hardin 1968). The absence of well-enforced, high quality property rights results in negative profits for the fishermen and declining stocks (Arnason 2009). Common property resources cause excessive fishing efforts, fisheries overexploitation, decreasing profitability and fishermen’s income, as well as low contribution to Gross Domestic Product (GDP), and threats to the sustainability of the human development and the fish stocks (Arnason 2009). In addition, a common property resource tends to be utilized exclusively for its commercial value, despite its other, non-commercial values, and as soon as its commercial value declines, it becomes either neglected or commercially redeveloped (Mitsumata 2013). For the aforementioned reasons, the scientific community supports the adoption of sustainable fisheries management plans, and points toward an Ecosystem-based Approach (EA), coupled with co-management schemes as a viable solution (Bundy et al. 2008, Hall and Mainprize 2004, Jentoft 2005, Pikitch et al. 2004). The potential of EA has been recognized by the United Nations Convention on Biological Diversity, which defines EA as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way” (De Young, Charles, and Hjort 2008). However, the Food and Agriculture Organization of the United Nations (FAO) takes the definition of EA one step ahead and, specifically for the fishing sector, incorporates the elements of uncertainty and multidisciplinarity: “an Ecosystem Approach to Fisheries (EAF) strives to balance diverse objectives, by taking account of the knowledge and uncertainties of biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries” (De Young, Charles, and Hjort 2008).

Until recently, globally, policy focused on the design and implementation of a uniform set of rules or management plan, which would be imposed centrally on a national level, and would affect the common property marine resources as a whole, rather than developing individual management plans based on the traditional ecological knowledge for each marine ecosystem and the specific need of the communities and the habitats under examination (Alder, Sloan, and Uktolseya 1994, Neis 1995, Sumaila et al. 2000, Ostrom,
Gardner, and Walker 1994, Ostrom 1999). According to Ostrom (1999), this approach fails at three fundamental points. First of all, the theoretical background for a central management plan, views the resource users as free-riders, whose exclusive goal is to maximise their immediate gains, without allowing for cooperation with other users in order to maximise their long-term benefits, unless an external force (i.e. the central government) forces them to do so. At the same time, the government officials are perceived as if they are only aiming at maximising the well-being of the citizens and they are able to design policies by analysing long-term patterns. In addition, the design of effective management plans is considered an easily achieved goal, as long as it is performed by objective analysts, unrelated directly to the fish stocks. Lastly, organisation itself is considered to be attainable only from the top – down (Ostrom, Gardner, and Walker 1994, Ostrom 1999).

2. Fisheries co-management and environment-based approach
Nowadays, in many countries, environmental management is changing form, from exclusive state control to joint management in which local communities and non-governmental organizations (NGOs) share authority and benefits with governmental institutions (Matsuda, Makino, and Sakurai 2009). Fisheries management based on the internal knowledge of the local artisanal communities, which operate with traditional techniques and tools, is considered the key to sustainability and protection of the marine and coastal ecosystems around the globe (Neis 1995, Sumaila et al. 2000, UNEP 2006, UNEP-WCMC 2006).

A very efficient institutional mechanism that allows user groups and stakeholders to influence the management system is participation in decision-making (Jentoft 2005). According to UNEP-WCMC (2006), “stakeholder participation in decision making is effective in addressing the alteration and loss of marine and coastal ecosystems and their services”. Thus, adopting a system of community participation in the decision-making process would result in enhancing the social capital within the community, an ingredient of extreme importance for the development of the area. Increasing social capital in fisheries management affects positively the community income in many ways, both directly and indirectly. Specifically, it increases natural capital through sustainable use of the common resource, increasing thus the income of the fishing households and allowing for more households to enter the market (Cheong 2004, Isham 2000, Islam and Dickson 2007, WorldFish Center 2007).

By establishing local partnerships and developing social capital, local communities are also enabled to subserve their collective interests and attract attention from the national level (Tsobanoglou 2008, Wilkinson and Pickett 2009). The basic principle of the “Third Sector”, in which local partnerships belong, is not the maximisation of profits; instead, it is based on local growth and development (Tsobanoglou 2008). The Third System operates differently from both the public and the private sector as it encompasses elements of the two, as well as introducing the idea of volunteering. Most importantly, it is structured upon relations of networking and also provides the interacting parts with the benefits of immediate interplay, creating thus working relationships of trust (Tsobanoglou 2008, Wilkinson and Pickett 2009). The services that derive from such a system are characterised by high quality and large variety (Roustag 1987, Tsobanoglou 2008). In addition, the Third System enhances local employment and affects private consumption by promoting local produce and services, highlighting the economic benefits a local community may gain from this kind of approach (Tsobanoglou 2008). However, developing local partnerships and enhancing social capital through participatory democracy is also a learning process, during which fishermen learn how to become effective fisheries co-managers (Jentoft 2005, Pateman 1970).

It is evident that community empowerment and organisation are necessary for fisheries co-management to become sustainable. Co-management involves and requires institutional design, participatory democracy and capacity building (Jentoft 2005, Pomeroy and Kuperan Viswanathan 2003). Such an arrangement creates a positive feedback cycle: co-management empowers the community and the empowered community promotes co-management (Jentoft 2005). According to Raakjær Nielsen et al. (2003) (as cited in Jentoft 2005), fisheries co-management is a “mechanism to give people within the fishing communities a chance to influence their own future in order to cope with the impacts of globalization; competing use of freshwater and coastal environments; and other fisheries-related communities." This definition focuses on the local element of empowerment in the global context.

As mentioned above, the most efficient way to increase social capital in communities which rely on fisheries is by establishing some form of self-regulation through public participation and local community involvement in fisheries management (Fiske 1992, Kaza 1988, Rigney 1990, Sumaila et al. 2000, Wulfenden, Cram, and Kirkwood 1994). However, a community cannot achieve the goal of complete self-organisation and self-regulation by itself. Even if local fishermen organise themselves, they cannot operate effectively without stately intervention (Dolsak and Ostrom 2003, Pomeroy and Berkes 1997). Intervention and regulation from the state is necessary, as the state itself should form the supporting pillar for the creation of the Third Sector (Tsobanoglou 2013). After all, co-management is defined as the sharing of responsibilities between governmental institutions and groups of resource users (Matsuda, Makino, and Sakurai 2009, Persoon, van Est, and Sajise 2005). According to Jentoft (2005), the state should maintain two vital roles in fisheries co-management:
1. There is public interest in fisheries management which the state has a responsibility to uphold, and one cannot expect user groups and stakeholders to look out for interests and concerns other than their own.
2. The state should offer legislative powers, financial resources, educational support and technical infrastructure (e.g. research).
In this context, the connection between co-management and the ecosystem approach to fisheries (EAF) is obvious. According to De Young, Charles, and Hjort (2008), EAF:
1. should be adopted within the societal context, to reflect the community objectives
2. considers the human interactions between fisheries and ecosystems, and mainly, human decision-making and behaviour
3. requires institutional arrangements which will provide incentives and punishment, for its implementation.

Japan
In Japan, the basic principle of the EAF, that fishing communities ought to be considered as part of the ecosystem (Coward, Ommer, and Pitcher 2000, Sumaila et al. 2000), is the basis for the management framework. The local fishermen are an integral component of the ecosystem, rather than unwanted extras to be eliminated from the “original ecosystem”. They are expected to play an indispensable management role, especially with regard to ecosystem monitoring and resource management. Responsible fisheries run by local resource users can contribute to the realization of cost-effective ecosystem-based management (Makino 2010). They are the principal decision makers and marine resource conservation is an central concept of resource use (Makino and Matsuda 2005). Through years of trial and error, viable management plans have been adopted, which depend highly on the fishermen themselves. However, they are not the sole actors in the decision making process and its implementation, as the local authorities and national governments play a significant role in delivering the necessary legislation on fishing rights and resource conservation. In addition, educational institutions provide support to the decision makers in the form of scientific information and administrative advice (Makino and Matsuda 2005). In accordance with the Japanese case, in order for fisheries co-management to succeed, it is necessary that the fishermen conceive the stocks as their own, as they adopt a more positive attitude towards management and conservation (Yamamoto 1995). Fishermen are willing to embrace the management concepts that constitute co-management, as long as they are at least economically neutral, and the potential to increase their economic gains is not unduly constrained (Sumaila et al. 2000). Nevertheless, even when the local fishermen adopt the notion of co-management, research institutions and governments continue to play major roles in this framework (Makino and Matsuda 2005).

This arrangement stems from the fact that marine management in Japan is characterized by a long history of coastal co-management of fishermen’s organizations (Makino, Matsuda, and Sakurai 2009, Matsuda, Makino, and Sakurai 2009). It is due to the complexity of the system and its intensive nature, that fisheries coordination and resource conservation cannot be implemented effectively in a top-down, command-and-control manner. Fisheries management organizations (FMOs) consisting of allied fishermen, play a core role in decision making, and are implementing and enforcing the measures they decide on their own initiative. Local and central government officials and researchers support FMOs’ activities with legal advice and scientific information (Makino 2011). Since the first legal provision for fisheries operations in the 8th century, the fundamental concept of fisheries management in Japan has been fisheries management by the resource users themselves. This concept has been passed down to even the most recent management system, such as Total Allowable Catches (TACs) which were adopted in Japan in 1997, and the Resource Recovery Plan that was established in 2001 (Makino and Matsuda 2011). The legal documents support this framework. For example, according to Article 7 of the Fishery Act, a right of common fishery or common-of-piscary right is authorized to each fishery cooperative association upon its application to the prefectural governor on a five-year basis. It is a collective right of the association members. It can then be understood that it is also a right of an individual fisherman as an association member. Each association holds regular or irregular meetings of its members, sets its own fishing regulations and decides on important issues. In the process of decision-making, democracy among members prevails. If the issue under discussion is a crucial one concerned with the future of all member families however, the decision is often required to be unanimous (Murota 2013).

Best-practice cases in Japan
Specific fisheries in Japan have an extraordinary record of efficient management practices to display. For example, in the northern part of Japan, in the Shiretoko Peninsula, the local stakeholders have come together to develop a holistic management scheme for their marine and terrestrial environmental resources. Their effort was also supported by the fact that the Japanese Government had nominated the Shiretoko Peninsula as UNESCO World Natural Heritage (Makino 2011, Makino, Matsuda, and Sakurai 2009, Matsuda, Makino, and Sakurai 2009). The publicity urged the stakeholder groups to cooperate more closely in order to fulfill the UNESCO requirements without compromising their communal interests. Through extensive consultation and supported by the Japanese local and national governments and various academic institutions, the Shiretoko World Natural Heritage Site Scientific Council was founded, with the aim to build consensus among the stakeholders and adopt the ecosystem approach. As representatives from most stakeholder groups are participating in the Council, multiple group interests, including tourism, fisheries, governance, agriculture and science are voiced during the decision-making process. The Shiretoko Natural Heritage Site Management Plan has made significant achievements, by adopting viable trade-offs between conservation, fisheries management and tourism, resulting in a sustainable and largely self-funded conservation scheme (Makino 2011). However, these achievements, and more specifically the high transparency level and consensus building, can be attributed to the fact that UNESCO had very high requirements in terms of sustainability in order to approve the Shiretoko nomination, and that the Japanese Government had guaranteed that there would be no additional fisheries regulations included in the management plan.
Another very interesting case is the Ise Bay Sand Eel Fishery. The most significant point of this fishery is the fact that it is being exploited by fishing fleets of two different prefectures. The Mie Prefecture and the Aichi Prefecture sand eel fishing fleets, instead of competing with each other for the resource, they have set up a complex fisheries management structure, consisting of four different Fishermen’s Unions (FUs), one of each prefecture targeting juvenile sand eels and the other targeting adult specimens (Makino 2011). The fishermen, in cooperation with researchers, have introduced science-based management measures, which they evaluate and adjust to the annual needs of the fishery every year, always after consulting with researchers (Makino 2011).

**Greece**

In contrast with Japan, the situation in Greece seems quite dire. Despite the fact that extensive legislation on fisheries management, both national and international, is in place, its enforcement is minimal (Vlachopoulou, Wilson, and Miliou 2013). The marine habitats have been gradually deteriorating, resulting not only in the loss of a large proportion of fish stocks, but also in the reduction of the livelihoods of the local artisanal fishing communities (Special Secretariat for Planning Applications & 3rd Community Support Framework 2007, Waycott et al. 2009). The EU laws are being disrespected and no management plan has been put in place. Furthermore, the majority of the population is not involved in the control and regulation of the national waters, as the state is highly centralized. The fishermen have minimal participation in the decision-making processes, the management of the marine resources or the enforcement of the legislation, and as result, their needs and local knowledge are not being voiced during the management procedures (Tsobanoglou and Vlachopoulou 2013). As a consequence, the current status quo does not seem to change, even though the quality of life of the artisanal fishermen and their families has been deteriorating (Tsobanoglou 2007, Vlachopoulou, Wilson, and Miliou 2013).

The Greek State is detached from marine management. The General Secretariat for Fisheries was alternating between various Ministries, and it was only settled within the jurisdiction of the Ministry of Rural Development and Food during the past two years. Even though the EU has been promoting Blue Growth with special focus on public participation and sustainability within the Union Area (European Commission 2013), in Greece the European directions have not been followed and the country is continuously facing the threat of penalties. Although various national projects for fisheries data collection and species-specific conservation have been deployed (e.g. eel), the state has been largely unable to provide the necessary financial support and, inadvertently, the projects have failed to produce results (Stergiou 2013).

Despite the fact that no general marine management plan exists, some steps have been taken, even though small and incomplete. According to (Abdulla et al. 2008), four Marine Protection Areas have been recognized officially in Greece:

1. Alonissos – Vories Sporades
2. Messolonghi – Aetoliko lagoons, estuaries of Acheloos and Evinos and Echinades Islands
3. Schinias – Marathonas
4. Zakynthos

However, out of the 4 Greek MPAs, there is data available only for the two which are National Parks. Furthermore, in the MPAs, the fishermen have no role to play in the management section, as there is no legislative background to allow participation in the decision-making processes, or even the provision of monitoring and control support (Tsobanoglou and Vlachopoulou 2013).

**3. Conclusions and discussion**

In order for a state to achieve sustainable exploitation of its fisheries resources, the safest choice would be to allow for the resource users to participate in the management process. The Japanese case has shown surprisingly good results which would prove quite effective in the Greek case as well. As the two countries share various similarities, from the insular character of the state to the reliance on the maritime sector and the love for the sea of the population, it would be rational for Greece to try and learn from the Japanese experience. The Greek state is plagued by the financial crisis and should use every means available to overcome the situation and emerge self-sustaining and sustainable.

The maritime sector, with fisheries in its very center, is the comparative advantage of the Greek economy, and by managing sustainably the marine environment, it would allow for multiple other sectors, and most significantly tourism, to develop significantly. Therefore, there is space for the introduction of both the ecosystem and the participatory approaches in order to increase the national employment and income as well as to achieve sustainable exploitation of fish stocks.

**4. References**


Bundy, A., R. Chuenpuech, S. Jentoft, and R. Mahon. 2008. "If science is not
the answer, what is? An alternative governance model for the world's fisheries. "Frontiers in ecology and the environment" no. 6 (3):152-155.


Tsobanoglou, G. 2013. Local partnerships in Ireland: Greek and other relations of social economy. Athens: Gordios.
UNEP-WCMC. 2006. Marine and coastal ecosystems and human well-being: A synthesis report based on the findings of the Millennium Ecosystem Assessment: UNEP.
UNEP. 2006. Our precious coasts - Marine pollution, climate change and the resilience of coastal ecosystems. GRID-Arendal: UNEP.
Section 5: Inclusive Recovery and Local City Governance
Flexible employment accounts and the neglect of the informal dimension during the crisis: evidence from Southern EU regions

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Abstract:
This paper argues that formal and informal employment are neither separate worlds nor different situations carrying completely divergent patterns and practices when compared to each other; both forms of employment frequently ‘overlap’ and co-exist, as much in spatial as in normative terms. This is especially so for the regional level of analysis. For example, following official EU theorizations, estimates of composite flexicurity (i.e. employment flexibility and security) indicators incorporate data on Flexible Contractual Arrangements but ‘forget’ to use sub-national variables that refer to informal employment. This paper conceptualizes and calculates the Informal Employment and Labour Market Segmentation (IELMS) composite indicator (CI) which can be used as an extra new dimension to contemporary flexicurity accounts. The calculation utilizes the employment (labour) discrepancy approach, as well as many other variables. The paper finds a North/ South divide on this matter: Southern regions are at the top places of the EU hierarchy in terms of informal work diffusion and are, thus, in urgent need of enhanced protection of labourers’ rights and working conditions therein.

1. Composite indicators: a brief literature review
In seeking to evaluate the possibilities for the ‘successful implementation of flexicurity’, the European Commission has used four metrics, namely the presence of: i) Lifelong Learning (LLL) opportunities; ii) Active Labour Market Policies (ALMP); iii) Modern Social Security Systems (MSS); and iv) Flexible Contractual Arrangements (FCA). However, these studies are in need of further methodological elaboration because they mainly focus on formal employment at a national level of analysis and seldom incorporate important informal and spatial dimensions (European Commission, 2006 & 2007; Manca et al, 2010a & 2010b). This is a major problem, for as Massey (1984) has shown and as Krugman has emphasized through his recent Nobel Prize, ‘Geography matters’, especially in today’s extremely globalized and at the same time locally sensitive economy (Herod, 2001; Wilthagen & Tros, 2004). As the literature review presented below reveals, formal and informal employment are neither separate worlds nor different situations carrying completely divergent patterns and practices when compared to each other; both forms of employment frequently ‘overlap’ and co-exist, as much in spatial as in normative terms.

This paper develops and calculates the Informal Employment and Labour Market Segmentation (IELMS) indicator which can be used as an extra new dimension to contemporary flexicurity accounts. The calculation utilizes the employment (labour) discrepancy approach, also known as the ‘discrepancy between the official and actual labour force’, as well as many other variables. The paper finds a North/ South divide on this matter: Southern regions are at the top places of EU hierarchies in terms of informal work diffusion and are thus in urgent need of enhanced protection of labourers’ rights and working conditions therein.

We have opted to approach these issues through Composite Indicators (Gialis and Leontidou, 2014). A relatively large number of studies focus on CIs and their wider socio-political significance (Lawn, 2003; Saltelli, 2007; Hoskins and Mascherini, 2009). Many of them deal with estimating and monitoring innovation and the technological efficiency of nations; other commonly discussed indicators are the Human Development Index (HDI; United Nations Development Programme, 1990), and the Genuine Progress Index (GPI; Redefining Progress, 1995) which estimate welfare and development across the globe. The former is widely considered by academics, politicians, the mass media and wider audiences as a multi-dimensional index that is more holistic than traditional measures (e.g. the gross domestic product or per capita income); while the latter measures the capacity-limit and resilience of human eco-systems. Furthermore, Environmental Sustainability (Esty et al, 2005) and Sustainable Economic Welfare (Ledoux et al, 2007) are examples of...
popular indexes that account for socio-environmental and economic sustainability of different nations, respectively.

Certain criticisms, either constructive or not, have been raised against CIs. These are justified by the inherent antinomy and epistemological constraints that quantitative exercises are subjected to. For example, indicators may simplify social phenomena; while quantification usually underestimates qualitative aspects of society and work that cannot be easily measured. To notice but a few, the GPI is in need of a more robust valuation method as well as it suffers from the absence of theoretically sound definitions of notions that it incorporates (e.g. 'income'); while the HDI should extend its ability to capture new socio-economic trends and adopt a ‘more global’ perspective of comparative development account (Sagar and Najam, 1998).

Regionally-sensitive CIs are relatively few. This depicts a certain form of neglect and ignorance of the regional character of the phenomena, while it underlines the need for producing more and better data-series on a sub-national level of analysis. In their work on the sustainability of Italian regions Floridi et al (2011) emphasize the ability of CIs to capture complexity, while they show that a range of possible rankings is produced when different weightings schemes, normalization rules and aggregation schemes are adopted.

2. Informal work: theoretical definitions and methodological issues

Most definitions agree that informal employment is a specific type of paid work that is hidden from the state or not registered by official authorities, in order that compliance with tax, social security or labour legislation is avoided (European Commission, 2007; Williams, 2010a & 2010b). Itself a multi-faceted phenomenon, informal employment is usually found in the form of hiring and work agreements that are not deposited to competent state authorities, and are thus undeclared. It is manifested in various activities which are hard to distinguish in terms of taxonomy, such as work arrangements that are partly ‘legal’ or ‘declared’ and partly not. Statistical analysis between an ‘ideal’ formal and a ‘pure’ informal situation cannot be easily performed as, for example, there are many employers who pay a part of their labourers’ salary on an informal basis in order to avoid tax and labour legislation that accompanies full employment.

Formal and informal employment are neither separate worlds nor different situations carrying completely divergent patterns and practices when compared to each other (Gialis and Karnavou, 2008); both forms of employment frequently ‘overlap’ and co-exist, as much in spatial as in normative terms. Thus hybrid situations between the formal and the informal may be the norm rather than the exception for both firms and the employees. The fluidity of this situation of existence is dependent upon complex social, economic and spatial factors. Mixtures of informal practices (e.g. concealment of part of the salary, avoidance of a part of social security contributions, partial implementation of labor legislation regarding remuneration and protection) with formal employment arrangements are very common in Southern EU regions. In fact, Williams and Padmore’s (2013: 73) argument that many scholars have treated formal and informal jobs as ‘separate and discrete’ is not taking into account a vast amount of publications on the how and why formality has been diluted in informal work and life practices in Southern EU areas, during the 20th century (Leontidou, 1993 & 1995).

The phenomenon of undeclared work has attracted the attention of several researchers during the past decade or so; some of them focus on Southern EU and the Eastern newly acceded members of Southeast Europe. The majority of these studies focuses on small representative samples and/or specific geographical areas; and they produce estimates of the informal/undeclared employment1. Williams and Padmore (2013) based on a 2007 Eurobarometer survey, for which 26,659 face-to-face interviews were conducted across EU-27, found that formal and informal jobs are not always discrete. Specifically, one in 18 formal employees were found to be involved in ‘quasi-formal’ employment, as they were paid two wages in their official job (i.e. a declared official compensation and an additional undeclared salary), thus being paid around one fourth of their average gross salary on an undeclared basis. In a previous publication based on this same survey (Williams, 2010a) this ratio was quite bigger for the Southeastern EU countries (i.e. Bulgaria, Cyprus, Greece, Romania and Slovenia), as 1 in 6 (16%) formal employees were found engaged in ‘under-declared’ jobs. The main motive behind such a practice was that employers paid a relatively lower amount to indirect salaries (i.e. social and health insurance, tax liabilities) while employees were concealing a part of their net income as the extra ‘envelope’ wage is not subject to tax. The authors found that such ‘quasi-formal’ practices are common in small firms and the construction sector, and they are also diffused amongst men, young employees and the lower paid parts of the working population; while they are significantly more diffused in both South and East-Central EU members.

Williams (2010b) found that not only under-declared employment is more prevalent among Southeastern EU countries, but an average 60% of gross salary is paid on a cash-in-hand basis in such countries. This rate is significantly higher when compared to the 43% found for the whole of the EU. The reason for this was that undeclared salaries in Southeast EU were usually used to remunerate regular and/or overtime work, while in North-central EU they were in their major part related to extra time worked to cover increased demands of the firms. In another study based on the same empirical material (Williams, 2010a) it was found that although a smaller share is involved in undeclared work in Southeast Europe, that is 4% of the population when compared to 5% for the EU 27 and 11% for the Nordic countries, such workers work for longer hours (360 per year) in the Southeast area, whilst in Nordic countries informal work is for fewer hours (60 per year on average) and related to ‘mini-jobs’ of lower scale and scope, such as baby-sitting, gardening etc.

1 For the Greek case see Danopoulos and Zidianic 2007; Karanitos 2007.
Measuring the magnitude of the informal economy is commonly based on three different methodologies: i) direct approaches, ii) indirect approaches and iii) alternative approaches (e.g. the model approach etc). Direct approaches are micro approaches that are either based upon sample surveys, censuses, and various forms of questionnaires, or rely upon data collected for tax auditing purposes and other monitoring or compliance mechanisms. In many countries periodical surveys are conducted for measuring the informal economy. A problem that must be properly treated in such studies is related to carefully defining the contract status of workers, as there are cases where the employee is unaware whether his/ her employer is legal in terms of applying all employment regulations or not (Dell’Anno et al, 2007).

Indirect approaches, on the other hand, are mostly based on macroeconomic data and attempt indirect estimations of the size of the informal phenomenon, based on its relation to other socio-economic indicators. Discrepancy methods, the ‘transition approach’ and the ‘currency-demand approach’ are among the best-known and widely used indirect methodologies. Discrepancy methods are commonly applied for estimating the informal sector and employment. They are mainly applied in advanced countries due to data standardization and reliability reasons. The discrepancy approach is based on the comparison of independent datasets that can be used to estimate a phenomenon. Its basic conceptual idea is that the net outcome of the phenomenon under scrutiny (e.g. informal employment) can be estimated by measuring the discrepancy between two calculations: i) one that measures the phenomenon while being relatively free of biases induced by that phenomenon and ii) another that is known as affected by that same phenomenon. Specific care should be taken in order to ensure that one of the two datasets is not, either directly or indirectly, affected by the phenomenon under study, as this may lead to a calculation of the different results of the two approaches rather than then the size or the magnitude of the informal activity (Karanitits, 2007; Williams and Padmore, 2013).

In the following section the IELMS CI is calculated based on the employment (or labour) discrepancy approach, which is also known as the ‘discrepancy between the official and actual labor force’, and based on the assumption that a decline in the participation of the labor force in the so-called official economy is an indirect sign of an increasing engagement in informal activities. Specifically, a decrement of the official rate of participation may signify an increase in informal employment, if the total labor force participation is assumed to be and remains constant, while all the other parameters that have an effect upon such participation also remain constant. An advantage of this approach is that it can easily reveal changes in the magnitude of informal employment through the above indirect comparison of two datasets that are common for the national statistical authorities. Its weaknesses lies on that, differences in the rate of participation are in many cases multi-parametric and related to different kinds of causes, as in cases where the same people are involved in both formal and informal employment and should not be separately counted.

Another weakness of the discrepancy approach is its theoretically ambiguous character, since changes in the employment ratio and the labour force ratio may not necessarily reflect changes in the informal economy and employment. It might be potentially related to involvement of employees of the registered part of the economy in the shadow economy too, as in the case of ‘quasi-formal’ employment practices discussed above; employees might be also holding a second job that is distinct from their main job on weekends, nights or after official working hours. In any case, indirect estimates are commonly used as important indicators of the size and reproduction of the informal work and economy.

3. The ‘Informal Employment and Labour Market Segmentation’ (IELMS) CI

Following an analysis of the NUTS-II-level available data, measurability of certain aspects of informal labour, and the potential relation between the sub-indicators, we decided to synthesise a total of eight (8) sub-indicators into a common IELMS CI following Nardo’s et al (2005) framework. The CI is calculated for all 200 NUTS II-level regions of France, Germany, the UK, Denmark, Sweden, Belgium, Greece, Italy, Spain, Portugal, Bulgaria and Romania for 2005, 2008 and 2011 to present a clear picture of causal effects soon before and after the 2008 recession. Complete data-series existed through Eurostat’s Labour Force Survey (LFS), and missing values were few. For data that were not immediately available through Eurostat’s official portal, such as the number of ‘persons seeking work but not immediately available’, ad-hoc requests had to be submitted to Eurostat. The sub-indicators were grouped into three (3) dimensions which, when put together, lead to an estimation of CI for the three years under study. The pillars and sub-indicators are as follows (see Table I):

3.1 The informal employment dimension

3.1.1 Discrepancy between labour force participation and employment rate, (%) (sub-indicator: IELMS1_1);
Percentage of difference between labour force participation and the employment rate for persons aged 15-74. The sub-indicator has a positive effect on composite IELMS index as the higher the share, the higher the incidence of informal employment and labour market segmentation (the lower the flexibility) in the labour market.

3.1.2 Long-term unemployed over total unemployed, (%) (sub-indicator: IELMS1_2);
The share of persons aged 15-74 that are long-term unemployed over total unemployed. The sub-indicator has a negative effect on composite IELMS index as the higher the share, the higher the incidence of informal employment and labour market segmentation in the labour market.

3.2 The underemployed and potential labour force dimension

3.2.1 The share of part-timers wishing to work for more hours over total employment (sub-indicator: IELMS2_1);
Persons aged 15-74 working part-time who wish to work additional hours and are available to do so; in other words, ‘involuntary’ part-time employment share. Part-time work is recorded as self-reported by individuals.
These data are mainly published on a national scale, yet regional data were retrieved through an ad-hoc query to Eurostat. The sub-indicator has a positive effect on composite IELMS index, as the higher the share, the higher the incidence of informal employment and labour market segmentation in the labour market.

3.2.2 The share of part-timers wishing to work for more hours over part-time employment (sub-indicator: IELMS2_2):
Persons aged 15-74 working part-time who wish to work additional hours and are available to do so; in other words, ‘involuntary’ part-time employment share. As previously stated, regional data were retrieved through an ad-hoc query to Eurostat. The sub-indicator has a positive effect on composite IELMS index as the higher the share, the higher the incidence of informal employment and labour market segmentation in the labour market.

3.2.3 Persons seeking work but not immediately available over economically active population (sub-indicator: IELMS2_3):
Persons seeking work but not immediately available are those aged 15-74 neither employed nor unemployed, who actively sought work during the last 4 weeks, but are not available to work in the next 2 weeks. This category also includes three smaller groups: those who found a job to start in less than 3 months and are not available to work in the next 2 weeks; those who found a job to start in 3 months or more; those who passively sought work during the last 4 weeks and are available to work in the next 2 weeks. Passive job search is e.g. waiting for the results of a job interview. The sub-indicator has a positive effect on composite IELMS index, as the higher the share, the higher the incidence of informal employment and labour market segmentation in the labour market.

3.2.4 Persons available to work but not seeking over economically active population (sub-indicator: IELMS2_4):
Persons available to work but not seeking work are persons aged 15-74 neither employed nor unemployed who want to work, are available to work in the next 2 weeks, but do not seek work. This specific group of people, that is officially part of the economically inactive population though potentially belongs the labour force, is often called the potential additional labour force. Most researchers and statistical authorities usually add those that ‘seek work but not immediately available” into this potential labour power. The sub-indicator has a positive effect on composite IELMS index as the higher the share, the higher the incidence of informal employment and labour market segmentation in the labour market.

3.3 The low-waged employees dimension

3.3.1 The share of low-waged full-time employees over total employees (IELMS1_1):
Low-wage earners are defined as those employees earning two-thirds or less of the national median gross hourly earnings. Hence, the thresholds that determine low-wage earners are relative and specific to each Member State. Data used in this paper comes from a publication issued by Eurostat based on the latest results of the four-yearly Structure of Earnings Survey. This survey provides detailed information on the structure and the distribution of earnings in the EU. The sub-indicator has a positive effect on composite IELMS index, as the higher the share, the higher the incidence of informal employment and labour market segmentation in the labour market.

3.3.2 The share of low-waged part-time employees over total employees (IELMS3_1):
The sub-indicator has a positive effect on composite IELMS index, as the higher the share, the higher the incidence of informal employment and labour market segmentation in the labour market. According to a recent report published by Eurostat, 31.3 % of the temporary employees are also low-wage earners. The respective figure for permanent employees is 15.7 % (Bezzina, 2012). Summing up, a total of 8 sub-indicators (variables), distributed across three different dimensions, was used for building the NUTS-II level IELMS CI. The CI has been calculated based on distinct annual datasets for three years: 2005, 2008 and 2011.

<p>| Table I. Dimensions and sub-indicators of the Informal Employment and Labour Market Segmentation CI |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>Code</th>
<th>Name of the sub-indicator</th>
<th>Short Description</th>
<th>Regional scale</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>IELMS1_1</td>
<td>Informal</td>
<td>Discrepancy between labour force participation and employment rate, (%).</td>
<td>Nuts II</td>
<td>Eurostat</td>
</tr>
<tr>
<td>IELMS1_2</td>
<td>Long_term_unempl</td>
<td>Long-term unemployed over total unemployed, (%)</td>
<td>Nuts II</td>
<td>Eurostat</td>
</tr>
<tr>
<td>IELMS2_1</td>
<td>Und_part_time_over_empl</td>
<td>Underemployed part-timers over total employment, (%)</td>
<td>Nuts II</td>
<td>Eurostat</td>
</tr>
<tr>
<td>IELMS2_2</td>
<td>Und_part_time_over_part_empl</td>
<td>Underemployed part-timers over part-time employment, (%)</td>
<td>Nuts II</td>
<td>Eurostat</td>
</tr>
<tr>
<td>IELMS2_3</td>
<td>Seek_not_avail</td>
<td>Seeking work but not available over economically active, (%)</td>
<td>Nuts II</td>
<td>Eurostat</td>
</tr>
<tr>
<td>IELMS2_4</td>
<td>Avail_not_seek</td>
<td>Available to work but not seeking over economically active, (%)</td>
<td>Nuts II</td>
<td>Eurostat</td>
</tr>
</tbody>
</table>
4. Calculation and analysis of CIs

4.1 Data normalization

There exist many different normalization methods and each of them produces different outcomes in relation to the CI under scrutiny. Categorical scale, distance from a reference country/region, re-scaling in relation to an identical scale (e.g., 0-1), standardisation or z-scores, and ranking of differences over consecutive years, are some of the most used methods in relevant studies. Selecting an appropriate method is dependent upon the aim of the research, the theoretical categories and empirical differences that are to be revealed through a study, the different sub-indicators and their impact upon the CI, as well as other factors. In this study the standardized z-score values were selected as they provide a good estimation of the role of outliers on the CI at hand (e.g. indicators with high values have a bigger impact on the final index). Through such a methodological choice our intention is to highlight the regions that do perform quite well (or very poor) in terms of informal employment and labour market segmentation. A consequence of such a choice is that regions that have high scores in some sub-indicators might be well revealed through the CI, while other regions performing close to the average in most of the sub-indicators may be ‘concealed’. This in turn, can be normalized during aggregation either through differential weighting of the sub-indicators or by excluding the extreme values of a sub-indicator from the calculation of the CI.

4.2 Weighting and aggregating for the CI

The equal weighting scheme, according to which all sub-indicators within the same pillar/dimension have equal importance and thus participate with the same weight in the CI, has been adopted (see Table II).

<table>
<thead>
<tr>
<th>Dimension/ sub-indicator</th>
<th>Dimension weight &amp; Direction</th>
<th>Description</th>
<th>Sub-indicator</th>
<th>Normalized weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>The informal employment pillar/ dimension</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IELMS1_1</td>
<td>1/1 (+)</td>
<td>Discrepancy between labour force participation and employment rate, (%).</td>
<td>Informal</td>
<td>0.333</td>
</tr>
<tr>
<td>The underemployed and potential labour force pillar/ dimension</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IELMS 2_1</td>
<td>1/4 (+)</td>
<td>Underemployed part-timers over total employment, (%)</td>
<td>Und_part_time_over_empl</td>
<td>0.083</td>
</tr>
<tr>
<td>IELMS 2_2</td>
<td>1/4 (+)</td>
<td>Underemployed part-timers over part-time employment, (%)</td>
<td>Und_part_time_over_part_empl</td>
<td>0.083</td>
</tr>
<tr>
<td>IELMS 2_3</td>
<td>1/4 (+)</td>
<td>Seeking work but not available over economically active, (%)</td>
<td>Seek_not_avail</td>
<td>0.083</td>
</tr>
<tr>
<td>IELMS 2_4</td>
<td>1/4 (+)</td>
<td>Available to work but not seeking over economically active, (%)</td>
<td>Avail_not_seek</td>
<td>0.083</td>
</tr>
<tr>
<td>The low-waged employees pillar/ dimension</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IELMS 3_1</td>
<td>1/2 (+)</td>
<td>Low-waged full-time employees over total employees, (%)</td>
<td>Low_wage_full_time</td>
<td>0.166</td>
</tr>
<tr>
<td>IELMS 3_2</td>
<td>1/2 (+)</td>
<td>Low-waged part-time employees over total employees, (%)</td>
<td>Low_wage_part_time</td>
<td>0.166</td>
</tr>
</tbody>
</table>


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Specifically, a z-score indicates how many standard deviations the value of region is bigger (smaller) from the mean of the population. It does so by normalizing all values into a common scale where the mean is zero (0) and the standard deviation is one (1). In other words, the z-score represents a normal random variable that belongs to a standard normal distribution. The population is comprised by all 200 values of the sub-indicator for the sample of regions under study (e.g. 200 part-time employment rates). The z-score of each region is calculated through the following formula: $z_{rt} = (X_{rt} - \mu_t) / \sigma_t$, where $X_{rt}$ is the value of the region, $\mu_t$ is the mean for all regions, $\sigma_t$ is the standard deviation, and $z_{rt}$ is the z-score for region r and year t.
Southern ones, have witnessed the weakness of their administrations to intervene and decide. Classical institutions, starting from the local and going up to the transnational level of intervention. The EU level has gained important power over the national authorities. During the current crisis many states, especially Southern ones, have witnessed the weakness of their administrations to intervene and decide. Classical hierarchical relations are important. The CEOs of these companies have difficult decisions to make between regional commitment and a move for higher profits in the current fluid and crisis-prone environment.

Several tensions are also present in the frame of the hierarchical structures of political organizations and institutions, starting from the local and going up to the trans-national level of intervention. The EU level has gained important power over the national authorities. During the current crisis many states, especially Southern ones, have witnessed the weakness of their administrations to intervene and decide. Classical hierarchical relations are important. The CEOs of these companies have difficult decisions to make between regional commitment and a move for higher profits in the current fluid and crisis-prone environment.

A linear aggregation method, as all sub-indicators have the same measurement unit, was then applied for each of the study years and based on the following formula:

\[ C_l = \sum_i w_i \sum_j a_{ij} \]

where \( w \) are the weights of each of three dimensions (i.e. 1/3), \( w^s \) are the weights of the \( s \) sub-indicators within each dimension, \( i \) the sub-indicator and \( r \) the region code.

5. Conclusions: Institutions, hierarchical relations and informal work

The role of hierarchical relations between state authorities, and other institutions, to the formation of the new employment and security realities for millions of workers is decisive. These hierarchical relations span from the local to the global, with inter- and trans-national institutions gaining more power than ever in the transformations imposed (McGrath-Champ, 1999). Therefore, the spatial dispersion of plants and units of multinational companies and their decisions to withdraw from some locales or stay and expand in others are important. The CEOs of these companies have difficult decisions to make between regional commitment and a move for higher profits in the current fluid and crisis-prone environment.

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keynesian-type monetary policies of recovery where completely dismissed. Many of the unpopular measures imposed where presented by Ministers and powerful elite’s representatives as necessary evils that come from the EU and its troika (EC, Central Bank and the IMF), which were taken as granted or even deified in terms of their power in taking decisions with serious consequences on many localities and people therein.

Hence, new division lines have been reproduced following existent regional and urban hierarchies (Markusen, 1996). Scale is of importance here, as conflicts and alliances that seem important at one scale of analysis are weakened or even disappear at another; for example the intra-state conflicts between metropolitan areas of Greece, especially Athens, which were relatively well-off in terms of capital and infrastructure investment, and peripheral regions relatively deprived of such investments have been altered, since the crisis seriously affected the urban centers. Nowadays, agricultural and peripheral regions are considered as more resilient against the crisis (Něslíporová, and Cazes, 2006). However, from the viewpoint of an EU scale, austerity policies are affecting the totality of Greek regions in one way or another while regional sensitivity can hardly be recognized among these policies (Gialis and Leontidou, 2014).

Political and institutional measures imposed on the regions from outside and rivalries as to who pays the burden are of a decisive character. The need to lower wages and the cost of labour power in general reflects the need to adopt the regional mode of labour and social reproduction to the aggregated and abstract modes of labour on a global scale, the latter strongly determined by the involvement of low-wage competitors, such as China, in worldwide commodity production and exchange. The legislative framework that weakens regional borders as barriers to inner and outer moves of capital and labour taken for granted, regions become more vulnerable to imported and imposed de-valuation. Of course regions and states are not passive actors, as they have the ability to counteract and oppose this imported devaluation while trying to export their internal problems (e.g inflation, unemployment, debt, stagnation in production etc) according to their political and economic power and temporal alliances. Quasi-imperialist politics are of importance for this process. Though the mixture between internally-triggered re-formations and externally-imposed re-structuring is time-place specific and requires an analysis of every region, a general trade-off between overaccumulation in one place and devaluation in another is always present and mediated through various socio-political and historical peculiarities. Thus, under the guiding and often repressive role of supra-regional powers, people in one region are exploiting other people in another region. And this uneven distribution of the burden of crisis and devaluation is also a pre-condition for capital accumulation to proceed (Leontidou, 1990; Harvey, 2006; Karamessini, 2008).

In this frame, our data revealed that formal and informal employment are neither separate worlds nor different situations carrying completely divergent patterns and practices when compared to each other; both forms of employment frequently ‘overlap’ and co-exist, as much in spatial as in normative terms. As this paper showed there is a North/South divide on this matter: Southern regions are at the top places of EU hierarchy in terms of informal work diffusion and are, thus, in urgent need of enhanced protection of labourers’ rights and working conditions therein. Instead of this, we encounter in the EU today the neglect or even stigmatization of Southern informal employment during the debt crisis, by power elites and media of the North (Leontidou, 2014). Variations of “hidden employment” are blamed for tax evasion and corruption in the South – as if the North did not suffer from such phenomena. The implementation of an integrated and innovative but also spatially sensitive method to study informality along with flexicurity and atypical employment would offer new insights into the contemporary reshaping of EU labour markets.

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6. References
European Commission (2007), Working time, work organisation, and internal flexibility -flexicurity models in the EU, in Employment in Europe, DG Employment, European Commission, Brussels
Lawn, P.A. (2003) A theoretical foundation to support the Index of Sustainable Economic Welfare (ISEW), Genuine Progress Indicator (GPI), and other related indexes, Ecological Economics, Volume 44, Issue 1, February 2003, Pages 105-118
Leontidou L. (1993) Informal strategies of unemployment relief in Greek Cities: the relevance of family, locality and housing. European Planning Studies 1.1 43-69
Chapter 2:

The contribution of e-mentoring programs to the professional development of novice teachers

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Abstract:
The transition from being a university student to becoming a competent teacher is undoubtedly the most difficult period in the professional life of a teacher. It is, thus, surprising enough that in many countries novice teachers have been left alone to struggle in the classroom arena without any support provided by the existed educational policies. Mentoring the novice teaching staff is necessary not only for the avoidance of their initial shock, when they first enter the classroom, but also beneficial for students’ positive attitudes towards the subject and their teacher. Now that the technological evolution is a reality in almost every part of the world we can also talk about the electronic mentoring (e-mentoring) of novice teachers, which is much easier to be organized and implemented and in many cases turns to be much more beneficial than the traditional mentoring.

This article aims at describing the nature and procedures of an e-mentoring program and at highlighting the benefits for all the involved parts from its implementation.

Key words: mentoring, e-mentoring, mentor-mentee, professional development, professional empowerment

1. Introduction
Mentoring is the relationship developed between an experienced teacher, the mentor, and a novice one, the mentee, aiming at the provision of support, guidance and feedback to the newcomer to the profession (Haney, 1997; Page, 1994). The mentor teaches, guides, informs, explains, challenges, inspires, advises, encourages the student teacher (Anderson & Shannon, 1988), contributing, thus, to the professional development and to the empowerment of the novice colleague. This way, the initial shock, very common during the first months to the profession, is avoided (Tauer, 1996) and the quality of teaching is significantly upgraded.

The aims of mentoring may be related to classroom management, lesson planning, pupils’ evaluation and specific teaching skills or oriented to the social integration of new teachers within the school environment and to their psychological support, since novices often present lack of courage and confidence. Most mentoring programs, however, aim to satisfy all the above mentioned objectives if possible. In any case, their effectiveness depends on the exact identification of each student teacher's needs and on the good understanding of their teaching context.

Many researches confirm the contribution of mentoring to the empowerment and professional development of novice teachers (Corley, 1998; Feiman-Nemser, 1996; Ballantyne & Hansford, 1995; Ganser, 1992; Huling-Austin, 1990; Little, 1990). According to their findings, the new teachers who have participated a mentoring program build a better relationship with their students, are more capable of dealing with discipline problems, more informed about the curriculum and teaching resources pools, more focused on their instruction and the selection of the most appropriate teaching methods and practices and receive greater job satisfaction in comparison to those who are left alone to swim or sink, to teach and learn how to teach at the same time. School principals report a better cooperation and climate between experienced and novice teaching staff, constructive communication with the parents, higher student performance and easier integration of the novice teachers into the school culture.

In the cases where traditional mentoring, which takes place in the school environment with the face-to-face engagement of the mentor and the mentee, is not feasible, electronic mentoring (e-mentoring, online mentoring, onsite mentoring, telemusiness), via the use of technology based communication formats, can support beginners teachers with the same success. Indeed, with the broad use of the internet during the last decades this alternative form of counselling has become even more popular than the traditional. As in the traditional mentoring programs, e-mentoring aims at the professional and emotional support of novice teachers, providing opportunities for growth and development. The main advantage of online mentoring in comparison to the traditional is that its flexible nature eliminates place and time constraints making things easier for the involved parts who can focus on counselling itself without practical concerns on mind.

During the 80s and the 90s many opponents of e-mentoring argued that its impersonal character and the lack of non verbal cues could not keep up with the nature of counselling and that the face-to-face
interaction of the mentor and the mentee is absolutely necessary for the success of a mentoring program (Sproull & Kiesler, 1986). Nowadays, however, no reactions and hesitations exist, since the internet has become a principal means of social interaction and an integral part of contemporary life. Thanks to the imagination and the creativity of the internet users thoughts, moods and feelings can be expressed not only through written discourse, but also through symbols and icons (emoticons, smileys, etc.). Moreover, the use of a computer camera eliminates distances and brings the users closer making the world of internet less impersonal and cold.

2. The benefits from e-mentoring

The numerous benefits from the online mentoring of the novice teachers may be practical, economical, cognitive, metacognitive, emotional or social.

One of the most important attributes recognized is the flexibility permitted by the asynchronous nature of the online interactions (Hawkes & Rominszowski, 2001; Seabrooks et al., 2000; Harasim, 1993). The contact of the mentee with the mentor, whether it is via e-mails or messages in fora or bulletin boards, is not subject to time limitations nor dictated by a timetable. The mentor is accessible by the mentee at any time, which creates in the novice teacher the feeling of security, since counselling and the provision of assistance is possible whenever needed. Spontaneity and flexibility are likely to be absent from traditional mentoring, where classroom meetings are scheduled, the duration strictly predetermined and any conversion may cause problems in the school program. What is more, if the same mentor is responsible for the support of more than one mentees, then practical problems are likely to appear due to scheduling complications and the numbers of meetings for each mentee inevitably decreases (Feiman-Nemser, 2001).

Online mentoring is also placed independent and the distance between the mentor and the mentee does not constitute a problem for the counselling process (Livengood & Moon-Merchant, 2004). This is not the case with the traditional mentoring, the success of which depends largely on the proximity of the two members involved. Many mentoring programs came to an end before the achievement of the desired outcomes due to the discouraging distance between the novice teacher and the mentor. In online mentoring such practical issues do not exist; on the contrary, it is very probable that the mentor and the mentee live in different distant cities, without any communication problems.

Through online mentoring the good interpersonal relationship between the mentor and the student teacher can be secured. The counsellor is a person of high prestige, long experience, knowledge and skills, while the student teacher is inexperienced and weak, lacks confidence and is in need of assistance (Frierson, 1997). According to Sproull and Keisler (1992), online mentoring contributes to the weakening of such differences and to the elimination of potential mentees’ negative feelings, since the Internet prevents the direct exposure of the inexperienced teachers to the eyes of the mentors and gives the feeling of a private and secure environment. The novice teacher can contact the mentor from the convenient environment of home which creates the feeling of safety, decreases reluctance of engagement in the process, eliminates hesitations and the stressful emotions of inferiority and embarrassment and helps in the externalization of the most sincere thoughts, fears and frustrations, feelings which with face-to-face contact would have probably remained secret (Baron, 1998b; Harasim, 1993). Moreover, if anonymity is permitted, which, of course, is not the case with formal mentoring programs, the extroversion of the student teacher is even greater and the externalization of secret thoughts and weaknesses much easier. On the contrary, in traditional mentoring and especially when the mentor and the mentee work at the same school it is very probable that the student teacher will be reluctant to expose all the fears and weakness, afraid of being negatively criticized and characterized as insufficient by the mentor and the rest of the teaching staff (Chubbuck et al., 2001).

Another benefit of online mentoring is that it permits the implementation of large scale counselling projects with low economic cost. The collaboration of one mentor with many teachers at the same period is possible, which is an economical solution for the governments that do not have the necessary funds for the implementation of such endeavours. What is more, the organization of e-mentoring programs is less complicated than the traditional and to a large degree the participants themselves are responsible for the arrangement of practical issues according to their needs.

In many countries, student teachers can themselves select their mentor and the online community they wish to participate, according to their educational and emotional needs and after having studied the curriculum vitae of many mentors and the profiles of the mentees in their groups. This way, the online communities are composed by members that have the same needs and the mentors selected are the most suitable for the specific trainees. It is, thus, more probable that mentoring will take place within a climate of trust, security, solidarity, mutual support and understanding.

The novice teacher interacts, not only with the mentor, but with the other members of the online community as well, who have the same specialization, face similar challenges and share the same fears, anxieties and insecurities. This reduces the feeling of loneliness that characterizes the first steps of the novice teacher and the stressful period of the adjustment to the new profession turns into a good opportunity for fruitful cooperation, exchange of experiences and information, reflection, problem solving and constructive interaction. As Lortie (1975) points out, novice teachers prefer to discuss the problems they face with people who are in the same difficult situation with them rather than with the more experienced colleagues. In online communities they have this possibility and peer mentoring proves to be as useful as mentoring by a senior professional. Obviously, in such an environment the task of the mentor who supervises the online interaction
becomes much easier, since the elicitation of the most sincere thoughts of the student teachers is significantly facilitated.

One of the most important contributions of e-mentoring to the professional development of novice teachers is the promotion of reflection, i.e., the metacognitive skill to review, analyze and evaluate past experiences with a critical attitude, in order to reach conclusions about the effectiveness of specific practices and the potential causes of problematic situations. It is a hard task that demands from the novice teacher conscious effort, maturity, sincerity and the activation of critical thinking in order to proceed to a constructive self-assessment and reach self-awareness. Even though the process of reflection is necessary for the personal and professional development of the novices, most of the new teachers state that they have not adequately practiced how to do it correctly during their university studies. Undoubtedly, critical reflection is vital in traditional mentoring as well, since the mentor and the mentee review classroom experiences and exchange thoughts concerning the appropriateness of specific practices or problematic situations. Online mentoring, however, promotes even more critical reflection for two reasons. The first has to do with the asynchronous nature of the online communication and the second with the written form of the interaction between the mentor and the mentee.

In online counselling the mentee has enough time available to recall classroom experiences, to organize the questions that wishes to ask, to reread the posts of the mentor or the peers, to prepare thoughtful responses. In other words, the mentee responds when he/she feels ready to do so, and thus the interaction is not quick and superficial due to time limitations (Babinski et al., 2001; Honeycutt, 2001; Scardamalia & Bereiter, 1994). On the other hand, in face-to-face contact the little time available between the responses often works against deep reflection.

The written form of online communication permits the multiple reading of the posts and as a result the thorough, full understanding of what is being stated. What is more, in the case that the mentor has not the possibility to watch videotaped the instruction of the novice teacher in the classroom, the mentee has to describe everything in detail in order to be understood and make the teaching context clear for the counsellor (Wells, 1999). This thorough recall into the memory of the classroom experiences and their detailed description proves to be beneficial for the process of reflection. Of course, the mentor should continuously encourage the mentee retrieve from the memory past events and analyze them, even if the reflection might temporally hurt the self-image of the student teacher. It is noteworthy the fact that the written form of online communication does not work in any case against the vividness and the directness of the interaction that characterizes oral speech. On the contrary, elements of both written and oral discourse are perfectly matched, so that the participants often feel that they read a faithful performance of an oral conversation. The language used in internet is constantly evolving and the users adapt with remarkable ease indicating creativity and imagination. They have invented symbols and mood icons (emoticons, smileys) to express how they feel, they switch between capital and small letters to indicate the tone, they use bold or underlined words to emphasize and show importance, etc. The internet environment is now so friendly and its language so familiar that the users have developed the skill to read behind the words, to understand the feelings and the intentions of the interlocutors, so that the lack of face-to-face contact and of non-verbal cues, such us facial expressions, voice tone, body movements is no more a problem for the full comprehension of the messages exchanged (Baron, 1998b).

3. Topics under discussion

In general, the issues that attract the interest of the participants in online counselling do not differ significantly from those in traditional mentoring. The difference lies in the fact that online mentoring gives more opportunities for the exchange of classroom experiences and the in-depth analysis of the issues under discussion, since it is, as already mentioned, free from time constraints, permits the detailed description of the teaching context and encourages the expression of the most sincere thoughts.

The most common topics posed by mentees for discussion are discipline and classroom management (Veenman, 1984). Indeed, the main concern of novice teachers is how to solve discipline problems and suppress students’ delinquent behaviour, because they feel that otherwise they will be characterized as insufficient by their colleagues or the school principal. It is true that the newcomers to the profession focus more on building their own image rather than on students’ real needs (Fuller, 1969; Veenman, 1984). Hours and hours of discussions with mentors and peers have to do with specific cases of students who disrupt the tranquility and the order in the classroom. Other common topics in online counselling interactions are lesson planning, activities’ preparation and time management. In the beginning of their career, teachers seem to give more emphasis on the subject matter itself, are often stuck on the textbooks and hesitate to take initiatives, presenting thus poor creativity and imagination while teaching. They need encouragement to try new teaching methods, to become innovative and creative and free themselves from the feeling of insecurity, in order to make the lesson a pleasant experience for themselves and for the students. They very often ask the mentor to provide them with specific activities to use in the classroom or with teaching material pools, which will help them enrich their activities and methods’ repertoire.

Students’ assessment is one more headache for the novices and one of the most discussed topics during e-mentoring. The mentor tries to elicit the personal criteria on which teachers base students’ assessment and to compare and contrast them with those set by the educational system and the curriculum.
Teachers are also very concerned about the relationship they have with their colleagues and the students’ parents, since they relate it to the opinion that the others have about them. A bad relationship may seriously harm their self-image and self-esteem, which entails low confidence during the teaching process.

E-mentoring, whether it takes place in a dyadic form (one mentor for one mentee) or in groups (one mentor for a group of mentees), aims at entertaining all these concerns and at minimizing or even eliminating the stress and the anxiety of the mentees, in order to become more effective in their duties and derive satisfaction from their profession. The mentor has increased responsibilities as he/she should be a trusted confidant and confessor and at the same time keep the absolute control of the counselling process uninfluenced by the freedom provided by the friendly internet environment. He/she should know and follow the principles of adult education and apply the most appropriate methods and techniques to guide the discussions, without, however, depriving them of spontaneity and openness.

4. Methods and techniques used during the implementation of e-mentoring

Among the methods and the techniques that may be selected by the mentor as the most appropriate to be applied during an e-mentoring program, according to the needs of the novice teachers and the demands of the teaching context, are case studies, problem solving, brainstorming, role playing, simulation, use of scenarios, cause and effects identification.

Journaling, ie the expression of thoughts and feelings and the description of past experiences in the form of a diary, is also a very useful technique, broadly used in adult education and counselling. Its confessional character helps mentees combat stress through the expression of their innermost thoughts and anxieties and brings them closer to self-awareness. Access to this diary may have only the mentor or the whole group of the peers after agreement.

The narration of stories and experiences from the professional life of the novice teachers is also beneficial for the counselling process (Clandinin and Connelly, 1996b). Through the narration past experiences are recalled; the mentee tries to make their description as detailed as possible in order to introduce the mentor and the peers to the context and to be fully understood. The analysis that follows facilitates critical reflection and the deeper interpretation of the events stated and helps the teacher realize the degree of effectiveness of his/her practices (Ambrose, 1993). It is important, though, that the experiences described are always relevant to the topic under discussion each time, so that coherence in the discussions is secured and the confusing switch from one topic to another is avoided.

The use of video-taped lessons is also necessary in e-mentoring since it covers the deficit from the lack of image and face-to-face, personal contact – this way the arguments of those who claim that e-mentoring cannot be effective due to the impersonal nature of the Internet are intercepted. With the approval of the school principal and the students’ parents the teacher may videotape real class teaching in order to introduce the mentor and the peers to the context. The participants in mentoring comment on the teaching process, identify potential unsuccessful choices of their colleague, highlight effective practices, observe students’ behaviour, submit their views on what should be avoided or done, provide alternative teaching methods and activities, think how they would themselves approach students with problematic behaviour or learning difficulties. The mentor introduces topics for discussion, guides the interactions, so that the analysis goes in depth and towards the correct direction and helps mentees to reach from specific experiences generalizations and vice versa. In short, mentor’s main aim is to promote reflection, a necessary skill for the professional development of the novice teachers.

5. Success factors for an e-mentoring program

The benefits from e-mentoring on the professional empowerment and development of novice teachers, as already stated, are numerous but not always guaranteed. An e-mentoring program, as any counselling program, must be well planned, structured and organized and the mentor should be competent in counselling and skilled in the use of the Internet. Below are listed some of the factors contributing to the success of online mentoring.

The counsellor should use a variety of activities aiming at the promotion of teachers’ critical reflection, avoiding, thus, the superficial approach to the issues under discussion. These activities should become progressively more difficult and challenging in order to activate the higher level skills of novices and avoid boredom, stagnation and lack of interest on the part of the participants. The mentor’s feedback should be frequent and direct, the mentees encouraged to participate consistently in online interactions and prevented from withdrawing gradually from the process due to lack of motivation. They should derive satisfaction from mentoring and view it as an opportunity for their professional development and empowerment rather than an additional duty and obligation. For this reason, mentees must be informed from the beginning of the program about the benefits and the specific aims of their mentoring, so that they will develop expectations and stay committed to their achievement.

The use of video-taped lessons is essential, since the participants do not have another way to share the teaching context and the description of school experiences is inevitably subjective and may not reflect the real dimensions and conditions of what is happening in the classroom. Besides, video-taped lessons provided by the mentor help the novices fully understand their counsellor’s practices and mentoring is not limited to theoretical approaches of effective teaching.
Finally, one of the most important factors for the success of an e-mentoring program is the continuous monitoring and the frequent evaluation of its progress in order to identify potential weaknesses and proceed to their rehabilitation. Towards this direction helps the existence of archives where the online interactions of the participants are saved and filed.

6. References


Chapter 3:

Economic Crisis Impacts Upon Child Mental Health

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Abstract:
This paper focuses on the effects of economic crisis, which is assumed as a stressor or traumatic event, on children’s emotional, physical and developmental well-being. Emphasis is placed on how individual, family and community risk factors and resources might be critical in increasing children’s psychological vulnerability in times of economic crisis. The key issues related to the provision of mental health services in times of increased pressure put upon them are discussed.

Key words: economic crisis, mental health, child

1. Introduction

The global economic crisis that started in late 2008 is still ongoing in Greece. The country undergoes the sixth consecutive year of economic recession, with its economy shrinking by 25% between 2008 and 2012, and with a few prospects of recovery. For the general public, the direct effects of the economic crisis are the losses of jobs and income, and pay cuts. Unemployment has more than tripled, as the total number of the employed population is standing at 3.482.345 (March, 2014) and the unemployed were recorded as standing at 1.274.843 while the economically inactive population was registered at 3.393.042 (Roussos, 2014). According to the statistics produced by the Public Employment Service (OAED) the unemployment figure was 1.077.876 in 2013; this year a decline was recorded to 993.118 – down by 84.758 less unemployed (Roussos, 2014). The difference in the labor employment accounts between the official statistics of the Hellenic Statistical Authority (EL.STAT) and the Public Employment Service (Ministry of Labor and Social Solidarity) represents a unique Greek variability among EU member-states worth considering when considering issues of social and institutional convergence among EU states (Tsobanoglou, 2014). But the uniqueness of the Greek labor situation does not stop there. In April 2014 the unemployment insurance benefits administration was to cover only 102.026 unemployed persons. From those receiving such benefits the 89.46 % (91.273 persons) were regular categories of the unemployed, while the 10.54 % (10.753 persons) were seasonal workers engaged in the tourism sector. Seasonality at work is an important situation in the Greek work environment involving also many undocumented workers in the rural communities sector, agriculture and tourism being key employment categories. Regarding the unemployed who seek work the 41.39 % (342.861) are men and the 58.71 % (485.438) are women. In the category under 30 year olds, the total number of the unemployed was standing at 24.86 % (205.904), while in the age category “from 30 to 54” was standing at 62.72 % (519.486 persons). The age category of “55- over” was 12.42 % or 102.909 persons (Roussos, 2014). We see here a dramatically low number unemployed, who do not receive any statutory benefits at all.

Previous research on the consequences of economic crisis and prolonged recession on people’s health has focused primarily on adults, and to a lesser extent on children and adolescents, who are particularly vulnerable to stress. The increase in child morbidity and mortality, child labor, child abuse and neglect, violence against children and women and other forms of abuse, in addition to reduced school attendance, decrease in quality of education, as well as the quality of child care, are only some of the indicators of negative effects of economic crisis on children’s well-being. For example, the latest available data suggest a 19% increase in the number of low-birthweight babies between 2008 and 2010. 23 Researchers from the Greek National School of Public Health reported a 21% rise in stillbirths between 2008 and 2011, which they attributed to reduced access to prenatal health services for pregnant women (Simou et al, 2013).

Researchers have stressed the close relationship between poverty and poor mental and that the effects of economic crisis may be irreversible for the children’s long-term well-being outcome. For example, children who are underfed (undernourished), leave prematurely school, or are forced to work, or become victims of neglect or abuse, are at increased risk of adverse effects on their cognitive and socio-emotional development, which is associated with worse outcome in adulthood. Among other things, poor mental health in childhood is associated with other health problems in young adulthood (e.g., substance abuse, violence, less educational progress, poor reproductive and sexual life), while higher rates of psychiatric disorders in adulthood are associated with multiple disadvantages during childhood (e.g., loss of parents through break-ups, financial hardship, mental disorder in parent) (Harper, 2005). In this review, through examining risk
factors at different levels, we will try to illustrate how the economic crisis has been affecting children in Greece.

2. At adult individual level

The psychological and physical health outcomes of job and income loss are not uniform, but vary depending on several cognitive, personality, and social factors. During times of economic crisis and prolonged recession, people experience elevated levels of stress. Economic challenges pose even a greater risk to parental mental and physical health, if job or income loss is defined as a negative, crisis-producing event that may result in impaired ability to regulate emotional reactions leading to loss of self-control, increased consumption of alcohol or drug abuse, increase in psychosomatic symptoms, eating and sleep problems, which all in turn adversely affect psychosocial functioning and parenting ability (Price et al. 2002; Roberts et al. 2010; Vlahov et al. 2002). Thoughts of future uncertainty and unpredictability may cause feelings of enhanced anxiety, anger, frustration, hopelessness or worthlessness.

Research conducted by the University of Ioannina in a representative sample of approximately 5000 adults, aged 18-74 years old, found a significant increase in psychiatric symptomatology among people with lower family income or those facing serious financial difficulties. The individuals that faced moderate to severe financial strain (irrespective of their actual income) were almost 3 times more likely to suffer serious mental health problems, as compared to those who did not face financial challenges. More specifically, among individuals without financial difficulties, 3% presented serious psychiatric symptomatology and 1% suffered depression, as compared to 22% and 12% respectively among individuals who faced financial hardship. With regards to employment, the prevalence of psychiatric symptoms was lower among those who were in full-or part-time employment, whereas the unemployed presented a double risk of developing serious mental health problems, and were two and half times more likely to express “wishes of death”, ideas of worthlessness and hopelessness for future (Skapinakis, 2011).

Analysis of data extracted from information obtained during the calls made to the Depression Telephone Helpline for Depression operated by the Greek University Mental Health Research Institute, from May 2008 until June 2011, showed a steep increase in number of calls with direct or indirect reference to the economic crisis from the first half of 2010 and onwards. The callers who referred to the economic crisis manifested depressive symptomatology of clinical significance to a greater degree than callers who made no such reference. The latter exhibited increased levels of distress and agitation as well as drug/alcohol misuse. Concomitantly, a higher frequency of depressive symptomatology was ascertained among the unemployed, whereas employed people were found to experience anxiety symptoms to a higher degree (Economou et al., 2012).

A study conducted Economou and colleagues (2011) reported a 36% increase between 2009 and 2011 in the number of people attempting suicide in the month before the survey, with a higher likelihood for those experiencing substantial economic distress. The inspection of data from the Hellenic Statistical Authority indicates that deaths by suicide have increased by 45% between 2007 and 2011, albeit from a low initial amount; this increase was initially most pronounced for men, but 2011 data suggest a large increase for women as well (Kentikelenis, et al., 2014).

3. At the family level

Many families respond to economic loss by restructuring their resources (e.g. restructuring their living arrangements to facilitate relatives moving in) and relationships (Elder & Caspi, 1988). Resulting alterations in mutual nurturance place families at high risk for instability. Classic studies of unemployment during the depression provide evidence that job loss produces stressful changes in families. These changes include decline in financial and social status, changes in family roles, and loss of hope for the future (Jahoda, Lazarsfeld, & Zeisel, 1971). The economic depression as a result of “forced” early retirement, redundancy or job dismissal may have negative impact on marital relationship (reduced satisfaction from the spouse, change of family roles and dynamics, frequent arguments, marital discord, etc.), which is much greater if marriage was before weak. When marriages end, whether through divorce, separation, or desertion, the child usually spends some time living in a single-parent household, most often (>90%) headed by his or her mother (Antonopoulou, 2013). Families headed by previously married mothers typically experience downward economic mobility. These events and circumstances have effects on both the child’s development and relationship with the father, who due to job or income loss is unable to pay on a regular basis child maintenance, which often results in increase of conflict between parents.

Data provided by the Hellenic Statistical Authority (EL.STAT) indicate that the divorce rate in Greece has remained relatively stable during the five-year period prior to 2008, however, the figures relating to the period of economic crisis (2009-2013) are as yet are not available. Analysis of data from the Community Mental Health Service of Peristeri (Greater Athens Area) indicates significant increase in number of children referred to the service who come from broken and/or single-parent families, and suffer considerable reduction of financial resources, due to either maternal or paternal job or substantial income cuts. Another phenomenon often observed is that the dramatic decline in family income leads to parental decision to continue leaving together despite the broken marital relationship. The emotional quality of the parent-child relationship is greatly compromised by tension in parental relationship but also stress that parents experience within other relationships, which they transfer to the child.

Greece’s austerity measures, because of reduced family incomes and unemployment of parents, have affected child health. The proportion of children at risk of poverty has increased from 28.2% in 2007 to 30.4% in 2011 and a growing number receive inadequate nutrition (UNICEF, 2013).
Poverty and social disadvantage are closely related to child’s cognitive deficits and poor school performance (Maughn, 1994). Children whose families have experienced job or income loss have more mental health problems (Werner & Smith, 1982) and are more depressed, lonely and emotionally sensitive. They are less sociable and more distrustful (Buss & Redburn, 1983), are more likely to feel excluded by peers, have lower self-esteem and reduced ability to cope with stress, and are more likely to exhibit disruptive behavior disorders, which are more severe in children who grow up in families with permanent financial stress; the effects are more pronounced in boys than in girls, and in children rather than in adolescents. Most studies have shown that the effects of poverty on children's mental health is indirect – poverty is a main source of parental stress that impacts on parent’s emotional availability and their parenting ability in recognizing and meeting child’s developmental and emotional needs, and indirect - through increasing risk of applying inconsistent and punitive discipline strategies by parents.

4. At the school level
The school life is one more important aspect of children’s and adolescent’s social world. Children’s emotional difficulties often manifest themselves through behavior problems that are easily perceived by the school (e.g., truancy, expulsion from school, poor attendance, and decline in school performance).

Schools are faced with many challenges, which increase in times of economic crisis. The impact of austerity measures in Greece has been severe on schools, which are being constantly undermined and devalued, both at a material level, with the lack of necessary funding and its consequences on school operation, and through the disparagement of school teachers (Anagnostopoulos & Soumaki, 2013).

Recent changes in Greek educational system (e.g. New Lyceum) have brought about greater stress in adolescents; school exams that already rank high in the list of young people’s fear of failure, have caused higher levels of psychological distress. The number of adolescents, who seek psychological help, in order to be able to cope with exams anxiety, has increased significantly in the last year. Similarly, the number of hospital admissions because of suicide attempts or due to persistent and severe non-organic somatic symptoms (abdominal pain, recurrent severe headaches, conversion symptoms, etc.) has markedly increased. Recently a letter sent by the Regional Director for Education of Attica, Administrative and Economic Support Directorate (26/05/2014) to the School Principals of the Region requests the registration of the number of the undernourished students in all public schools, to be sent by the 29/05/2014. The Ministry of Education is currently delivering to 406 schools nationwide (222 in Attica) a program for healthy diet, sponsored by the Niarchos Foundation. The Greek Orthodox Church with its NGO “Mission” has said that it sends parcels to 2000 students. The Ministry of Agriculture sends to 1.500 schools, in Athens and in Thessalonica, fruits and fruit salads for pupils. The Regional Education Authority refused to give information collected from the school system defining them as “classified” information. On the other hand, the Primary School Directorship in North Attica Area declared that in 129 elementary schools, a total of 110 pupils were considered as malnourished, with most in New Erithrea, Marousi, Melissia. These suburbs are very middle class and this is a unique situation as in the center of Athens, the western suburbs and Piraeus are certainly working class with much higher poverty rates. At the national level there are over 640 school applications to enter a program of school meals from which the 165 are in Attica (Tziantzi, 2014). It is clear from this that the whole issue of child poverty and welfare provision is still not embedded in the system of public policy as evidenced by current situation in the school system.

5. At the neighborhood level
The deterioration of the neighborhood environments in urbanized areas (e.g. Athens), increases parental anxiety with regards to child’s safety, leading to his/her over-protection and reducing the opportunities of socialization, which may result in developing emotional and behavioral difficulties. Young children often grow up “closed” in the apartments watching television or playing electronic games. In adolescence, the neighborhood effects are mediated through social interactions with delinquent peers and greater exposure to violence. Schools in socially deprived areas are facing additional problems due to a larger number of students presenting with deviant behaviors, increased number of bullying incidents, and lack of psychological supportive services within school.

6. At the level of mental health services provision
In Greece, in accordance with the Law 2716/1999, the development of administrative territorial sectors is the basic principle of organization of psychiatric care, aiming at the future development of mental health services due to its shortage and great inequalities between regions. This development (territorial sectors) of child and adolescent mental health services (CAMHS) has been officially established since 2002, and today there are geographically defined 12 sectors (catchment areas) in Attica, 3 in Thessaloniki and one in each Region, mainly. It needs, however, to be borne in mind that absolute numbers or epidemiological prevalence data concerning single diagnoses – to a greater extent than in adults – is an oversimplification. Defining the need for service development and delivery depends not only on service demand but on defining children’s mental health needs through acquiring knowledge of the socio-demographic characteristics and changing family and social factors within the given geographical area. For example, the 5-9% of children and adolescents, aged 5-18 years, suffers from severe emotional disorders. This figure however increases among children living in poverty. It has been calculated that roughly 20-25% of child and adolescent population require psychosocial intervention, when a broader spectrum of child problems is taken into consideration, and this percentage is increased further in conditions of extended prolonged economic depression.
Unfortunately, in Greece investing in child and adolescent mental health has never been a priority, as compared to adult mental health and even more to somatic health. This was confirmed by the evaluation of the National Plan of Action “Psychargos” for the decade before the economic crisis (2000-2009). With respect to meeting children’s mental health needs, the Group of European evaluators concluded that the development of psychiatric services for children has followed a different course compared to that for adults, as only 30% of the planned community CAMHS, 5.5% of the planned specialized services for children with autistic spectrum disorders, 48% of day centers for young people with autism, 6% and 14.5% of long- and short-term stay facilities respectively, have actually been materialized. Furthermore, the report stressed that the distribution of child psychiatric services is uneven, as more services are situated in the Attica Prefecture (to which the city of Athens belongs), whereas other areas in the country are lagging significantly behind both in number and in type of services provided. In some prefectures, there are no child psychiatric services (Thornicroft, Craig, & Power, 2010).

In Greece public and non-profit mental health service providers have scaled back operations, shut down, or reduced staff; plans for development of child psychiatric services, which has been in place within the framework of the psychiatric reform since 2000, have been effectively cancelled or abandoned; funding for mental health decreased by 20% between 2010 and 2011, and by a further 55% between 2011 and 2012 (Anagnostopoulos & Soumaki, 2013). Austerity measures have constrained the capacity of mental health services to cope with the 120% increase in use in the past 3 years (Anagnostopoulos & Soumaki, 2013). Indicatively, in CAMHS of Peristeri (West Attica catchment area, with 200,000 people under the age 18), the number of referrals has doubled in the first trimester of 2014, as compared to the first trimester in 2013. At the same time, the demand for supportive work within the community (due to the collapse of social services) and schools (due to insufficient psychological services) has also increased. As a matter of fact, the child mental health services are now called upon to substitute and assume the work of others, even the supervision of parent-child contact. Furthermore, an increasing number of patients seek care within the public system. A recent survey in a representative sample of both public and private child psychiatric institutions in Athens, Piraeus, and Thessaloniki compared data from 2007 and 2011 (two years before and two years after the implementation of austerity measures). Findings revealed a 39.8% increase in new cases in public outpatient services for children and 25.5% for adolescents, while percentages have dropped by a total of 35.4% in the private sector between the years 2007 and 2011 (Anagnostopoulos & Soumaki, 2012). As a result, both the waiting list and waiting time are now longer. In CAMHS of Peristeri, the waiting time has tripled and is now longer than 2-3 months, while the waiting time for assessment of learning difficulties exceeds 1 year. Reduction by 40% in salaries and substantial cuts in funding operating costs, as well as the intensifying the professional requirements has caused a drop in morale and work burnout. The accumulation of all the above factors has contributed to progressive in the quality of service provision (Christodoulou et al, 2012). The increased waiting list, caused also by the increased case complexity, leaves very little room for psychotherapeutic interventions. Nowadays, throughout public CAMHS, the diagnostic model seems to prevail over the psychotherapeutic model, for the benefit of private sector, which provides therapy to those, for whom the public sector fails to meet therapeutic needs, except those of pharmacotherapy. It is clear, therefore, that the most affected by crisis, with the devastating social consequences, are the economically weaker families, as well as, those without social health-insurance coverage (which is linked to employment status), who are unable to cover the cost of their child’s therapy. Indicatively, the mean cost of therapeutic intervention program for a preschool child with autistic spectrum disorder is approximately 800 Euros monthly; the social security fund covers only the sum of 450 Euros, leaving the parent to pay at least 350 Euros for his/her child’s therapy.

Furthermore, a large number specialized services and psychosocial rehabilitation units, run by NGO’s within the framework of the program “Psychargos” with the financial support of the European Union that covered the large gaps that existed and continue to exist in the public sector, have suspended their operation. It needs to be stressed that these units provided psychiatric care to the most vulnerable population (e.g. children with autistic-spectrum disorder or severe learning difficulty), who’s mental health and care impacts substantially on their psychological development, and the balanced functioning of their families.

In periods of economic crisis and extended recession it has been observed that, while the demands for mental health services increase, because of the reduction in health and social services expenditure, their provision is progressively decreases. This may result in a vicious circle that maintains and deteriorates further mental health problems (Triantafyllou & Angeletopoulou, 2011). The shrinking of child psychiatric and psychological services may create in the near future more psychosocial problems that will be passed onto the broader society (and next generation), with even more unpleasant consequences. This means that children and young people will find themselves without psychological help that could potentially aid their psychosocial development and functioning, and not deprive them from the probability of successful integration into society. Moreover their families, who are already in a difficult financial situation due to the crisis, will find themselves powerless to cope at home with highly disturbed children, whose mental state or behavior deteriorates, will result in the deadlock leading to despair, search for alternative solutions, and secondarily in development by other members of the family of psycho-social problems.

There is some emerging evidence that increased number of children is abandoned in paediatric hospitals, as well as, that increased number of parents seek child’s admission to institutions because they cannot meet their basic needs, i.e. food, housing, clothing, etc., which heightens the risk of Greece regressing back to institutional care. As an example, the Child Protection Center of Attica “Mitera” (formerly “Mitera
Infants Centre”) has recently re-opened the Newborns-Babies Unit, with an 8 bed capacity; with the aim of reducing to a minimum the time spent by babies in maternity hospitals or hospital obstetric clinics.

Data provided by “SOS Children's villages” indicate an extreme increase in demand for support; five years ago, the Organization helped 47 households, while today provides support to 9,000. Another example is the action of the non-profit organization the “Ark of the World”, aiming at providing care to children (clothing, play, medical and dental care, remedial teaching, foreign language learning, etc.) who live in conditions of neglect and abandonment, most from single-parent families. The objective of this effort is to prevent the institutionalization of children, and support their stay in the mother’s care, who receives monthly financial aid to cover the rent and bills, while trying to find a job.

7. Epilogue

The economic crisis in Greece has aggravated due to the faulty social safety net the situation of children in the country. Many private initiatives came to fill in the void but the missing poverty eradication supports are much in evidence. It is also clear that Poverty at present is not systematically being considered as part of a social policy for workers. We demonstrated that unemployment insurance is not universal and only a small percent of the unemployed are being on the receiving end of a benefit system. Differing accounts for unemployment figures between state agencies (EL.STAT and OAED) indicate a weak capacity and understanding to tackle a very worrisome social situation whereby the very concept of social governance is being put into question. Families and children in such a situation seem to suffer from lack or lower quality services within the public sector; a huge bulk of psychological and psychiatric care can be obtained in the private sector but only by for those who can afford it. Those in prolonged unemployment and poverty are sliding in the shadow and lose their faith in democracy as the system of social integration in place, employment, schooling, seems to be contacting dramatically to extreme levels. The weak reporting and registration seems to be a strong characteristic of the situation. If it is not registered, it is not accountable and it does not exist as calculable issue.

8. References


Werner & Smith, 1982) and are more depressed, lonely and emotionally sensitive. They are less sociable and more distrustful (WHO (2009). The Financial Crisis and Global Health Report of a High-Level Consultation. World Health Organization: Geneva.
Developing the social economy in member states: The European Coop Campus Project

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Abstract:
Social Economy is one of the most important economic sectors in Europe, with a significant occupational relevance. Based on available evidence, it is estimated that the social economy in Europe – measured as the aggregate of cooperatives, mutuals, associations and foundations – engages over 14.5 million paid employees, equivalent to about 6.5% of the working population of the EU-27. The social economy has increased more than proportionately between 2002-03 and 2009-10, increasing from 11 million to 14.5 million jobs. The significant contribution of the social economy to economic development and wellbeing has been confirmed by the recent economic crisis that has highlighted social economy and entrepreneurship generate new employment and help preserve existing jobs, as in the case of the conversion of existing corporations into social economy organisations. The facts demonstrate how social economy and social entrepreneurship respond to emerging social needs, for example, in Italy between 2007 and 2011 employment in cooperatives increased by 8% while it decreased in the economy as a whole by 1.2% and in private enterprises by 2.3%. Furthermore, social economy organisations effectively foster entrepreneurship and business creation; bringing economic activity in areas that are neglected due to low profitability and by bringing an entrepreneurial culture in sectors that were traditionally considered outside of the scope of entrepreneurial behavior.

Keywords: VET, ECVET, European Coop Campus

1. Introduction
There is a new framework for a new European policy for the recognition and validation of qualifications and competences. The pillars for this framework are the brief description of EQF and ECVET devices, in the framework of new European policy for recognition and validation of qualifications and competences. The focus is being drawn on qualification that European policy in the field of credit transfer in VET (ECVET) sees as a crucial element. Qualification is conceived as a mediating factor between labour market’s increasingly changing needs and the provision of training offered by VET institutions in response to those needs. The main pillars for the design of applications into a new domain of work activity, say in the voluntary sector, the social reproductive sector may be: (1) a competence defined job profile, (2) a learning outcomes qualification organized into related units, (3) a set of transferable-transportable such learned units to aid and sustain vocational and continuous training activities across borders on a European scale and finally (4) an agreed upon system of general rules that would agree to recognise the collected credits (ECVET). This denotes the establishment of a common universal equivalent for the pan-European skills system that would recognise the complexity of European States and the division of labour in EE and the formation of a standardised credit “currency” system in most employment –training categories. In many countries there is a national control of skill provision as the national economy seems to define qualifications to a large extent.

2. A current need for a VET credit system to face training mobility across Europe
Mobility of labour is essential to promote socio-economic integration and an internal market exchange for goods and services in Europe. Economic realities, however, are far from meeting requirements necessary to achieve these aims. While for European workers, initial vocational training might be the period of life in which they are offered the possibility to acquire mobility experience at an early stage, the mobility of apprentices across inner-European borders is still quantitatively low.
Of the numerous reasons for this pronounced lack of propensity for mobility among apprentices one of the most serious is certainly the great diversity of nationally organised VET systems, which vary according to regulations, degree of formalisation, institutional providers of education and training, and allocation of responsibilities. This in turn accounts for a lack of transparency of skills gained in the course of mobility periods spent abroad. The disparity of certification and validation procedures is great. In particular, systems where there is a high degree of formalisation of education and training pose almost insurmountable obstacles for the knowledge, skills and non-specific competence acquired abroad to be aligned with national norms and made visible in documentation. For this reason periods of vocational education and training spent abroad is very difficult to be recognized as an integral part of education.

In higher education this problem was solved by the adoption of the European Credit Transfer and Accumulation System (ECTS), developed under the ERASMUS programme. In accordance with the principle of subsidiarity by which European educational policies are regulated, the ECTS does not aim to harmonise systems of higher education but rather to ensure that learning outcomes achieved abroad and relevant for certification could be transferred to the home country. This has made studying in a foreign European country an institutionally founded issue. This has given a fresh impetus to university reforms currently being pursued by a number of EU member states.

In view of the success of the ECTS a corresponding transfer system – the ECVET system – in vocational education and training was deemed as appropriate. However, this field has special characteristics which exclude a simple application of the ECTS model. There is an institutional difference between responsible institutions – schools, universities, businesses, bodies providing, chambers of commerce, etc. – which differ between and within countries. The ECVET system has to satisfy different demands and prove adaptable in a different, more complex environment. In June 2002 in Copenhagen the EU Ministers of Education and the European Commission started the Copenhagen Process aiming at concretising a policy for vocational certification and continuous learning to match the Bologna Process established for university reform. The Declaration placed high emphasis on measures aiming at increasing transparency and recognition, and promoting mobility for vocational training. It was then agreed:

- to establish the European Qualification Framework (EQF);
- to integrate the existing Europass-VET and the European Curriculum Vitae into a single document to increase the transparency of qualifications and knowledge;
- to establish common educational standards through the establishment of a credit system in vocational education and training (ECVET) and for quality assurance in VET;

Between 2008 and 2009 the European Parliament and the Council approved the EQF and ECVET Recommendations.

### 3. Framework for the development of ECVET

One of the main obstacles to attracting more interest in transnational mobility as part of initial and continuing vocational training and education is the difficulty in identifying, validating and recognising learning outcomes acquired during a stay in another country. Furthermore lifelong learning is taking place increasingly in different countries and in a wide variety of contexts, formal, non-formal and informal.

In other terms, ECVET is a methodological framework that can be used to describe qualifications in terms of units of learning outcomes with associated points, with a view to transferring and accumulating learning outcomes. ECVET is based on the designing of coherent and meaningful units of learning outcomes and not on fragmentation of qualifications. ECVET does not aim for or require harmonisation of qualifications and VET systems; it aims instead for better comparability and compatibility.

According to the definition of the European Commission in the recommendation on a European qualification framework for lifelong learning (European Parliament and Council of the EU, 2008), a qualification is “a
formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to a given standard”.

The functions of standards as coordination mechanisms between the worlds of work and education can be described as follows:

(a) to improve transparency for users (employers, teachers, learners) about the value, the character, the profile, and the requirements of specific learning experiences;

(b) to reform VET by orienting it on the development of competences;

(c) to provide sound information about occupations and the expectations of employers, to design appropriate learning programmes and qualifications;

(d) to ease communication between stakeholders: social partners, trainers and teachers, experts, representatives of students and parents, or other interest groups;

(e) to make qualification systems more flexible, to respond to changing demands of the economy.

4. Greek ECVET implementation regime

The diversity of education and training systems in Europe has developed in national contexts and forms integrated parts of the individual countries’ identities. This diversity, as positive as it is, nevertheless at times also leads to a lack of transparency and comparability between systems. ECVET is designed as a way to work together, despite these organizational differences, but the diversity of systems is still a not to be underestimated as a complicating factor and should be taken into account when agreeing on mobility cooperation between the international partners.

The current crisis in Greece has brought up the reality of the administrative system which handles employment. Even though in the EU, the focus is on the promotion and development of the social economy, the structure of the employment system in Greece does not seem to participate in this attempt. However, multiple individual units within the country put considerable effort in overcoming the entry barriers to the social economy, and consequently, in growing and progressing. Following this logic, the European program European Coop Campus aims at supporting those attempts through the formation of non-formal learning institutions and at uplifting the administrative capability of those units.

5. Summary–Conclusions

Among the key challenges for social economy organisations there is the lack of specialized training and education in the sector. To overcome this challenge is necessary a better capacity building for social economy organisations, starting with specialized programmes. Several universities, often in partnership with social economy organisations, are launching new research centres devoted to social economy issues like social enterprise management or social innovation. However, it is also worth mentioning that most social entrepreneurs generally are not university graduates and if they have had a training, more often it was a VET or adult training. The very large and diversified range of activities and professional figures related to social economy across European countries and regions often are not clearly defined in terms of learning outcomes but also frequently regulated, in terms of access to training and qualification opportunities, in a way that in fact is very limiting the mobility beyond the VET systems “edges”– confines of national and regional VET systems, barriers to the mobility within a particular VET system, obstacle to mobility outside the formal education. For the EU to strengthen its social economy sector, it requires knowledgeable workers in the field. However, workers within the social economy sector are at present finding obstacles to pursue further training due to lack of recognised qualifications in this field. Besides, workers within the social economy sector are unable to reap the full benefits from their work experiences as these are also not being recognised.

Moreover, many European VET providers offer learning opportunities in the concerned professional field, but these VET courses are based on knowledge rather on competences, and the assessment of them is often not conducted on the field of related performances. This lack of competences needed by the labour market make more difficult the employment of the trainees, and the employees in keeping their job and improve their employability. To summarize, EQF and ECVET are complementary devices of an integrated system for the validation, recognition and certification of qualifications and competences between European countries. They represent the vertical and horizontal axis of a system that improve the VET mobility within the European Space of Learning (Fig. 2).

Figure 2 – EQF and ECVET
6. References
Section 6: Territorial Innovation and Planning Policies: Regions and Enterprises
Chapter 1:

Traditional vs. Web-based Participatory Tools in Support of Spatial Planning in ‘Lagging-behind’ Peripheral Regions

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Abstract:
The evolution of Web and Web 2.0 has formed the ground for broader communication and interaction among planners, decision makers and the public. In the context of spatial planning, several Web-participatory tools have been developed that aim at mobilizing and enhancing public participation. They have broadened the potential for public engagement in the planning process and provision of feedback on planning interventions by a range of societal interest groups. The focus of the present paper is on the potential role that Web-participatory tools can play for enhancing public participation at the stage of building scenarios for the revitalization of a Greek ‘lagging-behind’ mountainous region. Towards this end, a simple Web-participatory application was developed and used for gathering feedback from the public for further elaboration and enrichment of the proposed scenarios.

JEL category under which the paper primarily belongs:
Possible choices:
2. Empowerment of Citizens

1. Introduction
Public participation has been extensively used in spatial planning exercises as a means for managing conflicts, gaining feedback from citizens, enhancing the democratic nature of the planning process, and creating a platform for intense interaction and knowledge sharing among planners, decision makers and the public. As claimed by Arnstein (1969:216), “... citizen participation...is the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future”. Along the same line, Conroy and Gordon (2004:19) stated that “... participation research provides ample evidence that when people are involved in the decision-making process they are more likely to support and implement a decision”. Burby (2003), Brody et al. (2003) and Mirafab (2003) in their works converge that engagement of the public in the planning exercise contributes to the broader acceptance of a plan, while Seltzer and Mahmoudi (2012:4) note that “... if successful, planners would not only be engaged in one-way knowledge transfer, but a two-way knowledge exchange”. The important contribution of public participation in planning has been extensively acknowledged by a large number of researchers, while participatory planning methods have been adopted by a large number of spatial planning case studies.

Until recently, the so-called ‘traditional public participation’ methods were the only means through which public participation could take place. The advent of Web and Web 2.0 though, has set the ground for broadening the chances for participation, through the exploitation of Internet and available ‘e-tools’. According to Carver et al. (2001:907, 918), “... the proliferation of the Internet...has provided many opportunities to disseminate public information and also the on-line systems have the potential to involve the public more closely in the planning process” and Bizjak (2012:117) states that “... the use of these specific technologies has helped users to exchange and share information not only from personal computers, but also through mobile appliances, such as smart phones and pads”. From the governmental point of view, Internet technologies enabled the establishment of ‘e-governance’ collaborative activities through ‘Government 2.0’ platforms. Such activities assure transparency of governmental operations (Nam and Sayogo, 2011) and enhance the range and level of public participation. Thereby, Western-style democratic governments are strongly interested in creating communication platforms, by exploiting Web and Web 2.0 technologies, so that interaction between them and the citizens to be accomplished (Johnson and Sieber, 2013). In spatial planning, the contribution of participatory and visualization Web tools is of great importance. Internet GIS are described as client/server systems, the basic functions of which – presentation/visualization, database management, etc. – can support participatory Web applications in spatial planning (Peng and Tsou, 2003); Public Participatory GIS (PPGIS) have extensively been adopted in cases of...
problems that have a spatial reference, offering the chance for exploring the available spatial information and also interact with it at the various stages of the planning process (Carver et al., 2001); Argumentation maps, offer the potential for spatially referenced discussions “…through a single user interface that integrates both the map and the discussion” (Keller et al., 2005:137); Volunteered Geographic Information (VGI), involves citizens’ participation at the stage of creating or managing spatial data and geographic information, while “…it is increasingly being used in the case of geographic applications, such as map generation or elaboration by several users, as a bottom-up process” (Papadopoulou and Giaoutzi, 2014:114); finally, crowdsourcing is a means for guaranteeing substantial citizen participation in the whole process (Seltzer and Mahmoudi, 2012), a means for gathering innovative ideas from public and professional groups (Nam and Sayogo, 2011) and for enhancing democratization of the planning process, mobilizing thus participation and fostering creative thinking (Brabham, 2009). Based on the previous discussion, it is nowadays largely recognized the potential offered by Web-based tools for enhancing on-line accessibility of people, who can participate and express their opinion at the various stages of the planning process. Such tools eliminate time and place barriers that hamper the range and level of participation, and provide “…continuously updated information” (Stern et al., 2009:1069).

Along these lines, the focus of the present paper is on the potential of on-line participation for empowering people in the participatory spatial planning process in a less privileged region of the Greek territory. For that purpose, a simple Web application was developed in order to serve an on-line participatory exercise, where citizens are offered the chance to get information (textual and visualized) on proposed future development scenarios of the region at hand and express their opinion upon these scenarios through an on-line questionnaire. Feedback from the public is used for further elaboration of the proposed scenarios, so that the visions of the local community to be embodied in the final planning outcome. An attempt to compare traditional vs. Web-based participatory tools is also undertaken, considering the results produced from this e-planning exercise.

The structure of the paper has as follows: in the first part, the potential role that Internet-based participatory methods and tools can play in spatial planning is explored; in the second part, the proposed methodological approach is outlined; in the third part, a brief description of the study region and the proposed scenarios are presented; the fourth part focuses on the description of the Web application developed for gaining feedback from the local population, while the results of the planning exercise are also discussed. Finally, in the fifth part, some conclusions are drawn on the comparison of Web-based and traditional participatory tools, supported also by the experience gained from this empirical work.

2. Methodological Approach

According to Corburn (2003:420, 421), “…local knowledge is knowledge of specific characteristics, often acquired through life experience and should never be ignored by planners seeking to improve the lives of communities experiencing the greatest risk”, while Seltzer and Mahmoudi (2012:4) mention that “…the lack of region-scale institutions requires a willingness to engage people at the most local levels”. This is exactly the gap that the present methodology attempts to ‘fill’, by engaging local population and stakeholders in the planning exercise. Moreover, it seeks to explore the role that ICTs-enabled communication can play as a means for removing time and place communication barriers, enhancing thus the potential to involve a larger and more diverse variety of people, who are offered the chance to express their opinions and visions relating to the future development of their own region. Access to the Internet together with the availability of skills required for the successful handling of new technologies are crucial factors, affecting the level of involvement and thus the success of the participatory exercise. These prerequisites are feeding the on-going discussion on the potential of ‘e-participation’ tools vs. the traditional ones in the spatial planning context, especially in peripheral regions, where both accessibility and skills availability for ensuring e-participation are questioned. In any case, study of the available literature converges on the use of a combination of web-based and traditional participatory tools, as being a more wise choice for a successful outcome. Further elaboration on this issue is taking place in the conclusive part of the paper, based also on the experience gained by the specific case study application. The proposed methodological approach consists of six distinct steps, which have as follows (Figure 1):

- **Step 1 - Goal definition**: at this step, the goal of the study is defined, based on the specific problems of the region and also its particular attributes. The goal of the present case study is the integrated future development of the Taygetos mountainous region in Southern Peloponnesus – Greece.

- **Step 2 - Study of the current state**: at this step a description of the study region is taking place, while problems and comparative advantages are also explored.

- **Step 3 - Definition of future alternative scenarios**: concerns the structuring of alternative scenarios/images for the future development of the study region by using the backcasting technique as the most suitable for dealing with complexity and uncertainty of spatial systems. According to Shoemaker (1995), the scenario building process leads to a more effective management and integration of the available information, thus leading to the creation of a limited number of future and coherent images of the region under study.

- **Step 4 - Design of the Web application / Communication of scenarios**: incorporates the design of a Web application, through which the interaction among planners, the public and local stakeholders took place. The application contains both visual and textual ‘educational’ material as to the proposed scenarios, and also an on-line questionnaire, through which the local population had the chance to evaluate the proposed scenarios and express their opinion. The application is adjusted to the needs of the specific case study, i.e. it is a very simple application, so that local people could easily use it, despite their limited ICTs skills.
Step 5 - Feedback elaboration: at this step, the elaboration of feedback gained by the public and the local stakeholders took place, aiming at improving the proposed scenarios, by embodying the visions and desires of the local communities.

Step 6 - Evaluation of the on-line participatory exercise – Future perspectives: at this final step, the on-line participatory exercise is evaluated in terms of: a) quality of the results gained and b) range of participation. Also, some discussion is carried out on the potential of Web vs. traditional participatory techniques, stressing the advantages and drawbacks of each of the above approaches.

Figure 1: The proposed methodological framework

3. The Study Region – Alternative Future Development Scenarios

In this section, the main attributes of the mountainous region under study are presented, together with a description of the two alternative future development scenarios. The study region incorporates the mountain chain of Taygetos (east-southern part of Peloponnese – Greece) and a number of settlements located there. It covers an area of about 2,500 km², where the highest elevation is up to 2,407 m and its length is about 115 km. The region extends through three prefectures and is endowed with natural and cultural resources of exceptional interest. The climate conditions vary, depending on the elevation zone. In zones of lower elevation, the climate is characterized as ‘Mediterranean’, while in higher elevation zones it becomes harsher. According to the most recent census data (2011), the local population is 18,854 inhabitants. In the local economy, the agricultural sector prevails, while alternative tourism and small scale manufacturing activities have a complementary role. Moreover, a certain potential appears in the area in respect to the exploitation of agricultural and forest biomass for energy production. The region carries all kinds of disadvantages of peripheral mountainous regions, due to the: strong introversion, ageing of rural population, limited accessibility to infrastructure networks, increasing unemployment, uncontrollable grazing, strong dependence on conventional energy resources, rough morphology, weather conditions and natural disasters (fires), climate change impacts, etc. As a mainly agricultural area, it is exposed to a number of threats, rendering the region vulnerable to a range of natural, economic and social risks.

By taking into consideration the comparative advantages of the study region, the problems identified and also the potential future perspectives, two alternative scenarios were built, each of them presenting an alternative future development path. As earlier mentioned, the backasting technique was adopted, in which a scenario embodies: the current state of the region, an ‘image’ of the future of this region and the policy packages that support developments from the current state to the ‘image of the future’ (Dreborg, 1996; Stratigea and Giaoutzi, 2012a and 2012b; Giaoutzi and Stratigea, 2012). The key development axes of the
proposed scenarios are the sustainable development of the region, establishment of complementarity and synergies among the various sub-regions of the mountainous area and also support of an extraverted development pattern. More specifically, the two scenarios structured for the mountainous region under study have as follows (Papadopoulou and Stratigea, 2013):

- **Scenario 1: Spatially concentrated development pattern** – ‘Vertical’ integration of the various spatial units. In this case, three spatially extended development poles were created (Figure 2a), with each of them exhibiting a high degree of independence and self-sufficiency. Endogenous development of each pole is based on available natural and cultural resources, around which a range of activities are developed. In regions of higher elevation, a ‘grid’ of eco-tourist activities has been established, while in the semi-mountainous zones, emphasis is placed on the multifunctionality of agricultural land and the development of relative tourist activities (agro-tourism, cultural tourism, etc.). The forest and agricultural biomass is used for bio-energy production purposes. Hosting infrastructures, serving the needs of tourists, are located in semi-mountainous zones, while export trade activities are reinforced. A medium level of interaction among the poles is achieved, while certain competition among them still exists. Accessibility to infrastructure networks (ICTs, transportation networks, etc.) has been significantly improved, enhancing thus the extroversion of the region.

- **Scenario 2: Spatially de-concentrated pattern** – ‘Horizontal’ integration of the various spatial units. In this case, thirteen smaller development poles are created in the study area (Figure 2b). The development perspective of the region is mainly based on the spatial interaction and synergies among these spatially scattered poles, marked by complementarity principles. There is greater expertise in each specific pole, compared to those of the first scenario, where a smaller range of activities is developed within each pole, mainly based on the sustainable exploitation of local resources. As a result, there is a strong differentiation in the pattern of activities taking place in each pole, depending on the elevation zone and the type of resource availability. The local economy of each pole is supported by the specific activities developed in its land (agriculture, tourism, etc.), but also by the strong interaction and synergies created with the rest of poles. The poles are not competing, but they ‘collaborate’ harmonically towards common development objectives. The infrastructure networks (ICTs, transportation networks, etc.) have been upgraded and, based on that, the extroversion of the region is significantly enhanced.

### 4. The Web-based Participatory Planning Exercise

In the context of the present case study, a simple Web-based application was developed, for gathering public and local stakeholders’ views upon the proposed spatial interventions, while they could also add useful content, enriching thus the proposed scenarios. At this stage, the aim of the planning exercise is to gain feedback from local communities on their visions and desires in order these to be embodied in the proposed scenarios. For serving this purpose, the Web-based application designed, contains: a) textual information i.e. a brief and detailed description of the proposed scenarios, b) mappable educational material i.e. visualization of scenarios on a Google Earth map background, and c) an on-line questionnaire, consisting of two groups of questions: the first group includes general questions, seeking to identify the basic attributes of respondents (no personal information) and the problems faced in their everyday life; the second group includes questions concerning the proposed scenarios, where respondents are invited to express their personal views. Chat and interaction with the map is deliberately not provided, due to the low skill level of the rural population.

The Web-based participatory exercise was carried out in two stages/rounds (Figure 3). The first stage lasted two months. During this time, the site implementing the Web application was uploaded on the Web and a link connecting to it was set in several local portals, with a respective announcement informing visitors of the portals about the scope of the application. Anyone who had access to the Internet could access the site, search the educational material for free and complete the questionnaire. Although the site was quite user-friendly, participation of local population was rather limited (only 20 questionnaires were completed on the Web). As the main reasons, justifying the low level of participation, were considered the: limited access to the Internet, limited skills of local population and lack of previous similar experience, and more importantly the lack of participation culture or training (especially through the Web). At this point, it should be mentioned that in Greece and particularly in remote rural areas, the concept of participation in spatial planning exercises...
has not yet been matured. People are not aware of their ‘power’ and the potential use of it to strongly affect the planning efforts relating to the future of their own region.

Figure 3: The Web-based participatory process

Due to the limited participation at the first stage, a second stage followed, in which a more targeted group of local stakeholders and decision makers was invited through e-mails, phone calls, etc., requested to take part in the planning exercise and express its views on the proposed scenarios. In total 30 invitations were sent, which has resulted to a crop of 23 fully completed questionnaires. The addressing of request to local stakeholders and decision makers who, by their position, were more aware of spatial planning issues but also of local peculiarities, had as a result the increase of the level of participation and the more elaborated responses on the issues raised in the questionnaire, due to, among others, the educational level of respondents (higher or highest education level), the positions held by them in the decision making bodies (local administrative organizations, chambers etc.), and their unimpeded access to the Internet.

The data collected by the two-step Web-based participatory planning exercise (43 questionnaires in total), were further elaborated in order to gather participants' views and improve the proposed scenarios, while from the experience gained through the on-line exercise, but also from on the spot inspection of the region at hand, some useful conclusions were drawn on the potential role that Web-based tools can play for spatial planning processes in less developed regions, with a high level of ICTs-illiterate population. More specifically, elaboration of the respondents' attributes and responses reveals that: the majority of them hold at least a university degree, while they fall within the age groups of 26-35 and 36-50; most of them prefer the second scenario as they believe that more expertise in combination with strong networking among the settlements and the establishment of synergies will empower the local economy, the extroversion of the region and will also set the basis for its integrated sustainable development; the main problems they report are the limited accessibility to infrastructure networks, the scarcity of water resources, the lack of entertainment options, the absence of regional planning, the uncontrollable grazing and the increased danger of fire in the Taygetos woodland.

The feedback gained, created a new pull of input for the proposed scenarios as the remarks received by the respondents have born new ideas, revealed problems that were out of the planners’ view but also confirmed some others that were already grasped by the planning team. Thus, a chance for the scenarios to be enriched and embody the visions of the local respondents came up. However, due to the specific attributes of respondents at both stages (highly educated ICTs skilled lay people and experts/decision makers), the planning team is thinking of organizing a number of traditional participatory workshops for a face-to-face interaction with low-level of ICTs skills ordinary people (third stage of the scenario planning exercise – Figure 3) in order to further enrich the feedback and thus the outcome of the planning process. In the following section, some conclusions as to the adoption of ‘e-participatory tools’ in the planning process are drawn, while a comparison of e- vs. traditional tools is also carried out.

3. Discussion

‘E-Planning’ and ‘e-participation’ are steadily gaining ground in spatial planning as ICTs-enabled planning approaches that can ‘transfer’ the stages of the planning process on the Web and attract a rich diversity of views and knowledge on behalf of both the planning process and the outcome. Towards this end, several types of tools can be used. As such, can briefly be mentioned: a kind of Web-based Spatial Decision Support Systems (WebSDSS), accommodating public participation in spatial decision support by implementing a mixed client/server-based system (Rinner, 2003); crowdsourcing, increasingly used as a tool for gaining feedback from the public at the various stages of the planning process, by integrating distributed knowledge (Evans-Cowley, 2011; Papadopoulou and Giaoutzi, 2014); Participatory Planning GIS, which integrate several forms of on-line public participation with GIS, allowing for geo-discussion forums to be established and interactive Web-mapping applications to be developed; and finally, VGI as an alternative kind of 'e-
participation’, used for the production and dissemination of geographic data via Web 2.0, cloud computing & cyber-infrastructure (Sui et al 2013).

The choice of Web-based or traditional participatory tools draws upon the pros and cons of each specific approach and the specific problem at hand. A literature search can reveal a range of crucial issues concerning public engagement by use of Web-based participatory methods vs. traditional ones. More specifically, compared to traditional, Web-based participatory tools can offer some significant advantages, with the most important being:

- they are time- and space-independent, removing thus time and place barriers of traditional approaches;
- they can engage a large diversity of potential participants in respective e-participatory exercises, compared to the very limited number of participants, taking part by means of traditional participatory tools;
- provided that access to ICTs infrastructure is guaranteed, they enhance democracy, while their open nature assures transparency of the whole planning process;
- they are the means for wide diffusion of knowledge and information to the public, rendering thus the participatory approach also an ‘increasing awareness’ approach, by means of increasing the stock of knowledge transferred to the public on a specific issue;
- when accessibility is ensured, progress of e-participatory planning exercises needs less time to be implemented.

- participants can keep their anonymity and thus express their views without any kind of ‘second thoughts’ out of the participatory process.

Moreover, as Stern et al. (2009) point out, Web-based tools strengthen personal confidence by the access they provide to detailed, updated, accessible and always available information. On the other hand, a certain skepticism is developing as to the digital divide and the disadvantageous position of those having no access to computers and ICTs infrastructure or lacking the necessary ICTs skills (Brabham, 2009; Stratigea, 2011), which is gradually gaining importance among planners and decision makers in the context of the information era, as it leads to a certain kind of social inequality and social exclusion (Carver et al., 2001).

More specifically:

- a new form of illiteracy - ICTs-illiteracy - is coming to the fore, while the lack of ICTs skills and training constitute critical factors for exclusion from the e-participatory process;
- access to the Internet and broadband accessibility are the main prerequisites for participating in an on-line participatory process, which, as evidence shows, should nowadays not be taken for granted. This also has been the case in the lagging-behind mountainous region of Taygetos, used as a case study in this paper;
- lack of face-to-face interaction may impede lay people to unfold their thoughts and feelings, as the ‘black box’ (i.e. computer) behind e-participatory processes may create feelings of non-trust, reservation, suspiciousness etc. to the less educated people;
- lack of trust of the public on the outcome of e-participation, as people may consider that, through a process lacking face-to-face contact, their opinion will not be seriously received by decision makers. In respect to that, Kingston (2007) claims that e-participation has the potential to increase the number of participants, but the impact of their participation is not up to the participatory method used, but to the way that politicians listen to what the community is telling them and act upon it.

The Taygetos case study, presented in this work, attempts to draw upon the benefits of Web-based participation. In this respect, it adopts an on-line participatory approach, aiming at the engagement of local population via the Web for gathering feedback at the stage of building scenarios for the future development of the study region. The results obtained, verified the previously presented issues concerning public engagement by use of Web participatory methods vs. traditional ones. Based on the above discussion, it is clear that each approach has its own advantages and disadvantages and, depending on the case study concerned, the specific needs and the resources available, the planning problem etc., they may be alternatively selected. However, as empirical evidence shows, a combination of ‘e-participatory’ alongside with traditional participatory methods provides the most qualitative results. Thus, Web-based participation should be treated as complementing rather than competing traditional participatory approaches (Seltzer and Mahmoudi, 2012). In fact, many researchers seem to support the idea of using a mixed approach, i.e. both Web-based and traditional tools, which can offer a more satisfying planning outcome (Mandarano et al., 2010; Conroy and Gordon, 2004).

In conclusion, the feedback gained by the Taygetos ‘e-participatory planning’ exercise, although poor in terms of level and diversity of participation, it was rich in scope and has been proved really useful in feeding the proposed future development scenarios with some ‘local taste’ and values. Though, a face-to-face interaction with local society seems to be necessary to complement / enrich the e-participation results with lay people empirical knowledge, so that the further refinement of future development scenarios to be based on the richest possible diversity of views, visions and desires of the local communities, who are relevant to decide which future they want to go for.

6. References


R&D, Patenting and the Greek SMEs

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Abstract:
This paper examines the R&D activities of the Greek SMEs, both industrial and non-industrial, as measured by their patent records during the period 1988-2013. Firm patent records are used as indicators of R&D measurement and description. In this context, results present the technological content and the economic direction of these R&D activities, the former expressed in the form of technological sectors and fields and the latter as industrial sectors of application and use. The paper also tries to highlight cases of dynamism and opportunity for a sustainable future. Results could be integrated into a wider discussion on managing technology and innovation, promoting the development of new R&D activities and fostering new forms of entrepreneurship in Greece. The analysis shows that the R&D activities of the Greek SMEs are related to a variety of technological fields. There is obviously technology dispersion among SMEs. However, the further and deeper analysis shows that technologies related to the agricultural sector, food-beverages, pharmaceuticals, metal shaping-separation, rubber-plastic products, building-housing, instruments and electricity compose the main R&D landscape.

Key Words: Greece; Innovation; Patents; R&D; SMEs.

1. Introduction: R&D, patenting and SMEs
Firms are the main locus for the execution of R&D activities. As the backbone of the economy at national and international level, firms are the main source of creating jobs and contributing to economic growth. However, a crucial factor for their survival and growth is innovation, which presupposes the execution of R&D activities. Large firms play a key role in innovation but this doesn’t mean that there is no place for SMEs. The last years the environment for innovation has changed. The importance of SMEs to the innovation process has increased. The increasing incomes, the more “niched” market demand and the changing technologies have reduced the structural disadvantages of SMEs firm size. SMEs engaged in innovation have been considered to be central for both entrepreneurship and innovation. The contribution of small firms varies considerably across countries. In most economies, their share exceeds 70% of the total, ranging between 69% in Ireland and above 95% in Greece. Small firms account for a smaller share of the total number of employees, ranging between around 9% in the United States and the Czech Republic and around 35% in Greece (OECD 2011). As for the parameter of the value added by firm size class figures show that Greece’s 75% of value added is due to the activities of SMEs. In fact Greece is characterized by the highest share of value added in the class ‘1-9’ and has also one of the highest in both classes of ‘10-19’ and ‘20-49’ among a total of 30 countries (OECD 2012).

Thus, the study of the Greek SMEs is very important and given the role of innovation for their performance and success, the examination of their R&D behaviour could be characterized as an issue of significant importance. It is also an issue that hasn’t been studied so far. The rest of this paper is structured as follows: Section two presents a bibliography review on SMEs, R&D activities and in relation to their description and measurement based on patent data. Section three is focused on the issue of methodology, also describing the data and its elaboration. Section four presents the main results. Finally section five presents some concluding remarks.

2. Bibliography review: Theoretical and empirical evidence
Many scholars have argued that SMEs are the engines of technological change and innovative activity, at least in certain industries (Acs & Audretsch 1990). Scholars, however, have also argued that innovation activity is SMEs can be underestimating, as innovation in this kind of firms is usually realized informally, that is without the performance of formal R&D. Schumpeter (1934) on his ‘Mark I’ hypothesis emphasized the role of small innovative firms in introducing new technology and variety into the economic system and Baumol (2002) referred to a ‘David-Goliath co-existence and symbiosis between firms of different size. Much recent empirical research has showed that small firms account for a significant share of both innovation production and employment growth (e.g. Audretsch 2002). Innovation presupposes the execution of R&D activities, through their content and outcome innovation is usually described and measured. One way of describing R&D content and measuring innovation output is through patents. Patents are one of the main categories of
intellectual property rights and have been considered to be output indicators of description and measurement of R&D activities and innovation.

The relation between patents and SMEs has been studied in the international bibliography. Empirical evidence shows that the distribution of patents is highly skewed when the firm size is considered: Most patents are owned by a small number of large firms, especially at international and transnational level of patent protection. The above bias is less evident when a national patent office is taken into account (Schettino & Sterlacchini 2009). However, empirical evidence also shows that for those SMEs which are active internationally, they even outperform multinational firms in terms of internationalization (Fritsch et al. 2011). The same study examining the participation rate of SMEs in the patenting activities of 9 countries argues that SMEs are more active in emerging technology fields (e.g. nanotechnology, biotechnology and renewable energy) than in established fields (e.g. machinery, chemicals, pharmaceutic). The only exception in the emerging technology fields seems to be the optical technologies industry. Among the main results of this study is that Italy exhibits the highest share of transnational SMEs patents. Other cases-studies of national interest confirm the finding of similar results: For example Andersson and Lööf (2012) argue that one out of three Swedish manufacturing firms applying for national patent protection is a micro firm (1-10 employees) or a small firm (11-25 employees). Similar results are found in many other countries, as suggested by Iversen and his colleagues (Iversen et al 2008). This study shows that although SMEs dominate the Nordic population, with small firms (less than 50 employees or the equivalent) making up more than 97 percent of Nordic entities, most applications filed by Nordic firms at the EPO involve large firms, but that also a large group of applications originate in the region’s smallest firms.

Summarizing, SMEs play an important role in the growth, output and employment pattern of every economy. There is also an increasing role for them in relation to the production of innovation. Generally, the existing bibliography argues that SMEs aren’t engaged, or they are less engaged than expected. However the Greek case is different. Previous research has showed that SMEs account for more than 90% of all firm patents during the period 1989-2005 (Markatou 2012). Thus, the main objective of this paper has a meaning and could also be useful for public policy planning and related policy actions.

3. Methodology and data
This paper studies the R&D activities of the Greek industrial and non-industrial sector, based on the patents that the Greek SMEs have developed and produced during the period 1988-2013. Thus, the analysis is centred on the definition and the description- measurement of two main concepts, namely those of the SMEs and the R&D activities. In relation to the first concept the paper employs the EU definition of SMEs (EU, 2003). According to the EU the main factors determining whether a company is an SME are the number of employees and either turnover or balance sheet total. This definition is pegged to the number of employees, but recognizes that size involves overall resources. Therefore a measure for turnover or balance-sheet total is included which overrides the purely employment based division. The four categories are: First, ‘micro’ (0-9 employees and less than €2 million in turnover), second ‘small’ (10-49 employees and less than €10 million in turnover), third ‘medium-sized’ (50-250 employees and €50 million in turnover) and fourth ‘large’ (firms with more than 250 employees or greater than €50 million in turnover). In this context, this paper studies the R&D activities of the Greek firms, which employ less than 250 employees.

In relation to the second concept (R&D activities) the paper employs patent data to describe and measure this kind of activities, which means that the main data source is a national or international patent office and the main unit of analysis is the patent document. Therefore, this paper exploits first an initial patent database, which contains all patents that have been granted by the Greek Patent Office during the period 1988-2013 (OBI 1988-2013). Based on this data a second patent database has been created and elaborated, which contains firm patents, all owned by Greek firms. The description of R&D activities of the Greek industrial and non-industrial sector is based on the international technology classification, which classifies patents according to their technological content into one or more of the 8 technology sectors and then, into 20 different sub-sectors, 118 classes, 632 sub-classes and more than 2200 main groups. In total Greek firm patents account for 1710 patents, which are related to 1710 first- main technological (patent) codes and 3650 total technological (patent) codes, that is both first- main and complementary (e.g. second, third…) codes. The description of R&D activities of the Greek industrial and non-industrial sector is based on the study of the technological content of the above patent codes and on their economic interpretation and association with industrial sectors of potential application and use.

4. Results
Table 1 presents the R&D activities of the Greek SMEs at patent sector and sub-sector level for the whole period of analysis (1988-2013). The analysis shows that the R&D activities of the Greek industrial and non-industrial sector are dispersed into the eight technological sectors based on the international patent classification. This is also confirmed by the respective concentration indices, which account for 0.190 for the first- main technological (patent) codes taxonomy and 0.181 for the total technological (patent) codes taxonomy. In general, nearly 50% of the R&D activities of the Greek SMEs are concentrated in two sectors, namely those of ‘human necessities’ and ‘performing operations- transporting’. Another important technological sector is ‘fixed constructions’, which accounts for 19.04%. Among the resting sectors ‘chemistry- metallurgy’ and ‘electricity’ are rather underrepresented according to the international standards (6.6% and 4.96% respectively in Greece), while the 10.19% and 7.41% of patents concern R&D activities related to ‘mechanical engineering, lighting, heating, weapons, blasting’ and ‘physics’. The above shares
remain rather stable if the main (first) technological (patent) codes are compared with the complementary ones, with the exception of two cases: The first concerns chemistry- metallurgy and the second ‘electricity’, which increase their weight by 27% and 16%. This means that a part of R&D activities in ‘chemistry-metallurgy’ and ‘electricity’ appear as complementary R&D activities, which are interconnected with other than the main and primary R&D activities.

Table 2 presents the R&D activities of the Greek SMEs from the level of sub-sector to that of industrial sector of potential application and use. Adding to the previous analysis the results of table 2, the above technological sub- sectors may be generally corresponded to the five following industrial sectors of application and use: First, ‘machinery and equipment’, which concentrates the 27.23% of patents of the Greek SMEs and can be further disaggregated to ‘agricultural and forestry machinery’, ‘machine tools’, ‘non- specific purpose machinery’ and ‘special purpose machinery’. Second, the sector ‘fabricated metal products’ is found with a share of 11.67%. Third, ‘chemicals and chemical products’, which is the most concentrated industrial sector and mainly related to ‘pharmaceuticals’, accounting for 11.59%. In fact, more than 60% of the patent classified to ‘chemicals and chemical products’ are related to ‘pharmaceuticals’. Forth ‘non- metallic mineral products’ (8.914%), which concentrate the 27.23% of patents of the Greek SMEs and fifth, ‘rubber and plastic products’ (7.374%).

Integrating and synthesizing the results of table 1 and 2, thus interpreting the R&D activities of the Greek SMEs in terms of industrial sectors of application and use, it can be seen that:

(1) Pattern 1 (agriculture) leads to agricultural sector activities, but based on the interpretation of the respective patent codes, a final link to ‘machinery’ and more specific to ‘agricultural and forestry machinery’ can be recorded.
(2) Pattern 2 (foodstuffs- tobacco) leads to ‘food and beverages’ and is further specialized into the ‘production of meat, poultry meat products, bread and related products’.
(3) Pattern 3 (health; life- saving; amusement) leads to ‘pharmaceutical preparations, household and sanitary goods and toilet requisites’.
(4) Pattern 4 (shaping) leads to ‘machine tools’.
(5) Pattern 5 (transporting) leads to both ‘rubber and plastic products’ and ‘non- specific purpose machinery’.
(6) Pattern 6 (building) leads to first ‘non- metallic mineral products’ and second ‘fabricated metal products’ (e.g. production of aluminium and manufacture of metal structures and parts of structures, builders’ carpentry and joinery of metal, and locks and hinges).
(7) Pattern 7 (lighting- heating) leads to the respective industrial activity, namely that of ‘lightening equipment’.
(8) Pattern 8 (instruments) leads to both ‘optical instruments’ and ‘office machinery and computers’.
(9) Finally pattern 9 (electricity) is entirely related to the ‘electric distribution, control, wire and cable’ industrial activities.

<table>
<thead>
<tr>
<th>Technological sub- sectors</th>
<th>1988-2013</th>
</tr>
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<tbody>
<tr>
<td>Agriculture</td>
<td>7.65</td>
</tr>
<tr>
<td>Foodstuffs- Tobacco</td>
<td>7.55</td>
</tr>
<tr>
<td>Personal or domestic articles</td>
<td>5.44</td>
</tr>
<tr>
<td>Health- Life saving- Amusement</td>
<td>9.66</td>
</tr>
<tr>
<td>Separating- Mixing</td>
<td>2.04</td>
</tr>
<tr>
<td>Shaping</td>
<td>7.07</td>
</tr>
<tr>
<td>Printing</td>
<td>1.22</td>
</tr>
<tr>
<td>Transporting</td>
<td>9.86</td>
</tr>
<tr>
<td>Nanotechnology</td>
<td>0.07</td>
</tr>
<tr>
<td>Chemistry</td>
<td>6.26</td>
</tr>
<tr>
<td>Metallurgy</td>
<td>0.34</td>
</tr>
<tr>
<td>Textiles or flexible materials</td>
<td>1.02</td>
</tr>
<tr>
<td>Paper</td>
<td>0.20</td>
</tr>
<tr>
<td>Building</td>
<td>18.84</td>
</tr>
<tr>
<td>Earth or rock drilling: Mining</td>
<td>0.20</td>
</tr>
<tr>
<td>Engines or pumps</td>
<td>1.36</td>
</tr>
<tr>
<td>Engineering in general</td>
<td>1.56</td>
</tr>
<tr>
<td>Lighting- Heating</td>
<td>6.39</td>
</tr>
<tr>
<td>Weapons- Blasting</td>
<td>0.88</td>
</tr>
<tr>
<td>Instruments</td>
<td>7.41</td>
</tr>
</tbody>
</table>
Electricity & 4.96

<table>
<thead>
<tr>
<th>Technological Sectors</th>
<th>Industrial sectors</th>
</tr>
</thead>
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<tr>
<td>Agriculture</td>
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</tr>
<tr>
<td>Health; life-saving</td>
<td>Pharmaceuticals</td>
</tr>
<tr>
<td>Shaping</td>
<td>Machine tools</td>
</tr>
<tr>
<td>Transporting</td>
<td>Rubber and plastic products</td>
</tr>
<tr>
<td>Building</td>
<td>Non-metallic mineral products</td>
</tr>
<tr>
<td>Lighting-heating</td>
<td>Lightening equipment</td>
</tr>
<tr>
<td>Instruments</td>
<td>Office Machinery-computers</td>
</tr>
<tr>
<td>Electricity</td>
<td>Electric distribution, control, wire, cable</td>
</tr>
</tbody>
</table>

5. Conclusions

The study of the R&D activities of the Greek SMEs was the main target of this paper. The analysis confirms the dispersion of R&D activities into various technological fields. Therefore, results show a dispersed technology landscape among the Greek SMEs, but traditional enough in nature and orientation. In fact there is strong interrelation between production, as expressed by the economic activities of the Greek firms and technology, as represented by their R&D activities. R&D and production activities move in parallel, with a few “old” and traditional industries playing a very important role. Firms are or should be the main executors of R&D activities and the main producers of innovation, as they are considered to be a main source for jobs’ creation and contribution to economic growth. However, previous research on this field shows that the Greek firms’ patents as a share of the total patent activity only accounts for 23% on average during the period 1988-2010 (Markatou 2012). In relation to size, the same research shows that the great majority of these firms are SMEs. This share is much lower than the respective of other countries, which are characterized by the same or a similar economic and technological level.

Thus, a main issue is to increase this rate and the contribution of the Greek firms in the total patent activity, both inside and outside Greece, as it is widely accepted that their survival and competitiveness, especially in nowadays globalized environment, depends more or less on their ability to innovate, such as by introducing new products in the market, which presupposes their ability to conduct R&D activities. This paper has presented the ‘past’ and the ‘present’ of these R&D activities, but has a wider aim from the beginning of this study, which isn’t other than highlighting cases of dynamism and opportunity for a sustainable future. Dynamism and opportunity can be seen in those R&D activities which are related to both building and the agricultural sector. Both of them are compatible with the existing Greek industrial structure, ‘build’ on areas that Greek firms seem to have developed a certain technological knowledge and expertise and could be both a viable investment and a promising area for the future. Thus, sustainable agriculture and ecological building could be an opportunity for the country and the base on which public policy could intervene, promoting the development of new activities and fostering new forms of entrepreneurship. The results of this paper and further research on this field could be integrated into a wider policy discussion on that issue.

6. References


Abstract:
The purpose of this paper is to shed some further light on the impact of regional capacities to create and adopt technology in shaping the pattern of convergence in Europe. A model is developed in which the pattern of convergence is attributed to the rate of technological adoption across regions. If absorptive abilities vary across regions, convergence is constrained amongst a certain group of regions that share common structural characteristics. Whether regions exhibit a pattern of convergence depends on the degree to which infrastructure conditions are appropriate for the adoption of technological improvements. The model is tested using data for the NUTS-2 regions of the EU-25 during the time period 1995-2004. The results suggest that adoption of technology has a significant and positive effect in regional convergence in Europe. The analysis is also shown to have important implications for the direction of regional policy in Europe.

Key words: Convergence clubs, Technological Gap, European Regions.

JEL: C21; O18; R11; R12

1. Introduction

The publication of the ground breaking work of Baumol (1986) was the spark that ignited an enormous interest in the issue of convergence across national economies. The debate on convergence has since become one of the most foremost topics in economic research. This topic can also be tackled with respect to different areas within a country, that is to say, regions. In the context of regional convergence, the term ‘region’ refers either to areas determined according to similarities in geographical characteristics or areas corresponding to administrative divisions, which may be arbitrary.

The debate on regional convergence has bred, and continues to do so, dozens of empirical studies (e.g. Button and Pentecost, 1995; Neven and Gouyette, 1996; Alexiadis et al., 2008; Álvarez-Garcia et al., 2004; Ezcurra et al., 2005). Although, in this fast growing literature technological progress has been acknowledged to be of paramount importance in promoting convergence across regions, nevertheless, the impact of the adoption of technology has received less attention. Indeed, Bernard and Jones (1996) claim that empirical studies on convergence have over-emphasised the role of capital accumulation in generating convergence at the expense of the diffusion of technology. In this context, some remarks by Bernard and Jones (1996) are highly pertinent:

‘To the extent that the adoption and accumulation of technologies is important for convergence, the empirical convergence literature is misguided’. (Bernard and Jones, 1996, p. 1037) [Emphasis added]
As acknowledged by Abramovitz (1986), technological progress is driven not only by indigenous innovation but also by the process of technology absorption, and thus the ability of a regional economy to ‘catch-up’ may substantially depend on its capacity to imitate and adopt innovations developed in more technologically advanced regions. Although some attempts have been made to capture the impact of technology adoption (e.g. de la Fuente, 2000; Rogers 2004) nevertheless this issue remains a fruitful area of research, especially, for regional economists. Given that the adoption of technology is manifested more clearly across regions and is accelerated by geographical proximity, its impacts on enhancing regional convergence is an ‘area’ where more work is needed by regional economists.

It is the intention of this paper to confront theory with facts. In doing so, we develop and apply empirically a model that explicitly takes into account technology adoption in an extensive regional context, that of the NUTS-2 regions of the EU. In doing so, we expand the range of empirical studies on European regions. We should emphasise at the outset that the approach used in this paper is mainly quantitative. However, it is hoped that this paper will be able to isolate some interesting views on the issue of regional convergence across Europe due to technology diffusion and adoption.

This effort is organised as follows. Section II reviews some approaches that have been put forward to explain the impact of technological diffusion and adoption in the process of economic growth. The existing literature, however, is limited to the extent that it only highlights specific aspects of technology adoption without offering a general model that captures its impacts on regional convergence. Section II, subsequently, develops such a model. In Section III the methods employed and the data used in the process of econometric estimations are discussed, followed by the presentation and a detailed account of the econometric results in Section IV. Section V provides a brief conclusion.

2. Technology Creation and Adoption

In the standard neoclassical model, a factor that promotes, and accelerates, regional convergence is technological progress and diffusion. If the labour force and technology grow at constant rates, and if there is instantaneous diffusion of technology in conjunction with a movement of factors of production, then convergence in levels of labour productivity (or in per capita output) is an inevitable outcome of the neoclassical model.

Under the assumption of perfect competition it may be argued that technology has such characteristics and is, as Borts and Stein (1964) argue, ‘available to all’ (p. 8). However, several criticisms have been raised against this argument and many economists are searching for an alternative way forward. A process of technology diffusion is not a simple and automatic process. Instead, it requires that lagging economies (countries or regions) should have the appropriate infrastructure or conditions to adopt or absorb the technological innovations. As Kristensen (1974) points out, technological spillovers are not likely to be effective if the capability of the receiving economy is too low:

‘The most rapid economic growth should be expected to take place in countries that have reached a stage at which they can begin to apply a great deal more of the existing knowledge’ (p. 24)

On similar lines, Abramovitz (1986) recognises this possibility by arguing as follows:

‘Countries that are technologically backward have a potentiality for generating growth more rapid than that of more advanced countries, provided their social capabilities are sufficiently developed to permit successful exploitation of technologies already employed by the technological leaders’ (p. 225) [Emphasis Added]

In other words, it ‘social capabilities’ or infrastructure conditions are not ‘sufficiently developed’ then it cannot be presumed that there is an ‘advantage of backwardness’ associated with a high technological gap. The absorptive ability of an economy is therefore of paramount importance to the convergence process and has already been examined seriously by, for example, Baland and Francois (1996), Keller (1996), Parente and Prescott (1994, 1999), all of which consider the implications of technology absorption for economic growth in national economies, and express the absorptive ability in terms of human capital. Other authors approximate the absorptive abilities of an economy in terms of the level of innovation in an economy (e.g. Griffith et al., 2003). In particular, Griffith et al. (2003), building upon the arguments of Schumpeter (1934), put forward the idea that Research and Development (hereafter R&D) activities affect not only the degree of innovation but also the absorptive ability of an economy. Four regional studies emphasise the absorptive ability of regions in promoting economic growth, with each highlighting different factors. Acs et al. (1994) put emphasis on the average size or age of local firms, Dosi (1988) considers the dominant production structure and the existence of networks, Henderson (2003) uses available human capital in a location while in Driffield (2006) the spillover effects from foreign direct investment are the focus. However, these models do not consider the implications for convergence, at least in an explicit way.

A link between the absorption of technology and economic convergence is also considered explicitly in a further five models. In particular, Barro and Sala-i-Martin (1997), Detragiache (1998), Rogers (2004), Duszyński (2003), and Howitt and Mayer-Foulkes (2005) examine this relationship for national economies. Duszyński (2003) proposes a model that combines technology diffusion, perfect capital mobility and adjustment cost for capital investment. This model predicts variation in the rates of convergence, with

1 Although Gerschenkron (1962) is acknowledged as the initiator of this view, nevertheless, the basis of the argument is based on Veblen (1925). See also Fagerberg (1994) and Inkster (2002).

undercapitalised countries exhibiting relatively fast initial rates of convergence. Rogers (2004) implements a form of human capital measure in that approximation to the absorptive ability of an economy is expressed in terms of number of students studying abroad. Howitt and Mayer-Foulkes (2005) develop a model on Schumpeterian lines and approximate the ability of an economy to absorb technology in terms of levels of human capital and the endogenous rate of innovation.

From this brief review of the existing literature, it is clear that although the importance of technology adoption has been acknowledged, nevertheless, only specific aspects of the infrastructure conditions are examined. At a more general level, a critical question arises: how do the overall infrastructure conditions affect the absorptive ability of a regional economy? This question can be stated alternatively as: what are the implications of a ‘poor’ or a ‘superior’ infrastructure for regional convergence? It is possible to provide some answers to these questions by constructing a model of regional convergence that encapsulates the impact of infrastructure in the absorptive ability of a regional economy.

The approach adopted in this paper takes a model developed by de la Fuente (1995, 1997 and 2000) as a point of departure. This model provides an appropriate framework to analyse the implications of technology creation and adoption in regional convergence. The model is based on the usual assumption that technological progress depends on the extent of technology diffusion from the most advanced economy but income disparities are also attributed to differences in the levels of investment in physical capital and technology, i.e. there is indigenous innovation possible in any economy. According to this model the potential for technology adoption is positively related to the technological gap, i.e. the higher the technological gap, the higher the potential for technology adoption and faster the rate of convergence. However, this model does consider the possibility that high technological gaps might act as obstacles to convergence.

In this paper the model by de la Fuente (2000) is extended further as to take into account the impact of existing infrastructure in the absorptive ability of economies. Under the assumption that the adoptive ability of a regional economy is linked to infrastructure conditions, our model yields two possibilities of convergence; convergence towards a ‘high’ and a ‘low’ equilibrium. Whether regional economies converge towards a high or a low equilibrium depends on the degree to which infrastructure conditions are appropriate for the adoption of the latest technological improvements.

Following de la Fuente (2000), the growth of technology is assumed to be an increasing function firstly of the proportion of output invested in R&D to produce ‘technological capital’ (\( \Theta \)) and secondly the opportunities for ‘technological catch up’, as measured by the gap between the existing level of technology in a region and that of a ‘technological best-practice frontier’, (\( B \)). Thus, it is possible to express the growth of technology in a region \( i \) in terms of the following general function:

\[
G_A^i = f(\Theta^i, B^i)
\]  

(1)

with the expectation of \( f'_{\Theta^i} > 0 \) and \( f'_{B^i} > 0 \).

More specifically, it is anticipated that the ability of a region to produce technological capital, i.e. the ‘intentional creation of technology’, as reflected in R&D activities, will have positive effects on the growth of technology in the region. Regarding the second source of technological growth, a high technological gap in a region implies opportunities for adopting technological improvements in the technologically advanced regions. In such circumstances, the further away a region’s technology is from that of the most advanced region, the faster will be its rate of technological progress (Fagerberg, 1987; Gomulka, 1971, 1986, 1990).

The logic behind this hypothesis is that technology transfer will be relatively cheap for lagging regions, when compared to regions which are already employing the most modern technologies and which cannot therefore simply imitate existing production techniques in order to promote further growth. Specific resources must be allocated to innovation activities, and hence innovation is a much higher cost activity for leading regions. Low technology regions can therefore experience faster growth provided, of course, that they possess the necessary infrastructure to facilitate the adoption of technology from the more technically advanced regions.

The functional form given by equation (1) can be specified in a multiplicative form. Thus,

\[
G_A^i = \Theta^i B^i e^c
\]  

(2)

Equation (2), in turn, can be written in linear form by taking logarithms as follows:

\[
g_A^i = c \Theta^i + d B^i \text{ with } \gamma, c \geq 0
\]  

(3)

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1 A related issue pertains to the model by Daniels (1999) who examines the hypothesis of technology transfer through international trade.

2 This model is also based extensively on Nelson and Phelps (1966), Phelps (1966) and Nelson (1956, 1960, 1962 and 1981).

3 Pigliaru (1999, 2003) develops a similar model in which technology accumulation in a region depends not only on technology diffusion from the leading region but also on the proportion of regional output devoted to innovation.

4 The ‘technological gap’ is defined as the distance between the best-practice frontier and the level of technology prevailing in a region.

5 De la Fuente (1997, p. 25) defines technological capital as ‘the accumulated stock of useful technical knowledge’ and argues that it is subject to the same constraint as physical capital, namely exhibiting diminishing returns. This variable represents indigenous innovation in an economy.
Given that $\theta_l$ approximates ‘technological capital’ or the level of innovation in a region, measured as the proportion of its output to R&D, then the parameter $\gamma$ measures the productivity of innovation in augmenting technology while $\epsilon$ represents the rate of diffusion of technology across economies and, hence, reflects the opportunities for technological catch-up. The technological distance ($b_i$) is defined as the difference between a best-practice frontier ($\pi$), which is determined exogenously, and the prevailing level of technology in a region, represented by some index $a_i$, i.e. $b_i = a_i - \pi$. Assuming that the economy is divided into two regions, a leading and a follower-region ($i = l, f$), then the technological distances are given by: $b_l = a_l - \pi$ and $b_f = a_f - \pi$, respectively.

Assuming further that each region devotes a different proportion of its output to R&D, equation (2) is used to show the growth of technology in the leading and following region: $\dot{a}_l = \gamma \theta_l + \epsilon b_l$ (4)

The growth rate for the technology gap between the two regions ($\dot{b}_{lf}$) is therefore:

$$\dot{b}_{lf} = \dot{a}_l - \dot{a}_f = \gamma (\theta_l - \theta_f) + \epsilon (b_l - b_f)$$ (5)

Defining $b_{lf} = b_f - b_l$ and $\theta_{lf} = (\theta_l - \theta_f)$, equation (6) can be written as follows:

$$\dot{b}_{lf} = \gamma \theta_{lf} - \epsilon b_{lf}$$ (7)

An implicit assumption of this model is that all economies are able to absorb technology to the same degree, so that the higher the technological gap the higher the effect on growth, ceteris paribus. However, it may be argued that large gaps do not necessarily promote convergence in this way. It is quite possible that a significant technological gap is associated with unfavourable conditions for the adoption of new technology. This consideration can be introduced in a regional convergence framework by assuming that the rate of diffusion of technology ($\epsilon$) is a non-linear function of the technological gap. More specifically,

$$\epsilon_i = \frac{\rho}{b_i^\pi}$$ (8)

where $\rho, \pi > 0$ are parameters.

The intuition behind equation (8) is that the rate of diffusion is not constant but varies across regions, according to the size of the gap. Thus, for a given value of $\rho$, a high technological gap implies a low capacity to absorb technology. The parameter $\rho$ can be interpreted as a constant underlying rate of diffusion, which would apply to all regions if there were no infrastructure/resource constraints upon technological adoption. However, the existence of such constraints causes the actual rate to diverge from $\rho$. In other words, the higher the technological gap, the slower the rate of technological diffusion ($\epsilon$). Of critical importance is the parameter $\pi$, which determines the extent to which the existing gaps, and implicitly therefore the existing infrastructure, impacts on the rate of diffusion. This parameter can be viewed as a measure of the appropriateness or suitability of regional infrastructure to adopt technology. Thus, the rate of technology diffusion is endogenously determined.

The implications of modelling the rate of diffusion in this way can be seen by substituting equation (8), into de la Fuente’s framework (equation 7) to yield an expression for the rate of change in the technological gap as follows:

$$\dot{b}_{lf} = \gamma \theta_{lf} - \rho b_{lf}^{(1-\pi)}$$ (9)

In equilibrium $\dot{b}_{lf} = 0$ so that:

$$\gamma \theta_{lf} = \rho b_{lf}^{(1-\pi)}$$ (10)

which gives an equilibrium value for the technological gap:

$$b_{lf}^* = \left( \frac{\gamma \theta_{lf}}{\rho} \right)^{\frac{1}{1-\pi}}$$ (11)

It is interesting to consider, however, the implications for a regional economy when its gap with the leading economy is not at this equilibrium level. The outcome turns upon the value of the parameter $\pi$. If

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* Verspagen (1991) develops a model on similar lines.
* For a more detailed analysis see Alexiadis (2013).
\[ \pi = 0, \] then according to equation (8) \( \varepsilon_i = \rho \) and the diffusion of technology occurs at a constant autonomous rate equal to \( \rho \) implying a linear process of convergence, while if \( \pi = 1 \) the size of the gap becomes irrelevant in the process of technological diffusion (using equation 9). Two distinct patterns of convergence arise, however, when \( \pi < 1 \) and when \( \pi > 1 \).

Figure 1 portrays the pattern of convergence implied by \( \pi < 1 \).

**Figure 1:** Convergence towards a single equilibrium when \( \pi < 1 \)

As illustrated in Figure 1, the process of convergence is a non-linear one. When the gap between leader and follower is below \( \dot{b}_i \), the dynamics of the system cause the gap to grow towards its steady-state value, since the rate of innovation investment outweighs the effect of technology diffusion and, hence, \( \dot{b}_i > 0 \) \( \forall i \in [0, \dot{b}_i^*] \). Conversely, when the gap is greater than \( \dot{b}_i^* \), there is movement towards equilibrium since \( \dot{b}_i \) is negative, i.e. \( \dot{b}_i < 0 \) \( \forall i \in [\dot{b}_i^*, \infty] \). Assuming, further, that the leading region maintains its leading position over a given time period, then economies with a large technology gap, i.e. above \( \dot{b}_i^* \), converge towards equilibrium but at slower rates compared to those regions where the gap is below \( \dot{b}_i^* \).

Thus, when \( \pi < 1 \) convergence towards a single equilibrium is possible but regions with unfavourable infrastructure conditions reflect in a large technological gap move towards equilibrium at a slower pace.

Up to this point the pattern of convergence is similar to that implied by de la Fuente (2000), although is specified in non-linear terms. Convergence towards a unique equilibrium is still the case, although this non-linearity implies that regions with low (high) initial technological gaps converge at a higher (slower) rate. However, if \( \pi > 1 \), then convergence towards a unique equilibrium, for all but the leading region, is no longer the case, and \( \dot{b}_i^* \) represents a threshold value now. In this case technology diffusion is represented by a convex function implying that regions converge towards different equilibria, as shown in Figure 2.

**Figure 2:** Convergence towards different equilibria when \( \pi > 1 \)

As Figure 2 shows, economies on either side of the threshold \( \dot{b}_i^* \) move in different directions. This pattern of convergence and divergence can be illustrated using a simple example. Consider an economy divided into three regions, one ‘leader’ \((l)\) and two followers, i.e. \((i = 1, 2)\). Assuming that the leading region is at the technological frontier \((\dot{b}_l = a_l - x = 0)\) so that steady-state equilibrium is, therefore, approximated by the leading region, then convergence with the leading region requires that the gap at a terminal time \((T)\) should be zero, i.e. \( \dot{b}_{l,T} = 0 \). However, as Figure 2 indicates, a zero gap with the leader...
is not feasible, since by definition the curve $\rho b_{lj}^{(1-x)}$ is asymptotic to the axis of the graph. Hence, a more realistic condition would be that the technological gap tends towards zero over a given time period, i.e. $b_{lj,t\rightarrow 0} \rightarrow 0$.

Assume that the leading region devotes a proportion of its output to R&D that is higher compared to regions 1 and 2, namely that $\theta_j > \theta_f$. For simplicity assume that regions 1 and 2 devote the same proportion of output to R&D, i.e. $\theta_1 = \theta_2$. So that $\theta_{lj} = \theta_{lf}$ and that $\gamma_1 = \gamma_2$. It is also assumed that $\rho$ is the same for both regions\(^{10}\). A crucial assumption for the purposes of this paper is that the initial technological gaps differ between the two region-followers ($b_{lj} \neq b_{lf}$), with $b_{lj} < b_{lf}$. If the initial technological gaps differ between these regions ($b_{lj} < b_{lf}^* < b_{lf}$), then region 1 is able to close the technological gap with the leader, and the gap approaches zero asymptotically. Despite a lower rate of innovation compared to the leader, this region is able to adopt technology from the leading region and it is this latter effect which dominates. However, region 2, with a high gap and hence poor infrastructure conditions exhibits too slow a rate of technology absorption and, as a result, the gap with the leader increases over time. Convergence, therefore, is a property apparent only for region 1 and the leading region. These regions can be conceived as an exclusive convergence club. In terms of Figure 2, this club includes any region with a technological gap in the range $(0,b_{lf}^*)$, for which $b_{lj} < 0$, while regions with gaps in the range $[b_{lf}^*, \infty)$, which $b_{lj} > 0$, diverge from the leader and the remaining regions. In other words, the technological advantages of particular regions would accumulate and militate against convergence for all. In this light, $b_{lf}^*$ is not an “equilibrium” level for the technology gap, but rather a ‘threshold’ level, which distinguishes between converging and non-converging regions. A similar situation emerges if a time dimension is introduced to the model or if the parameter $\pi$ varies through time. Assume that some regions are able to adopt technological innovations, developed in time $t$, in time $t + 1$, and others, due to poor infrastructure conditions or large technology gaps, in time $t + n$ with $n > 1$. The former group will exhibit relatively higher rates of technology growth and, hence, to converge with the leader while the latter group will probably diverge or exhibit a slow rate of convergence, depending on the length of the lag in the adoption of technology.

These assumptions impose a non-linear process of technological diffusion (i.e. $\pi > 1$) that depends on infrastructure conditions as embodied in the size of the gap at a point in time.

To be more precise, if the adoption of technology is related in a particular way to the size of the initial technological gap and associated infrastructure conditions, then two groups of regions can emerge: one which is a convergence club while a second group that does not exhibit an ‘equilibrium’. Whether a region belongs to the convergence club depends on its capacity to adopt technology, and this capacity declines the higher the initial technology gap.

The assumption in the preceding example with two following, or lagging, regions is that both exhibit the same characteristics, such as the propensity to innovate. A more complicated picture arises if this assumption is relaxed, allowing the creation of technology to differ between the lagging regions, for example, i.e. when $\theta_{lj} \neq \theta_{lf}$. Such a situation might also occur if region 1 develops a ‘knowledge-producing’ sector in a subsequent time period ($T_1$) due to the combined effect of a relatively low initial technological gap and high absorptive ability. In particular, assume that $b_{lj,t_0} > b_{lj,t_1}$, which signifies that conditions in region 1 are favourable as to allow adoption of technology, that leads to $\theta_{lj,t_0} > \theta_{lj,t_1}$. If this sequence continues, providing of course that the adaptive ability of this region remains, at least, the same in future periods, then convergence towards the leader is feasible. Thus, we may express this process as: $b_{lj,t_n} \rightarrow 0$ and $\theta_{lj,t_n} \rightarrow 0$, as $n \rightarrow 0$.

---

\(^{10}\) Relaxes this assumption leads to similar conditions. To be more precise, redefining $\rho$ in terms of differences in infrastructure conditions in a region and a leading region, i.e. $\rho_s = \rho_j - \rho_l$, then convergence requires that $\rho_s \rightarrow 0$, as $t \rightarrow \infty$ while divergence occurs when $\rho_s \rightarrow \infty$, as $t \rightarrow \infty$. 
Figure 3: Club Convergence when $\pi > 1$ and $\theta_{B1} \neq \theta_{B2}$

Figure 3 shows a situation where region 1 has a higher rate of technology creation, compared to region 2, which is reflected in a lower differential in technology creation with the leader, i.e. $\theta_{B1} < \theta_{B2}$. Point B represents the critical threshold for region 2, showing that a large difference in innovation rates requires a high rate of technology absorption in order to prevent the region moving further away from the leading region in terms of overall technology growth. On the other hand, point A is the threshold for region 1, which has a lower innovation differential compared to the leader. As a result, the rate of technology absorption that is required to prevent region 1 from following a divergent path, is lower compared to that of region 2. A diverging path for region 1 corresponds to movements to the right of point A. Hence, by imposing different abilities to create and absorb technology, two thresholds exist, one that corresponds to $b_{B1}$, with low $\theta_{B1}$ and another to $b_{B2}$, with high $\theta_{B2}$.

Broadly speaking, this model suggests that only regions with low technology gaps, relative to leading regions, are likely to converge towards a steady-state equilibrium growth path, as represented by the growth rate of the leading region. Regions with relatively large technology gaps may fall progressively behind. Depending on the value of the absorptive parameter $\pi$, two distinct cases can be identified. If $\pi < 1$, then this model predicts a constant equilibrium gap, with different equilibrium positions possible depending upon whether $\theta_{B}$ is the same, or different, across regions or, more generally, whether regions share the same characteristics or not. The pattern of convergence implied by $\pi > 1$ is the most interesting. In this case, two equilibria emerge, even when all regions share the same characteristics, or parameters, apart from their initial position with regard to the size of the technological gap; a case for club-convergence$^{11}$. It is the size of this initial gap that distinguishes whether a region follows a convergent or divergent path. Further, if regions also differ with respect to their structural characteristics (i.e. in terms of $\theta_{B}$ or the values of parameters $\rho$ and $\gamma$), then the membership of the convergence club is more ‘complex’ to establish but fundamentally there is still one convergence club. This club is most likely to include regions with structural characteristics similar to the leader. The model, discussed in this section, clearly indicates that convergence towards leading regions is feasible only for regions with sufficient absorptive capacity, which is assumed to be a function of infrastructure conditions in an economy.

To understand the forces at work it is useful to consider a way to incorporate the above framework into a formal model of regional convergence. Assume that the production functions are identical across regions and take the form of a standard Cobb-Douglas production function, expressed in intensive terms as follows:

$$Q_{it} = k_{it}^{\alpha_t}$$

(12)

where $Q_{it} = Y_{it}/(AL)_{it}$, $k_{it} = K_{it}/(AL)_{it}$, $Y_{it}$, $K_{it}$ and $L_{it}$ are output, the stock of physical capital and the labour force, respectively, $A_{it}$ is a measure of technological progress and $0 < \alpha < 1$ is the share of capital.

Given a constant and spatially invariant rate of depreciation ($\delta > 0$), and assuming that labour force and technology grow at constant and exogenously determined rates, $\eta$ and $g$ respectively

$^{11}$ See also Alexiadis and Tomkins (2004, 2006).
(L_i = L_0e^{\eta} \text{ with } \eta \geq 0 \text{ and } A_i = A_0e^{\eta}, \text{ then, } Q_{i,t} \text{ converges towards its steady-state value } Q^*_i \text{ in accordance with the following relation}^{12}: \]
\[
\frac{\text{d log } Q_{i,t}}{\text{d}t} + \beta \text{ log } Q_{i,t} = \beta \text{ log } Q^*. \text{ where } \beta = (1-\alpha)(\eta + g + \delta) \tag{13}
\]

Equation (13) is a differential equation in log \( Q_{i,t} \) with the general solution:
\[
\text{log } Q_{i,t} = (1-e^{-\beta t})\text{log } Q^* + e^{-\beta t}\text{ log } Q_{i,0} \tag{14}
\]

According to equation (2), technological progress derives from two sources, namely technology produced within a region, i.e. the resources that a region devotes to innovation or a ‘propensity to innovate’ \((PI_{i,t})\) and technological progress that results from adoption of innovations developed in other regions \((TG_{i,t})\). This element is expressed in terms of the technological gap in order to capture both the process of technology adoption and the degree of appropriateness in infrastructure conditions, as this is reflected captured by a high or low technological gap. Hence, technology can be expressed as \(A_{i,t} = PI_{i,t} \cdot TG_{i,t}\), which implies that output per effective units can be written \(
\text{log } Q_{i,t} = \text{log } \left(\frac{Y_{i,t}}{L_{i,t}}\right) - \text{log } PI_{i,t} - \text{log } TG_{i,t}.
\)

Thus, equation (14) can be written as follows:
\[
\text{log } \left(\frac{Y_{i,t}}{L_{i,t}}\right) = (1-e^{-\beta T})\text{log } Q^* + e^{-\beta T}\text{ log } \left(\frac{Y_{i,t}}{L_{i,t}}\right) - \text{log } PI_{i,t,0} - \text{log } TG_{i,t,0} + \text{log } PI_{i,t} + \text{log } TG_{i,t} \tag{15}
\]

Subtracting \(\text{log } \left(\frac{Y_{i,t}}{L_{i,t}}\right)_0\) from both sides of equation (15) yields:
\[
g_{i,T} = c + b_1 \text{ log } \left(\frac{Y_{i,t}}{L_{i,t}}\right)_0 + b_2 \text{ log } PI_{i,t,0} + b_3 \text{ log } TG_{i,t,0} \tag{16}
\]

where \(g_{i,T} = \text{log } \left(\frac{Y_{i,t}}{L_{i,t}}\right) - \text{log } \left(\frac{Y_{i,t}}{L_{i,t}}\right)_0\), \(T = t - 0\), \(b_1 = -(1-e^{-\beta})\), \(c = (1-e^{-\beta T})\text{log } Q^* + \text{log } PI_{i,t} + \text{log } TG_{i,t}\)
and \(b_2, b_3 = -e^{-\beta} \).

In equation (16) the variables related to technology are expressed in initial values. There are two primary reasons for such an approach. The first is related to the fact that R&D effort and adoption of innovations, normally, have future or long-run effects on regional growth. Funke and Niebuhr (2005, p. 149) have succinctly put this argument as follows: ‘[…] current R&D should affect future GDP.’ In other words, future growth is affected by current efforts to enhance technology. Therefore, including the two technological elements at the initial time captures these long-run effects of technology on regional growth over a specific time period. A second reason for using initial values is that it tests the hypothesis that initial conditions ‘lock’ regions into a high or low position, for example, high or low levels of technology affect the pattern of regional growth and convergence. In addition, including the \(TG_i\) variable in initial time reflects the argument that a low (high) initial technological gap can be conceived as favourable (unfavourable) infrastructure conditions. In this sense infrastructure conditions critically affect the process of regional convergence, with regions having the appropriate (inappropriate) infrastructure to adopt technology from technologically advance regions converging towards a high (low) equilibrium.

The general framework, discussed in this section, will be tested empirically in the context of the European NUTS-2 regions in a subsequent section. Prior to this, however, section III briefly reviews the most commonly used ways to approach the issue of convergence empirically and an econometric technique that is of particular importance to the aims of this paper. In particular, a model that is able to provide an empirical approximation of the effects of spatial interaction is discussed. This section also includes a discussion of the appropriate measurement of the key variables of the model.

3. The Empirical Context

The empirical literature on regional convergence makes extensive use of two alternative tests for convergence, namely absolute and conditional convergence, described by equations (17) and (18), respectively.

\[12\text{ For a more detailed elaboration see Barro and Sala-i-Martin (1995).} \]
\[ g_i = a + b_1 y_{i,0} + \varepsilon_i \]  
(17)

\[ g_i = a + b_1 y_{i,0} + b_{X_i} X_i + \varepsilon_i \]  
(18)

where \( y \) represents per capita output of the \( i \)th economy (in logarithm form), \( g_i = \left( y_{i,T} - y_{i,0} \right) \) is the growth rate over the time interval \((0, T)\), and \( \varepsilon_i \) is the error term, which follows a normal distribution\(^{13}\).

Absolute convergence occurs if \( b_1 < 0 \) while the speed at which regions move towards the same steady-state level of per capita output is calculated as \( \beta = \ln(b_1 + 1)/-T \).\(^{14}\) Conditional convergence requires that \( b_1 < 0 \) and \( b_{X_i} \neq 0 \). If different economies have different technological and behavioural parameters, captured by the vector \((X_i)\) in equation (18), then convergence is conditional on these parameters, giving rise to different steady states. It follows, therefore, that a test for conditional convergence is more suitable to accommodate an empirical application of the model developed in section II, and it becomes of critical importance to choose the appropriate variables that will be included in the vector \( X_i \).

A key feature of the model discussed in Section II is that technical change, leading to regional productivity growth, originates either from within the region or from other regions (technological spillovers). In the former case, such internally generated technical change would be the outcome of R&D activities, patent applications and subsequent investment expenditures; features that form the underpinnings of Endogenous Growth Theory (hereafter EGT). According to the relevant models\(^{15}\), the relationship between R&D and economic growth is not a simple linear process, due to strong threshold effects and external economies associated with investment in R&D\(^{16}\). More recent models attribute the returns from investment in R&D to a number of specific factors such as human capital in a region (Cheshire and Carbonaro, 1995; 1996), or the spatial concentration of R&D centres (Audretsch and Feldman, 1994; 1996; 1996a; Verspagen, 1992; 1999). Nevertheless, all these various formulations acknowledge the importance of R&D. The practical problem, however, is effective measurement of R&D.

In empirical studies (e.g. Fagerberg \textit{et al.}, 1996; 1999; Fagerberg, 1987; Jaffe \textit{et al.}, 1993; Piergiovanni and Santarelli, 2001), patent applications and patent citations are often used to approximate innovative activity, although an alternative approach outlined by Pigliaru (1999, 2003) provides a more appropriate measure in the context of the observed slow rate of convergence across regions. According to this approach, technological growth is related to the ‘propensity to innovate’, as defined by Pigliaru (2003). Thus, the resources devoted to innovation in a region as a share of total regional resources represents the propensity to innovate.

Problems arise, however, in choosing appropriate ways to measure the resources utilised in the knowledge producing sector. In the relevant empirical studies (e.g. Paci and Pigliaru, 1999; 1999a; 2001; Paci and Usai, 1998; 2000; 2000a), R&D expenditures or patent applications and citations are used. Soete (1981), however, makes a distinction between technology output measures and technology input measures\(^{17}\). Data related to patents fall into the first category while R&D expenditures or labour employed in R&D activities belong in the second category. It is argued by both Soete (1981) and Fagerberg (1988, 1994, 1996) that the former category is a better measure of the impact of innovative effort since the latter often reflects efforts related to both innovation and diffusion. Ideally, therefore, an output measure of innovation would be preferable for the present study, given the objective of distinguishing between innovation and the diffusion of innovation.

In this paper the ‘propensity to innovate’ (\( PI_i \)) is expressed in terms of patents per million inhabitants as those are reported by the Patent applications to the European Patent Office (EPO) by priority year at the regional level, obtained by EUROSTAT. Patents per capita have been used extensively in the empirical literature of European regional convergence as a proxy for activities related to technology creation and a measure of the degree of regional innovation.

Turning to the ability of regions to adopt technology and innovations, this is even more difficult to measure. Peri and Urban (2006), for example, approximate technology adoption in terms of spillovers from foreign direct investment. While such approaches are interesting, it is difficult to apply them directly in the

\(^{13}\) The error term is assumed have zero mean and variance, and to be independent and identically distributed over time \((E[\varepsilon_i, \varepsilon_j] = \sigma^2 I)\) and across the observational units and uncorrelated with the initial level of output per worker.

\(^{14}\) However, several criticisms have been put forward regarding this model – see, for example, Friedman, 1992, Quah, 1993). For a more detailed review see Capolopulo (1998).


\(^{16}\) It should be noted, however, that the contribution of the R&D sector, and its spatial distribution, to regional growth has long been recognised in regional economics. Richardson (1973, p. 56) notes: ‘Innovations and technical progress do not spread evenly and rapidly over space but frequently cluster in a prosperous region; for instance, technical progress may be a function of the levels of R and D expenditures which are higher in high-income regions.’

\(^{17}\) Marjit and Beladi (1998) make a distinction between product and process patents.

present context due to data limitations. However, other approaches put emphasis on the role of dynamic, advanced technological sectors in driving the technology diffusion process. Here, the relative extent of technology adoption capacity is therefore approximated by the share of a region’s resources found in such sectors. In other words, this approach involves identifying technically dynamic sectors, which are perceived to be the most receptive to innovation and its utilisation.

At this point it is worth mentioning that one of the first attempts to include industrial structure that recognizes high technology in a model of conditional regional convergence is by Gripaios et al. (2000). These authors select four high technology industries, as defined by the OECD, namely aerospace, pharmaceutical, TV-radio and communication equipment and computer and office equipment. Gripaios et al. (2000) use the proportion of employment in high technology industries as an explanatory variable in a test for regional convergence across the UK counties. This variable is used, in conjunction with a series of employment variables (traditional manufacturing, utilities and financial/business services) to approximate industrial structure, to test for the differential impacts of various sectors in shaping patterns of regional growth. According to Gripaios et al. (2000):

‘[…] different sectors will have different growth patterns arising from long-term changes in technology and demand’ (p. 1165)

Similarly, Plummer and Taylor (2001, 2001a) also select five such industrial sectors: pharmaceutical and veterinary, aircraft manufacturing, photographic, professional and scientific equipment, data-processing services and, finally, research and scientific institutions18.

For the purpose of this paper, a region’s level of technological development and adoption capacity is thus measured as the percentage of total employment in sectors where labour is used to approximate total resources. The approach adopted here is based on the contention that this measure encapsulates the sectors highlighted by the studies mentioned previously, and provides a more comprehensive measurement of the adoptive ability of a regional economy. More formally,

\[
ADP_{i,t} = \frac{\sum_{j=1}^{m} \eta_{i,j}}{L_{i,t}}
\]

where \( \eta_{i,j} \) refers to personnel employed in high-tech manufacturing and knowledge-intensive high-technology services ( \( j = 1 \ldots m \) ) and \( L_{i,t} \) is the total employment in region \( i \), obtained by EUROSTAT.

Equation (19), represents the level of technological development, but also, indicates a capacity for technology adoption, since these are taken to apply high technology. However, the potential for such technology diffusion increases as the technological gap increases, defined as the distance between a region’s technological level and that of the most advanced technological region with the highest percentage of employment in high-tech manufacturing and knowledge-intensive high-technology services19.

Consequently, in this context a variable that approximates the technological gap for region \( i \) at time \( t \) can be defined as follows:

\[
TG_{i,t} = \frac{ADP_{L,i}}{ADP_{i,t}}
\]

Expressing equation (20) in logarithmic terms yields:

\[
TG_{i,t} = \ln ADP_{L,i} - \ln ADP_{i,t}.
\]

Embodying in this variable is the idea of both a gap and the capacity to adopt technological innovations. As shown by the model in Section II, the presence of a technological gap alone is not sufficient to promote significant technology diffusion. There has to be an appropriate level of capability to adopt technology. Thus, the bigger the gap the greater the potential for technology adoption, but the lower the capacity to actually achieve this.

Therefore, it is possible to express a model of ‘technologically-conditioned’ convergence as follows:

\[
g_i = a + b_1 y_{i,0} + b_2 P_{L,i,0} + b_3 TG_{i,0} + \varepsilon_i
\]

As shown in Section II, the time dimension of variables describing technology should refer to the initial point in time for the period of study. From an econometric point of view, inclusion of technological variables measured at the initial time helps to avoid the problem of endogeneity. Moreover, Pigliaru (2003) claims that models which include measures of technology require data on total factor productivity. In the absence of such data, econometric estimation requires that the variables related to technology ought to be included in initial values.

Equation (22), thus, incorporates the potential impact of both internally generated technological change and technology adoption upon a region’s growth. Broadly speaking, it is anticipated that \( b_2 > 0 \),

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18 Andonelli (1990), Alderman (2004) and Alderman and Fisher (1992) use a similar approach in identifying sectors that are able to adopt technological innovations, although in a context other than of regional convergence.

19 This is the region of ‘Berkshire, Bucks and Oxfordshire’.
since regions with high initial levels of patents per capita are normally associated with high levels of growth and vice versa. However, it is not automatically the case that this condition promotes convergence. In other words, this view accepts the argument that if low productivity regions have a high initial level of intentional technology creation, then this will have positive impacts on convergence, by enhancing their growth rates. On the other hand, if such regions have a low propensity to innovate, then no significant impacts on growth are anticipated and, hence, it may be difficult to converge with technologically advanced regions. The latter case is the more likely.

In the case of the $TG_{i,0}$ variable, this variable reflects two distinct features, namely the level of ‘technological distance’ from the leading region and the degree to which existing (initial) conditions in a region allow adoption of technology. The approach adopted here is based on the contention that a high initial technological gap combined with a high rate of growth may indicate, ceteris paribus, that less advanced regions are able to adopt technology, which is transformed into high growth rates and, subsequently, convergence with the technologically regions. It may be argued, therefore, that the condition $b_2 > 0$ promotes convergence. On the other hand, a high initial value for $TG_{i,0}$ may indicate that although there is significant potential for technology adoption, initial infrastructure conditions are not appropriate to technology adoption and, therefore, there are no significant impacts on growth. In other words, if the latter effect dominates then $b_2 < 0$, and convergence between technologically lagging and technologically advanced regions is severely constrained.

Despite its simplicity, this model aims to highlight the importance of initial conditions regarding spatial technology in the process of regional growth and convergence. As it stands, this approach neglects spatial factors. Equation (22) treats regions as 'closed' economies, apart from the recognition of a technological gap with the leading region. It is possible to overcome this, clearly unrealistic, assumption by introducing in equation (22) the effects of spatial interaction. Indeed, in the light of recent literature it may be argued that any empirical test for regional convergence is misspecified if the spatial dimension is ignored (Rey and Montouri, 1999; Rey and Janikas, 2005; Lall and Yilmaz, 2001), the presumption being that the extent of regional interactions, such as technology spillovers, are significantly dependent upon the location of regions relative to each other.

According to Rey and Montouri (1999) the potential for spatial interaction can be incorporated within convergence analysis by means of the spatial-error model. In this model, the key feature is that spatial interaction occurs through the error term of equation (22), and hence the usual assumption of independent error terms is not sustainable. Following Rey and Montouri (1999), the error term incorporating spatial dependence is shown as follows:

$$e_i = \zeta We_i + u_i = (I - \zeta W)^{-1} u_i$$

where $\zeta$ is the spatial error coefficient and $u_i$ is a $n \times 1$ vector for the new independent error-term with $u \sim N\left(0, \sigma^2 I\right)$. Inter-regional spatial dependence is generated by means of the $n \times n$ spatial-weights matrix ($W$) the elements of which ($w_{ij}$) may be devised in various ways. For example, a common practice is to allow these weights to take the value of 1 if a region is contiguous to another and 0 otherwise (a first order contiguity matrix). Alternatively, the spatial weights may be continuous variables (Cliff and Ord, 1981), constructed so as to produce declining weights as distance between regions increases. Thus:

$$w_{ij} = \frac{1}{\sum_j 1/d_{ij}}$$

where $d_{ij}$ denotes the distance between two regions $i$ and $j$, as measured by the distance between the major urban centres where the majority of economic activities are located. The denominator is the sum of the (inverse) distances from all regions surrounding region $i$. This approach is used in the empirical analysis in section IV.

Taking into account the effects of spatial interaction, the test for absolute convergence in equation (17) is transformed as follows:

$$g_i = a + b_1 y_{i,0} + (I - \zeta W)^{-1} u_i$$

Introducing a spatial error term in the test for ‘conditional’ convergence extends equation (22) as follows:

$$g_i = a + b_1 y_{i,0} + b_2 P_{i,0} + b_3 TG_{i,0} + (I - \zeta W)^{-1} u_i$$

It should be noted that contemporary empirical literature on regional convergence is based on models that combine conditional variables with spatial terms (that is to say ‘spatial conditional convergence’ models) focused mainly on the EU regions (e.g. Marseth, 2001; Lopez-Bazo et al., 2004) with fewer studies referring to individual countries (e.g. Funke and Niebuhr, 2005). Equation (26) is consistent with this literature and can be applied to the regional context of any individual country, provided that the required data are available.
At this stage, however, it is important to comment on the estimation methods for these spatial econometric models. Estimation of the spatial error model is carried out by the maximum likelihood method, as OLS may result in problems of bias. To be more specific, the presence of spatial interaction in the error term leads to the following non-spherical covariance matrix (Rey and Montouri, 1999, p. 149):

$$E[e_t'e_t'] = (I - \zeta W)^{-1} \sigma^2 (I - \zeta W)^{-1}$$  \hspace{1cm} (27)

The presence of non-spherical errors results in unbiased OLS estimators but biased estimations of a parameter’s variance. Bernat (1996) notes that the presence of spatial autocorrelation invalidates the standard tests in OLS regressions in a way similar to heteroscedasticity. Thus, all inferences based on that model are invalid. Hence, the recommended estimation method is through maximum likelihood (Anselin, 1988; Anselin et al., 1996; Pace, 1997; Anselin and Florax, 1995a).

Having outlined the empirical context, the next step forward is to begin to investigate more systematically the pattern of regional convergence in Europe. As argued in Section II, if infrastructure conditions are not favourable to adopt technology (approximated by a high technological gap), then convergence is not feasible. The next section, therefore, attempts to test this hypothesis empirically.

### 4. Empirical Application

In this paper we exploit data on GDP per capita. The regional groupings used in this paper are those delineated by EUROSTAT and refer to 258 NUTS-2 regions. The EU uses NUTS-2 regions as ‘targets’ for convergence and are defined as the ‘geographical level at which the persistence or disappearance of unacceptable inequalities should be measured’ (Boldrin and Canova, 2001, p. 212). Despite considerable objections for the use of NUTS-2 regions as the appropriate level at which convergence should be measured, the NUTS-2 regions are sufficient small to capture sub-national variations (Fischer and Stirböck, 2006).

The time period for the analysis extends from 1995 to 2004, which might be considered as rather short. However, Islam (1995) and Durlauf and Quah (1999) point out that convergence-regressions, such as equation (17), are valid for shorter time periods, since they are based on an approximation around the ‘steady-state’ and are supposed to capture the dynamics toward the ‘steady-state’.

![Figure 4: β-convergence, GDP per capita](image)

As explained in Section III, convergence is identified with an inverse relationship between growth and initial level of per capita income/output. Such a notion of convergence embodies the essence of the neoclassical argument that poor regions grow faster than rich regions, and produces estimates of the rate at which poor regions are catching up with rich regions, should convergence be detected. The potential for absolute convergence is indicated in Figure 4, which shows a scatterplot of the average annual growth rate against the initial level of GDP per capita. Figure 4 provides some indications of absolute convergence in terms of GDP per worker.

The presence of absolute or β-convergence, however, cannot be confirmed by visual inspection alone. Therefore, the cross-section test, based on estimation of equation (17) for the 258 NUTS-2 regions of the EU, is applied to the period 1995-2004.

Furthermore, the conventional test of regional absolute convergence is modified to include an explicit spatial dimension, as in equation (25). Finally, the hypothesis of ‘technologically-conditioned’ convergence is also estimated for both the non-spatial and spatial specifications, namely equations (22) and (25), respectively\(^{21}\). The results are set out in Table 1.

**Table 1:** Convergence in terms of GDP per capita, EU regions, 1995-2004

<table>
<thead>
<tr>
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<td>a</td>
<td>2.3195**</td>
<td>2.4358**</td>
<td>2.2573**</td>
<td>2.3391**</td>
</tr>
<tr>
<td>b(_t)</td>
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<td>-0.2121**</td>
<td>-0.1976**</td>
<td>-0.1994**</td>
</tr>
<tr>
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<td>-0.0039</td>
<td>-0.0039</td>
<td>-0.0039</td>
</tr>
<tr>
<td>b(_z)</td>
<td>-0.0387**</td>
<td>-0.0423**</td>
<td>-0.0423**</td>
<td>-0.0423**</td>
</tr>
<tr>
<td>(\zeta)</td>
<td>0.8755**</td>
<td>0.8457**</td>
<td>0.8457**</td>
<td>0.8457**</td>
</tr>
</tbody>
</table>

\(^{20}\) Heteroscedasticity occurs when the disturbance variance is not constant and arises due to measurement problems, inadequate specification or omitted variables. See also Stewart and Gil (1998) and Gujarati (1995).

\(^{21}\) In estimating equations (17) and (22) OLS is applied while equations (25) and (26) are estimated by the Maximum-Likelihood method.
Considering first the results of testing for absolute convergence, i.e. equation (17), it might be argued that there is some tendency for absolute convergence across the regions of an enlarged Europe. The rate of convergence is 2.5% - quite close to the ‘stylized fact’ of 2%, proposed by Barro and Sala-i-Martin (1991, 1992). The rate of absolute convergence changes slightly when spatial interaction is included (about 2.4% per annum). The spatial coefficient is also statistically significant and can be taken as an indication that there is a significant spatial dimension in the process of European regional convergence. This view is further supported by the fact that both the criteria for model selection that are applied here, namely the Akaike (AIC) and the Schwartz-Bayesian (SBC) information criteria, clearly indicate the superiority of the spatial specifications. Further support is provided by the value of the LIK, which increases, as anticipated, with the introduction of the \((I - \zeta W)^{-1}\) term. Of particular importance to this paper, however, are the results obtained for the conditional convergence model (equations 22 and 26). Conditioning for the two technological variables tends to increase the estimated rate of convergence (2.6 per annum). The spatial specification, however, implies a lower rate (2.5%). Both the AIC and SBC criteria support the spatial version of the ‘technologically-conditioned’ specification. Turning to the impact of innovation, the variable \(P_{I,0}\) is statistically insignificant. As argued in Section II, a positive value of \(b_2\) does not necessarily promote convergence as such, since regions with relatively high initial level of innovation exhibit relatively higher rates of growth. On the other hand, the variable describing technology adoption and infrastructure conditions \((TG_{i,0})\) is always highly statistically significant and negative in sign. As argued in Section II, a high technological gap does not necessarily imply that technologically lagging regions will be able to adopt technology - a large gap may constitute an obstacle to convergence. This proposition is supported by the empirical analysis which suggests that, on average, regions with high technological gaps at the start of the period grow slower than regions with low gaps, ceteris paribus. Clearly, this is a factor that helps to sustain initial differences across regions, constraining any possibilities for overall convergence and, in turn, suggesting the possibility of convergence towards different equilibria (a pattern of club convergence) following the predictions of the model, examined in Section II. If technologically backward regions of the EU were successful in adopting technology, then the estimated coefficient \(b_3\) would be positive. Since \(b_3 < 0\) this indicates that infrastructure conditions in regions with high technological gaps are inhibiting this process of technology adoption. While technology adoption might be the best ‘vehicle’ for lagging regions to converge with leading regions, is nevertheless a process which might be difficult for lagging regions, especially during the early stages of development when conditions are least supportive. The message, therefore, from the empirical application of the model developed in this paper is clear. The adoption of technology to set the lagging regions of the EU in a process of convergence with the leading regions requires an improvement in infrastructure conditions.

5. Conclusions

Although an increasing number of empirical studies have paid attention to issues of economic convergence in the EU, the impact of technology adoption in regional convergence has so far received more limited attention. We have attempted in this paper to address this question, using data for the 258 NUTS-2 regions of the EU-26 over the period 1995-2004. The results suggest that the NUTS-2 regions of EU-26 exhibit a tendency towards convergence in terms of labour productivity and per capita output. Convergence appears to be faster in terms of labour productivity compared to GDP per capita, with the latter at a rate around the ‘stylised fact’ of 2% per annum, proposed by Barro and Sala-i-Martin (1992). However, absolute convergence does not seem to be the case in the EU regions. An important conclusion to emerge from the empirical application is that the EU-26 regions exhibit faster tendencies to converge after conditioning for technological differences across regions. While the ‘technological gap’ approach predicts in principle that the higher the technological distance from the leader, the greater the incentive to adopt technology, the results in this paper imply that the lagging regions of Europe are not able to reap the ‘benefits of backwardness’. This inability can attributed, possibly to inappropriate infrastructure conditions prevailing in lagging regions, which prevent or constrain convergence with the more technologically advanced regions. Convergence, where possible, is not towards a single

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As a rule of thumb, the best fitting model is the one that yields the minimum values for the AIC or the SBC criterion, calculated as \(\text{AIC} = -2L + 2K\) and \(\text{SBC} = -2L + K \ln(T)\), where \(L\) is the value of the log likelihood function, \(T\) is the number of observations and \(K\) stands for the number of parameters estimated. The SBC test has superior properties and is asymptotically consistent, whereas the AIC is biased towards selecting an overparameterized model (Anselin, 1995, Enders, 1995).
equilibrium but towards different equilibria, creating thus a pattern of club convergence. Catch-up to the leading regions is feasible only amongst those regions whose conditions are similar or close to those of the technologically advanced regions.

While this paper has been concerned with the role of adoption technology and has stressed the impact of initial infrastructure conditions, there is no intention of implying that this approach represents the only route to understanding the contribution of these factors in regional growth and convergence. It must be recognised that the foregoing analysis does not provide an exhaustive account of all the factors that affect the process of regional convergence. What then is the purpose of this paper? Perhaps the main purpose of this paper should be to provoke interest in further work on the appropriate conditions for, and impact of, technology adoption in regional convergence.

6. References


Gomulkas, S. (1986) *Growth, Innovation and Reform in Eastern Europe*, University of Wisconsin Press, USA


Veblen, T. (1915) Imperial Germany and the Industrial Revolution, New York: Macmillan


Technical Efficiency, Regional Innovation & Industrial Policy:
A Stochastic Frontier approach

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Abstract:
Nowadays, taking into consideration the slowdown and the effects created by the current financial crisis, one of the key factors influencing the competitiveness of European Union is efficiency enhancement, mainly through innovation and industrial activity. This paper aims to provide insights into the level of technical efficiency and policy planning, in an attempt to reach a better understanding of the contribution of alternative policies to technical efficiency growth. Moreover, this paper investigates the impact of industrial and innovation policy at strengthening the competitiveness of producers by promoting competition, ensuring access to markets and establishing an environment which is conducive to innovation and R&D, taking into consideration that lack of innovative capacity stems, not only from deficiencies in the research base and low levels of R&D expenditure in European Union, but also from weaknesses in the links between research centers and businesses, and slow adoption of information and communication technologies.

Key Words: Technical Efficiency, Innovative Capacity, Policy Planning, Stochastic Frontier Analysis, Efficiency Function, Productivity, Innovation Policy, Industrial Policy

1. Introduction
One of the most important hypotheses in modern economic theory is based on the assumption of optimising behaviour, either from a producer or a consumer approach. As far as producer behaviour is concerned, economic theory assumes that producers optimise both from a technical and economic perspective:
• From a technical perspective, producers optimise by not wasting productive resources.
• From an economic perspective, producers optimise by solving allocation problems involving prices.

However, not all producers succeed in solving both types of this optimisation problem under all circumstances. In real economic life, it is unlikely that all (or possibly any) producers operate at the full efficiency frontier, with failure to attain the efficiency frontier implying the existence of technical or allocative inefficiency (Reifschneider and Stevenson, 1991).

One important aspect of the recent empirical literature on efficiency measurement is the analysis of production frontiers, the relationship between input and output and the adjoining sources of efficiency (Greene, 2008). Better understanding of the process of generating efficiency requires studying the deeper determinants and factors which explain the differences in efficiency growth. In response to this most important research issue, particularly at regional level, and with the increase in regional data availability, also in European Union, economic literature has shown a resurgence of interest in testing and quantifying various theories of explaining regional efficiency growth and examining the corresponding relationships:
1. What are the reasons for diverging efficiency among different regions?
2. Which factors contribute to regional efficiency differences?
3. How the efficiency of a region evolves over time, with respect to technical progress and other related determining factors?

More recently, the role of regional efficiency to the economic growth and competitiveness enhancement has become even more important, taking into consideration the slowdown in the European Union economy, and the effects on the business environment created by current financial crisis. Thus, European regions have a very important role in creating opportunities making an important contribution to economic growth and development. Overcoming any shortages or laggings and increasing efficiency has become critical for competitiveness and economic growth.

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However, European Union regions are characterized by being very heterogeneous since they differ in their endowments of resources as well as on the characteristics involved in their productive activities. For this reason, it is of great importance, on the one hand to analyze their efficiency level and potential, and on the other hand, to analyze the factors which determine their efficiency potential.

This paper considers a European Union perspective efficiency analysis to increase the information base and derive broader conclusions about European Union productive performance.

2. Technical efficiency: the concept and the basic model: Review of a relationship

Efficiency represents the degree of success by which producers achieve allocating the inputs they have at their disposal and the outputs they produce, in an effort to meet their objective. The objective of producers might entail the production of given outputs at minimum cost or the utilization of given inputs to maximize revenues, or the allocation of inputs and outputs to maximize profit. Nevertheless, in real economic life, producers are hardly fully efficient (contrary to the neoclassical approach assumptions). Two otherwise identical firms never produce the same output, and costs and profit are not the same. This difference in output, cost, and profit can be explained in terms of technical and allocative inefficiencies, as well as a range of unforeseen exogenous shocks. Given the resources (inputs), a producer is said to be technically inefficient if it fails to produce the maximum possible output. The basic concept underpinning the measurement of technical efficiency starts with the description of production technology. It has been acknowledged in the literature that, in reality, a gap normally exists between a firm's actual and potential levels of technical performance (Figure 1).

**Figure 1.** Technical, allocative and economic efficiency

In neoclassical theory, all firms operate at potential technical efficiency at points along the frontier FF_0. Any inefficiency will be solely allocative. Thus, if a firm is operating on its frontier FF_0, its point of economic efficiency may be at B, the point of tangency with its price line. If it operates at B, with inputs I_1 and output Q_3, there will be maximum profits π_1 and no allocative or economic inefficiency. It should be noted that, provided firms are operating on their technical frontiers, allocative (in) efficiency will be the same as economic (in) efficiency (they are used synonymously in the literature) because of the theoretical assumption of potential technical efficiency.

Thus if a firm is operating at point A on its frontier, using I_1 inputs and producing Q_2 output, its profits may be π_2, and its allocative/economic inefficiency will be measured as π_3 / π_1. In practice, with a new technology, firms operate at less than potential technical efficiency owing to incomplete knowledge of best technical practices or to other organisational factors that prevent it from operating on its technical frontier. Thus, a firm will operate on an actual or perceived production function which is below the potential frontier, e.g. on AA_0. At I_2 inputs, it operates at point C, produces Q_1 output and earns π_1 profits. On this actual production function, point C is allocatively inefficient. To maximise its profits (π_3) it would have to operate at point D, use I_3 inputs and produce Q_3 output. At D, however, it would not achieve potential economic efficiency, for by definition, potential economic efficiency can only be achieved with potential technical efficiency.

To be consistent with neoclassical production theory, efficiency should only be measured in relation to the frontier production function FF_0. Thus if a firm is operating at C on its actual or perceived production function, its economic inefficiency would be measured in profit terms by the ratio π_3 / π_1, or in output terms by the ratio Q_3/Q_1. Now, it can easily be seen in Figure that this economic inefficiency comprises two components, technical and allocative inefficiencies. In profit terms, the total loss in economic inefficiency in operating at point C is π_1 - π_2. Of this, the loss from technical inefficiency is π_1 - π_3, and the loss due to allocative inefficiency is π_3 - π_2. In output terms, the losses are Q_3 - Q_1 and Q_1 - Q_2 respectively.

**Figure 2.** represents a simple production process. A single input (x) is used to produce a single output (y). The production frontier is OF showing the relationship between input and output, namely the maximum output attainable from each input level, regarding the state of technology.
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**Figure 2: Production frontiers and Technical Efficiency**

The feasible production set is the set of all input – output combinations which are feasible. It consists of all points between production frontier OF* and the x-axis. All the points on the production frontier are technically efficient, whilst all the points below or lying to the right of the efficient frontier are technically inefficient (Wang et al., 2002). If what a producer actually produces is less than what it could feasibly produce than it will lie below the frontier. The distance by which a producer lies below its production frontier or above its cost frontier is a measure of the producer’s inefficiency (Bera and Sharma, 1999). The further below the production frontier a producer lies, the more inefficient it is. The points along the production frontier define the efficient sub-set of this feasible production set and they show the technically efficient combinations of input and output. On the other hand, the points beneath the production frontier show the non-technically efficient combinations, respectively. In this figure, e.g. point (A) is inefficient; points (B) and (C) are efficient points.

Technological change, innovation and technology creation and diffusion are an important factor to economic progress. This involves advances in technology that may be represented by an upward shift in the production frontier. This is presented in the following figure (3) by the movement of the production frontier from 0 to 0F1 in period 1: In period 1, all firms can technically produce more output for each level of input, relative to what was possible in period 0. When we observe that a producer has increased productivity from one period to the next, the improvement need not have been from efficiency improvements alone, but may have been due to technical change or the exploitation of scale economies, or from some combination of these three factors (Coelli et al., 2005).

**Figure 3: Production frontiers and Technical Efficiency**

Based on Wang (2007), if R&D resources are not used effectively, additional investment may be of little help in stimulating economic growth.

Generally, the stochastic production function model takes the form:

\[ \ln y_i = x_i \beta + v_i - u_i \]  

(1)

where \( v_i \) is a symmetric random error to account for statistical noise.

Statistical noise arises from the unintended omission of relevant variables from the vector \( x_i \), as well as from measurement errors and approximation errors associated with the choice of functional form. The model is called stochastic frontier production function because the output values are bounded from above by the stochastic (random) variable \( \exp (x_i \beta + v_i) \). The random error \( v_i \) can be positive or negative and so the stochastic frontier outputs vary about the deterministic part of the model, \( \exp (x_i \beta) \).

The component \( (v) \) is a symmetric normally distributed error term that represents factors that cannot be controlled by production units, measurement errors, and left-out explanatory variables. On the other hand, the component \( (u) \) is a one-sided non-negative error term representing the stochastic shortfall of producer \( i \)'s output from his/her production frontier due to technical inefficiency. In this context, technical efficiency
reveals the maximum amount by which output can be increased using the same level of inputs and technological conditions.

The most common output – oriented measure of technical efficiency is the ratio of observed output to the corresponding stochastic frontier output:

\[ TE_i = \frac{y_i}{\exp(x_i \beta + v_i)} = \frac{\exp(x_i \beta + v_i - u_i)}{\exp(x_i \beta + v_i)} = \exp(-u_i) \] (2)

This measure of technical efficiency takes a value between zero and one. It measures the output of the \( i \)-th firm relative to the output that could be produced by a fully – efficient firm using the same input vector. The first step in predicting the technical efficiency \( TE_i \) is to estimate the parameters of the stochastic production frontier model. Inefficiency, as a measure of the magnitude of sub-optimal performance, is represented by the asymmetric error term in the stochastic frontier model. As technical efficiency enhancement becomes an increasingly important issue, production must draw on a wide range of production ideas, component technologies and complementary capabilities. Within this framework, it is rather difficult for any single industry to incorporate and take advantage of the relevant technological advances, as well as the underlying industrial and innovation policies. This means that the actions of industries involve the targeted development of specialized knowledge, integrated from a wider range of knowledge areas (Kessler, Bierly, and Gopalakrishnan, 2000).

3. Productive Efficiency and Institutional Context: Industrial and Innovation Policy in European Union

Growth and competitiveness become contingent on the ability of firms to compose, establish and maintain external interfaces (Nicholls-Nixon and Woo, 2003), to choose the right mode of governance (Fey and Birkinshaw, 2005) and to link these effectively to internal knowledge accumulation and capability development.

European industrial, technology and innovation policies are no longer exclusively in the hands of national authorities: increasingly, national initiatives are supplemented by or even competing with regional innovation policies or transnational programmes, in particular, the activities of the European Union. At the same time, industrial innovation increasingly occurs within international networks. Research, technology and innovation policies of European countries clearly reflected the profiles of their national (and regional) ‘innovation systems’, understood as the various institutions, corporate actors and processes contributing to industrial and societal innovation.

The innovation policies of the European Union (Guzzetti, 1995) played a noticeable, but not yet a dominant role in the national contexts, at least not in the bigger member states (Kuhlmann, 2001).

The spectrum of implemented instruments of research, technology and innovation policy is widely differentiated in the meantime, reflecting the scope of institutions and interests involved: it stretches from public funding of research institutions over various forms of financial incentives to the conducting of research and experimental development in public or industrial research labs, up to the design of an innovation-oriented infrastructure, including the institutions and mechanisms of technology transfer. In many European countries, these instruments dominated the practice or research and technology policy for the last three decades. As further instruments one could mention efforts to guide public demand, measures in education and further training and the regulatory possibilities available. In the 21st century, though, the national and (regional) innovation systems are experiencing revolutionary shockwaves: the growing pull of internationalising economic relationships has mixed up traditional regional or national divisions of work between industrial enterprises, educational and research institutions as well as administration and politics, and it debased many of their traditional strengths. Internationalisation, however, has so far not led to a uniformity of the national innovation systems, which would finally mean their abolition. The various national and regional innovation cultures and related policy arenas react very differently, which partly leads them into crises, partly stabilises, but partly also reveals unexpected, novel chances in a transformed international context. At the same time, European transnational innovation policies have been entering the stage, increasingly since 1985, nowadays covering the whole range of instruments (Kuhlmann, 2001).

4. Industrial Policy and Technical Efficiency

Sustainable development is a key concept within the industrial policy of the European Union. The key elements for the sustainable development policy concern the efficient use of resources encouraging the development of new productive technologies, extending the use of productivity and efficiency enhancement schemes and encouraging both innovative and productive activities. Within this context, the main role of industrial policy in the European Union is to provide the appropriate framework conditions and to make the European Union an attractive place for industrial development and employment creation.

One of the core targets of industrial policy is to influence the volume and composition of the European Union industrial output, primarily the manufacturing output, aiming to increase the volume of production and/or employment (Baldwin and Martin, 2006). More specifically, industrial policy refers to structural policies designed to strengthen the efficiency, scale and international competitiveness of industrial sectors within a country, bringing about economic growth and development (Soete, 2007).
Industrial policy has been a cornerstone of economic policy in the European Union. During the 1970s and 1990s, industrial policy shifted mostly towards support of high-tech industries. There is also a close relationship between the effectiveness of industrial policy and the level of development within an economy. Advanced countries have witnessed over the 1990s a major acceleration in the process of deindustrialisation with a more rapid growth in services following the diffusion of information and communication technologies (Petit and Soete, 2001).

However, the first unitary concept of an industrial policy for the European Union appeared after the European Commission’s proposal from 1990s report ‘Industrial Policy in an Open and Competitive Environment: Guidelines for a Community Approach’, as a confirmation on the necessity of adopting industrial policy measures in a free trade economy. In 1993, the Commission published the white paper on Growth, Competitiveness and Employment, underlining the meaning of the European economy’s competitiveness in the new conditions, and the legal frame for European Union industrial policy was settled through the Treaty of Maastricht (Nica and Cuza, 2010). The incentives for an overall approach over an industrial policy of the European Union were the differences registered as compared to the economies of the United States and Japan, regarding growth rates, investment rates, R&D and innovation, and international trade, as well as the rise of the new competitors from South-East Asia.

Within this period, the dominance of the industrial sector within the European Union remains structurally very different between European member states, such as Germany or France, which are still dominated by strong industrial presence. On the other hand, there are cases of small member states which have witnessed rapid deindustrialisation over the 1990s but at the same time, nevertheless witnessed rapid growth in the industrial value added, such as Austria or Finland. However, while applying certain measures at national level, the actions might become selective by aiming certain industries or industrial objectives. Certain industrial sectors are more vulnerable internationally, due either to market characteristics, or to the insufficient development of the European industry compared to the world level. As a consequence, industrial policies were defined, aiming mainly to the competitive growth of the European industry, focusing on the following objectives (Nica and Cuza, 2010):

- Accelerating the adaptive process of the industry to the structural changes;
- Developing an environment in the favour of initiative and development of enterprises;
- Encouraging the favourable environment for business cooperation;
- Favouring the industrial potential of the research, technological development and innovation policies (Dachin, 2006).

One of the main aims of industrial policy regards the encouragement of innovation, knowledge and research. European Union industrial policy builds a framework which aims to encourage private investments in R&D, and ensures an optimal use of the public resources for industrial research. Furthermore, encouraging investments in intangible assets and human capital is crucial, in order to maximize the efficiency of the current technology and its effects. Furthermore, supporting entrepreneurship and developing industrial sectors is an objective that goes beyond the limits of the industrial policy, by joining actions of the educational policies, internal market, financial services and tax policy (Nica and Cuza, 2010). Certain fields require specific intervention, in order to improve the internal market, such as the financial or services markets, where the technical barriers and the legislative differences limit the free trade, in order to improve the economic environment, with special attention in areas which present the fastest technological progress. However, the development objectives set at European level cannot be reached without a tight interconnection of the industrial policy measures with those of some complementary policies, such as the commercial policy, the single market policy, transport and energy policies, research and development policies, competition policy, regional and macroeconomic policies. While in these fields the policies are already coordinated, the sustainable development requirements, with the three development pillars: economic, social and environmental, require supplementary measures for coordinating the industrial policy with the associated policies and requirements. Thus, European Union must inscribe the balance between national level, within the limits of competency of the different member states (Nica and Cuza, 2010). On the other hand, cohesion policies amount to an efficiency-based long-run strategy of ‘catch-up growth’, in which the interventions aim to accelerate catch-up growth and achieve cohesion policies, rendering industrial policy aims into increased growth and employment and the improved international competitiveness of European industrial sectors.

The nature and intensity of European industrial policy has drastically changed since the Rome Treaty (1957). More specifically, the Rome Treaty (1957) did not have a clear industrial approach (apart from transport policy). Until reaching a unitary concept, the approaches on the European industrial policy passed through several stages. In a first stage, between 1958-1975, national policies prevailed. Between 1975-1985 a general tendency favouring the interventionist policies was observed. The Community measures were aiming to encourage the national efforts, and varied from subventions for the steel industry until granting funds for research and development projects and introducing commercial barriers in the trade with the countries from the rest of the world. In 2000, the Lisbon European Council set the objective of transforming the European Union in the most dynamic and competitive economy of the world. In 2004, EU’s enlargement through the integration of the Central and Eastern European states represented a challenge for the European Union industrial policy, as the newly integrated states were to align to the industrial level of the European Union while maintaining and increasing the competitiveness of EU at a general level. After the first enlargement of the European Union, in 2004, the Commission established the main action lines of the industrial policy in the
new geopolitical conditions, through the communication titled ‘Fostering structural change: an industrial policy for an enlarged Europe’ (Nica and Cuzza, 2010).

Currently, competition, the efficiency of public and private services, and infrastructure are important determinants of industrial competitiveness in European member states. In many member states, increasing competition in the network industries remains a challenge. Lengthy permitting procedures and public acceptance also constitute important obstacles to the development of infrastructure. A stronger enforcement of competition rules is necessary to reduce competition distortions. Moreover, today, the competitiveness of European industry crucially depends on the quality and efficiency of the energy, transport and communication infrastructure services, with the upgrading and modernisation of these networks being rather essential. Transport networks need to be improved to overcome any related obstacles and improve cross-border connections. These improvements will require massive investments and the development of innovative financing solutions. According to European Commission (2010), a new industrial innovation policy is needed to encourage the development of productive processes of goods and services, as well as the enhancement of productive efficiency.

Industrial policy of the European Union must offer solutions for industrial development. Such challenges concern globalization, the technological and organizational changes, the increasing role of innovation and entrepreneurship. Strategy framework for industrial policy must put technical efficiency and competitiveness of European industry at centre stage (European Commission, 2010):

- to adopt policies that have an impact on the cost, price and innovative competitiveness of industrial sectors, such as standardisation or innovation policies, or industrial policies targeting e.g. the innovation performance
- to speed up the adjustment of industry to structural changes
- to encourage an environment favourable to cooperation and development of firms throughout the Union
- to foster better exploitation of the industrial potential of policies of innovation, research and technological development
- to consider the competitiveness effects of all other policy initiatives such as transport, energy, environmental or social and consumer-protection policies (Pelkmans, 2006).

European industry must also strengthen the knowledge base to remain competitive, investing in research and innovation for a sustainable and inclusive economy. Most importantly, science, technology and innovation play a significant role in increasing technical efficiency and are a driving force in international competition. Innovation policy is a broad concept that contains research and technology policy and often overlaps with industrial policy.

5. Innovation Policy and Technical Efficiency

Innovation policy seeks to help firms or industries to improve their capacity to innovate. This includes the provision of scientific infrastructure in research and education and direct and indirect support for research and technological development. It also includes a wide range of policies which aim to build networks, to make markets more conducive to innovation, to facilitate the transfer of technology, to help firms to acquire relevant capabilities, and to provide a supporting infrastructure in areas such as standards and intellectual property. Public innovation policy aims to strengthen the competitiveness of an economy or of selected industries, in order to increase societal welfare through economic success (Kuhlmann, 2001). Hence European Union has made innovation a top priority through several strategies, funding opportunities and assessments. The pressures of globalisation have brought innovation to the fore as a key element in increasing productivity along with technical efficiency and underpinning industrial competitiveness, taking into consideration the under-investment in business R&D and other innovative activities, strongly linked to the fragmented condition of European markets.

Innovation policy is essential for European Union productive efficiency and an important driver in enabling European Union to enhance competitiveness, increased efficiency and growth and consequently to compete on a global scale. However, policy-makers also underlined the need for interaction between innovation policy and other policy areas to improve the environment for innovative enterprises (Nilsson, 2004, Chesnburgh, 2002, Georgiou, 2006). After the Second World War, and increasingly since the 1970s, with the acceleration of high technologies, the industrialised countries developed a broad spectrum of technology policy intervention measures (Roobeek, 1990, Ergas, 1987). However, neither industrial policy nor innovation policy was among the areas covered in the 1957 Treaty of Rome. By the early 1980s, however, both had found a place among the European Commission’s directorates (Guzzetti, 1995). The first research and technology development (RTD) programmes were designed and implemented in the early 1980s (Nelson and Winter, 1982; Dosi et al., 1988). This included broad programmes such as the European Strategic Programme for Research and Development on Information Technologies (ESPRIT) whose main goals were: i) to promote intra-European industrial cooperation through pre-competitive R&D; ii) to thereby furnish European industry with the basic technologies that it needed to bolster its competitiveness through the 1990s; and iii) to develop European standards (European Commission, 1987) and the Basic Research in Industrial Technologies (BRITIE) programme designed to help the European manufacturing industry to become more competitive (Mytelka and Smith, 2001). Since the 1980s the Community was trying to foster the creation of strategic industries, in line with the individual member states’ efforts to promote national champions. In fact, the objective was to foster cooperation, innovation and commercialization processes, where the role of
Community institutions was mainly to enable and coordinate policies rather than dictate their contents (Triulzi, 1999).

Until the middle of the 1980s the Community had a research and technology policy of its own that more or less complemented national policymaking with a transnational dimension, in order to create a European Research Area. The rationale behind this approach is that European economic integration, in combination with the opportunities associated with the enlargement of the European Union and the challenges of economic and technological, functionally leads to an integrated innovation policy approach in European Union. On top of the national and regional efforts and in parallel with Europe’s economic and political integration, the emergence of a European innovation policy-making system can be traced. Its main pillar is the Framework Program, the first of which was established in 1984 and concentrated on industrial technologies, information technology, telecommunications and biotechnology. Each subsequent FP has been broader than its predecessor in its scope of technologies and research themes, with correspondingly higher expectations of its impact on the economy and society. The Framework Programmes are the instruments through which the Commission implements its scientific and technological research policy. The system of innovation approach lays emphasis on the interactive process in which enterprises in interaction with each other and supported by institutions and organisations – such as industry associations, R&D, innovation and productivity centres, standard setting bodies, university and vocational training centres, information gathering and analysis services and banking and other financing mechanisms – play a key role in bringing new products, new processes and new forms of organisation into economic use.

Into the 1990s, Community innovation programmes sought to promote technology transfer across industries and regions in Europe, aiming at achieving competitiveness and productive efficiency. A few years later enhancing innovation became a cornerstone of the strategy to meet the target agreed by the European Council in Lisbon in March 2000 of the Union becoming the most competitive and dynamic knowledge-based economy in the world by the end of the decade, drawing attention to the interfaces between industries and financial markets, R&D and training institutions, advisory services and technological markets (Nilsson, 2004). The Lisbon European Council (2000) was an important milestone for the Community’s approach to innovation policy. The so-called Lisbon strategy required the Union to become, by 2010, “the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion”. With the Lisbon strategy, innovation gains increasing importance in the EU policy framework; the argument that firms’ competitiveness in a globalized economy is increasingly dependent on the introduction of new products and services is emphasized. Innovation policies, previously framed within the context of research policy, begin to be considered as essential components of industrial policy strategies.

In 2002, the Barcelona European Council set a twofold objective requiring the Union to reach, by 2010, a level of R&D expenditure equal to 3% of European GDP (compared with 1.9% recorded in 2000), within which the level of private funding should increase up to two thirds of community R&D investments. Today, innovation in EU is distributed right across the system in all European countries. European-level networking of key players in the innovation process links national innovation systems. On the national level the member states are expected to build national innovation strategies. Innovation system was considered to be a measure to build dynamic clusters based on technologies with large growth potential. Innovation became a new industrial policy along with research policy, industrial policy, energy policy, or labour market policy. However, policy-makers also underlined the need for interaction between innovation policy and other policy areas to improve the environment for innovation and technical efficiency (Nilsson, 2004). Nowadays, within the European Union innovation policy framework, current trends and the resultant emerging industrial innovation activities focus mainly on Information and Communication Technologies (ICT) related topics. Information and Communication Technologies (ICT) enable the development of new services and increase the efficiency of existing services. Globalisation and internationalisation of innovative industries is important, as is the convergence between the technologically intense sectors and other sectors. Maintaining and strengthening Europe’s industrial base is fundamental to securing the foundation and transformation of the EU economy and ensuring employment, social progress and cohesion.

The majority of public initiatives is still mainly developed in national policies, offered by national institutions. While for the last years member states increasingly tended to compete with each other in the field of innovation policy, strong industrial or financial capital actors have been appearing more frequently on the scene - multinational enterprises, international strategic alliances of national enterprises - who act globally and across the national innovation systems. In the member states of EU this policy initially took the form of initiatives for stimulating research, improving innovation financing and promoting technology absorption and innovation management.

Additional priorities like intensifying the cooperation between research, universities and universities, promoting ‘clustering’ and other forms of cooperation among enterprises and other organisations involved in the innovation process and encouraging the start-up of technology-based companies were added to the national innovation policy (Nilsson, 2004). The following Table (1) presents the main priorities regarding the effectiveness of innovation and industrial policy implementation:

The evaluation of the innovation policy demonstrated that despite achieving most of the proposed actions, there are still significant obstacles to innovation in the EU. These obstacles can be overcome by taking coordinated action at both EU and national level. As part of the Europe 2020 strategy, the Commission launched in 2010 an ambitious new industrial policy that highlighted the actions needed to strengthen the
attractiveness of Europe as a place for investment and production, including the commitment to monitor Member States competitiveness policies.

### Table 1. Policy Effectiveness Priorities

<table>
<thead>
<tr>
<th>Priority</th>
<th>Means and actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>give priority to innovation and enterprise</td>
<td>creating closer links between research institutes and industry, developing conditions favorable to R&amp;D, improving access to finance and know-how and encouraging new business ventures;</td>
</tr>
<tr>
<td>ensure employment</td>
<td>emphasizing the need to open up employment opportunities, to increase productivity and quality at work and to promote lifelong learning;</td>
</tr>
<tr>
<td>ensure an inclusive labor market</td>
<td>reducing unemployment and disparities in access to employment;</td>
</tr>
<tr>
<td>connect European Union</td>
<td>promoting closer integration by improving transport, telecommunications and energy networks;</td>
</tr>
<tr>
<td>protect the environment</td>
<td>stimulation of innovation, and introducing new technologies, for example, in energy and transport.</td>
</tr>
</tbody>
</table>

Source: Own elaboration

The changing nature and scope of global innovation activities creates very significant consequences for EU innovation policy, requiring a substantial review of the pillars of EU innovation policy, involving both the scope and the governance of innovation at the EU and national level. European Union has identified the following key areas where the competitiveness of the EU economy could be further strengthened in order to make significant progress towards the Europe 2020 goals:

- facilitating structural changes in the economy, in order to move towards more innovative and knowledge-based sectors that have a higher productivity growth and which have suffered less from global competition;
- enabling innovation in industries, in particular by pooling scarce resources, by reducing the fragmentation of innovation support systems and by increasing the market focus of research projects;
- promoting sustainability and resource efficiency, in particular by promoting innovation and the use of cleaner technologies, by ensuring fair and undistorted pricing of energy and by upgrading and interconnecting energy distribution networks;
- improving the business environment, in particular by reducing the administrative burden on businesses and by promoting competition among service providers that use broadband, energy and transport infrastructure;
- benefiting from the single market, by supporting innovative services and by fully implementing the Single Market Regulation, in particular the Services Directive;
- supporting small and medium-sized enterprises (SMEs), in particular by favouring access to finance, by facilitating internationalisation and access to markets.

EU industry must accelerate its efforts to adopt these technologies to keep its competitive edge in the world with research and innovation driving productivity growth and industrial competitiveness.

### 6. Concluding Remarks and Policy Implications

A transition towards a sustainable, resource efficient economy is paramount for maintaining the long-term competitiveness of European industries. Overall, European member states have made significant progress in defining and implementing consistent national legislative frameworks for stimulating efficiency. However, some lack the experience and the administrative capacity to do this and for these countries the framework legislation at the EU level can provide guidance and support.

The quality and availability of infrastructure (energy, transport, and broadband) make an important contribution to an efficiency promoting environment. Industrial sectors need a modern public administration, able to deliver efficient and high quality public services. Coordinating clusters and networks improve industrial competitiveness and innovation by bringing together resources and expertise, and promoting cooperation among businesses, public authorities and universities. EU industrial and innovation policies should aim to overcome existing market failures and funding gaps, especially to supply the bridge between technical efficiency and productivity enhancement.

European governments are in need of a more coherent, more coordinated approach towards industrial technical efficiency support. However, the pressure on public budgets adds to the urgency of this matter in different policy areas of industrial and innovation policy. The range of explicit innovation policies being applied is very much concerned with the supply side and even more with R&D support of various types, ranging from funding of science in public institutions through to fiscal incentives for firms to increase R&D spend. A comprehensive approach to industrial and innovation policy can be achieved by supporting markets for innovative goods and services and excellence in research in new technologies, including information and communication technologies (ICT), introducing a more focused strategy to facilitate the creation of areas for action, and in particular introducing a more focused strategy to facilitate the creation and marketing of new innovative products and services. Within the domain of industrial and innovation policy, regulatory reform is
seen to affect innovation indirectly through affecting the funds available for investment, and directly through its impact upon the promotion of technical efficiency and productivity.

An open, efficient and competitive business environment is a crucial catalyst for growth in a global context. Improving the business environment covers policies in areas ranging from improving infrastructure to shortening the time needed to obtain a building license. In many cases, better institutional mechanisms need to be functioning as a single research area, business environment and innovation system. There need to be strategic approaches, which not only promote closer interaction among sectors but also among policy-makers (from different policy fields and different levels of government). European innovation and industrial policy is therefore recommended to develop strategic approaches which integrate R&D, innovation and industrial policy along with a more coherent EU strategy for innovative competitiveness, giving special attention to ICT in innovation and industrial policy. At the national level, governments could set up agencies funded by public bonds with the mission to provide venture capital, investment credits and R&D support to new activities in the above fields. Productive efficiency and competitiveness would be strengthened by:

- Pooling scarce resources to help to achieve critical mass in bringing innovation to the market; and by increasing cooperation in innovation to create large scale demonstration projects and pilot test facilities
- Reducing the fragmentation of innovation support systems, facilitating bringing innovative solutions to the market, and increasing the market focus of research projects.
- Developing support for innovative services based on measurable outcomes
- Facilitating the growth of manufacturing industries by ensuring that regulations do not pose obstacles to expansion, by favouring access to appropriate finance; and by providing support services for accessing new markets, and publicising these.

A new generation of policies have to overcome the limitations and failures of past experiences, such as collusive practices between political and economic power, heavy bureaucracy, lack of accountability and entrepreneurship. They have to be creative and selective, with decision-making mechanisms that are more democratic and inclusive of different social interests. These new approaches to industrial and innovation policies could play a key role in pulling Europe out of the current crisis. Industrial and innovation policy programmes and projects claim to contribute to technical efficiency. This implies that policies should concentrate on areas in which there is expansion and therefore good prospects for growth, community businesses are supposed to become more competitive, and scientific and technological progress is expected to offer a medium- or long-term potential for dissemination and exploitation. An open, efficient and competitive business environment is a crucial catalyst for growth in a global context. Rising to these challenges can improve the competitiveness of European manufacturing industries, and the Commission aims to help the member states to use their limited resources efficiently in order to increase the global competitiveness of their industries. Addressing these challenges will improve the growth prospects of industries. A competitive industry can lower costs and prices, create new products and improve quality, contributing thus decisively to wealth creation and productivity growth throughout the economy. These conditions are largely related to technical efficiency and include, among others, the capacity of a regional economy to generate, diffuse and utilize knowledge and so maintain an effective production system.

7. References


Chapter 5:

Functional Urban Regions and Larger Urban Zones in Europe and Greece:
The deficient and fuzzy definition of an essential spatial unit.

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Abstract:
In the European Union, Functional Urban Regions are important to economic and spatial planning; so is the existence of statistical data at this spatial level, both for the European and the national policies. Still, most European countries, like Greece, have no official delimitations for these zones and, consecutively, no socio-economic data produced at this level. “Larger Urban Zones”, created by Eurostat’s Urban Audit represent the only proxy to FURs that could be used for comparable studies, but this would demand an effort for a better harmonization and for consequent statistical series.

Keywords: Urban statistics, Functional Urban Regions, Eurostat, Urban Audit, Larger Urban Zones

1. Introduction
Functional Urban Regions in the European Union, either formally defined (by the national Statistical Services) or informally (in academic works), are statistical spatial units defined primarily on the criterion of daily travel-to-work flows (commuting).

The concept of ‘Functional Urban Areas’ (FUAs) is the one that prevailed in Europe and was introduced as the equivalent of the Metropolitan – and Metropolitan – Areas of the American territorial statistical nomenclature, or to that of ‘Functional Urban Region’ (FUR) in the United Kingdom. In terms of urban geography, the Functional Urban Regions correspond to wider, city-centered “employment areas”. Functional Urban Regions not hardly ever coincide with the city limits in the morphological sense, though they are sometimes arbitrarily confused with the ‘urban archipelagos’ ie multi-nuclear structures of the urban-rural mix (urban-rural compound) that shapes modern urban sprawl in the periphery of the larger cities.

As defined in the E.S.D.P, the European Spatial Development Perspective, (CEC, 1997), the Functional Urban Regions are formed by two distinct and opposite components, which are:
- a) The core –which consists of the city in its morphological definition, based on a threshold referring to either the population size or the number of jobs within its limits. (The core may, in its spatial structure, be mono-nuclear or multi-nuclear - ie composed by clearly distinct sub-cores).
- b) The surrounding zone, which is usually determined on the basis of a minimum percentage threshold of daily travel-to-work movements to the core. Based on international experience, the statistical threshold is most usually set to 15 or 20 % of the employed population residing in the respective spatial area.

2. The need for comparable urban data in Europe and the theoretical and methodological problems for the delimitation of the functional urban regions
In a theoretical frame, the questions that concern the criteria of delimitation of Functional Urban Regions are open to discussion, regarding the choice of variables that will determine the core (such as the population size, the density of jobs, or the morphological criteria of urban tissue) – but also regarding the nature of commuting taken into consideration (work, consumption of goods and services etc). Also, open field of discussion is the one concerning the eligible size of the core but also the pertinent thresholds for the determination of the surrounding, commuting zone.

However, in the case of many modern Functional Urban Regions, the spatial patterns tend to be more complex, since:
- On the one hand, appears the simultaneous trend of an increase of new jobs in the periphery, as it often happens linearly, along motorways, or even in new emerging poles (the edge cities of the big metropolitan centres or smaller scale urban spots1), and
- On the other hand, in many cases of European cities - especially in medium-sized cities with an historical character – there is an increase of the attractiveness of city-centers. Thus, the core and the surrounding zone form a functional coupling, with bidirectional flows.

Another problem in statistical methodology and nomenclature for FURs is that in most European countries, at this stage, the Functional Urban Regions are characterized by an extreme volatility of their

1 In his famous book, Garreau (1991), considers that the designation of an urban form as an ‘edge city’, presupposes some criteria relating to the scale of the phenomena.
boundaries, since they are determined by functional correlations which vary continuously (unlike physical delimitations of the cities, who know a much lower change in time).

In particular, the rapid changes in the functional structure within many European urban areas, have to do with the two major factors that shape them, ie both, the rapidly changing “landscape” in the spatial distribution of jobs, and that of the housing market.

However, the determination of Functional Urban Regions for statistical purposes, does not only face the problem of continuous change of their limits but also that of the lack of comparability and interoperability of the statistical data between the different countries of the European Union.

This is owed in voids and methodological difficulties, in four levels:

- (a). Different urban systems: Depending on the phase of a country in its transition to the ‘information society’ - but also according to the its particular historical and geographical conditions - the urban system presents different characteristics.
- (b). Different commuting patterns: Both because of the different characteristics of the economies and the technological level and because of different cultural norms and lifestyles, the scope and features of commuting diverge considerably. (The phenomenon is older and much more intense in northern Europe than in Mediterranean Europe).
- (c). Different datasets between the countries: Despite the efforts of Eurostat - particularly in the field of urban policy - in recent years, there are still substantial differences in the series of data produced by the Statistical Services of the member countries of the European Union.
- (d). Different building block areas: The delineation of Functional Urban Regions, regardless of the criteria it uses, is forced to adapt to the limits of administrative or statistical units (statistical districts), for which there is available data. But it is known that neither the NUTS\(^2\) nor LAU\(^3\) -despite the official introduction throughout the European Union\(^4\) – have been fully harmonized (Carlquist, 2006a). In Sweden, for example, the average size of municipalities (kommuner) is 1.437 km\(^2\) and 30,300 inhabitants while at the other extreme, in France, the average size of municipalities (communes) is just 15 km\(^2\) and 1,500 inhabitants - which is about a hundred times smaller. Moreover, different reforms of local administration status across Europe is adding another factor of difficulty for the harmonization of the statistical territorial units in the European Union.

3. The recognition of the importance of the Functional Urban Regions from the European Union

The importance of Functional Urban Regions as the most appropriate spatial units for urban policies and projects, has been repeatedly recognized and emphasized by various institutions of the European Union, since the late nineties. Furthermore, the growing need for urban statistics for these spatial units has been also emphasized.

Officially, this need was formulated for the first time, on the 14th of May 1998, in the Opinion of the Committee of the Regions for the “Statement of the Committee: “Towards a program for the urban environment in European Union” (EU-CoR, 1998).

The term of “Functional Urban Zone” was not met in the international bibliography, and had been introduced for first time in this document of the Committee of the Regions, accompanied with a general and purely theoretical definition. The definition of a “Functional Urban Zone”, is a “network of cities and surrounding areas, who are interconnected in their local and regional economy, and the (daily) mobility of their citizens”. It is recognized that the Functional Urban Zone can provide solutions for the urban problems in the suitable scale, and is pointed out that its concept should be developed further in the future, so that is shaped a suitable frame for the urban policy.

In the same Opinion, the Committee stresses the need for comparable models, based on the “Functional Urban Region”. In the conclusions, is formulated the opinion that the concept of the Functional Urban Zone should have application everywhere, and does not depend from the size of cities. (Which means that the importance of a functional approach of the city is not recognized only in the level of metropolitan regions but in all the levels of urban hierarchy).

Still, the Committee of the Regions, in its Opinion, of January 14\(^{th}\) 1999, underlines the importance that could have for the ESDP the new concept of “Functional Urban Zone” (EU-CoR, 1999). In this Opinion, is recognized the importance that Functional Urban Zones have for the European planning.

Some very similar remarks are repeated the 1st of July 2004, in the Opinion of the European Economic and Social Committee, on the metropolitan areas (EU-EESC, 2004). After it is reminded that the concept of “metropolitan area” is close to that of “Functional Urban Region”, the EESC points out that there are no reliable and comparable urban and metropolitan data, in a European scale, in regard to the metropolitan areas –and the Functional Urban Regions in general.

The European Economic and Social Committee also expressly formulates the opinion that the European Union owes to ensure the production of such data by the member states. It is also pointed out that “the means that allocates Europe for urban statistics are today insufficient”. This is attributed in the first place in the fact that the European statistical system has been developed in connection with the European policies.

\(^2\) NUTS = Nomenclature des Unites Territoriales Statistiques (Nomenclature of Territorial Units for Statistics).
\(^3\) LAU = Local Administrative Units.
\(^4\) Eurostat had created the Nomenclature of Territorial Units for Statistics - NUTS - from the 1970s, but for about 30 years, it was applicat with difficulties, through “gentlemen’s agreements” between the Member States and Eurostat. Only in May 2003, adopted by the European Parliament and the Council,Regulation (EU No. 1059/2003) that gave legal status to the NUTS.
More specifically however, it is pointed out in the text, the discrepancy between the system of Statistical Nomenclature of Territorial Units (NUTS) of the European Union, and the existing “urban regions”, as socio-economic realities that do not coincide with administrative units. Thus, the data of Eurostat do not allow the monitoring of demographic trends in the metropolitan regions (and more generally in the urban regions). On the other hand, the lack of reliable and geographically comparable data leads the comparative studies in erroneous or even contradictory conclusions. For the production of “reliable and comparable urban and metropolitan data”, according to the European Economic and Social Committee, the Statistical Service of the European Union should allocate the required additional economic and human resources. For this reason, the Committee thinks that the constitution of a Unit of “metropolitan regions” in Eurostat would be essential.

The European Economic and Social Committee, also in a second Opinion, in 2007 (EU-EESC, 2007) underlined the voids that exist in the matter of production of statistical data in the level of larger urban regions. But regarding the few available data, it is also characteristic the ascertainment of the EESC that, “the data that are transmitted by the statistical services are incomplete and have been gathered according national definitions, which means that they are still not comparable in a European scale”.

Regarding the steps taken the recent years to this direction – and particularly the effort of Eurostat via the “Urban Audit” project - the EESC points out that the characteristics of the information provided do not allow still a wide exploitation. And this is attributed by the EESC in the “particularly insufficient” means that have been allocated in for this task.


The concept of Functional Urban Region was introduced by the Eurostat under the term of “Larger Urban Zone”, in the “Urban Audit” project. The collect of the Urban Audit data concerns three different spatial levels:

- (a). the city (as an administrative unit),
- (b). the level of the district (sub-city district) and
- (c). the Larger Urban Zone - LUZ

This third spatial level, the Larger Urban Zone (LUZ), corresponds, according to Eurostat, to the concept of Functional Urban Region (given that its delimitation is based on the commuting flows. The statistical threshold for the incorporation of a territorial unit in the Larger Urban Zone was fixed at 15% of the residing workforce.

The choice and the determination of the appropriate level for the Larger Urban Zones resulted after long consultations with the national statistical services and with the fundamental criteria of comparability and availability of statistical data (Eurostat, 2004). It was precisely for reasons of availability of statistical data, that had been already accepted (in 2003) the use of the spatial level NUTS 3, as the approximate Functional Urban Region for big cities –which is also underlined by the choice of the term “Larger Urban Zone”. Thus, initially 9 countries of the Urban Audit used as basic territorial units for the determination of Larger Urban Zones the level NUTS 3, while 11 used the level NUTS 4 (LAU 1) and 7 the level NUTS 5 (LAU 2). The medium surface of the 300 LUZ, was in 2009 1978 km2.

Regarding the Greek Larger Urban Zones, the Greek National Statistical Service (ESYE), in agreement with Eurostat, proceeded in the revision of the LUZ limits for the 8 of the 9 major urban areas that participated in the Urban Audit (Thessalonica, Patras, Irakleio, Volos, Larissa, Ioannina, Kavala, Kalamata). In the case of Athens was nevertheless maintained the identification of its LUZ with the limits of the prefecture of Attica (excepted its insular part). This particularity was justified by the availability of data at the level of the prefecture NUTS 3), and after it was realised that - on the contrary to the cases of the other 8 cities, in the case of Athens, there is a practically total concurrence of the limits of the prefecture with the limits that result from the application of criteria for the LUZ, based on the daily commuting criteria.

5. References
CEC, (1997), E.S.D.P., European Spatial Development Perspective, First Official Draft, Brussels
Eurostat, (2005), Increasing the number of Urban Audit Cities, Working Party on Regional and Urban Statistics, Luxembourg
Parr J.B., (2005), “Perspectives on the city-region”, Regional Studies, 39, (pp. 555-566)
Piron O., (2004), “Penser, nommer, classer les territoires”, Revue Urbanisme, No 338 (pp. 70-72)
Section 7: Local and Global Social Dimensions in Sustainable Development
Electro mobility and Pedelecs: Spatial reconfiguration of the transport system?

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Facing the sinking petroleum reserves in the world a progressive transition to electric mobility technologies seems today inevitable in the long run. However, the path dependency of the political regulation in the transport and energy policy as well as the habituated mobility conducts of the population takes the effect that electro mobility is still conceived in the categories of conventional private cars and its old-fashioned spatial and social use patterns. E-mobility has often been discussed as the panacea to solve all transport related environment problems. Sustainable mobility, however, demands more than just a replacement of conventional through electric propulsion systems. In an integrated mobility system, electric vehicles will complement other sustainable transport options, as e.g. bicycle, bus or train, to replace car trips. While electric cars are still costly, pedelecs or e-bikes provide a technically mature and inexpensive form of highly energy-efficient and user-friendly mobility which can ideally be integrated into a holistic transport system.

The industrial societies of the 20th century have pushed their mobility and energy supply systems in a stage of nearly complete dependency of fossil and nuclear fuels. The import dependency of petroleum of the European Union is predicted to climb up from 82% in 2007 to 92% in 2030 (IEA 2008, p. 105), meanwhile the road traffic and the public transport depends to 79% on these energy sources (Topp 2011, p. 3). Supply crisis that showed the high level of extern dependency of our mobility system in the 1970s haven’t taken place since then. However, it’s a fact that in a worldwide dimension, the middle class with its rising purchasing power in the big emerging nation is growing, so more and more consumers on the global market share the oil production that has taken since 2006 – the year of „Peak Oil“ (IEA 2010, p. 48) - a sinking tendency.

Because of increasing fuel prices mobility based on fossil fuels will get more and more expensive in the long run. However, the course of the cost curve remains uncertain as the energy sources traded on stock exchange react in a very sensible way not only to the global demand but also to the crises-induced inflation risks and political risks in the export regions.

The more the inflation processes of the motorized individual transport accelerates additionally pushed by sinking real incomes and pensions and increasing youth unemployment in the European context the more augments the pressure on the consumers to search for more low-cost and energy-efficient transport alternatives. Therefore, the upcoming transport transition includes beside the ecological aspects also explicit social and politico-economic components.

1. Social and technological transition

Mobility systems develop in long stages in the conflicting area of, on the one hand, social structures, norms and attitudes and, on the other hand, of for the respective groups available technological and financial means to satisfy mobility needs. In the Fordist-fossil era of the private car, mobility becomes evident in the industrial nations in terms of a correspondent high road volume. The political regulation has a considerable impact on the development of our transport system and our daily mobility choices. It’s a long-term challenge for the society to find ways out of the petroleum dependency and the path dependency of the automobile towards a post-fossil integrated traffic system. This requires on the hand a systematic political regulation, and on the other hand the active participants of civil society. Recent social and technological developments indicate already new opportunity windows to disconnect mobility from traffic as well as traffic from the consumption of fossil fuels.

Recent data show that the mobility patterns of parts of the younger people are in process. Actual studies come to the result that the private car constitutes for the young people in Germany not the usual dominant value to present status and to realize spatial mobility and liberty. Thus, the share of people under 30 years in the group of new car buyers in Germany sank down from 17% in 1999 to seven percent in 2008. In the same way, the rate of people who made their driving license under 26 years decreased from 90,6 to 75,5%. The level of motorization of the under 30 years old downsized within ten years from 518 to 344 personal cars per 1000 habitants (34%), as well as the rate of ways which people under 25 years make using personal cars...
decreased between 2002 and 2008 from 65 to 57% (Canzler and Knie 2011, p. 32ff). In contrast to these trends by parts of the younger generation the age group with high birth rates (the so called baby boomers) climbs up nowadays in the upper levels of the population pyramid. This causes a relative and absolute growing of the number of elder people for which the private car is habitually central for their daily mobility patterns. The socioeconomic conditions determine in a strong way the possibilities of the mobility patterns and transport choices. Tendencies towards a precarization of living conditions of growing parts of the population are already notable in some European Nations. While the South European countries are already facing youth unemployment rates of up to 58% in 2012 (Statista 2012), Germany has remained largely unaffected of these structural problems. However, also there in the lower classes there is a tendency towards sinking real incomes and real pensions that – in view of the growing quotient of elder people and pension funds at risk – in the middle or long run can cause serious problems of old-age poverty. Therefore, the socioeconomic conditions to satisfy individual mobility needs will change for a growing part of the population on a long-term basis. In the case that these development tendencies in degraded rural regions coincidence with the emigration of young well skilled young people, then challenges for the public sector to provide mobility systems become apparent. These challenges cannot be faced with the current mobility concepts based on motorized individual traffic. Thus, the requirements for the available mobility infrastructure will change clearly and questions will rise of how to secure the basic provision and affordability for the population as well as how to use the potential of innovative mobility services to provide workplaces.

Another mobility relevant trend in society is situated in the area of the communication technology. The rising penetration rate of internet and smartphone makes it possible especially for the younger generation, the “Digital Natives”, but also for the technological interested people of other age groups, to self-organize even complex mobility requirements online without precedent timing spontaneously on the way. This open up potentials for new mobility forms in terms of “use instead of own”, for example online-communication make the sharing of cars possible. Car-Sharing and online lift offers complement in a small-scale but growing segment the current public and private mobility options.

2. Electro mobility requires integral concepts

It isn’t possible to supply the increasing mobility needs of the growing world population in a long-lasting way and in sufficient amounts with carbon-based energy carriers for conventional combustion motors based on fossil or biogenic sources. However, renewable energy for electro cars can be produced in decentralized facilities and intelligently regulated supply systems (Smart Grid) in temporal unlimited and sufficient dimensions. Correspondently, the European Commissions defines in the White Paper Traffic 2011 the political goal to halve the rate of vehicles with combustion motor in city traffic until 2030 and to avoid their use completely until 2050 (EC 2011, p. 10). In the course of the reconstructing of the energy supply systems the electro mobility should become to an integral component of the „Smart Grid“ and it should absorb energy out of the grid according to the offer and recharge it in case of need in order to stabilize the electricity system. First results of surveys show that 74% of the users would be under certain circumstances willing to make use of the possibilities to restore electricity in electro cars (Rothfuss et al. 2011, p. 64f.).

The possibility to provide the required amount of electricity for electro mobility in the frame of an integrated energy and traffic system based on regional renewable energy sources seems realistic in the long run. Additionally, the substitution of fossil energy imports creates new value added potentials in innovative industrial sectors and also in rural regions. In Germany, through the substitution of eight percent of fossil energy imports in 2011 there was a flow of 8 billion Euros into domestic economic circles in stead of foreign countries (ImpRES 2012, p. 4). Therefore, ten million electro cars with an average kilometer per year efficiency could be driven completely by renewable energies and they would consume 13 billions kilowatt-hours of energy in one year (AEE 2009, p. 2); this corresponds only with ten percent of the amount of energy produced by renewable energies in 2012.

Actual challenges in the technological development comprise the intelligent recharging in times of low capacity and the mobile energy saving in the vehicles. Especially the second difficulty seems like the greatest barrier for the widespread introduction of electro cars for the actual use patterns facing the fact that the current expensive battery systems have an eightfold lower energy density per kilo battery weight in comparison to carbon-based fuels (Canzler and Knie 2011, p. 111). However, this aspect is less relevant for the smaller and lighter E-vehicles and especially for the definitely lighter bicycles with the electric step support, the so called pedelecs ("Pedal Electric Cycle") with its lesser energy requirements. The pedelecs that take clearly less public traffic and settlement space in the wheeled and parked transit than cars mark already the first stage of the e-mobile boom that is to be expected in the coming years: 2012 there were already more than one million Pedelecs on German roads whereas only 4.500 electro cars were admitted. The sale statistics show that Pedelecs with an amount of 510.000 sold pieces have been bought between 2010 and 2011 171 times more than electro cars with only 2.984 pieces (vgl. NPE 2012, p. 55f. and ZIV 2012, S. 18).

Not only in view of the sold pieces also in economic terms the Pedelecs gain an increasing significance in introducing electro mobility: The trading volume of Pedelecs for the industrial sector was five times higher than that of electro cars in 2010 and 2011. Viewed in the context of this trend the overestimation of the electro cars in the public discourse should be seriously questioned: Philippi (2011) showed in a quantitative discourses analysis in the reference time of 2007 until 2010 that only ten percent of all media reports discuss the issue of Pedelecs whereas eighty percent of the reports centre on the electro cars.
3. Potentials of pedelecs/e-bikes for sustainable transport policies
As different studies show, pedelecs offer a high potential to substitute motorized transport trips (vgl. BUWAL 2004, Mader und Mader 2011, Reiter und Pressl 2009, Haefeli 2008 und Strele 2010). A number of field studies have shown, that from 20 up to 50 % of all pedelec trips, would had been car trips instead (GoPedelec 2012, S. 62). Powered with energy generated from renewable sources – also in the German climate zone – a 0,3 m² solar panel would be sufficient to supply the amount of electricity for 5.000 km of driving performance, reducing overall emissions to 0,3 g CO₂/km (cp. DGS 2008, S. 80). Cycling accounts for far less direct and external costs than motorized private transport does. Furthermore it saves energy, noise and local emissions. The pedelec has the potential to shift daily trips of the distance usually covered by motorized transport to cycling. Due to the fact that driving speed can be increased and obstructions as head wind and a challenging topography can be balanced, larger distances can be overcome with the pedelec. Fig. 1 visualizes the increased catchment area of public transport stops. At the same time the catchment area of public transport increases, through the pedelec.

Fig. 1: Increased public transport catchment area through the use of pedelecs.

4. Spatial reconfiguration of the transport system: The mobility networks of the post-fossil future
Electro mobile future should not be developed on the actual vehicle concept of the heavy „long-distance racing limousine“ (Canzler und Knie 2011), with a virtually unlimited range. It should rather be integrated in an intelligent and cross-linked multimodal overall system. Among other factors, the mode choice depends on combination possibilities of user demanded trips (cp. y-axis in fig. 2) and the trip distance (x-axis). The stronger the mobility demand for a certain relation is, the more cost-efficient an attractive public transport supply can be. In sparsely populated rural areas offering a decent public transport supply proves to be increasingly challenging, making individual transport from a certain degree of spatial dispersion more competitive and attractive. Fig. 2 illustrates how an integrated mobility system should be structured, on the one hand to use its specific advantages, on the other hand to serve different mobility demands in the most environmentally friendly and energy efficient manner. The upper part of the figure indicates an intensive alongside certain section easy to bundle mobility demand with the possibility to provide attractive public transport. To cover mobility needs in the lower part, individual transport options are preferable to cover spatial disperse and non-bundled trip demands. Fig. 2: Concept of an integrated multimodal mobility system, respecting trip distances and spatial dispersion of trips.

Goal of transport policy favouring electro mobility as an integrated part of a mobility system, should be the best exploitation of the whole variety of environmentally friendly transport systems, in order to make conventional combustion motorized transport on a long run unnecessary (cp. Koch et al. 2011, p. 25f.). As fig. 3 shows, the goal to replace conventional motorized transport on short-distances walking, cycling, pedelecs (for trips up to 15 km), fast „S-pedelecs“ and e-bikes (up to 25 km) as well as electric cars (up to 50 km) can be used on trips in individual transport. Public transport will complement the replacement of conventional passenger cars on short and medium distances with electric public transport vehicles and electric railway systems for long-haul travels, as well as new long-distance bus services (cp. arrows above Abb. 3).

Fig. 3: „Closing the motorized individual transport scar“ – Mode share for different trip distances and motorized transport replacement through environmentally friendly, as well as public transport.
The subsidiarity principle of energy-efficient mobility* should serve an integrated spatial and mobility development policy. With the claim of generally CO₂-extensive, compact and interdependent spatial structure (cp. von Winning 2012, p. 94) the one transport system should be politically favoured, meeting the mobility demand with lowest possible energy-input at a decent comfort level. From this point of view it is not intended to increase the electric cars’ range in any order, e.g. through battery changing stations. Instead, for long distances an intermodal and user-friendly interchange relation should be used, featuring electric long-haul railways and the use of electric car sharing systems just for the „last mile“. In rural areas electric cars could serve as an alternative to motorized public transport. Due to low transport demand, yet service frequencies are unsatisfactory. Because of the low occupancy rate also energy efficiency per passenger-km is low. As the ability to bundle mobility needs of different users (cp. fig. 2 y-axis) can have a stronger impact than trip distance (x-axis), this factor should be relevant in a differentiated transport policy and promotion of energy efficient mobility options for an integrated mobility system.

5. Forecast and international trends
The departure towards the post-fossil age of electro mobility, is challenging technology, the industry and transport policy. Handling those will form the upcoming decades. In the field of electric two-wheelers the change is approximately ten years ahead of the electric car. In China as an emerging nation yet 100 millions pedelecs are used. With a production capacity of 22 million pedelecs, compared to two million in the rest of the world, China dominates this market almost entirely (vgl. GoPedelec 2012, S. 10). It is not solely an environmental, but also a challenge for economic policies to safeguard a considerable share of the 250 million unit global e-mobility two-wheeler production predicted for 2050 for European manufacturers (cp. ibid.). Promotion policy in the European economies, which highly depend on automobile production is barrier determined and should be expanded for the promotion of innovative vehicle concepts, such as pedelecs and small electro cars. On long-term view electro mobility vehicles will capture growing market shares and could replace the conventional passenger car until the half of the 21st century in petroleum-importing industrial nations. With its ambitious economic policy goals it can be expected that China will dominate the market, at least quantitatively. With the electrification of the drive chain leading automobile companies should replace conventional vehicle concepts through lightweight construction. Governmental planning and promotion should create the framework for integrated mobility systems, with seamless interchange possibilities between transport systems without user barriers. Regional added value through renewable energies – instead of loss of purchasing power through energy import – are an essential variable for future politico-economic development strategies.

6. Bibliography
DLR, Deutsches Zentrum für Luft- und Raumfahrt: Gütertransporte auf zwei Rädern
- Elektro-Lastenräder als klimafreundliche Form der Citylogistik. Berlin 2012
Mader, M. und C. Mader: Elektromobilität in der Steiermark. Eine Studie zu Elektromobilität (Fokus E-Bikes) im ländlichen Raum. Graz 2011

**Internet**


Chapter 2:

‘Smart’ Cities as a New Paradigm for Serving Urban Sustainability Objectives – A View in the Mediterranean Experience

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Abstract:
The present paper aims to indulge in the concept of ‘smart’ cities, as a new paradigm for coping with sustainability objectives in urban environments. In this respect, it firstly elaborates on the concept of ‘smart’ cities. Then smart city developments in the Mediterranean are explored by use of three specific examples. Next, progress attained in this field in Greece is presented, through elaboration of three smart city examples, where is also undertaken an effort to critically link ‘going smart’ efforts with the development strategy of these specific urban environments, setting the context for selecting specific types of smart city applications. Finally, some conclusions are drawn, built upon the experience gained by all smart cities’ examples considered.

Keywords: ICTs, ‘smart’ city, community development, sustainable urban development, urban planning, public participation

1. Introduction

In the shared vision of future European cities, these are considered as (EU, 2011:VI):
- places of advanced social progress, with a high degree of social cohesion;
- platforms for democracy, inter-cultural dialogue and diversity;
- places of green, ecological or environmental regeneration; and
- places of attraction and an engine of economic growth;
or stated otherwise, cities represent a ‘promise for the future’, built upon concepts such as freedom, creativity, opportunity and prosperity (Schaffers et al., 2012).

The above vision is far from present reality and actually constitutes a policy ‘target’ to be reached. In fact, contemporary cities are confronted with great challenges, threatening their future state, while sustainable urban development is still considered as a key planning goal in policy agenda.

In planning a sustainable future for cities, policy makers and planners are nowadays largely supported by the radical technological advances and the new potential these offer for economic development, organizational performance, social equity and quality of living in urban environments. Broadband network developments (DSL, cable, satellite and wireless communication, etc.) are largely affecting the interaction potential of various actors (individuals, businesses, institutions and local governments), by providing access to a range of tools to ‘connect’ both locally and globally. Based on the new challenging network opportunities, steering competitiveness gains and community development efforts, the concept of ‘smart’ cities appears, considered as a new paradigm for sustainable urban development, which supports local prosperity and social inclusion in the urban context (Stratigea, 2012). The widespread use of this concept is associated with the pivotal role it can play in coping with challenges emerging in urban environments around the globe.

The present paper aims at getting a flavor of ‘smart’ cities in the Mediterranean through prominent city examples, with a distinct view on applications enhancing participation and citizens’ empowerment. In this respect, it firstly elaborates on the smart city concept; then successful smart city examples from the Mediterranean are explored; it follows a discussion on three Greek smart city examples, where an attempt is made to critically link ‘going smart’ efforts with the pursued development objectives of these specific urban environments, dictating somehow the types of e-applications needed. Finally, some conclusions are drawn, based on the experience gained from all smart city examples considered.
2. Defining Concepts

What is actually meant by ‘smart cities’? A clear-cut definition of the term does not exist in the literature. Furthermore, a number of terms similar to ‘smart’ cities appears, such as ‘wired’ or ‘smart’ communities, ‘broadband’ communities, ‘digital’ communities, ‘networked’ communities, ‘intelligent’ communities, etc. (Droege, 1997; Keenan and Trotter, 1999; CISC, 2001; Coe et al., 2001; Komninos, 2002, 2006 and 2009; Steventon and Wright, 2006; ICF, 2007; Intel, 2007), which seem to be interchangeably used by various researchers, all implying communities that are making ‘a conscious effort to understand changes and engage in a world that is increasingly connected’ (Albert et al., 2009:8). Despite the differences on the way the above terms are used by various researchers, these seem to have in common the: communication mean (network infrastructure); process (networking among actors); and goal pursued (public involvement or other) (Stratigea, 2012). At the heart of the ‘smart city’ concept lies (Stratigea, 2012):

- sustainability: pursuing a balance among environmental, social and economic objectives;
- innovation: seeking to empower both people and places;
- participatory governance: implying the way that rules are set and implemented by governing bodies towards a more effective resource management perspective; and
- investments: pertaining to ICTs infrastructure and applications that fit with the needs of each specific urban environment.

The creation of ‘smart’ cities is based on the successful handling of five critical success factors, also used as evaluation criteria for assessing smart cities’ progress. These are (Figure 1) (ICF, 2008; Bell et al., 2008; Passerini and Wu, 2008; Komninos, 2009):

- broadband communication infrastructure, upgrading local capacity for digital communication;
- education and training of human resources, improving their ICTs skills/capabilities for performing knowledge-intensive activities, participating in knowledge creation processes, etc.;
- digital democracy, bridging ‘digital divide’ among different societal groups;
- innovative capacity, leading to the creation of an innovation-friendly environment that attracts highly creative people/businesses;
- marketing of ‘smart’ communities as advantageous places to live, work and run a business, in order to attract talented employment and investments.

- **Figure 4**: Critical success factors for ‘going smart’

By offering a range of tools and ICTs-enabled applications, smart cities support the creation of virtual environments, which enhance individual choices and group communication-collaboration options (Komninos, 2006). These applications can be classified into (Stratigea, 2012):

- **e-Information**: providing various types of information to a wide range of audience;
- **e-Business**: exploiting e-business opportunities, business-to-business (B2B) and business-to-client (B2C) interaction models, new innovative strategies for business development etc.;
- **e-Marketing**: marketing a city’s image, products, archaeological sites, cultural assets etc.;
- **e-Government**: providing services to citizens, businesses, and governmental institutions (G2C, G2B and G2G models);
- **e-Innovation**: e-cooperation and on-line development of new products;
- **e-Participation**: e-inclusion of citizens, widening the range of participation in policy making.

The concept of a smart city is currently perceived as building upon the six key dimensions, presented in Figure 2 (Tsarchopoulos, 2006; Giffinger et al., 2007; Stratigea, 2012). Thus a smart city is considered as a city ‘... well performing in a forward-looking way in these six attributes, built on the smart combination of endowments and activities of self-decisive, independent and aware citizens’ (Giffinger et al., 2007:11).

By providing access of citizens to effective/affordable ICTs systems, a smart city can also support community development processes, leading to a more equitable share of knowledge and information among societal groups that fuels respectively a shift of power structure that affects decision making processes. Community development, in turn, supports a more active public participation, where upgrading of skills and capacity to innovate drive citizens’ empowerment, engagement and more knowledgeable making of decisions. The challenge is to redefine the city as an environment of innovation, empowerment and participation of citizens, businesses and other stakeholders in shaping their future, through the choices they have and decisions they make; or the challenge is to focus on change and transformation towards a smarter city, in the sense of a
change towards shaping a better and more participative, inclusive and empowering city (Schaffers et al., 2012).

Figure 5: Digital dimensions of smart city development

Source: Adapted by Tsarchopoulos (2006), Stratigea (2012)

3. Smart Cities’ Experience from the Mediterranean Context

In this section is shortly presented the experience gained from prominent smart city examples in the Mediterranean. More specifically are presented Barcelona in Spain, Issy-les-Moulineaux in France, and Trento in Italy.

3.1 Barcelona

The city of Barcelona is among the pioneers at both the European and the global level in respect to ‘going smart’ efforts. An ICTs-enabled city platform hosts applications having as a main goal to build a sustainable urban future, enhancing citizens’ welfare, quality of life and economic prosperity. The ground for these applications forms a telecommunication infrastructure that integrates different fiber optic networks, boosts Wi-Fi networks and reduces operating and maintenance costs. Most important ‘smart’ initiatives are:

- **Smart lighting**: remotely controlled street lighting, activated by motion detection;
- **Zero energy blocks**: creation of self-sufficient blocks, based on the elaboration of consumers’ energy needs, thus improving energy efficiency;
- **Tele-management of irrigation**: remote management system for monitoring automated irrigation infrastructure (duration and frequency of irrigation);
- **Heating and cooling**: environmentally-friendly pilot heating and cooling system (78 buildings), expected to expand in the city; heating from combustion of urban waste, cooling from seawater;
- **Smart transportation**: targeting public transport efficiency through a restructuring of bus network (horizontal, vertical and diagonal lines), hybrid buses for reducing emissions, and establishment of smart bus shelters, using solar panels to activate screens that provide information on ‘waiting time’;
- **Bicing**: bicycle sharing system covering short daily routes within the city, new Bicing application enabling users to check real-time availability at stations;
- **Smart parking spaces**: sensor network used for displaying real-time parking availability to clients, supporting urban mobility management;
- **Zero emissions mobility**: encourage electro-mobility by deploying electric charging stations, electric vehicle fleets and electric car rentals;
- **Open government**: transparent municipal activities and strengthening of citizens’ participation, by deploying 44 ‘citizens attention’ kiosks and Open Data portal;
- **Bústia ciutadana**: smart phone application for gathering citizens’ complaints, suggestions and reports of city problems;
- **IDBCN (ID Barcelona)**: remote citizens’ identification through a digital ID in their mobile phone;
- **Smart waste management system**: drop-off containers leading trash to a subterranean vacuum network, sensors on rubbish and recycling bins providing data on the trash level;
- 22@ (Innovation district): revitalization of a former industrial area to a pioneer business district and a major pole of technology and innovation;
- **Barcelona urban lab**: a public space, where tests and pilot programs on products and services, aiming at the urban sustainability, are carried out;
- **Barcelona in your pocket**: encouraging developers and business owners to participate in competitions and workshops for creating new city applications.

### 3.2 Issy-les-Moulineaux

Since 1995, the city of Issy-les-Moulineaux has adopted an ambitious **digital technology strategy**, which transformed the city into a real living laboratory of innovative and exemplary use of technology to the benefit of citizens and its economic prosperity. Issy’s strategy is based on an ‘innovation triangle’, formed by businesses as technology facilitators, citizens as users and the government as projects’ initiator and coordinator. Focusing on six fundamental ‘smart pillars’, namely digital solidarity, infrastructures, e-Services, e-Government, e-Democracy and mobile services, Issy-les-Moulineaux has turned into a successful smart city example. Most important ‘smart’ initiatives are:

- **Free Internet access - multiple internet public access points**: free internet terminals used by citizens for improving ICTs skills and bridging digital divide;
- **Issy’s interactive city council**: ICTs-enabled citizens’ participation in the City Council meetings;
- **Issy’s citizen panel**: group of citizens regularly e-consulted by the City Council on significant city issues;
- **Participative budget making platform**: platform, enabling citizens’ participation in setting investment priorities to the benefit of inhabitants.

*e-voting*: used for district councils’ elections, on-line registration in voting lists enhancing participation through polls;

- **IRIS local one-stop-shop**: system properly addressing issues raised by citizens and visitors through various communication modes (phone, mail, e-mail, fax);
- **City’s website**: a significant source of information for citizens, public servants, business and other actors;
- **Local Web-TV**: providing local information on a weekly basis;
- **Tomorrow’s city hall**: a virtual administrative service, enabling access to local administrations and authorities for citizens/businesses,
- **On-line city services**: serving G2C communication in various administrative acts (birth, marriage and death certificates, parking reservation in case of relocation, change of address and family status, etc.).
- **Multimedia libraries**: serving citizens, offering an interactive way to explore the city;
- **The cube**: a virtual administrative service, enabling access to local administrations and authorities for citizens/businesses;
- **Les flux d’Issy**: augmented reality application, allowing residents and visitors to navigate in the city’s main points of interest;
- **IssyGrid**: energy use optimization at district level, smart street lighting adapted to road traffic, time and seasonal conditions;
- **Les flux d’Issy**: real-time discovery of the latest city news;
- **PaybyPhone**: paying parking place via mobile phone;
- **Issy 3D**: digital 3D city model displaying urban projects, construction sites, building rules, etc.

### 3.3 Trento

The city of Trento is building a smart city model for **sustainable urban development**, by launching a range of pioneer projects, with emphasis on **citizens’ participation**. Most important ‘smart’ initiatives are:

- **Internet Access**: extensive broadband Internet accessibility;
- **eSociety**: diffusion/ adoption of ICTs for active participation, involving administration, businesses, institutions, citizens etc.;
- **eTerritory**: development of a territorial platform that facilitates massive delivery of services to citizens, visitors, business and government, relating to the environment, tourism, mobility, energy etc.;
- **iScope**: 3D city models for urban planning and environmental protection, an open platform supporting crowdsourcing applications and enhanced Internet-based services;
- **SUNSHINE - Smart Urban Services for Higher Energy Efficiency**: platform for smart services as to the energy efficiency of buildings (eco-maps creation);
- **Your Trento 2013**: innovative tourist mobile application, offering an interactive way to explore the city;
- **Context aware project**: intelligent services to people who visit, live or work in Trento, also a list of facilities accessible to people with mobility problems;
- **eSchooling**: development of advanced models of digital learning in schools, where new ICTs-enabled systems can support both students’ learning and teachers’ training;
- **Trec Project**: on-line service platform for the management of citizens’ health records;
- **Smart campus**: a laboratory and a community, where students, teachers, researchers and campus staff, using advanced ICTs, participate and collaborate in designing innovative procedures for smart services, in support of urban sustainability objectives;
- **Open data**: facilitating transparency, public information and support of citizens to participate in the development of the city;
- **Smart crowds**: a territorial lab, in which citizens can participate as volunteers in R&D and innovation projects.

### 4. Smart Cities’ Experience from the Greek Context

In this section is discussed the development of smart cities in Greece, by shedding light on the ‘going smart’ efforts carried out by three specific urban settlements, namely Heraklion-Crete in the southern, Trikalla in the central and Kozani in the northern part of Greece. These refer to **three distinct peripheral city profiles** of the Greek territory in terms of size, role in urban hierarchy, structure and openness of local economy, accessibility to transport and communication infrastructure, presence of R&D and educational institutions etc. It should be noted that Trikalla is the first ‘smart’ city in Greece that was placed among the 21 first rating ‘smart’ cities in the world, awarded by ICI\(^1\) in 2009, 2010 and 2011, while Herakleion was awarded in 2012, 2013 and 2014. Of course these are not the only Greek cities that have taken steps to adjust to the broadband economy context, but are among the first entering the ‘game’, each one for different reasons, strongly conditioned by city-specific attributes and development objectives pursued.

In the following, for each specific city profile is presented the scope behind ‘going smart’ efforts, setting the context for selecting specific types of e-applications.

#### 4.1 The city of Trikalla

The nomos\(^2\) of Trikalla is located in the central part of Greece. It is mainly a mountainous region (83% mountainous/semi-mountainous land), endowed by natural and cultural assets. The city of Trikalla, capital of the nomos, is a small peripheral urban settlement, where almost half of the population of the nomos is located (80,900 inhabitants in 2011). In the local economy the rural sector prevails, while tourist and service sectors are recently gaining importance. During the last decades, the whole region has suffered by isolation, population decline and economic stagnation. As key barriers, conditioning the region’s development potential, were considered the: insufficient transport accessibility for intra- and inter-mobility; rough morphology impeding productivity and economic efficiency gains; limited access to communication and knowledge infrastructure; and low skill profile of population (Table 1).

Going ‘smart’ reflects an effort to address **new development perspectives**, by use of ICTs-enabled applications for **removing isolation**. Based on national and European resources and liberal local leadership, the city is transformed into a pioneer at the national and one prominent example at the international level. Emphasis is placed on creating: a **vision**, inspiring and motivating local citizens and businesses to participate in local affairs; and an **innovative urban e-environment**, affecting people’s lives and opportunities.

The going ‘smart’ effort of Trikalla started in 2004 and evolved rather quickly. In 2008, the ‘e-Trikalla A.E.’ was established, running almost exclusively by the Municipality (99%) and the Commercial Chamber of the city (1%). The main goal was to establish effective interactions among local actors (G2C, G2B and B2C), serving sustainable urban development objectives. Efforts were concentrated on: a) **smart living**, for improving quality of life in the city; b) **smart economy**, supporting business interaction/development; c) **safety of citizens**, protecting disabled citizens (Alzheimer patients); d) **social care**, providing e-Health services to population; and e) **e-participation – e-Democracy**, encouraging citizens’ participation in decision-making processes. More specifically, e-initiatives undertaken are:

- **smart health care**: health services to elderly, disabled and chronically ill citizens, based on the wireless broadband city’s network and portable devices, via which citizens are steadily monitored and offered health care services.
- **smart safety**: creation of a ‘smart house’ for Alzheimer elderly, based on sensor technology, house surveillance equipment, reminder/help equipment, GPS, etc.
- **DEMOSTHeNES system**: gathering citizens’ complaints on everyday life aspects (e.g. litter collection, pavement problems, parking spaces), properly addressed for further handling;
- **smart park system**: use of SMS for pre-reserving, paying and extending duration of a parking place;
- **smart transport**: supports monitoring/managing of municipality fleet, monitoring of public transport fleet and congestion, e-ticketing services and location-based information on bus transportation;
- **GIS – Location-based information to citizens**: on a range of city’s activities;
- **tourist portal**: information on the region’s assets, potentially downloaded through PDA’s connected to municipal free Wi-Fi.
- **e-Participation – e-Democracy**: high priority in citizens’ participation, setting the agenda of the municipality board, expressing opinions on issues discussed, e-voting and e-interacting with the city council to affect final decisions.

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1. Intelligent Community Forum
4.2 The city of Heraklion-Crete

Heraklion is the administrative and commercial capital of the Crete Region, with population of 173,450 inhabitants (2011). The city has a strong local economic base, with emphasis on agriculture, services (tourism) and transportation. It is characterized by a low quality of urban environment due to the density of population and traffic congestion. It also exhibits a medium quality of health services and a low exploitation of the abundant cultural resources. It possesses a very good intraregional and interregional accessibility, while it hosts a range of important higher education and research institutions.

The city of Heraklion has been one of the privileged cities of the Greek urban system, in terms of natural and cultural resources, transport accessibility, role in the urban hierarchy, proximity to R&D and educational institutions, geographical position, etc. (Table 1). The scope behind ‘going smart’ reflects an effort to re-gain competitiveness and improve quality and range of services offered to citizens. The strategy set in this respect is twofold, aiming at promoting:

- ‘place identity’, focusing on preservation and e-marketing of local assets; and the upgrading of competencies of local labour force, taking advantage of the proximity to R&D institutions and universities;
- digital inclusion of local stakeholders in order to improve services offered and strengthen participation in local affairs.

In order to pave ‘smart’ development, the city has prepared a strategic development plan, where key objectives are: broadband infrastructure development, investments in new technologies, training of local population, promotion of e-culture, e-government and e-democracy, and strengthening of bonds between local businesses and research community.

Based on the development of a Fiber Optic Network (MAN) and a municipal wireless network, the following e-initiatives are undertaken:

- **Herakleio@DigitalCity**: refers to integrated, user-oriented, ICTs applications, including:
  - e-Democracy: strengthening public participation in the decision making processes, and
  - e-Services to citizens: round the clock, on-line, provision of services to citizens and businesses, and electronic transactions;

- **Steps to civilization and tradition**: digital portal for cultural and tourist marketing, protecting and enhancing the world class natural and cultural assets for the sustainable future development of the city;
- **GIS**: protecting of historic documents, used also for city marketing purposes;
- **e-Government**: providing information for serving everyday life local population needs.

**Table 1**: Comparison of the three examples of ‘smart’ cities

<table>
<thead>
<tr>
<th>Attributes</th>
<th>City</th>
<th>Trikala</th>
<th>Heraklion</th>
<th>Kozani</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of the city</td>
<td>Local</td>
<td>Local – Regional – National Capital of the nomos – Administrative / Commercial centre of the Crete Region</td>
<td>Local</td>
<td></td>
</tr>
<tr>
<td>Size (population 2011)</td>
<td>Middle size (80,900 inhabitants)</td>
<td>Larger size (173,450 inhabitants)</td>
<td>Middle size (70,420 inhabitants)</td>
<td></td>
</tr>
<tr>
<td>Prevailing economic sector</td>
<td>Agriculture (recently tourism)</td>
<td>Agriculture, tourism and services</td>
<td>Energy</td>
<td></td>
</tr>
<tr>
<td>Transport accessibility</td>
<td>Low level (road transport)</td>
<td>High level (sea, air transport)</td>
<td>High level (rail, road, air transport)</td>
<td></td>
</tr>
<tr>
<td>Role in the transport network</td>
<td>Low importance</td>
<td>High importance transport node at a national level (sea and air transport node of Crete – TEN-T)</td>
<td>High importance transport node, connecting regions of Macedonia, Epirus and Thessaly</td>
<td></td>
</tr>
<tr>
<td>Presence of R&amp;D and Educational Institutions</td>
<td>No presence</td>
<td>High presence</td>
<td>Moderate presence</td>
<td></td>
</tr>
<tr>
<td>Extraordinary of local economy</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>ICTs infrastructure (2010)</td>
<td>Fiber optic network of 35 km</td>
<td>Fiber Optic Network of 36 km</td>
<td>Innovation pole - Metro Ethernet 10 Gigabit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extended Municipal Wireless Network (34 nodes)</td>
<td>Extended Municipal Wireless Network (22 nodes)</td>
<td>Less extended Municipal Wireless Network (5 nodes–more 18 in the surrounding municipality area)</td>
<td></td>
</tr>
<tr>
<td>Scope of going smart</td>
<td>Address new development perspectives / improve quality/range of services offered to citizens</td>
<td>Re-gain competitiveness / improve quality/range of services offered to citizens</td>
<td>Open new development perspectives for the city</td>
<td></td>
</tr>
<tr>
<td>Public participation</td>
<td>High priority</td>
<td>High priority</td>
<td>High priority</td>
<td></td>
</tr>
<tr>
<td>Other ICTs-based Initiatives</td>
<td>Head of ‘CitiesNet’</td>
<td>Head of IKAROS® Network</td>
<td>Member of ‘CitiesNet’</td>
<td></td>
</tr>
<tr>
<td>Broadband penetration</td>
<td>High penetration rates 20% Internet users (2008)</td>
<td>High penetration rates (2011) 50% for households 74% for businesses</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

4.3 The city of Kozani

The city of Kozani (70,420 inhabitants) is one of the most important energy production nodes of the Greek energy system. This is based on the lignite deposits available in the region, largely affecting the local economic structure, in which the energy sector prevails. The city nowadays, after the completion of the Egnatia East-West TEN-T road transport corridor, consists of a transport node, connecting the Regions of Macedonia, Epirus and Thessaly (Table 1). Moreover, it is in progress the development of a new business and...
residential district at the suburbs of the city, which, based on the high-speed ICTs network connectivity, aims at serving as an innovation pole, attracting talented workforce and highly innovative entrepreneurial activities.

The trajectory of the city of Kozani has been marked by the presence of lignite deposits, assigning to the city a specific role, that of the energy production node at a national level. This has conditioned the type of socio-economic development of the city, but also its environmental quality. Certain developments of the last few years (e.g. improved road transport accessibility, participation in the first Greek digital community - CitiesNet), have opened new development perspectives for the city. In the course of these developments, the ‘going smart’ efforts focus on the promotion of innovations in both the social and the business level, involving; community development based on digital inclusion, social integration, networking/participation of local population/businesses in the decision making processes; and promotion of cooperative clusters and regional innovation systems, shifting the emphasis of the local economic structure and adopting a more extravert orientation of the local economy, while at the same time creating new opportunities for innovation, employment and attraction of high quality labour force and innovative businesses.

The e-initiatives undertaken by the city of Kozani are:

- **e-Democracy – e-Participation:** promoting public participation in the decision making processes (e-dialogos platform);
- **Transparency:** by on-line transmission of municipality meetings;
- **Smart park system:** managing park places in the city;
- **GIS - Serving locally-based population needs:** providing information on everyday life needs;
- **Active citizens:** social networking platform/applications strengthening social cohesion through Citizen-to-Citizen (C2C) interaction.

- **Creation of an innovation pole at the outskirt of the city of Kozani:** co-financed by the state, the local government, the university and the private sector, a broader coalition for further supporting innovative development of the city.

### 5. Conclusions

Experience gained from the implementation of the smart city concept for sustainable urban development, but also from the previously discussed ‘smart’ city examples, show that successful ‘going smart efforts’ are strongly based on visionary leadership, good planning, as well as strong commitment. Moreover, time and effort should be devoted to the identification of community needs and expectations, based on traditions, culture, etc. in order to make decisions on proper ICTs infrastructure and relating city- and citizen-specific e-applications (Stratigea, 2012; Stratigea and Papadopoulou, 2014). The latter is of crucial importance as customer profiling or, even more, co-designing of services with the citizens can lead to more sustainable and effective e-services, providing to citizens a higher level of satisfaction and thus higher rates of ‘log-in’ potential (Stratigea, 2011).

From the study of the three Greek ‘smart’ city examples, the following conclusions can be drawn:

- The role of ICTs in sustainable urban management is nowadays greatly acknowledged by many Greek cities.
- The concept of ‘smart’ cities is gaining ground in Greece for coping with sustainable urban development challenges in the broadband economy. It should be noted that a large number of Greek cities are now on the way to deliberately invest on human capital and proper ICTs infrastructure and reap the benefits of ‘going smart’.
- **Isolation** is a key motive for many of the urban settlements ‘entering the game’ in the Greek context. From the three examples presented, the city of Trikalla and Kozani are discrete examples of previously isolated, declining urban environments.
- **Key issues** in all municipalities, although with somehow diversifying emphasis, are e-democracy and e-government, as well as the creation of innovative urban environments for attracting high skilled labour and investments in order to confront with new challenges and threats introduced by the broadband economy.
- All cities aim at the establishment of a new participatory culture in decision-making as a tool for consensus-building, smart and inclusive growth, and a balance between public and private interests.
- **The benefits** reaped by ‘going smart’ for the city of Kozani are not yet quite evident, as the city is at early steps. For the early-comer, the city of Trikalla, some primary positive impacts can be drawn as to the restraint of urban population decrease, the lesser vulnerability of the city in the economic crisis (ICF, 2011), the active participation in a range of national, European and international activities in the field of ‘smart’ city development, the participation in a range of EU Research Projects, focusing on the development of specific e-applications, the establishment of links with the pioneers in the ‘smart’ city development field (member of the International Network of e-Communities, Pan-European e-Participation Network PeP-NET, DigitalCities etc.), the strong interaction established between the city and universities at the national level, the dynamic development of the e-Trikalla A.E. (from 1 employee to 22 technology specialists within 5 years), etc. Concerning the city of Herakleion, a considerable progress has been achieved, bringing the city in a very short time period among the 21 ‘smallest’ cities of the world (ICF award in 2012, 2013 and 2014), while it has become part of wider networks (Eurotowns, Eurocities, Balkan cities) and leader of the IKAROS network.
- It should be stressed the pioneering role of local government towards driving ‘smart’ city initiatives and enhancing ‘log-in’ willingness of citizens in all three Greek case studies presented.

As barriers for ‘smart’ cities development in Greece can be considered the lack of:

- **financial resources** for developing proper communication infrastructure;
- knowledge stock, technical personnel and relevant equipment, as well as relating costs for getting access to this staff;
- ICTs skills of population in peripheral urban settlements; and
- ICTs culture that would strengthen the use of ICT applications in everyday life.

6. References


Websites

http://www.trikalaicity.gr/
http://www.ferialion.gr/
http://www.kozanh.gr/
http://cityclimateleadershipawards.com/barcelona-barcelona-smart-city/
http://www.issy.com/

1 ICF: Intelligent Community Forum
Chapter 3:

‘Seeking the international role of Athens in the context of globalization’

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Abstract:
The paper supports the aspect that a planning procedure is implemented in Athens the last twenty years, aiming to its transformation in technical and human terms to undertake the role of a semi-regional pole in the region of the Eastern Mediterranean, which is needed for the integration of the globalization system. The infrastructures and the main urban works were completed to meet the Olympic Games of 2004, the legal measures regarding the administrative and labour issues were undertaken during the previous four years, while the purchase of needed urban lands was obtained in the coastal area of the Athens plain (Elliniko, Hippodromos, Vouliagmeni). These developments should be considered as the main arguments for supporting our thesis that Athens is now re-organized and upgraded with new urban equipment, which will facilitate the settling of the headquarters of various multinational organizations and other private enterprises and organizations in its territory, aiming to the creation of a new semi-regional pole needed in the globalization process for the Eastern Mediterranean region.

Key-words: globalization, world cities, semi-regional pole, Eastern Mediterranean, Olympic Games 2004, Athens, infrastructure works and urban upgrading.

In our previous work (Marmaras, 2003: 55-9), the quest for the strategic aim of post-Olympic Athens was undertaken. An aim that was purposely, we believe, concealed by the authorities and those responsible, for unknown reasons. One could actually argue that, in contrast with the case of Barcelona that organized the 1922 Olympics, where a ‘self-definition’ of urban intervention prevailed, in Athens an ‘outside-definition’ predominated, which means that the particular aims of the largest athletic event in 2004 were never stated.

In reality, Athens had engaged in organizing the most important world athletic event, which was a privilege of strong nations, without actually knowing why the country had received this special treatment. As an excuse the unclear intention of resurrecting the spirit of the Olympic Games was offered – a contradiction in a world where economic interests and rights rule- with the simple return of the Games to their birthplace and the weak argument of indirect urban upgrading of the Greek capital, something which was needed to be done.

The aforementioned article was based on the hypothesis of the so called ‘globalization’ phenomenon that can be considered as the means of world governance. This is a worldwide development advanced by the Western World powers as well as China and Russia. In accordance with this idea, the establishment of a world network of leading and secondary cities-nodes is pursued as well as the creation of semi-peripheral principal and secondary cities adequately linked. This system is meant to gradually substitute the existence and role of nation-states. All relative scientific approaches on the subject (Hall, 1966: 7; Friedmann, 1986; Trift, 1989; Sassen, 1991: 171; Pacione, 2001: 276-8) place the world cities of New York, London and Tokyo at the top of this network. Nevertheless for the completion and operational adequacy of this network there is a need for smaller local urban centers. This latter network of smaller city-nodes will connect with the higher level one and is intended to host the headquarters of multinational organizations, such as monetary institutions, important enterprises, large hotel chains, that operate in the specific region.

Under this framework, S. Kratke (1993) proposed a triple layered urban network for Europe. In the first category fell, the obvious executive world cities; in the second one the traditional metros among which were Rome, Munich and Barcelona. Finally, in the third one were the most important urban regions at the national level, including Athens.

In the Eastern Mediterranean the lack of a peripheral center is manifest, obviously due to the geopolitical tensions and the instability there, not allowing the development of an urban node in the evolving global network (fig. 1). In the article mentioned before, it was supported that the real reason for Athens being chosen to undertake the ‘Olympic Games 2004’, was the aim to advertise or to make known it in a wider level the Greek capital and to establish it as such a center, a fact noted also by other Greek colleagues as early as 2001 (Oikonomou et.al., 2001: 123-33). In this line of thinking, one cannot regard accidental the news published in the Greek Press October 2003 – although officially denied – that the ‘Panathinaikos’ basketball club had been chosen, along with the Spanish ‘Real’ and possibly the French ‘Racing Paris’ to participate in the American NBA championship of 2007 (Kosmos tou Ependiti, 2003: 531).

The absence of another acceptable urban center for the specific role in the Eastern Mediterranean had contributed toward this direction. The main opponents of Athens for the role of a peripheral urban node were Istanbul and Rome. Istanbul gathered many advantages, claimed and continues to claim in many ways this role. Likewise the Turkish government expressed their ambition to install a center of world economy in
Istanbul (Massavetas, 2006:31); however, obviously due to the instability connected with the rising Islamic factor, it was considered unsuitable. Relating to Rome, even having the advantage of being a G8 country capital, it does not appear suitable, as it was seated in the outskirts of the region. Finally, the other urban centers in the greater area, such as Cairo, Alexandria, Tel Aviv and Beirut were rejected owing to the constant war conditions contributing to the absence of peace and leading to the disequilibrium of the specific region.

In the framework of this search, Athens presented advantages and disadvantages. The advantages were that it belonged, for a long time, in all Western international organizations, as was the case with Istanbul and Rome. At the same time, it held a central position in the Eastern Mediterranean geographic space. In terms of disadvantages, Athens was then an unorganized city lacking basic infrastructures, distancing her from developed western standards. Moreover, the inhabitants were hardly disciplined and highly demanding, creating difficulties in the implementation of critical decisions. Therefore, the elimination of these disadvantages needed to precede the acceptance of the request to host the Olympic Games and the fulfillment of Athens new role in international level.

With the occasion of the Athens Olympic Games, it is common knowledge, that considerable infrastructures were promoted, for the improvement of the urban services. Such were the Spata airport, the Metro, the Suburban Railway, the Attica Highway, the upgrading of Kifisia Avenue, the Unification of Archaeological sites around the Acropolis hill, as well as other secondary public works (Marmaras, 2003: 55-6 & Marmaras, 2012: 230-4). Nevertheless, there was still a lot to be done in constructions and legislation. The question that has to be asked is twofold: who would pay for the upgrading of Athens and who would take advantage of this reorganization and the intended new role?

In line with the above thesis and the forecast for the future of Athens, it had been supported even since 2003 that (Marmaras, 2003: 58):

“[… ] serious dangers are threatening, emanating from the change of uses that are expected to be introduced in the urban fiber of the capital…. The predestined future prospects… seem to be interlinked with the new character of Athens, as an upgraded center for the installation of multi-national companies and as a tourist destination. Today, the safeguard of land uses might be preached, but it is not certain that this will be realistic when the pressures will be powerful. This, since the most suitable site to welcome most of the new operations (office buildings, conference center, hotels etc.) is that of the old Palaio Faliro horse race track and the greater area. Therefore, the risk of transforming the race track into an area of high urban densities exists and thus the deterioration instead of betterment of the neighboring area conditions. A secondary implication will appear due to the fact that the most convenient place to house the officials employed in the future Faliro- who anyway will demand higher housing standards- is the near area of the old Elliniko Airport […]”

Furthermore, the then stated will of the Prime Minister to create a large park at Elliniko was gradually overcome by the pressure for housing development of the site. According to the 2006 declaration, a park of finally 4.000 stremata (1 stremma=1000 sq. m.) and 1.000 stremata housing was envisaged, the latter would contribute in the self-financing, the creation and maintenance of the park (Lialios, 2006: 7). In 2014, this prospect was totally revised and the park, it was stated would be limited to 2,000 strema while the remaining area would be covered with housing (Mandravelis, 23.3. 2014).

This, in our view, happened for the simple reason that as supported in 2004, the area of the old Airport in Elliniko offers an ideal place for a well protected housing project, fit for multinational officials, which means a gated community. What then hadn’t been anticipated, according to the prevailing approach, was the extensive land use change and the conversion into ‘high quality residences’ even of the prominent for its hotels Vouliagmeni peninsula. For whom did Vouliagmeni change uses from luxury tourist installations?

Was it to house the economically suffering inhabitants of the Athenian basin or to welcome the future incomers?

In relation, what does the promotion for the construction of the future Opera and National Library in the location of the old horse race track signal? Could it be included in an ad hoc plan that is under development and aims at moving the city center toward the sea in the greater area of Faliro – Kallithea? In our opinion, there, will be installed the new CBD (central business district) of the future Athens, included in the globalized system as a peripheral pole of the Eastern Mediterranean region. From the recent developments, that follow the economic collapse of the country since 2009, it is obvious that the needed land for the construction of basic buildings for the ‘New Athens’ is sold at symbolic prices. Prices that in reality are far from the prevalent rates in the beginning of the 21st century. A fact, manifest in the developments of the Vouliagmeni and Elliniko cases. Especially, in Elliniko the sale price, according to the Press, was lowered from the initially € 5 billion, estimated at the end of 2011 (Gelaltalis, 8.12.2011), to only 550 to 600 € million (Mandravelis, 23.3.2014). Finally, the agreement of totally € 915 million, of which 33% will be deposited directly, while the rest in a depth of 10 years, meaning € 577 million in present value with a predefined interest of 12% (Mandravelis, 27.3.2014: 20). The wages for the involved manpower – engineers, employees and laborers-, as well as their labor rights, as they have been reformed recently, have dramatically declined to low amounts compared to the Greek reality of the years before. As a result, the large profit from the future urban development and the programmed constructions in Athens will be directed to the invested capitals, that according to existing information will be Chinese, Arab and American (Mandravelis, 27.3.2014: 20). The main aspect, in our opinion, is that the basic circle activating these investments, as already noted, will not affect the direct national development, but will regard the multinational enterprises operating in the greater region of the Eastern Mediterranean and indirectly influence Greece. Therefore, it seems that the role of Athens in the
globalized network will be limited in delegating its important geographic position, which appears to be valuable for the international factor.

Concluding, the approach followed, does not have the ambition to interpret the general crisis facing Greece. In contrast, it tries to predict issues related to the crisis and concerns current technical matters regarding the future international role of Athens. These themes should be researched in order that the right actions could be undertaken to confront them. One could therefore, dare conclude that the urban area of Athens, is in the middle of a process of ad hoc planning and programming for the future of the city, already evolving, that appears to have begun since the end of the 20th century. Today, we are at a further fase of this planning process; specifically we are at the stage of changing land uses, the acquisition of the necessary lands and the construction of the first basic cultural installations. The latter were obviously chosen to make the whole endeavor appealing.

Definitely, seeing the issues from a narrow profitable view and away from ideological restrictions, one could not initially disagree with a future upgrading and strengthening of the international role for Athens. Nevertheless, the question remains: does this development serve the city inhabitants and the country itself, or is it directed toward the invested international capital at the least possible cost?

References

**Figure1.** The map of the Eastern Mediterranean Sea, showing the central position of Athens in the region.
IDENTIFYING THE FORMS OF GENTRIFICATION IN THE ATHENIAN LANDSCAPE
Urban and Regional Development the in European Union and planning Policies for Sustainable Growth

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Abstract:
Nowadays, through the economic crisis there is high interest of urban researchers as far as the urban renewal projects, their scale and the evaluation of their consequences in the city of Athens, at both human and building environment. Gentrification process is differentiated from global gentrification patterns, as the Athenian landscape presents particularities. At a second detailed glance, Athens follows a great variety of forms of gentrification. Sometimes either different forms are implemented at the same area or each neighborhood is affected from different form or there is combination of them. The identification is difficulty evaluated, but it’s worthwhile.

Key words: Gentrification, Urban renewal, Forms of Gentrification, Gentrination

1. Introduction
Athens, from the ancient times presents particular planning process. Nowadays, it is affected from the gentrification trends even if there is debt crisis. Many areas in her city core give flashes or trends of gentrification but in each case study, there are different patterns. This is because of various factors that produce this phenomenon or there are different types of gentrification that take place in each area? That’s an interesting question.

2. The Athenian Landscape & it’s particularities
Nowadays, Athens has evolved to a modern metropolitan area following the international standards. During 2000s her population peaked at 3.9 million, even if today there is tension to minimize her population, especially downtown. According to official statistics, during the last decade 2001-2011 the population of Athens was reduced by 18%, while a recent study by the University of Thessaly, recorded that the proportion of vacant retail space in the center of the capital reaches 40%! The city center is deteriorated in such a high degree that leads people to move from the center to the suburbs, the revenues are minimized, the municipality then cannot afford for the maintenance of services and public spaces, and more deterioration is produced. The economic crisis increase the pace of this procedure, especially in the city core. As the debt crisis deepens and impoverishment hits Athens, the city is transformed with emergent ghettoization trends in some enclaves (Leontidou L., 2012).

At the suburbs and exurbs, either from the previous decades there was population growth, but nowadays there is stability. Even if the city core loses population, the population density downtown is higher than the suburbs. Because of the fiscal crisis, the international migration flow is decreased, in contrast with the illegal migration which is increased. Till now, recuperation must be seen as an attempt by the Greek establishment at reproducing the symbiotic or ‘deferentially intertwined cultures’ prevalent in Greek society for so long (Afouxenidis A., 2006).

At the same time, native Greeks are discouraged cause of crisis to family formation, producing even lower rates of fertility. Population is shrinking, but this will cause problem to the population pyramid at the future. The Greeks have to bear with unscrupulous governments, politicians crudely dealing with the debt crisis according to orders from an EU–IMF–ECB ‘Troika’, but indifferent to rising unemployment levels and the brain drain caused by the emigration of the young educated unemployed Greeks (Leontidou L., 2012).

Other scientists highlight not only the international migration but also counter-urban movements within the Greek territory (Gkartziotis M., 2013).
As far as the building stock, urban space in Athens is fragmented in such a high degree, that even a
simple urban renewal program cannot be implemented as in other countries. This leads planning to occur in a
small scale, which shows that there is no change of the degraded identity. It raises important questions as to
the function, timing and location of this intervention, next to the burnt and decaying sections of the inner city,
which are left to decline (Leontidou L., 2012). Especially, at the central areas, many buildings with historic
value have lost their glory. For instance, there are some of the Olympic infrastructures of 2004 which remain
unused for two main reasons: no proper planning and implementation and expensive maintenance. Planning in
Greek cities is not implemented with punctuality and as a result the development in urban space is
spontaneously. Even the data of evaluating the gentrification process are absent especially in detailed scales or
the data per decades which cover the dynamic nature of the phenomenon are not available. Furthermore, the
owners of the building stock are individuals, and the government cannot take radical measures.

Even if there is economic crisis, the gentrification endures in some areas like Gazi or Psirri in the
center of Athens. According to Lees (Lees L., 2009), the present economic crisis that began in 2008 may
temporarily slow it down but is not likely to stop it.

As far as the practical evaluation of gentrification process, it is quite difficult as in each
neighborhood there are different factors that evolve the urban space. The setting of ideal parameters and the
establishment of appropriate indicators is difficultly implemented. Specifically, in Athens some researchers
propose a model where coexist all variations of gentrification, some others support that each case is unique
and there are different forms of gentrification. It is important to underline that gentrification in Greece as a
phenomenon, is not developed in the same way as in other western societies (Stergiou M. & G. Sidiropoulos).

3. The Forms of Gentrification
There is increasing acknowledgement in the literature of a more detailed ‘geography of
gentrification’ (Lees, 2000). The classical term of Gentrification is the middle class settlement in renovated or
redeveloped properties in order, inner-city districts formerly occupied by lower-income population (Derek G.
et al., 2009). (Figure 1)

The urban identity even at neighborhood mutates over time, and in recent years, it has spread more
and more widely a change in the concept of urban renewal that transcends the umbrella of quality renaissance
(Stergiou M. & G. Sidiropoulos). Gentrification as a term, process, idea has many extensions not only locally
but also in global scale as far as the qualitative factors. These extensions offer a better understanding of the
multiple dimensions of gentrification (Rerat et al., 2010).

The basic types of Gentrification according to Zura (Zura P. & E. Chrisolora, 2009) are the
following ones: 1.] First of all, is the New Build Gentrification in which new buildings are created in empty
fields, there is no displacement of local population but in the end there is development and upgrading
neighborhood. 2.] The second type is the Rural gentrification, which is the same with the classical type of
Gentrification but it happens only in rural areas, where gentifies are seeking for the idyllic rural landscape and
the authenticity of living close to nature. Where urban middle-class residents relocate to the countryside
(Philips M., 2010). 3.] The third type is Super-Gentrification. This is located on already gentrified landscape, which
requires even higher level of investments in the region and economic resources. Super-Gentrification is
also known as re-gentrification. 4.] The fourth type, is Student Gentrification, where many students are
located in an area, and there are many social, environmental and financial procedures. 5.] The fifth form, is the
Commercial Gentrification, in areas with commercial avenues or trade centers. 6.] The Tourism
Gentrification is the sixth one, where through residential and commercial uses there is the conversion of a
neighborhood in a relatively affluent and with an exclusive use, where commercializations of leisure and
tourist centers thrive. 7.] Inshore Gentrification, is the type of Gentrification that takes place in coastal areas,
mainly for building economy and tourism.

The most known form of Gentrification according to global researchers is the ‘new-build
gentrification’. This form is the construction of high-status housing in inner urban areas and notably on
brownfield sites (Davidson M. & L. Lees, 2009). Such projects are considered as a form of gentrification
because they share a series of features with classic gentrification: (i) reinvestment of capital in inner cities, (ii)
social upgrading of locale by incoming high-income groups, (iii) landscape changes, and (iv) direct or indirect
displacement of low-income groups (Rerat et al., 2010). There is high about this new form. Some other
scientists prefer to use the term reurbanisation and to keep the term gentrification for processes where direct
displacement takes place (Boddy, 2007). There are many kinds of displacement, direct and indirect. However,
displacement is much more than the ‘moment of spatial dislocation’, it is also the loss of place (loss of
neighborhood, community, family, and home) in a phenomenological sense. An influx of new-build gentrifiers
transforms the neighborhood’s social composition, which in turn shifts local politics and planning, generates
new commercial demands, and, subsequently, stimulates wider gentrification (Rerat et al., 2010).

Some other scientists underline the need to look further at the term of gentrification with the
classical concept. If initially the concept of gentrification was restricted to the rehabilitation of existing
housing stock in inner city areas by more affluent households, several authors have looked at the upgrading of
public spaces and commercial services too (Zukin, 1995). It points the importance both of the aesthetics of
built form and of the socially specific practices embedded in urban space (Rerat et al., 2010). Even in cases
like London city there are social and spatial contrasts between gentrified neighborhoods (Bridge G., 2003). As
a consequence, not only the type or the combination of gentrification types matters, but also social and
political background of each case study.
4. Discussion

In general terms, either the classic version of Gentrification or any other form of Gentrification has different meaning and implementation locally. These processes of urban change do not have a universal character but take on different forms in relation to their national, regional, or local context of emergence (Rerat et al., 2010). Around the Athenian landscape, there are mainly hybrids of any type of Gentrification. It’s so rare to detect an area with only the classical type of Gentrification with the exception of Gazi area. As it happens also in Montreal, where (Rose, 2009) “instant” gentrification often taking place in areas scarcely touched by classic gentrification.

The Greek planning policies around gentrification are complex and they get influenced by political–economical accounts. This is perhaps especially so for cities lower down the global city hierarchy, whereas – with a few recent exceptions (Rose, 2009). London or New York, are exceptional examples of implementing gentrification. In any case, depending on the area of research, it is better to focus at a time and the goal of the researcher as well as the assumptions chosen as the main components (Stergiou M. & G. Sidiropoulos).

In Athens, there are not so many distinctive examples of gentrification, as the phenomenon has started recently. From the above types of Gentrification, there is no possibility to see Super-Gentrification in Athens. As this intensified re-gentrification is happening in a few select areas of global cities like London and New York that have become the focus of intense investment and conspicuous consumption (Lees L., 2003). Possible example of Student Gentrification is around Zografou area at east Athens where many universities are gathered. The rest Greek universities and schools are spread around Athens, and there is no cohesion at one area.

Furthermore, inshore gentrification will be presented at the south suburbs of Athens, with the recreation of Elliniko area. New build gentrification is presented also at east, north and south suburbs of Athens where there are still empty fields and rural gentrification could be presented at smaller cities than Athens (but there is not so much distance from Athens) like Chalkida.

The main forms of Gentrification, that someone can spot at the main urban core of Athens is Tourism and Commercial gentrification. Tourism gentrification is implemented in areas close to the historical city center or the archaeological areas that exist around the city center. A characteristic example of Commercial gentrification is the Ermou street, which connects the Syntagma Square with Monastiraki (both metro stations), urban markets close to historical center. Even downtown Athens has many perspectives for gentrification projects; the urban semi-peripheral centers attract more attention. The ideal gentrification target is therefore the urban semi-periphery: an urban segment that will allow either for the outright expansion of the core, or else for the outsourcing and facilitation of functions necessary for its unobstructed operation (Vradis A., 2014). This is quite frustrating, especially in a city with such a historical background! But, it is interesting to spot the peripheral semi-centers that occur like satellite gentrification processes around the city center. A characteristic example is the Egaleo municipality, which is in the borders with Municipality of Athens, it has metro station and before some years it was quite deteriorated. As years go by, the “image”of Egaleo changed, in a center with an important market, close to the city center, with low population density and ideal area for gentrifiers with young children.

Another characteristic of Greek reality as far as the gentrification is that in the same area there are many forms or motives for creating gentrification. For example, at Kerameikos area, at the west side of the area there are nests of cultural events (it is known that artists are agents of gentrification). Recently, there is union of culture and economy, even in alternative economic practices (Indergaard M., 2013). In comparison with the east side of the area, where almost every road has it is civilization (Agisilaou street is a small Chinatown or Iasonos street is the road with eastern-european block brothers), there is high deterioration of urban space. Especially this area could be used as an example of tourism gentrification (promoting the deteriorated places as it occurs in Harlem area in New York). As Sandford underlines tourism as an industry in an economically depressed area must sell its product almost before it is marketable (Sandford M, 1987). This contradictory situation shows that there is possibility of gentrification, but in which area by tourism...
gentrification that promotes cultural events or the deterioration and different gangs “neighborhoods”. The ideal solution will be Kerameikos to be transformed in urban cultural market rather than an area of gangs, as it was supposed to be even in planning studies during the 1990s (Souliotis N., 2013).

Tourism gentrification highlights the twin processes of globalization and localization that define modern urbanization and redevelopment processes (Gotham K., 2005). Tourism may be a ‘global’ force, it is also a locally based set of activities and organizations involved in the production of local distinctiveness, local cultures and different local histories that appeal to visitors’ tastes for the exotic and unique (Gotham K., 2005). Many researchers support that gentrification process can reboot the local economy and develop new horizons. Even Harvey (Harvey D., 2010) underlines how the most recent wave of global financial upheaval, ostensibly bursting out the ether of financial abstraction, should be traced back to the only-too-grounded world of urban development. In the end, it is important to refer to the need of gentrination except for gentrification. A gentrification process in Greece will succeed if previously there is gentrination in planning. What is gentrination? Gentrination is the equivalent process of gentrification at the national, instead of the neighborhood level (Vradis A., 2014). Only if there is glocality, a project like gentrification will be implemented in a Mediterranean city with so many particularities like Athens.

4. Conclusions

Athens occurs likes other cities in civilization, but because of the fiscal crisis her cultural and political economy is not sustainable. Urban phenomena like gentrification, will give solutions, as the promote the locality of each neighborhood. Especially, for the Greek city core areas, the most proper and ideal forms for gentrification is the cultural tourism gentrification, as it boost neighborhood by giving future prospects to locals and preserves the glorious past.

5. References

Zura P. & E. Christora, 2009, “Exploring gentrification through the example of Metaxourgio area”, NTUA.
chapter 5:

everyday urban mobility and urban form. cases studies in nikaia and dionysos

(athens metropolitan area)

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abstract:

this study explores the relation between everyday urban mobility and urban form with a comparative case study in nikaia and dionysos (athens metropolitan area). firstly, the study explores the bibliography concerning the relation between urban form and urban daily mobility and concludes that the definition of urban form based exclusively on quantitative data of density and distance is not suitable for the study of urban daily mobility because it doesn’t take into consideration the socio-spatial differentiations in peri-urban spaces. then, based in a recent research (ramadier, petropoulou, haniotou et al, 2011) this research focuses on the relation between urban daily mobility (with the use of mobility notebook and a semi-similar investigation completed with participatory observation), eco-landscapes (with the use of satellite images, maps and in city photos) and social characteristics (with a long questioner). the study focuses on the peri-urban space of municipality of athens, in two municipalities with opposed social and residential characteristics (nikaia and dionysos).

keywords: everyday urban mobility, commuting, urban form, eco-landscape, urban landscape, socio-spatial segregation, sub-urbanisation, peri-urbanisation, urban sprawl, nikaia, dionysos, athens.

1. everyday urban mobility, socio-spatial characteristics and urban morphology

the discussion on the topic of “everyday urban mobility” has occupied several researches concerning the spatial relationships of various social groups using different types of transportation means: some studies focus on commuting to work, new suburbs and urban development (berger m. e, 1996). another dimension comes up from a sociological perspective emphasizing in the exclusion - due to automotive - of older (over 60 years), and young people (up to 15 years), particularly in the suburbs who do not have access to public transportation (fokker s., grotz r., 2006, pinson d., despres c., ramadier t. dir., 2006). some behavioral studies have focused particularly on the consumption of urban space through different grouped attitudes, different ways of daily commuting and the differences observed between the behavior of the inhabitants in the city centers and the suburbs (pelegrino g. dir., 2012). some anthropological studies have also focused on the role of "everyday urban mobility" in daily life and reproduction of urban space on different ways to travel, consumption and reproduction of urban space according to gender (jirón p., 2007 and knowles c., 2011).

recently, a discussion on the relationship of “urban form” and "everyday urban mobility" has opened. on the one hand, it is argued that this relationship exists and that the daily movements change according to the distance from the center and that this mode of travel (especially by car) has a serious environmental impact, and therefore the idea of the compact city is been supported. on the other hand, some papers support the reverse: that the daily movements are not affected negatively by urban sprawl especially where developing new towns on the edge of cities. finally, there are studies suggesting that a clear causal relationship between the distance from the center, the urban density and the use of car does not exist and that these relationships are more complex (pouyanne g., 2010).

as shown above, the problem lies in the definition of urban form. in the first case (debate about the influence of the density of the city and the distance from the center to "everyday urban mobility") the term has purely quantitative characteristics such as density of buildings, proximity to the center etc. the concept of urban form is also used in many papers concerning the analyses of land cover in urban areas (example urbanatlas: commission 2011). in the case of comparative research between england and u.s. authors conclude: "while the effect of income on daily travel is similar for the us and great britain, the effect of density is more pronounced in the us" (giuliano g., narayan d., 2003: 2295–2312).

beyond these controversies, some researches focus on qualitative characteristics of urban form such as land uses, historical, ecological and socio-economic urban elements (see also the recent researches in canada), and conclude that a particular relationship exist between daily mobility and some strongly positioned socio-economic sub-urban landscapes (keil r. (ed.), 2013).
The issue of exclusion of the poorer popular strata through daily mobility has preoccupied the symposium on mobilities and mobilizations of the urban poor (Jaffe R., Klaufus C., Colombijn F., 2012) were a focus on differential mobilities is used to analyze how mobility differences within or between social groups are (re)produced in local power constellations. Recent research in Spain, considers the social aspects of daily mobility, which is studied as a social product.

“Urban and mobility policies, urban dispersion, greater automobile use and new trends in the socio-technical organization of cities exert a great influence on these unequal social positions, promoting new forms of exclusion and social risks” (Camarero L., Oliva J., 2008: 344–362).

Respectively, a research in Santiago Chile linked urban sprawl and new social spatial segregation. The paper concluded that the study of socio-spatial segregation is usually based on static elements such as social characteristics of residents who live in one or another area of the city, land etc. while there are also other items related to daily mobility. This gives considerable weight to the exclusionary practices associated with urban daily mobility (Jiron, Lange, Bertrand, 2010). The same research suggests that social exclusion phenomena due to exclusion from moving are particularly marked in major Latin American cities. In fact, in recent years many social movements that have the topic of “commuting” in the center of their interest are growing and they are becoming important social movements (e.g. free ticket to Brazil; do not pay the road tolls in Greece etc.). These movements are organized with participatory forms of meetings, utilizing the capabilities of internet and mobile telephony. The relationship between the “right to the city” and the “right to mobility” is an issue that particularly occupied some authors (Cresswell T., 2006: 752-753).

Taking in consideration the above discussion, this paper researches the relationship between socio-spatial segregation, urban landscapes and everyday urban mobility. A previous research with this perspective (Ramadier, Petropoulou, Bronner, 2007) focused on qualitative characteristics of urban form (such as land covers and land uses, historical, ecological and socio-economic urban elements) using the term of “urban eco-landscape” (Petropoulou, 2003). It concluded that there is a special correlation between the daily urban mobility and urban landscapes, particularly where these landscapes are strongly socially characterized (from HLM to HLM, résidentiel - résidentiel, historical centers-historical centers). The methodology developed in Ramadier, Petropoulou et al. (2007, 2011 and 2013) tends to take into account the behavioral aspects of the environmental values. The method combines the morphological analysis of the urban space and the observation of spatial behaviors. Thus, the collected information needs to take into account both the daily mobility of individuals and their relationship with space, structure of the urban space, environmental attributes, and the position of the individual in the social structure.

2. Methodology - The case of Nikaia and Dionysos in Metropolitan Region of Athens

This paper is based on an earlier research carried out in Strasbourg and Thessaloniki (Petropoulou, Ramadier, in press) specifying it for Municipalities of Anoixi and Nikaia (Metropolitan Region of Athens) under the combination of quantitative and qualitative (participatory) research (see the thesis of Stella Zenetou, 2014). The urban space is approached through the correlation of two concepts from different disciplines: the concept of urban eco-landscape (urban geography, landscape ecology and remote sensing, see: Petropoulou, 2003) and the concept of “identity of mobility” (environmental psychology and social psychology, see: Ramadier, 2002). The study examines the effects of social factors in daily journeys and landscaping preferences of mobile. This method focus particularly on the social factors affecting eco-landscaping choices movements and understanding the processes creating "characteristics of different forms of everyday mobility,” according to their relationship with the lived “eco-landscapes” which is socially constructed, as demonstrated. In a second phase, it is possible to expand this research with mental maps and social data-information and representations (those associated with an ad-hoc item of the individual’s spatial representation) (Ramadier, Petropoulou, Hanistou et al, 2007 and 2013). The methodology is presented in the book of Petropoulou, Ramadier (in press).

For the need of the research, a total of 36 people (18 residents of Neapolis of Nikea Municipality and 18 residents of Settlement Agioi Angeloi (Holy Angels) of Dionysus Municipality, men and women, aged 18-50 years have been involved. People of age less than 18 and over 65 year old have not been examined, because of the particular features presented in their daily mobility. According to the maps of Atlas of Greek cities and other researches (Maloutas, 2000, Emanouel, Zakopoulou et al,2008, Petropoulou, 2013, Skayannis, 1990, Milakis, 2006, Leonidou, 2001) both municipalities have quite different socio-spatial characteristics in terms of type of habitat, education level, type and position in the work, access in individual cars etc.

The interviews were semi-directed and related to topics such as: occupation, level of education, place of residence, place of previous residence, place of emotional attachment, opinion about the daily mobility in the city, preferences for traveling related with specific activities, accessibility in residence and work etc. The spatial behavior of the questioned is based on his/her personal self-observation and recording of his/her movements during a three days period (with the use of a mobility notebook). The “mobility notebook” shows the routes and activities of interviewees, the time required to move and the means of transportation.

The eco-landscapes maps were made with field research and using satellite imagery and digital road map (Google earth and Google maps). To create the maps with the routes of the respondents the Google maps program was used with the command “create map” set the points and paths of mobility notebook. The routes of cars were made by automatic calculations of Google maps and public transportation was designed manually. Finally, the maps created stored in a format recognizable by the Google earth (.Kml), so it can be used without a network. The routes were digitized with different colors according to the medium used: walking, cycling, public transport (metro, tram, bus) and car. In this research took part 36 people in total x3
daily journeys each, in total 108 daily routes and 643 total daily movements, 9 men and 9 women from each
district, aged 18-50 years, median and highest level of education, living in the same place on average 14.23
years in Anoixi (Spring) & 17.5 in Nikaia.

3. Conclusions and Discussion
In this research, the springboard for the analysis of Municipalities of Nikaia and Dionysus was the observation
of socio-economic disparities, particularly in the housing sector and the physiognomy of the urban
environment. Finally, there seems to be a reciprocal relationship between social and geographic space and a
strong involvement of social relations with the spatial transformations and urban landscapes.

All respondents said that, in order to go to work or university schools, they consume considerable
time and specifically 36 minutes on average the residents of Anoixi and 42 minutes respectively of Nikaia. We
distinguish six types of mobility: central, linear, sectoral, bi-sectoral, multisectoral and diffuse. The type of
mobility depends on the type of activity (work, leisure etc) the gender and the age.

On Municipality level, 38% of resident’s mobility in Anoixi is made by public transport and 90%
respectively of Nikaia. Still, young people’s mobility (aged 18-25 years) of both municipalities is made by
public transport by up to 92%. Respectively, the upper percentage is: for student’s mobility 92%, employees
63%, self-employed 20% and the technicians - merchants 66%.

Middle-aged residents of Anoixi (by 100%) use their car in order to serve their needs. The area of
their residence is a landscape of purely residential type. The commercial centers, public services, banks,
schools educational institutions, etc., are in a remote area.

In contrast, middle-aged residents of Nikaia use their cars exclusively in order to meet the needs of
entertainment and social obligations. For daily obligations, they are moving almost always on foot while living
in an area of mixed use. Retail trade, pharmacies, doctors, schools and many others, are almost next to their
residence.

According to participatory research and interviews it seems that residents maintain contacts with the
former place of residence. In particular, 38% of the Holy Angels inhabitants lived in the past to municipalities
Nikaia and Korydallos (similar eco-landscape) of which 90% maintain close contact with the area either
because of their employment or visiting relatives and friends. The 88% of the same participants resided in
other dense areas with history of popular auto-construction (Peristeri, Rentis etc) or areas with dense buildings
of “policatikia” type (Kipseli, Paphlithea, Patissia), of which 72% maintain emotional relationships and
communication.

The daily movements of all respondents towards the areas of the historic urban center of Athens are
very few but less than daily commuting to the historic center of Piraeus. Exceptions are young students
irrespective of place of their residence who are much more connected with the historic center of Athens due to commuting for training and recreation. However, according to an interview with Anoixi residents who do not reside in the settlement Holy Angels, students who live in the suburbs (studying in university schools located near the center of Athens) move to the historic center with the sole purpose to meet the waiting time for next lecture of their school. In fact, in their leisure time for recreation, they prefer the northern green suburbs and should they choose to move to the center of Athens they prefer Kolonaki and other considered ‘noble’ areas.

Many residents of Dionysus Municipality (Anoixi, Ag. Stefanos, Rodopoli, Stamata, Kryoneri, Drosia, Dionysus) that move only in areas dominated by houses with gardens, show a uniformity in their daily mobility with a limited perceptions in images and landscapes, have contact with the same social and cultural groups and they don’t have frequent access to the happenings of the urban center and are not connected with urban city life (urbanity). The inhabitants of Nikaia that don’t move out of local area (very small group of respondents) have limited perceptions regarding their relationship with nature (excluding those who move frequently in rural areas of Greece).

According to the participatory observation, the highest proportion of people moving on foot to the area of Anoixi are men up to 50 years who wish to combine natural environment with sports. But the rest of the Anoixi residents don’t make use of their position of residence (near to nature) for daily walks on foot and so they may have limited perceptions regarding their relationship with nature. These issues open a new debate on the impact of suburbanization and social development of cities beyond the frames of this work.

For residents of Nikaia, the largest percentage of walking people are youngsters regardless of gender because they possess much more free time, feel the need to build new contacts with other people and meet friends, show special interest to know their city, combine their movement with the purchase of consumer goods, entertainment and sports.

It is finally interesting that most of the inhabitants of both regions declare that they have recently restricted their movements over long distances for recreation and personal relationships, due to crisis, increase of the price of gasoline and increase of the amount they have to pay for the public transportation monthly pass. This is an issue that needs further investigation.

The first results of the study are statistically significant in terms of number of trips that were examined (643 total daily movements) but still limited to only 2 districts in Athens. The research will continue and will be enriched with more questionnaires in other areas of Athens to comparing the results with a similar research done in Thessaloniki and in Strasbourg.

4. References
Cresswell T., 2006. The Right to Mobility: The Production of Mobility in the Courtroom. Editorial Board of Antipode 735-754

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Pinson D., Despres C., Ramadier T. (coord.), 2006. "ACI: Sociétés et cultures dans le développement durable" Morphologie de l'étallement urbain et exclusion par l'automobilité : "La non-accessibilité par l'automobilité ; le cas des adolescents et des personnes âgées habitants des banlieues". Université Laval, CIRTA, Laboratoire Image et ville, GIRBa

Pouyanne G., 2010. Urban form and daily mobility: methodological aspects and empirical study in the case of Bordeaux European Transport Trasporti Europei n. 44 (2010); 76-95


Ureta S., 2008. To Move or Not to Move? Social Exclusion, Accessibility and Daily Mobility among the Low-income Population in Santiago, Chile, Mobilities, 3:2, 269-289
Section 8: Innovative Community and Social Development
Evaluation and Choice of University Courses Using the Analytic Hierarchy Process Decision Making Method

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Abstract:
The aim of this paper is to use the Analytic Hierarchy Process (AHP), which has been developed by Saaty (1977,1980,1994,2008), for the Ranking of the following University Courses: “Introduction to Computing”, “Business Statistics” and “Financial Mathematics”, according to student evaluations, through a Questionnaire, with respect to the following three criteria: “Teaching Effect of Professor”, “Effect of a good course book” and “Easiness for getting pass grade at exams”. The subcriteria for the “teaching effect of Professor” are: “Academic qualifications”, “previous professional Experience”, “Communication ability”, “Friendly conduct” and “Research activity”. The subcriteria for the criterion “Effect of a good course book” are: “Clear exposition of content”, “Inclusion of many examples” and “Accessibility of Coursebook”. The subcriteria for “Easiness for getting pass grade at exams” are: “Avoidance of stress by good preparation”, “Obtaining a partial pass grade by continuous assessments during the course” and “Existence of knowledge about the subject from previous courses”.

The evaluators were a random sample of 480 students at the University of Athens, Greece and at the Technological Institute of Athens. A questionnaire was distributed to them containing questions on Demographics, Pairwise Comparison of the three Courses with respect to the three Criteria and Pairwise Comparisons of the subcategories of every Criterion. After applying the Analytic Hierarchy Process, we found the weights corresponding to the “importance” of the courses.

The final ranking was the following in descending order: First course: “Introduction to Computing”, Second course: “Business Statistics” and Third course: “Financial Mathematics”. The Consistency Ratios were calculated for all 7 pairwise comparison matrices (PCM) and were all less than (0,1), which is an important requirement for the consistency of the pairwise comparisons. An important finding is that, for students, the “Communication ability” and “friendly conduct” of a Professor carries more weight than his “research activity” and that the “homework given to students during the course” carries more weight than “knowledge accumulated from similar previous courses”. Finally, students rate higher a “book containing many examples” presented with clarity than the “effort which they make in obtaining the course book.”

Key words: Analytic Hierarchy Process, Pairwise Comparison Matrices, Normalization of Matrices, Consistency Ratio, Operations Research, Student evaluations

AN ANALYTIC HIERARCHY PROCESS MODEL FOR EVALUATING AND COMPARING UNIVERSITY COURSES

1. INTRODUCTION AND LITERATURE REVIEW
The evaluation of courses and teaching effectiveness has been a research topic of continuous interest. A great deal of research has been devoted in determining if the teacher’s effectiveness of teaching (SET) is a function of the instructor who teaches a course rather than the course that is taught. (Centra 2003), (Marsh 2007), (Marsh and Roche 1997; Watkins 1994). Of particular interest are the review papers of Feldman...
A multi-criteria method for decision making that uses qualitative and quantitative data is the Analytic Hierarchy Process, introduced by Thomas L. Saaty (1977, 2013). This important decision-making technique has been applied to decision problems in many disciplines, such as economic analysis, regional planning, and forecasting (Vargas 1990), (Alessio and Ashraf 2011). Important reviews on Analytic Hierarchy Process are: (Ho 2008), (Vaidya and Kumar 2006), (Subramanian and Ramanathan 2012).

We shall review some important papers on AHP which have been published recently. R.W. Saaty (1987) investigates the considerable qualities of AHP as a method of measurement which uses ratio scales and gives the axioms and some of the crucial theoretical underpinnings of the theory. R.W. Saaty (1987) pays special attention to departure from consistency of the PCM, because the consistency is necessary for the validity of the AHP. The AHP method uses pairwise comparison matrices (PCM) for making decisions. A recent paper (Lin et al 2013) contains a statistical approach for a consistency test in (PCM). The authors use two approaches for testing the consistency of the (PCM), the deterministic approach and the statistical or stochastic approach. The interested reader is referred to the paper of Ergu et al (2011).

The Bootstrap, a nonparametric statistical method, (Efron and Tibshirani 1994) is applied for the construction of a (PCM) when the evaluators are uncertain about their judgements and they do not give single-valued pairwise comparison judgements but their answers lie within an interval. The Bootstrap method is used to find nonparametric means in the interval judgements on AHP. (Halim et al, 2007).

Blanas (2008) uses AHP in the selection of the e-learning support platform based on qualitative analysis of interviews with key actors using the platform. In a research paper, (Tsimidou et al 2010) the authors attempt to obtain a clearer picture of evaluations of quality determinants in Greek Higher Education as they are perceived by the students. The authors use the AHP for finding the relative importance weights of quality determinants that influence the educational process in Greek Higher Education. These quality determinants are the following: “Academic Staff”, “Administration Services”, “Library Services”, “Curriculum Structure”, “Location”, “Infrastructure” and “Career Prospects”. For the criterion of quality: “Academic Staff”, the authors suggest the following subcriteria: “Academic Qualifications”, “Professional Experience”, “Communication Skills”, “Friendliness”, “Business Links” and “Research Activity”.

The subcriteria for “Curriculum Structure” are the following: “Course content/Book”, “Educational Material”, “Structure of Courses”, “Course Structure info”, “Elective Courses”, “Laboratories” and “Weekly Timetable”. A point which needs further investigation is that the students who have answered the questionnaire in the above paper, believe that the subcriterion “Content of the Course” is not very attractive compared to the other subcriteria of “Curriculum Structure”. (Chinidou et al 2010)

In Education the AHP has been applied in selecting University Faculty (Grandzol 2005; Saaty et al 2001). In Marketing, the AHP, has been used for evaluating and comparing website usability. (Presley and Fellows 2013). In a paper by (Altuntas et al 2012), the AHP is used for measuring hospital service quality.

AHP is a popular multicriteria method for making decisions around the world. In China, nearly 100 Universities offer courses on AHP and many Ph.D. Theses are published annually on the subject of AHP. Up to now, 900 research papers have been published on the subject in China and there is a Chinese Journal devoted to the study of AHP (Sun and Hongkai 2005).

In an important review paper (Sipahi and Timor 2010), the authors categorize the applications of the Analytic Hierarchy Process (AHP) and Analytic Network Process (ANP) in various fields such as environmental management and agriculture, the energy, transportation and construction industries, education, logistics, research and development, telecommunication industry, banking and finance, urban development, defense industry and military, government, marketing, tourism, archaeology, mining and auditing. During the period 2005-2009, 600 papers related to AHP and ANP have been published, according to the same authors.

According to (Forman and Gass 2001), the decision circumstances in which the AHP can be applied include:

- a. Choice. The selection of one alternative from a given group of alternatives, usually where there are multiple decision criteria involved.
- b. Ranking. Ordering a set of alternatives from most to least desirable.
- c. Prioritization. Determining the relative advantages of members of a set of alternatives, as opposed to selecting a single one or merely ranking them.
- e. Benchmarking. Comparing the operations and processes in one’s own organization with those of other best-of-breed organizations.
- f. Quality Management. Dealing with the different points of view of quality and quality improvement.
- g. Conflict Resolution. Settling Disputes between Companies or groups of workers with apparently incompatible goals or positions. (Saaty and Peniwati 2008), (Saaty 2008).

In this paper, we apply the Analytic Hierarchy Process (AHP) in order to rank three courses “Introduction to Computer Science (INTRODUC_TO_COMPUTING)”, “Business Statistics (BUSINESS_STATISTICS)” and “Financial Mathematics (FINANCIAL_MATHS)”, with respect to the three criteria: “Teaching Effect of Professor (EFFECT_PROF)”, “Effect of a good Course Book (CBOOK)” and “Ease of passing the exam (EASINESS)”. 

1. AHP METHODOLOGY

2.1 SETTING OF THE OVERALL GOAL, THE PAIRWISE COMPARISON MATRIX FOR THE THREE CRITERIA AND THE EVALUATION SCALE

In general, a hierarchical model of a social problem might be one that descends from an overall goal (focus), down to criteria, down further to subcriteria which are subdivisions of the criteria, and finally, to the alternatives from which one must make the choice. In our case, we have:

OVERALL GOAL: the choice by the students of one University Course with respect to three criteria (CHCOURSE).

CRITERIA: “Teaching Effect of Professor (EFPROF)”, “Effect of a good Course Book (CBOOK)” and “Easiness for Getting Pass Grade at Exams (GPEXAM)”.


The subcategories of criterion: “Teaching Effect of Professor (EFPROF)”, are:
- Academic Qualifications (ACQUAL)
- Previous Professional Experience (PEXPER)
- Communication Ability (COMMNCA)
- Friendly Conduct (FRIENDC)
- Research Activity (RACTIV)

The subcategories of criterion: “Effect of a good Course Book (CBOOK)”, are:
- Clear exposition of contents of course (CLEARC)
- Inclusion of many examples (EXAMPLE)
- Accessibility of Course book (ABOOK)

The subcategories of criterion: “Easiness for Getting Pass Grade at Exams (GPEXAM)”, are:
- Avoidance of Stress by good preparation for exams (ASTRESS)
- Obtaining a partial Pass mark by Continuous Assignments during the Course (CASSIGN)
- Existence of knowledge about the subject from Previous Courses (PCOURSE)

To obtain the weights for the three criteria or objectives, we begin by forming the first pairwise comparison matrix (PCM) called A. Matrix A is a (3x3) matrix and the entry in row (i) and column (j), labeled \( \alpha_{ij} \), indicates how much more important criterion (i) is than criterion (j). For consistency we set \( \alpha_{ji} = 1/\alpha_{ij} \). The following integer-valued scale measures the degree of “importance”.

<table>
<thead>
<tr>
<th>Value of ( \alpha_{ij} )</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Criteria (i) and (j) are equally important</td>
</tr>
<tr>
<td>3</td>
<td>Criterion (i) is slightly more important than criterion (j)</td>
</tr>
<tr>
<td>5</td>
<td>Criterion (i) is strongly more important than criterion (j)</td>
</tr>
<tr>
<td>7</td>
<td>Criterion (i) is very strongly more important than criterion (j)</td>
</tr>
<tr>
<td>9</td>
<td>Criterion (i) is absolutely more important than criterion (j)</td>
</tr>
</tbody>
</table>

The next step is to set up pairwise comparison matrices for the 3 courses compared with respect to each of the three criteria, in the same manner as we formed matrix A.

We call them: B (Comparison with respect to criterion (EFPROF)), C (Comparison with respect to criterion (CBOOK)), D (Comparison with respect to criterion (GPEXAM)).

1.2. OBTAINING STUDENTS’ EVALUATIONS THROUGH A QUESTIONNAIRE

The entries in the pairwise comparison matrices A, B, C, and D are the mean values of the answers to questions contained in a structured Questionnaire which has been distributed to (480) students at the University of Athens and at the Technological Educational Institute of Athens who have been taught the three courses.

1.3. THE FOUR PAIRWISE COMPARISON MATRICES

From the answers to the Questionnaires, we obtain the following Pairwise Comparison Matrices:
### 2.4 Normalization of Matrices and Derivation of the “Importance” Weights

The ideas behind AHP are fairly intuitive but the mathematical reasoning required to find the weights for each pairwise comparison matrix are quite advanced.

We find the weights for matrix A for the three criteria using the following two steps:

1. For each of the columns of A, we divide each entry in the column by the sum in the entries in this column. This yields a new matrix $A_{\text{norm}}$ for "normalized".

2. We transform with the same procedure, matrices B, C, and D, which are the Pairwise Comparison Matrices for the three Courses with respect to the three criteria, into the normalized matrices $B_{\text{norm}}$, $C_{\text{norm}}$, and $D_{\text{norm}}$. We also derive for each matrix, the corresponding Scores for each Course, with the same procedure, we used for the derivation of weights in the case of matrix A. Hence, we have:

$$A_{\text{norm}} = \begin{bmatrix} 0.225806452 & 0.157895 & 0.3043478 \\ 0.4516129030 & 0.315789 & 0.2608696 \\ 0.322580645 & 0.526316 & 0.4347826 \end{bmatrix}$$
For the final Ranking of the three Courses, we find the product of the Matrices:

\[
\begin{bmatrix}
S_{11} & S_{12} & S_{13} \\
S_{21} & S_{22} & S_{23} \\
S_{31} & S_{32} & S_{33}
\end{bmatrix}
\]

2.5 CALCULATION OF THE CONSISTENCY RATIOS FOR EACH PAIRWISE COMPARISON MATRIX

A matrix is said to be consistent if it holds: \( \alpha_{ij} \alpha_{jk} = \alpha_{ik} \) for every i, j, and k.

We must calculate the Consistency Ratios for every pairwise comparison matrix and these Ratios, according to Saaty (1977) must not exceed appreciably (0.10), otherwise we must revise some of our judgements. We calculate, now, the Consistency Ratio of the first pairwise comparison matrix A. Similarly, we can calculate the Consistency Ratios for the other matrices of the problem:

First, we find the product of Matrix A with the weights for matrix A (or, the Scores for the other Matrices). It is:

\[
\begin{bmatrix}
0.644838992 \\
0.177478622 \\
0.177682386
\end{bmatrix}
\]

We form the matrix:

\[
\begin{bmatrix}
0.644838992 & 0.509346 & 0.7216239 \\
0.177478622 & 0.079536 & 0.1988401 \\
0.177682386 & 0.350467 & 0.1988401
\end{bmatrix}
\]

\[
\begin{bmatrix}
0.0774749 \\
0.134091 \\
0.16110287
\end{bmatrix}
\]

\[
\begin{bmatrix}
0.1721664 \\
0.66687548 \\
0.2089017
\end{bmatrix}
\]

Each element of Matrix R is the ratio of the corresponding element of Matrix P divided by the corresponding element of matrix W, e.g. 3.053213 = (0.700253439)/(0.22934967).

The Consistency Ratio is given by:

\[
CR = \frac{(\lambda_{\text{max}} - n)}{(n - 1) + r_n},
\]

where, \( \lambda_{\text{max}} \) is the maximum eigenvalue given by the Average of the elements of matrix R, \( n \) is the number of alternatives for this problem (n=3) and \( r_n \) is a random number given by Saaty (1977), for n=3, the number of alternatives (\( r_n = 0.58 \)). The Consistency Ratios calculated in the same manner for the matrices A, B, C, and D, using Microsoft Excel, are given below (Winston, Albright and Broadie 2001; Ragsdale 2001; Expert Choice, 1995):
Table 2. Consistency Ratios for the Pairwise Comparison Matrices

<table>
<thead>
<tr>
<th>Pairwise Comparison Matrix</th>
<th>Consistency Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.069332</td>
</tr>
<tr>
<td>B</td>
<td>0.049787</td>
</tr>
<tr>
<td>C</td>
<td>0.0818</td>
</tr>
<tr>
<td>D</td>
<td>0.066772</td>
</tr>
</tbody>
</table>

Note, that every Consistency Ratio is less than (0,10), according to the guidelines of Saaty (1977). Hence, the judgements of the evaluators are fairly consistent.

2.6. THE PAIRWISE COMPARISON MATRICES FOR THE SUBCRITERIA OF EACH CRITERION

Now, we turn our attention to the pairwise comparisons of the subcriteria corresponding to each criterion. We form the following pairwise matrix, E, for the subcriteria of the first criterion: “Effectiveness of teaching Professor

The subcategories of criterion: “Teaching Effect of Professor (EFPROF)”, are:
Academic Qualifications (ACQUAL)
Previous Professional Experience (PEXPER)
Communication Ability (COMMNCA)
Friendly Conduct (FRIENDC)
Research Activity (RACTIV)

SUBCRITERIA OF 1ST CRITERION, MATRIX E

\[
\begin{bmatrix}
ACQUAL & PEXPER & COMMNCA & FRIENDC & RACTIV \\
ACQUAL & 1 & 3.62605042 & 3 & 3.662473795 & 3,400835073 \\
PEXPER & 0.275782155 & 1 & 3.45511482 & 3.586638831 & 3.347280335 \\
COMMNCA & 0.333333333 & 0.289425982 & 1 & 3.111 & 2,333 \\
FRIENDC & 0.273039496 & 0.278812573 & 0.32144005 & 1 & 0.9 \\
RACTIV & 0.294045427 & 0.29875 & 0.42863266 & 1,111111111 & 1
\end{bmatrix}
\]

After normalizing the above matrix E, in the same manner as we have done with matrix A, we find the following weights:

\[
\begin{bmatrix}
ACQUAL & 0.41772574 \\
PEXPER & 0.26445576 \\
COMMNCA & 0.15792916 \\
FRIENDC & 0.07550846 \\
RACTIV & 0.08438088
\end{bmatrix}
\]

We can see that the highest weight of “importance” is assigned to “Academic Qualifications” whereas the lowest weight of “importance” is assigned to “Research Activity.” We note that “Friendly Conduct” and “Communication Ability” have higher degree of “importance” than “Research Activity,” in the opinion of students.

Similarly, the pairwise comparison Matrices F, G , for the subcriteria of 2nd and 3rd criterion respectively, are:

SUBCRITERIA OF 2ND CRITERION, MATRIX F

\[
\begin{bmatrix}
CLEARC & EXAMPLE & ABOOK \\
CLEARC & 1 & 2.9143198485 & 3.23242184 \\
EXAMPLE & 0.343133236 & 1 & 2.23 \\
ABOOK & 0.309365562 & 0.448430493 & 1
\end{bmatrix}
\]

with weights:
We note that the students rate: “Obtaining a partial Pass mark by Continuous Assignments during the Course” higher than “Existence of knowledge about the subject from Previous Courses” and “Inclusion of many Examples” higher than “Accessibility of Course book”.

3. CONCLUDING REMARKS

The findings of this paper are the following:

a. The AHP is a powerful method which can be used for the evaluation and choice of Courses and Selection of University Faculty. Apparently, the AHP can be applied also to many diverse fields, such as Engineering, Planning, Military, Marketing, Economics, Conflict Resolution, Environmental Management, Research and Development and many more.

b. According to the opinions of the group of students who have completed a Questionnaire, “Teaching Effectiveness of the Professor” is a criterion with subcriteria of highest rating the “Academic Qualifications” and of lowest rating the “Research Activity”. The subcriterion “Ability of Communication” is of higher rating than the subcriterion “Research Activity”. The following questions are to be investigated: (b1) If there was a different random sample of students, the degree of the “importance” of Teaching Effectiveness could be different? (b2) If the Courses in consideration were offered online would the preferences of the students be different? (b3) Which are the preferences of the students towards Courses which are taught at laboratory Sessions, using Computer packages?

c. An important task is to develop Psychological instruments such that people’s feelings can be adequately represented by numerical scales.

d. The results of AHP can be compared with similar results from other Decision approaches, such Expected Reward decisions and Optimization algorithms.

4. REFERENCES


Blanas, G (2008), Using the e-class open platform for e-learning support at the TEI of Larisa, Greece, Proceedings of the Third International Conference “Modern (e) Learning”, Varna, Bulgaria, 2008.


Chapter 2:

Social policy implementation of “Kallikratis” program: Review and critique

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Abstract:
The Decentralized Administration which was introduced by the program “Kallikratis, is about to continue a 30-year of consecutive legislative efforts of reforming measures in the field of local government in order to decentralize services and target their proximity to the service user, the citizen. As required by paragraph II of Article 75 of the Code of Municipalities and Communities, Municipalities practice, at local level, governmental responsibilities, which have been assigned to them in order to better serve the citizens within the framework of existing legislation. The program was established by the adoption of the Law 3852/2010 (GG No.87/7-6-2010, effective from 01/01/2010).[1]

In the area of Social Protection and Solidarity a series of responsibilities is included, which strengthen the role of local government. This way the intervention of the municipalities in implementing welfare policies is widened, according to the standards of national welfare systems of European Union countries. The ultimate aim is the identification of opportunities for adopting regional development policies, through targeted actions in local reality with the executive assistance of the general governance framework.

However the Kalikratis’ reforms come at a time of rapid developments in the broader state sector with wide-scale financial measures and with political tension due to the applied cuts across the state. The Municipalities and the regions are faced with additional responsibilities while facing difficulties in application of the measures both because of the funding cuts and the inadequate staff. At the same time, the demand for social services and its beneficiaries is constantly increasing. Furthermore, it is told that there are many institutional gaps additionally with the absence of horizontal policies which would be required by a decentralization plan such as that attempted by the legislation.

JEL category: Social Policies and Social cohesion in Europe

1. Introduction
Decentralized Administration which was introduced by the program “Kallikratis” was introduced substituting “Kapodistrias” reform in order to enhance the framework of responsibilities and authorities given to municipalities and regions. Institutional reforms aim to strengthen local cohesion and to empower the adoption of more effective citizen-centered services. The two degrees of local government no longer have an hierarchical relationship but are expected to cooperate via horizontal collaboration.

2. An overview of the institutional changes introduced by the “Kallikratis” program
The modern institutional framework for regional development in Greece is asked to incorporate the grid of new and complex responsibilities of self-government and devolved administrations, as it is formed by the existing legislative framework of “Kallikratis”. [1] The organizational restructuring of the local government constitutes undoubtedly a broader institutional demand and could be a lever to attempt drastic changes in the structure and function of the local government, which were considered necessary in order to effectively cope with the socio-economic imperatives of this time. The involved institutions are invited through their development policies formed in the basis of their increased responsibilities, to highlight opportunities and to intercept any threats that may arise as a result of the complexity and the fragmentation of potential parts and networks developed under the general governance.

This restructuring is at the heart of a wider government restructuring, which aims to equip the state with institutional and management tools in order to cope with the new globalized trends and requirements which incorporate supranational institutions and processes, with predominant the contractual obligations (for
our country) of European integration and the adjustment program presented in the context of financial restructuring.

The decentralized administration which was attempted by the program “Kallikratis”, with all the decentralized state services, is a branch of the Central Government, which is responsible for the state affairs in its area in accordance to the Article 101 of the Constitution. It is worth noticing that the Article 280 of the “Kallikratis” program, states that “the Decentralized Administration shall exercise the powers of the State Region.” In terms of the local Government, municipalities and regions constitute the 1st and 2nd degree of Local Government and also the fundamental institution with functional type dependencies, as it is fortified in the Article 102 of the Constitution and the European Charter of Local Autonomy.

Understandably, the organizational restructuring of the local government cannot be considered separate from the broader “tsunami” of public interventions in administrative changes thus, must be evaluated along with it, as an integral part of this operating system. The attempted decentralization, the rationalization of resources, the decentralization of the administrative decisions at local level and the reinforcement of development planning powers by the upgraded 1st and 2nd degree local region administration is considered both in terms of administrative efficiency and in the light of social policy work which is produced in terms of proximity, accessibility and adequacy. With the “Kallikratis” program (Law 3852/2010) the levels of government are redesigned, in a New Architecture of Local Authorities and Decentralized Administration. “Kallikratis” attempts to incorporate the local region administration of 1st and 2nd degree in a broad policy framework which includes:

- The executive rule of Government framed by administrative organs, with such an institutional role which enables the administrative efficiency, the design autonomy and the economic independence. The aim of the above is to achieve the local and regional development with targeted actions and initiatives spatially oriented based on local realities and specificity.
- Decentralization of Administration in order to highlight existing or new models that add flexibility, efficiency, promptness in the user of the services user and exploit the peculiarities of local communities and integrate them, feeding back the models of management.
- Integration of the principles of government, transparency of local government, project evaluation and adoption of healthy competition at management level and promotion of the good practices. According to the Article 4 of the “Kallikratis” program, between the two levels of local government, there are neither relationships based on control nor on hierarchy, but “cooperation and interaction, which are developed based on the common law agreements, and the coordination of joint actions”.
- Increased citizen participation and subsequently expansion of democracy and sense of collegiality, promotion of ancillary activities such as social organizations, local clubs and voluntary action.
- Exploitation of new tools and new methods of e-government and automated services of the citizens within the broader integration of governance in the era of the information society, the basic principle of which is the interconnectedness of institutions among themselves and with the citizen.

Especially in New Architecture:

- The foundations of primary local government reset entirely and are set fewer and naturally with stronger range municipalities. (325 municipalities now on the contrary of 1034 that were before). [2]
- The second grade local government abolishes the 54 Prefectures and defines 13 regions (by abolishing the 54 prefectures). Furthermore, regarding the development planning, scripts of the development plan of law 2503/1997 are conceded.
- The decentralized management is founded and particularly, in the position of 13 Administrative Regions are now established 7 Decentralized Administrations.

The new architecture changes the government and the decentralized administration at both the organization and the operation level and in terms of infrastructure and organizational systems. With the “Kallikratis” program, a range of powers is attributed to the new municipalities, which was previously practiced by self-management prefectures in critical areas such as the environment and the quality of life, health, education, culture and sport, rural development, forestry, livestock and fishery. So, it is specified a new role of the new municipalities in local development. The role of elected bodies of municipalities is, therefore, pivotal, as they are not only institutional vehicle for the articulation of development choices of the individual spatial units of the new municipality, but mainly the main exponent and founder of the development vision of the region.

The understanding of the comparative advantages and disadvantages of the area is necessary as greatly facilitates the integration of these local development features in a wider context. An important element is the accession of the local economy in the wider regional and national economic and business environment. This element is necessary because in recent years, the local authorities are facing an intense competition and political pressure in attracting investments, improving the business climate, the creation or the retention of jobs.

The analysis and the comparative evaluation of the above data is therefore a key condition for the cooperation and synergy with other neighboring Local Authorities and the Region to promote the local development program. The local development is a process that requires strong leadership to stimulate the endogenous development potential, the awareness, the formulation and communication of a clear and comprehensive development vision for the area. The initiative to undertake such a developmental role in the local community can come from many different political, economic and social institutions, such as local chambers and representative professional organizations, businesses and civic groups. In any case, the role of
3. **Social policy action through local authorities in Greece of Memorandum**

According to the harmonized European social protection statistics (ESSPROS), the term "social policy" refers to the total amount of benefits in cash or in kind by social protection programs designed to cope with a defined set of risks and needs. [3] The Social Policy is the "basic target for values and goals, deliberate choice, preference, ranking methods, tools and actions in order to achieve certain results in the wider area of social administration". The Social Policy as an integral part of social planning deals with the principles and methods of determining eligible scripts of actions. According to this, politics is the first stage of social design, which consists of four interrelated and sequential stages: Policy, Program, Implementation and Evaluation [4]. In a time of scarcity of resources of local government, a direct consequence is the intensified demand of welfare and solidarity services that is expected from the management system from the most vulnerable groups of the population. At local level, the "Kallikratis" program provides a new framework of organization and operation of social policy at local level. The new responsibilities, which are transferred to municipalities, in this critical sector, strengthen their role in this difficult economic climate but also pose new challenges for the elected bodies. The increasing demands of local communities on social policy, focus in the areas of care, protection of the elderly, strengthening of families, supporting people with disabilities and especially confronting with the phenomena associated with social exclusion and marginalization of vulnerable social groups such as the poor, the immigrants, the uninsured.

So, the elected officials are invited to take initiatives in order to enhance the social infrastructure and to better take care of these core problems. As in the developmental sector, it is necessary to enhance the ability to raise and process critical information about the level of social infrastructure which operates in the municipality, whether they belong to their services, or to other state or social institutions. Given the fragmentation of social services at the local level, one of the key challenges of the elected is to contribute, through the knowledge of local conditions and problems they have, to the better coordination of discrete and disparate units that provide social services to municipal boundaries as well as in designing and implementing new services and programs that best meet the constantly changing demands of vulnerable social groups. Additionally, the implementation of the Medium Term Fiscal Strategy 2013-2016, during which there are strict restrictions in terms of local authorities staff, as well as obligation to active savings of resources, contributes negatively to the integration of social policy actions since, in many cases, questions arise about failure to meet the necessary expenses.

Before we detail the framework of responsibility of local authorities on the implementation of social policy based on the current legislative framework, it is worthy staking the wider environment in which municipalities and regions are invited to respond. Briefly, the reformations are timely framed by the:
- time of economic crisis, deregulation of the welfare state and the transfer of powers to local authorities,
- increase of the beneficiaries of services and benefits of social protection,
- increase of people at risk of exclusion due to unemployment,
- targeting of social protection and social inclusion almost exclusively in the labor market,
- changes in social security,
- increasing participation of the private sector in providing this type of services.

4. **Responsibilities of the Department of Social Protection of Municipalities**

According to Law 3852/2010, concerning the Powers of Municipalities in Article 94 par. 3B on social protection and solidarity, the responsibilities of municipalities are: [5]

- Care of the vulnerable social groups by providing services and promoting mental health.
- Care and support of the homeless and financially weak citizens.
- Prevention of delinquency, with the creation of Local Crime Prevention Councils.
- Promotion and development of volunteering and social solidarity.
- Implementation of vaccination programs and their conducting.
- Authorization of establishment and operation of child welfare institutions to individuals.
- Certification of financial weakness.
- Payment of benefits to blinds deafs, etc.
- Adoption of decisions providing social protection.
- License for establishment and operation of public and private kindergartens.
- Informing citizens on public health issues.

5. **Responsibilities of the Department of Social Protection of Regions**

According to the Article 186 "Responsibilities of regions" of the law 3852/2010, “the organs of Regions exercise their powers in accordance with the principles of transparency, efficiency and effectiveness” and b “when exercising them should be taken into account [5]:
• The need for cooperation and coordination with other local or public authorities and organizations.
• The resources available to meet the responsibilities and the need to ensure effective and beneficial use as well as their balanced distribution.
• The need to organize the provided services, so as to ensure their adequacy and quality, transparency and fairness in order to better serve the citizens.

Existing social services within the powers of local government:
The studies so far have revealed severe heterogeneity in pursuit policies. The social policy actions, which are implemented in reality, are reduced in relation to the requirements of “Kalikratis”, particularly in the first grade of local authorities, so that there is no central direction and continuity of operations and programs. Additionally, it is recorded an overlap of responsibilities and also many gaps of intervention for many social activities. [6, 7]

Localized rigidities and problems are identified as follows [6, 7]:
• From the beginning, the Kalikratis program at central level, did not include the serious positions and experience of stakeholders, resulted to not incorporate the empirical «think-tank», which would be provided by the stakeholders. Additionally, little attention was received in policy coordination in the horizontal plane and the usual practice of integrated competencies was followed, with every coordination problems which entails.
• Lack of strategic planning and programming at the local level excludes the possibility of policies to be dynamic and to be fed back at the base of experience and expertise and hinders the completion of actions in terms of adoption of integrated objectives and sustainable programs. As regards particularly the viability, we can understand that the area of social protection is deprived thereby the exploit of long-term benefits which usually arise from social interventions.
• The poor financial planning in self-governing level deprives the stable cash flows and hampers the viability of programs, even those that prove standing coverage needs of citizens and operate in full development.
• Lack of staffing, organization and proper training of Social Services and the outdated bureaucratic structures deprive any strategic planning the appropriate use of tools as indicators of efficiency, effectiveness and dissemination of established interventions.
• The limitations associated with the user access services at the decision making level, deprive the design of the necessary feedback information in order for the interventions to be redrawn, if and when necessary.

6. Conclusions
Kalikratis program promotes social protection & inclusion by enhanced local government authorities to support efforts to invest in people – in areas like education, childcare, healthcare, training, job-search assistance and rehabilitation, and reforming their systems. Their role is important as they are the main institutional body to make the recognition of the basic needs of the local community, for better social management, greater efficiency and proximity. The wider environment in which municipalities and regions are invited to respond, is mainly characterized by economic constrains, deregulation of the welfare state and increase of the beneficiaries of services and benefits of social protection. The existing heterogeneity in policies and the reduced implementation of social policies in relation to the requirements of “Kalikratis”, reveal that there is no central direction and continuity of operations and programs.

What needs to be done?! The development of the administrative capacity of the social structures of a municipality is expressed by [8, 9]:
• the degree of functional differentiation (specialization) of structures,
• the degree of integration (coherence, coordination) which is showed by the structures with each other and with their environment,
• the ability of continuous learning of its structures and
• their viability for long – term event horizon.

The above can be evaluated using systematic recording and measurement of quantitative and qualitative indicators such as:
• Investigation of the development growth of welfare services as outlined for the Municipalities in Kalikratis program and according to their ranking relative to their size (e.g. Independent Department of Social Protection, Education and Culture, Social Welfare Office, Office for the Protection of Public Health, Office of Education, Lifelong Learning and Culture).
• Search for actions of support to the composition of annual operational programs related to social policy actions of the new municipalities.
• System of indicators concerning the social policy for monitoring the functioning of municipalities.
• Actions for redesigning and standardization of operating procedures.
• Standards of staffing through the training of indicators which would lead to an objective and realistic assessment of staffing needs based on the current workload.
• Standardization of forms used by the municipal services.
• Identifying and describing the vacancies for any administrative unit of each area.
• Program for the development of human resources which focuses on information / training of supervisors.

These interventions are expected to contribute to:
• Bring out the degree of integration of operations through the respective quotas.
• Bring out any statistical significance in the comparative evaluation between the Municipalities and Regions and allow the drawing of conclusions on individual actions.
• Record the reproducibility of the data collected and allow the pinpoint of reefs of management.
• Allow the creation of proposals, reforms and changes not only in individual interventions but also in the overall legislative framework based on the mapping of the problems that will arise from the log data analysis.

Apart from the process of recording and analyzing the administrative framework of social production of Services, it should be attempted to capture the quality of the services, as they are perceived by service users, i.e. citizens who enjoy social protection services. All of the above require IT solutions that are already a strategic priority of the framework and many efforts have already taken place. Efforts are focused on the idea to provide high quality solutions in IT and communication, which will support the correct, full and effective operation by the institutions of social security and health providers over time and the service of the citizens through the provision of modern electronic services and information.

Nowadays technology offers tools for citizen service, through which the visitor can be informed for example about the required documents and can also be able to submit an online request in order to obtain certificates – certifications – licenses, free from cumbersome procedures. At the same time, the development of Internet-based system for managing and viewing information will make the citizen much more informed on matters related directly or indirectly to the municipality. Also, thanks to technology all requests, reports or complaints of citizens can be recorded, depending on the category to which they belong. For example, electrical issues, cleanliness, road construction, abandoned vehicles and machinery, environment, forestry etc. The report will be routed to the appropriate service of each municipality depending on the category that solves the problem as soon as possible. Furthermore, future interventions and actions about each subject will be planned.

Equally important is the utilization of geographical information systems for the benefit of the citizen. The aim is to create a modern digital geographic operating environment for municipal services, with the use of information technology and communications and the simultaneous increase in their efficiency and effectiveness. The system’s function is bidirectional and interactive and the citizens have the opportunity to intervene through internet. As a result, they socialize and they can use a large number of information and services. The utilization of new technologies for the implementation of e- governance in local government will put on a new basis the relationship between the citizens and the local authorities, by automating processes to communicate with each other and creating new horizons for the management of local communities. The most important of all is how e-government can change the image of the, so far, outdated government and lay the foundation for a technological revolution.

7. Bibliography


Luxembourg: Office for Official Publications of the European Communities.  
ΕΕΤΑΑ. "Επιχειρησιακό πρόγραμμα υποστήριξης Νέων Δήμων και Περιφερειών. Τα έργα που έχει αναλάβει η ΕΕΤΑΑ.".
Κοντιάδης Ξενοφών, Θεόδωρος Τσέκος, (2008), Οι νέες λειτουργίες των ΟΤΑ στον Σχεδιασμό και την εφαρμογή δράσεων κοινωνικής πολιτικής, σε Κοντιάδης, Ξενοφών Τσέκος. Θεόδωρος Η αναδιάρθρωση της κοινωνικής διοίκησης σε τοπικό επίπεδο, Παπαζήσης, σ.σ. 15-34.
Λαδιάς, Χρ. (2013), «Το σύγχρονο θεσμικό πλαίσιο της περιφερειακής ανάπτυξης στην Ελλάδα». Εκδόσεις Παπαζήση, Αθήνα.
Chapter 3:

The glocality of political cultures

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Abstract:
As Meyrowitz pointed out back in 1985 and again twenty years later (2005), every experience is eminently local. Nonetheless, new information technologies change our perception of time and space. Traditionally, the forming of political identities and cultures passed through local practices and face to face debates. But with the development of the mass media and Computer Mediated Communication (CMC), every local experience or indeed, political issue, can be shared at a local, national and transnational level, as have efficaciously pointed out the recent video’s and blogs from Iranian, Libyan and Egyptian rebels.

Although participation through CMC does not always/often entail greater involvement of citizens in the decision making process, mass media and CMC strongly influence the ways citizens perceive the power in charge, reduce its “sacredness” and promote new actors proposing new issues for the local as much as the global political agenda. Making citizens feel they too, can be political actors. Influencing what they know, what they feel and how they evaluate politics: the three dimensions of a political culture according to the classic Almond and Verba theorization. Allowing local, national, transnational political cultures to meet and confront. In short, new information technologies contribute to the formation of new interest groups, lobbies, activists, development of ideas and projects that can be local as much as global (Sassen 2008), while at a more general level, help the development of a more global public opinion exercising its influence on local, national and transnational political institutions, working at the making of a down-top agenda. So, while global economic dynamics weaken the decision capacities of governments within the nation-states (Beck, 1999), this enlargement in the geography of civil society seems to represent the growth of a global public sphere as Habermas would call it. A slow and uncertain process, far from being as revolutionary as it might sound and yet already contributing to a transnational political culture.

1. Political culture theory in Almond and Verba’s approach
When speaking of a political culture we still refer to Almond and Verba’s classic text that started the network of studies on this topic: The Civic Culture, dating back in 1963. According to its original definition, a political culture
1. is represented by the national population’s whole set of subjective orientations towards politics
2. it comprises cognitive, affective and evaluative components; it involves knowledge, beliefs and feelings over the political sphere and the political values
3. its content is produced by socialization, education and the exposition to mass media as well as adult experiences related to social, economic and political processes.
4. influences political and governmental structures as well as their performances, but it doesn’t determine them. They influence each other mutually.¹

Therefore, as we can see, in this approach to political culture, there is no explanation of where a political culture derives from and it is not seen to be connected (or functional) to the economic structure. As it is widely known, these research studies blossomed during a particular historical period which had seen democratic conquests in danger: the affirmation of authoritarian regimes in Italy, Germany, USSR had led intellectuals and, indeed, social and political scientists, to interrogate themselves on the nature of a democracy, on what makes it stronger and what jeopardizes it. So, under a certain perspective, we can also say that these studies entail a certain amount of militant culture when not of ideology itself, the attempt being the individuation of processes that could make a democracy stronger and more stable. As Carole Pateman² poignantly pointed out they also suffer from being affected by a liberal perspective on democracy, disregarding any democratic system other than that. This topic brings with it another element that’s been under discussion since the publication of Almond and Verba’s famous study: the role of participation in democracy in general of course, but more specifically in a democratic political culture. According to the authors, a democracy is more likely to be stabilized by a particular type of political culture that is a civic culture. But how exactly can a civic culture be defined? According to the authors a civic culture is very close to the rational activist model of political culture, where citizens are informed in order to make sound decisions when it comes to vote or take a stand, and are prepared to get active in politics whenever needed. A democratic citizen seems to be in the first place a participant one, but, this is not enough: a civic culture is also “an allegiant participant

culture” for citizens are not only capable of conveying demands and expectations to political institutions but they are also “positively oriented” to the political system. In other words they feel loyal to the nation and its institutions, therefore the political culture and the political structure are “congruent” 3. So it would seem correct to conclude that the political culture more fit to sustain democracy is one of participation. But it is not. According to the liberal theory underlying the study, direct and active participation is not sought after. Quite the contrary, “too much” participation may as well be an endangering factor as Lipset pointed out just a few years earlier, analyzing how the Nazis regime in Germany could have counted on mass participation and ideologically used it to legitimate itself and undermine the previous political system. 4 And we may remember what liberal theorists like Schumpeter stated on the matter roughly twenty years before Almond and Verba’s work, who stressed the fact that electors should respect the division of labour between them and the elected politicians. Once elected, politics it’s a politician’s business not theirs. 5 Assuming this perspective, for the authors a limited participation seemed more adequate to support democracy.

In my opinion, Almond and Verba’s study conserves the extraordinary merit of having inaugurated a field of research that shifts the attention from the governors to the governed, which certainly needed to get in the picture when analyzing any political process. It has also been very enriching both methodologically (applying survey analysis on socio-political studies) and as far as comparative political studies are concerned. But has it proved to be a reliable tool in the perspective of anticipatory capacities regarding the future of existing democracies? Can we still rely on this type of political culture as formulated at its origins in order to make accurate analysis of a Country’s political process? And can we still speak of a national culture given the globalization of markets, communication and even socialization?

Probably not in these terms. Not without a broader definition of a political culture at least.

2. Theoretical limits evidenced from the Italian case study and Gramscian solutions

A reliable tool. If we take Italy as an example we will find that Almond and Verba’s survey showed some structural weaknesses as well as many sharp findings. In 1963 Italian young democracy still had to overcome the recent authoritarian experience and most interviewees were found to be suspicious and skeptical towards politics and institutions. Even more clearly so, they were reluctant to speak about politics to anybody, probably because of the difference inherited from the previous Fascist period. This type of data, together with what Banfield had already defined as the Italian amoral familism (i.e. the tendency to distrust institutions, sacrificing the common good for nepotism, favouring the restricted family even when it comes to disregarding the rules) brought the authors to the conclusion that the general political culture in Italy was an alienated one, where citizens took no pride in the national political system, were not fully competent and able to take action or even to expect fair treatment from the authorities. Which led the authors to hypothesize risks for our newborn democracy. Without getting into great details of their analysis for it’s not the topic of this paper, I’ll just mention here that their Italian chapter represents a valid example of a structural weakness in their approach which has convinced me through the years of the necessity of widening the definition of a political culture.

The main problem resulting from their original analysis resides in the evidence that some not secondary facts were not taken into due account at the time and, in my opinion, this has led to what we may call a contradiction in their conclusions and partly, in their approach too. If the main characteristics of a political culture that’s more fit for democracy is one based on “limited” participation which basically means participation through vote in electoral times, well then analyzing election campaigns, participation and, indeed, the voting ratio in Italy should have been a priority in order to get a fuller picture of the ongoing political process. So, while some of the original findings are still valid today, for it would be still correct to say that Italian’s tend to have a very low civic sense (even among the younger generations 6 trust towards institutions, expectations on fair treatment from authorities, respect of the rules, do not even reach one third of the population, with low peaks that occasionally drop as far down as 5%), it is also true that the voting ratio in this Country has historically been much higher than that in the United States for example, albeit decreasing during the past ten years. For instance, at the first free democratic election back in 1946 the voting ratio has been of a very high 89.08%. A percentage that has even grown through the following years. In 1963 the year of the publication of The Civic Culture it had reached the remarkable rate of 92.89%. Values around 90% were kept through the 80’s, then in the 90’s - even after the major brieidal scandal “Tangentopoli” that swept away (together with the Berlin wall crack) all the main national parties and leaders - the voting ratio never went below 80%. The minor point was hit in the latest national political competition only four years ago, in 2008 when votes for the Chamber went as down as 80.51%. Whereas if we take a quick glance at the US turnouts, we find that participation to national elections there has always been dramatically lower. In 1962 the National Federal Election turnout reached a mere 47.27% (and during the 1960-1996 period it has ranged between the highest peak of 63.06% in 1960 and the lowest 36.40% registered in 1986) 7. Carole Pateman has convincingly

5 Joseph A. Schumpeter, Capitalism, Socialism, and Democracy, Harper & Row, New York 1942
7 Source: Federal Elections Commission http://www.eac.gov/assets/1/AssetManager/1960%20-%201996%20Voter%20Registration%20and%20Turnout%20Overview.pdf although it must be said “that turnout rates are
analyzed the socio-economic-sexual character of American apathy so there is no need to get into that discussion here but we cannot end discussing political culture without noting that even from Almond and Verba’s liberal theory approach, voting turnouts should at least have been taken into account. And along with this concept, other authors have already pointed out that it is hardly conceivable to analyze a political culture without taking into due consideration political behavior as well. And on this respect, we should immediately note that along Italian democratic history this type of comparative data, would have suggested an Italian stronger relationship (when not identification) with political organizations then the one registered in the original survey. A (positive) relationship, may I add, not only with mass organizations such as parties and trade unions, but also with the new political democratic system. Behaviours that on the whole resemble those imagined by Almond and Verba to be part of a civic culture, i.e. a political culture capable of sustaining democracy. It is my opinion that had the authors taken into account political praxis, to put it in Gramscian terms, and had they focused more on the developing of Italian economic conditions, their conclusions would have probably been more accurate.

3. A broader approach
So to answer the second question formulated earlier, can we still rely on this type of political culture as formulated at its origins in order to make accurate analysis of national local or global political processes? I would say no, we should be able to sharpen this tool of analysis. My attempt to give political culture a broader definition moved originally from these considerations and from the anthropological use of the term “culture”. More specifically from the classic still efficacious definition given by Sir Edward Burnett Tylor in 1871’s Primitive Culture, according to which any given culture includes the whole set of “knowledge, beliefs, arts, morals, crafts, laws, customs and any other capability or habit that men acquire as members of a given society”. Furthermore during the 19th century anthropology has clarified that culture entails also tangible objects, as well as immaterial ones. And I agree with Wyatr’s critique of The Civic Culture when he states that it does not explain the historical roots of a political culture, nor does it connect it with class structure. I would add that, more importantly, it does not really connect it with the Country’s economic structure. Although Almond will admit that the economic situation does have an impact on the political culture, there is no structural hypothesis to analyze their connection. Actually, according to their approach, economy and culture mutually influence each other. As far as the genesis of a political culture is concerned, if production relations are at the origin of the juridical, political and cultural structures underlying a given society, as a consequence, political culture refers to the form acquired by production relations within the different classes as soon as they organize themselves in order to shape a nation’s administrative and political institutions. Within this perspective, I propose to redefine a political culture by reassembling (reuniting) the anthropological and Gramscian approach with that of Almond and Verba in the sense that a political culture is given not only by subjective cognitions, feelings and evaluations towards the political system but also by the citizens as well as political actors actual behaviors and actions (praxys) and, not secondarily, by the form taken by the political system itself by this meaning the juridical system, organization, distribution of power, the theories, ideologies and values that sustain and legitimate it. More specifically, we could say that a political culture comprises and synthesizes the whole process and the aspects we’ve seen so far.

4. New communication technologies and local, national and global political cultures
The title of this paper is the glocal approach with that of Almond and Verba in the sense that a political culture is given not only by production relations within the different classes as soon as they organize themselves in order to shape a nation’s administrative and political institutions, but this includes persons ineligible to vote, mainly non-citizens and ineligible felons, and excludes overseas eligible voters. When turnout rates are calculated for those eligible to vote, a new picture of turnout emerges. See http://elections.gmu.edu/voter_turnout.htm

usually calculated in the U.S. by dividing the number of votes by what is called the “voting-age population” which consists of everyone age 18 and older residing in the United States but this includes persons ineligible to vote, mainly non-citizens and ineligible felons, and excludes overseas eligible voters. When turnout rates are calculated for those eligible to vote, a new picture of turnout emerges. See http://elections.gmu.edu/voter_turnout.htm

See the authors who studied the political culture in communist Countries, for example: Richard Fagen (1969), Robert Tucker (1973), Stephen White (1979 and 1984)


Almond, G. Almond, G., Cultura civica e sviluppo politico, Il Mulino, Bologna, 2005

and first hand experiences then it used to be centuries ago and even at the time when our parents acquired adult conscience.

But with the development of the mass media, ICT and Computer Mediated Communication (CMC), every local experience or indeed, political issue, can be shared at a local, national and transnational level, as have efficaciously pointed out the recent video’s and blogs from Iranian, Libyan and Egyptian rebels. As information technology allows us to be informed in real time of the killings in Syria, a flood in Russia or of a nuclear disaster in Japan, they become part of “our” reality too. We know about it, we feel about it, we evaluate it. Not rarely we acquire conscience that these facts, even if they have happened at the other end of the world, may bring consequences of some kind to our lives. Political instability in the Middle East for example, has different kinds of effects on Western political situation, decisions, budgets, economies. This is not really a new phenomenon, but it has grown through the decades and it is more transparent now. So, can we still say that every experience is eminently local? Or indeed that political cultures are eminently national? I would say: less so by the day.

As “reality” becomes less individually based and enlarges its boundaries, it immediately becomes more complex. As Bauman sharply pointed out, in global and liquid society, this brings – paradoxically we may say - to the enhancement of the perception of individualization. Citizens are “bombed” by highly specialized information and it isn’t possible in one single life to acquire all the competences needed in order to face, understand, interpret and deal with the complexity the whole human kind has reached in centuries of evolution. As the complexity of society increases, also due to the fact that the boundaries of what we call “society” have dramatically enlarged since the original hordes to today’s globalization (which brings to our perception more information not only about our restricted or wider family or neighbours but also of facts, habits, politics coming from different cultures and far away nations) the organization of the information delivered to us increases with it. And our perceptions can become more fragmented. We may decide to keep up just with certain types of information (the economy, the women’s condition, the political situation in the Middle East, human rights, global warming and so on) but it would be virtually impossible to maintain the thorough information about “life in the village” when the “village” has become the entire world. So fatally a part of it remains obscure to us. We don’t know it nor do we understand it. Worse of all, we acquire the uncomfortable awareness that there is little that we can do to govern it’s processes.

Should we conclude then, updating Almond and Verba’s approach to today’s global reality that the globalization of markets, politics, ideologies and power is producing globalized parochial, if not subject political cultures? Yes and no.

If we accept that a political culture is influenced (if not determined) by the economic structure of a society, we also have to recognize that the globalization of markets is playing a role in the forming of a globalized political culture as well. May be in its embryonic form but we can see traces of it, not only with the no global movements around the world, but also in the growing awareness of national government’s weakness to orient, limit and govern international finance, which is emerging as the real actor in power. Influencing and occasionally determining a nations’ fiscal and labour policy,13 exploiting various countries financial crisis, keeping down what used to be sound State’s economies (look at what’s happening in Europe, for instance). The good old nation state is proving growingly incapable to mediate between legitimate interests while is progressively losing decisional capacities. It’s political strength and credibility seems to be overcome by global economy trends. Is it a wonder that political institutions, deprived as they are from authority as well as power, are so mistrusted in any recent public opinion survey in many Western Countries and that political apathy is growing? In Europe and in Countries where the economic crisis is particularly acute, people expect, need and demand strong political and social policies and development plans. But it is proving very difficult to convince firms to stay in the Country, keep giving jobs, when other Country’s cost of labour is much lower, where there are no Trade Unions, where governments can be convinced to enforce favourable laws (emblematic the case of Pakistan, studied by Sasskia Sassen)14. In Italy for example, the conscience of this loss of political power and growth of economic power is arising but it is still quite vague. For now, it has produced mainly disaffection and anti-political feelings. The reaching of a civic culture made of competent and informed citizens, confident on their ability to take action and change things for the better, seems to be suffering from a drawback. The economy is progressively thinning out the credibility of political institutions, causing disaffection, apathy and impotence, at least at the latent level. In this respect, we could say that instead of developing a political culture increasingly based on citizenship competences we are risking the development of a parochial one, even in traditionally democratic Countries. But, at the same time, while the national political culture seems to be weakened and less allegiance to national political structures, we witness the growth of local political cultures as well as the birth of a global awareness if not yet conscience, that seems to convey to a transnational political culture too.

One reaction to complexity and impotence, is to turn to the private sphere (it is the case of Italian younger generations for example, who have come to totally mistrust governmental institutions and political parties) 15 or to the local dimension. Local is smaller, less complex, an accessible and more intelligible reality.

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14 Sasskia Sassen 2008 and keynote speech at the XVII ISA World Congress, Goteburgh, Sweden . July 2010 The re-assembling of territory, authority and rights http://www.isa-sociology.org/sociotube/

15 Many recent surveys confirm this trend but one data for all undoubtedly synthesizes and represents the situation, when a sample of Italian young citizens (between 15 and 30 years old) were asked to describe in one word what is politics to them,
whose boundaries are certain, known, where one can measure oneself, think he/she can make a difference and see the effects of his/her own public, if not political, engagement.

While we witness the proliferation of local communities and organizations for whichever purpose (from street security to farming preservation), we cannot underestimate the growth of a globalization public opinion. As I said at the beginning, we are more informed about what happens around the world, and more conscious that in a way or the other it will affect our lives. We start having opinions on transnational facts, phenomena and events. A public opinion yet unorganized, whose level of political conscience seems still embryonic but which nonetheless contributes to the formation of a bottom-up political agenda.

As Manuel Castells pointed out, the progresses in communication technology change communication itself. The media become more flexible and allow interaction in a simultaneous way: their lower costs make them accessible to a larger part of the population. They form a network, not only in communication facilities but also in the subjects that represent new sources of communication and, more broadly, the new morphology of modern societies. A network is made of various knots linked together by some way of communication so these can be represented by very different kind of subjects: Stock Exchange as far as global financial flows are concerned for example or by Ministry Councils and European commissioners as far as the net governing the European Union is concerned, or indeed television networks in the media global system which represent and transmit public opinion, cultural expressions and identities in the information era. They are characterized by an open structure which allows its endless expansion including and integrating new knots whenever necessary. These networks – states Castells – seem particularly adequate to favour processes that are typical of the capitalist economy which is based on innovation, globalization and decentralization. Furthermore, according to this approach, the power of these flows tend to become predominant even in relation to the traditional power flows, producing transformations in the political system as well. 16

As a consequence, one first consideration is that while the network empowers the markets and the free flow of financial exchanges (making it difficult to control and limit them as well), it also empowers a global public opinion, while, on the other hand, traditional national political power gets weakened. To synthetize the point, we can say that this shift of communication processes from the hands of the rulers to those of a multiplicity of subjects (financial power, opinion leaders all over the world, organized citizens, associations and so on) produces various effects: the power deriving from monopolistic communication is getting more fragmented and less nationally based and, may be more importantly, the actors playing a role in the decision making process or at least trying to get a say in the public political agenda, have multiplied. As mentioned before, low costs of electronic communication, the rapidity with which it allows the spreading of information, their flexibility and the possibility to involve an unlimited number of participants17 have encouraged the proliferation of virtual communities and interest groups who share common objectives even if often on single issues (as is the case of many young activists all over the world). This proliferation of virtual communities and broadcasters (professional and no) as well as producing an unprecedented information offer, also implies a readjustment in power hierarchies and modalities. The communication process becomes less hierarchical: more horizontal and less vertical. Media tend to become more interactive, allowing anybody to express its opinion in a context of potential peer to peer relationship. Furthermore, if knowledge is power, the potential spreading of information and knowledge allowed by the new media tends to progressively redistribute power quotas amongst wider parts of the global population. The global information market, although still governed mainly by institutional apparatus and market logics starts to be in competition with information, news, proposals, issues, opinions expressed through the net free access.

In other words, the new media widen the offer in terms of political communication and participation. They represent a tool for the processing of political ideas and information to a potentially unlimited public without restrictions in time and space, which favours the encounters and exchanges between local, national and transnational political cultures, contributing to the formation of a globalized political culture, along the lines of a globalized political communication.

This potentiality is not (yet?) as revolutionary as it might sound. Not only because there is no globalized political system or at least transnational political system capable of decision making at a supranational level when it comes to deal with international finance and production delocalization (we are experiencing the effects of this in Europe). But, even if may be secondarily, we cannot disregard the fact that most information technologies are produced in Western Countries or, more precisely, are owned by Western companies, following market logics, nor can we disregard that the majority of the net content (sites, journals, portals and on line marketing-selling websites) are substantially oriented to a Western culture. None the less, improvements in the levels of education in developing Countries, the spreading of the English language worldwide, the knocking down of the costs related to computer, new technologies, mobile phones, and internet access (also thanks to the delocalization of production, which seeks lower labour costs in the very developing Countries), allow a growing number of connected, informed, potentially active and participant citizens from all over the world. Conditions that make us foresee a less geo-culturally unbalanced future with regard to the use of the internet and the production of political information, demands and proposals from activists, simple citizens and politicians too.

the first answer was: “hypocrisy” and the second was “corruption” (Saccà, F., Una nuova alfabetizzazione politica. Valori, definizioni e domande delle giovani generazioni, Franco Angeli, Milano, 2008)


17 Reinghold, H., The Virtual Community, Addison-Wesley, Reading, MA, 1993
In other words, I believe that the rise of the network society and of cheaper, advanced, communication technology, supply the space and the place for the development of new interest groups, lobbies, activism, processing of political ideas and projects, which, all together, contribute to the formation of a public sphere as well as of a public opinion that’s growingly global. In some cases it is producing political organization too, as we will soon see.

5. Conclusions

Habermas’ public sphere seems to be – at least potentially – regaining significance while broadening it’s boundaries. But of course a political culture is not confined to public opinion as Percy Allum poignantly pointed out in his critique of Almond and Verba’s work. As I mentioned before, I (and Percy Allum and the other authors who studied the political culture in Communist Countries mentioned earlier) believe that a political culture should comprehend political praxis too. In this perspective, we can say that new technologies not only offer a new “media” for a wider political communication that exercises an influence on political and public opinion, both at a local and international level. They also and not secondarily represent the “means” and the “place” for political and civic organization of new actors.

In Italy we have had the case of former comic actor Beppe Grillo who started a rapidly famous blog in 2005, discussing local and international political problems from a different perspective then that supplied by the official media. His success was enormous and the evolution of the blog has been quite remarkable: he became an opinion leader, an activist and lately, the man who promoted and organized a movement called 5Stelle (5 Stars as the quality ranking of particularly good services). In just four years (a very brief time in Italian political history, where the main political leaders have been such for at least the last 20 or 30 years) he went from debating single serious issues on the blog, to using the blog to organize (for the first time in Italian political history) a major demonstration with hundreds of thousands of participants (from different political backgrounds) which took place in various Italian squares (in September 2007), to launching the 5 Star political movement in 2009. In order to be enrolled with them and reach a candidacy one must meet certain standards (being new to politics, have never been enrolled in a traditional party before, never have had any kind of troubles with the law, and so on). In 2012 for the first time a representative of the 5Star movement was elected as Mayor of an Italian town (a very young -by Italian standards- 30 year old Roberto Castiglion, now runs a municipality of only 6000 souls) but the outbreak arrived a few weeks later: Federico Pizzarotti, another 5 Star representative, became Mayor of Parma, a much more important city of almost 200.000 inhabitants. Even more strikingly, they came first at last October’s Sicilian Regional elections (with 15% of votes). The next goal will be the national Parliament.

Besides this Italian experience, we all have been able to follow protesters around the world thanks to Youtube, blogs and Facebook. Many have denounced abuses from the military service, the police or unfair treatment from particularly subjective interpretations of religious commandments. They not only leak into our conscience world-wide, not only do they interfere with the way we perceive the world, the political processes or our sense of justice. They become part of what we know, feel and evaluate of politics at a larger scale. Not rarely they also imply some kind of action. In the case of Safiya Hussaini a Nigerian woman condemned to capital punishment for having conceived a child out of marriage, a petition was launched through the internet that was signed from citizens and politicians all over the world assuming a diplomatic weight that could not be disregarded. After a juridical battle under international media lenses in 2002 Safiya’s charges were dismissed.

More recently, the killing of Iranian protester against Ahmadinejads’ regime, Neda Salehi Agha-Soltan, during 2009 presidential election shocked, moved and raised the public opinion in many Countries, and the number of cases is growing through the years. But I find the recent Egyptian experience to be a particularly significant example not only of how political cultures are growing outside nation-state boundaries but also of how new communication technologies are turning up side down the traditional political process where a political organization sharpened its objectives and then went out to communicate them through various channels (from face to face communication to the mass media). Now we start to witness the reverse process: from communication to political organization. A phenomenon that is well described in Wael Ghonim’s Revolution 2.0: The power of the People is Greater than the People in Power. A memoir, Ghonim, an Egyptian Google manager, reports of his initial cautious attempts to raise a political debate through Facebook after seeing a startling and disturbing picture of a 28 year old from Alexandria beaten to death by the Egyptian police. The event was not so rare per se’ but, as in the case of the suicide committed by a fruit seller in Tunisia, after experiencing abuse from the police which raised protests all over the Country, it hit the consciences of many young citizens in many Muslim Countries where the population felt it had no rights, could not count on fair treatment from the authorities, basically felt they were more subjects then citizens.

Cases of this kind were not isolated in Tunisia nor in Egypt but the communication management of each case seems to have made the difference. Ghonim’s book is of extreme interest for it’s like a diary of how

Egypt went from a military oppressive regime, with little and weakened opposition, to the dethronement of the former President Mubarak thanks to the protests timidly arisen through the web and then coagulated in Tahrir Square massive processes that we all watched on the television channels all over the world. As I mentioned before: from communication to political organization. The regime collapsed. The young protesters of Tahrir square, the students and intellectual and professional élites that started the revolution then founded a political party (Al-Adl) in order to run for presidential election. But lost against the traditional Muslim Brotherhood opposition to the old regime. A more organized, older, tempered and better known structure, sponsored and supported by the wider and more powerful net of Mosques disseminated throughout the Country. A clear example of how the new technologies can support the rise of new ideas, demands, information, stands that can contribute to the formation of a bottom-up agenda (that can be both local or transnational) and, more recently, even of political organizations and new parties. But they obviously still compete with traditional communication channels, editors, sources, not to speak of traditionally recognized political agencies. The power ratio between them is obviously strongly unbalanced. Could we conclude that this potential enlargement in the geography of civic society also represents a growth in terms of global conscience, global political culture and democracy? In order not to exceed in idealism it would be more prudent to consider that while economic globalization dynamics weaken nation-states governments and politics, snatching slices of their decisional power away (Beck, 1999) the very information technologies that make global markets a reality, also favour the rise of a global public opinion that is slowly turning into a global political culture. A global public opinion that is starting to occasionally become active, organizing itself in order to exercise an influence on national as well as on international policies.

If we think about it that’s the very meaning of globalization itself according to Ulrich Beck: globalization is not the end of politics but the setting of politics outside the nation-state categories and even outside the traditional schemes assigning political or non political meaning to roles and actions. A political culture will growingly go with it.

6. References


Fagen, R., The transformation of political culture in Cuba, Stanford 1969

Ghonim’s W., Revolution 2.0: The power of the People is Greater than the People in Power. A memoir, Houghton Mifflin, Harcourt, 2012


Reingold, H., The Virtual Community, Addison-Wesley, Reading, MA, 1993

Saccà, F. Nuovi amministratori, nuove generazioni, nuove culture politiche. Indagine sui giovani amministratori dei Comuni del Lazio. Franco Angeli, Milano, 2004


Schumpeter Joseph A., Capitalism, Socialism, and Democracy, Harper & Row, New York 1942

Tucker, R. C., Culture, political culture, and communist society, in "Political science quarterly", June 1973, pp. 173-190


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21 Sassen S., A Sociology of Globalization (Contemporary Society Series) W.W. Norton, 2006

Section 9: Entrepreneurship and Regional Development: Policy and Planning
Chapter 1:
Incentives to Promote Entrepreneurship in Greece: Results Based on the ‘New Innovative Entrepreneurship’ Program

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Abstract:
This paper examines a national case of providing incentives, which aims at promoting entrepreneurship and enhancing innovation. The research findings show that half of projects are related to the manufacturing sector. Overall, however, the majority of projects concern the activities of information technology and its applications, while emerging sectors seem to be those of ‘scientific research and development’ and ‘architectural and engineering activities; technical testing and analysis’. In addition, nearly half of projects concern start-ups and very small and small new firms located in the region of Attica, namely the region of the capital of Greece. Results also show that only the 16.9% of projects use the banking system as a complementary financing source. The 27.3% of projects has rights of intellectual property ownership related to the innovation introduced at the level of the Greek territory. The majority of the Greek entrepreneurs intend to introduce a new or significantly improved product or service in the market based on their innovative idea, aiming at diversifying and improving the quality of their products and/or services. Last but not least it seems that the Greek entrepreneurs have as main target the increase of their profitability and the further strengthening of their competitive position in the market.

Keywords: Government support, Innovation, Policy, Subsidies

1. Introduction
Nearly 80 years ago, Schumpeter (1934) stressed the role that entrepreneurship plays in the development and spreading of innovation. He actually defined entrepreneurship as ‘the assumption of risk and responsibility in designing and implementing a business strategy or starting a business’. Gough (1969) argued that ‘entrepreneurship refers to a person who undertakes and operates a new enterprise or venture, and assumes some accountability for the inherent risks’. Klapper et al. (2010) interpreted entrepreneurship as the ‘activities of an individual or a group aimed at initiating economic activities in the formal sector under a legal form of business. Along complementary lines, Acs, Audretsch, Braunerhjelm, and Carlsson (2004) argued that the main contribution of entrepreneurship to economic growth consists in playing the role of a knowledge filter that transforms inventions into commercially viable products and processes. Based on the above definitions, it can be argued that the concepts of ‘discovery’, ‘creation’ and profitable exploitation for goods and services’ are implicit in the entrepreneurial process. Finally and focusing on the philosophy of policy practitioners, entrepreneurship has generally been viewed as the process of creating new wealth. Economic growth relies on both the fostering of entrepreneurship and the production of innovation. In fact there is a wide acknowledge of the significant role played by both entrepreneurship and innovation in economic growth. Entrepreneurship is also very important for the dynamism of every economy, as it is usually expressed by the establishment of new firms, which create jobs and foster competition finally leading to economic growth.

The objective of this paper is the study of a national case of providing incentives, which aims at promoting entrepreneurship and enhancing innovation. This national case concerns the case of Greece and the analysis is based on the participation of the Greek, existing and prospective, entrepreneurs and their project proposals in the ‘New innovative entrepreneurship’ program, which was launched in 2011. The paper is structured as follows: Section two discusses the theoretical and empirical framework of providing grants/subsidies, while describing the experience of a number of countries in this field. Section three describes the data that has been used and the methodology that has been applied in the study. Section four is focused on the main findings and empirical results of the study based on the Greek case. Section five synthesizes, further discusses the results, presenting at the same time some concluding remarks.
2. Literature review: Theoretical and Empirical Evidence
Entrepreneurship and economic growth are considered to be interrelated, while their relationship has concentrated the interest of local, regional, national and international authorities and agents of governance. Recent studies have shown that the contribution of the entrepreneurial sector to the growth of both employment and GDP is increasing (Kumar & Liu, 2005). Another stream of empirical research has stressed the social implications of the entrepreneurial activity (Chell, 2007). As a consequence, the debate at political and policy level has highlighted the idea that government should intervene in the field of entrepreneurship reducing or even eliminating any constraints on entrepreneurship and, this way, stimulating and pushing upwards their economies (Minniti, Bygrave, & Autio, 2006). In practice, however, entrepreneurship policy presents a significant challenge since, more than for any other type of industrial policy, its effectiveness depends on the establishment of an appropriate trade-off between market concentration and productivity performance (Audretsch, 2004). Nowadays, it is widely accepted that entrepreneurship contributes significantly to economic growth. Entrepreneurship is responsible for the creation of new organizations, products, services, jobs, and opportunities for complementary economic activities. Nowadays, it is also widely accepted that a reciprocal and interdependent relationship exists among entrepreneurship, economic growth and innovation.

Grants- subsidies, generally defined as incentives, have been a source of controversy among economists for decades (see for a review the work of Baum, 1987): The group of economists being positive with grants-subsidies argues that there many cases where subsidies can increase both local and national economic welfare, leading therefore to economic growth. On the contrary, the negative ones argue that subsidies are unlikely to increase local economic welfare and are likely to decrease national economic welfare. In this context, the no need of such financial assistance schemes is stated in the research of Wren (1987). Studying and examining the effect of local authority financial assistance on the operation and employment of establishments over the period 1980-84 (using data collected as part of a survey of 201 establishments located in the North-East of England) he argues that local authority assisted projects performed well, but nearly two-thirds of these projects would have gone ahead without being assisted. For or against the provision of grants-subsidies, it is generally accepted that the provision of provision of financial assistance to a part or the whole economy has formed a growing and important part of the economic development policies of many countries.

Entrepreneurship becomes a difficult task in periods of crisis and, more generally, of economic difficulties. Recovery is the main target, which may be easier for large nations and firms and more difficult for small and problematic nations, in which the large majority of firms are small and medium sized. This is the case of many countries and, certainly, the case of Greece. In this context the paper examines a specific case of incentives to promote entrepreneurship in Greece during a period of crisis where access to financing becomes more difficult. Policy analysts argue that access to financing is one of the most significant challenges for the creation, survival and growth of SMEs (BIS, 2012). In addition, government funding has always been a significant mechanism that both the potential, as well as the existing Greek entrepreneurs mostly use in order to start and expand- modernize their economic activities respectively.

3. Methodology and Data
The data for this study is based on project documents, which have been collected in the form of paper sheets. The Program provided financial support in the form of grants for setting up firms created by individuals over the age of 18 years. These individuals had, however, to turn an innovative idea and/or a proprietary know-how into a commercialized innovation. Thus, the idea and the know-how under consideration wouldn’t have commercialised at the period of the submission. In addition, there was financial support for small and very small new firms with up to five (5) approved financial- accounting periods. For that category of support, firms had to commercialise innovative ideas, by placing new products and services on the market, expanding- diversifying their products and services and/or improving their production and distribution processes. Summaryizing, the following forms of firms and entrepreneurs can benefit from the program: (1) Entrepreneurs intending to establish a new firm, (2) newly established firms with less than one financial year of life. (3) new firms with less then 5 years of life. All categories of firms statuses can be included in the program [e.g. sole proprietorship firms, very small businesses (up to 9 employees), corporate firms, small firms (Up to 49 employees), partnerships/ cooperatives].

A database is constructed and further elaborated, which basically exploits a part of the information of the project proposals in the form of paper sheets. Among other information, each project proposal contains a techno-economic analysis, which has also a part dedicated to a number of qualitative features- parameters related to innovation. More analytically, the database has the following information fields: (1) Name of the project (name of the firm), (2) project location (e.g. regional distribution), (3) project location 1 (e.g. location in an industrial region or related form, incubator, cluster, research center- institution or inside an OPAAX region), (4) economic activity, (5) total budget and public expenditure, (6) type of the firm (start- up, new, newly established firm), (7) woman entrepreneurship bonus, (8) banking sector participation and from (9) to (14) there are 6 qualitative features- parameters based on the a techno-economic analysis of each project. These qualitative features- parameters are the following: (1) type of innovation, (2) ownership of innovation and/or originality, (3) concession of the use of property rights’ for the next eight years, (4) sources of innovation and/or originality, (5) expected results from the implementation of innovation and (6) project targets.
4. Results
4.1 Main features
The sectoral distribution of the projects shows that both the manufacturing activities and the associated with the manufacturing sector economic activities concern the 49.65% of the investment proposals (table 1). The ‘manufacture of computer, electronic and optical products’ ranks first, the ‘manufacture of chemicals and chemical products’ second and three other manufacturing sectors third, having similar shares (e.g. food products, printing and reproduction of recorded media and fabricated metal products). Overall, however and based on the total ranking half of projects are related to the industries of information technology and its applications (sectors: Computer programming, consultancy and related activities and Information service activities), while emerging sectors seem to be those of ‘scientific research and development’ and ‘architectural and engineering activities; technical testing and analysis’. The first group of industries account for 39.8% of projects (information technology and its applications), while the second group of industries gathers the 11.17% of projects.

Nearly half of projects concerned start-ups and very small and small new firms located in the region of Attica, namely the region of the capital of Greece (46.7%), as it can be seen in table 2. Central Macedonia ranked second and Crete third with a total of 74 and 33 investment projects respectively (16.9% and 7.5% respectively). Location is further analysed according to whether firms are or intend to be located in an industrial region of related form (e.g. technological park), an incubator, a cluster, a research center-institution or inside a region, which has been characterised as a specialised region of rural development. Results in this field show that nearly 10% of firms are located in an industrial region of related form, 16 investment projects are related to an institutionalized firms’ incubator and 4 to a cluster. Thus, the great majority of the Greek entrepreneurs have chosen their firm location based on their own criteria (e.g. proximity to their home address, firm establishment in their own land).

According to the size and type of the funded project, results show that half of them have been start-ups by Greek individuals over the age of 18 wishing to establish very small and small firms. A share of 43.7% is related to new very small- small firms (firms with 1-5 closed financial years) and the remaining 6.2% concern newly created very small- small firms (firms with have started up but they but have not closed a full financial year). Combining the regional distribution of the funded investment projects with their size and type of firm, regional variation can be recorded with the regions of Peloponnesus, South Aegean and Sterea Ellada showing a larger percentage in start-ups firms and the regions North Aegean and Epirus a smaller one. In addition and based on the main features of the submitted projects, the 87.9% of investment projects have features of industrial market, the 84.3% of investment projects have confirmed correlations of vertical production and distribution of a products and services, for the 80% of investment projects exist or will be partnerships- synergies with other related firms, while for the 58.8% of investment projects cooperation with scientific, research, technology organizations and laboratories for technical, scientific and technological support is anticipated. Results also show that only the 16.9% of the investment projects use the banking system as a complementary financing source (74 investment projects in total). The total amount of the bank lending represented only 2.75% of the total budget and varied from 5,500€ to 45,000€, while the average amount of bank lending amounts to 28,461€.

Table 2: The program ‘New innovative entrepreneurship’- Economic sectors

<table>
<thead>
<tr>
<th>Economic sectors</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop and animal production</td>
<td>0.7</td>
</tr>
<tr>
<td>Other mining and quarrying</td>
<td>0.2</td>
</tr>
<tr>
<td>Food products</td>
<td>3.4</td>
</tr>
<tr>
<td>Beverages</td>
<td>0.9</td>
</tr>
<tr>
<td>Textiles</td>
<td>0.2</td>
</tr>
<tr>
<td>Wearing apparel</td>
<td>0.5</td>
</tr>
<tr>
<td>Leather and related products</td>
<td>0.5</td>
</tr>
<tr>
<td>Wood and cork</td>
<td>1.4</td>
</tr>
<tr>
<td>Paper and paper products</td>
<td>0.5</td>
</tr>
<tr>
<td>Printing and reproduction of recorded media</td>
<td>3.2</td>
</tr>
<tr>
<td>Chemical products</td>
<td>3.9</td>
</tr>
<tr>
<td>Basic pharmaceutical products and preparations</td>
<td>0.9</td>
</tr>
<tr>
<td>Rubber and plastic products</td>
<td>2.1</td>
</tr>
<tr>
<td>Other non-metallic mineral products</td>
<td>1.1</td>
</tr>
<tr>
<td>Basic metals</td>
<td>0.5</td>
</tr>
<tr>
<td>Fabricated metal products</td>
<td>3.2</td>
</tr>
<tr>
<td>Computer, electronic and optical products</td>
<td>5.5</td>
</tr>
<tr>
<td>Industry</td>
<td>Percentage</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Electrical equipment</td>
<td>1.1</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>2.7</td>
</tr>
<tr>
<td>Motor vehicles, trailers and semi-trailers</td>
<td>0.2</td>
</tr>
<tr>
<td>Other transport equipment</td>
<td>0.5</td>
</tr>
<tr>
<td>Other manufacturing</td>
<td>2.7</td>
</tr>
<tr>
<td>Repair and installation of machinery and equipment</td>
<td>1.1</td>
</tr>
<tr>
<td>Water collection, treatment and supply</td>
<td>0.5</td>
</tr>
<tr>
<td>Sewerage</td>
<td>0.9</td>
</tr>
<tr>
<td>Waste; materials recovery</td>
<td>1.8</td>
</tr>
<tr>
<td>Remediation activities and other waste management services</td>
<td>1.4</td>
</tr>
<tr>
<td>Publishing activities</td>
<td>3.9</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>1.8</td>
</tr>
<tr>
<td>Computer programming, consultancy</td>
<td>21.4</td>
</tr>
<tr>
<td>Information service activities</td>
<td>17.8</td>
</tr>
<tr>
<td>Architectural-engineering activities; testing and analysis</td>
<td>4.1</td>
</tr>
<tr>
<td>Scientific research and development</td>
<td>7.1</td>
</tr>
<tr>
<td>Other professional, scientific and technical activities</td>
<td>1.4</td>
</tr>
<tr>
<td>Libraries, archives, museums and other cultural activities</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 3: The program ‘New innovative entrepreneurship’ - Regional distribution (part 1), size and type of firm (part 2)

<table>
<thead>
<tr>
<th>Greek Regions</th>
<th>Total number of investment projects</th>
<th>Total Budget %</th>
<th>Public Expenditure %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Greece</td>
<td>22</td>
<td>5.53</td>
<td>5.54</td>
</tr>
<tr>
<td>Epirus</td>
<td>12</td>
<td>2.50</td>
<td>2.51</td>
</tr>
<tr>
<td>Ionian Islands</td>
<td>6</td>
<td>1.13</td>
<td>1.14</td>
</tr>
<tr>
<td>Peloponnesus</td>
<td>24</td>
<td>5.80</td>
<td>5.81</td>
</tr>
<tr>
<td>Attica</td>
<td>205</td>
<td>43.00</td>
<td>43.11</td>
</tr>
<tr>
<td>Northern Aegean</td>
<td>4</td>
<td>1.17</td>
<td>1.18</td>
</tr>
<tr>
<td>Southern Aegean</td>
<td>8</td>
<td>1.56</td>
<td>1.56</td>
</tr>
<tr>
<td>Sterea Ellada</td>
<td>18</td>
<td>4.76</td>
<td>4.77</td>
</tr>
<tr>
<td>Crete</td>
<td>33</td>
<td>6.78</td>
<td>6.80</td>
</tr>
<tr>
<td>Thessaly</td>
<td>14</td>
<td>3.95</td>
<td>3.74</td>
</tr>
<tr>
<td>Central Macedonia</td>
<td>74</td>
<td>19.32</td>
<td>19.38</td>
</tr>
<tr>
<td>Western Macedonia</td>
<td>4</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Eastern Macedonia-Thrace</td>
<td>15</td>
<td>3.26</td>
<td>3.22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Greek Regions</th>
<th>Small and Medium Sized Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start-ups</td>
</tr>
<tr>
<td>Western Greece</td>
<td>13</td>
</tr>
<tr>
<td>Epirus</td>
<td>4</td>
</tr>
<tr>
<td>Ionian Islands</td>
<td>3</td>
</tr>
<tr>
<td>Peloponnesus</td>
<td>16</td>
</tr>
<tr>
<td>Attica</td>
<td>91</td>
</tr>
<tr>
<td>Northern Aegean</td>
<td>1</td>
</tr>
<tr>
<td>Southern Aegean</td>
<td>5</td>
</tr>
<tr>
<td>Sterea Ellada</td>
<td>11</td>
</tr>
</tbody>
</table>
5. Conclusions
The ‘New Innovative Entrepreneurship’ Program has been one of the most recent cases of providing incentives to promote entrepreneurship in Greece during the period of crisis and the IMF involvement. The analysis showed that a number of 439 investment projects out of total of 1,170 were funded by this scheme. Half of them were associated with the manufacturing sector, while the majority of projects were related to the activities of information technology and its applications. Both the prospective Greek entrepreneurs and firm founders of very small firms were activated and responded to the call, while, as anticipated, the majority of these entrepreneurs were from Attica, being located in Attiki, namely the region of the capital of Greece. Attiki and more specific Athens suffered more than the other Greek regions and cities, as a consequence from the memorandum and the economic crisis. The analysis also showed that the Greek entrepreneurs don’t collaborate with the local banking system, as few use it as their complementary financing source. According to the main findings of the analysis, one third of the Greek entrepreneurs understand the importance of possessing intellectual property rights and rush to protect them firstly at national level, while the introduced and related to the intellectual property rights innovation aims at the creation of a new or significantly improved product or service in the market, which will diversify and improve the quality of their products and/or services. Lastly, and focusing on the main targets of the projects, it seems that the primary concern of the Greek entrepreneurs is the issue of profitability, and this is expressed in many ways, followed by the need for the further strengthening of their competitive position in the local and international market. However, there is also high concern for the maintenance or even growth of employment and this is extremely important for the Greek economy and society as a whole.

6. References
Abstract:
Organizations are open systems operating under conditions of substantial turbulence, risk (known unknowns) and uncertainty (unknown unknowns) and seeking to balance stability and coherence with flexibility and change in pursuit of higher levels of efficacy and routine excellence.

In addition, organizations exist, survive and prosper on the basis of a sound value proposition (even not-for-profits should be creating and not destroying value) and functional business model that helps unlock, capture and re-distribute in an efficacious manner the value added by the organization in question.

This paper focuses on the effects that can be achieved through business model innovation, in particular organizational sustainability and resilience. In this regard the paper focuses on the organizational design and governance and the role different stakeholders, predominantly customers and partners play in the innovation process towards organizational sustainability and resilience.

Keywords: Business Model, Value Proposition, Sustainable Enterprise Excellence, Innovation

1. Introduction
Organizations are open systems operating under conditions of substantial turbulence, risk (known unknowns) and uncertainty (unknown unknowns) and seeking to balance stability and coherence with flexibility and change in pursuit of higher levels of efficacy and routine excellence. In addition, organizations exist, survive and prosper on the basis of a sound value proposition (even not-for-profits should be creating and not destroying value) and functional business model that helps unlock, capture and re-distribute in an efficacious manner the value added by the organization in question.

Reinmoeller and van Baardwijk (2005) identified four primary enterprise innovation strategies: knowledge management, exploration, cooperation, and entrepreneurship. Briefly, knowledge management is reusing of tacit and explicit enterprise knowledge, exploration refers to experimentation for the purpose of finding meaningful re-combinations of enterprise knowledge, cooperation refers to assessing and reusing complementary knowledge of supply chain and other enterprise ecosystem partners, and entrepreneurship may be characterized as experimentation aimed and identification of new meaning in the enterprise landscape.

Business Model Innovation is a concept based on the premise that firms can innovate leveraging their internal capabilities and resources (Christoph Zott & Amit, 2010a) and, therefore, relates to several of the afore-mentioned enterprise innovation strategies. It has been argued that the innovation of a business model can be a response to environmental changes, since organizations business models might be the victims to a shelf life, due to technological advancements (H. Chesbrough, 2010). Never mind the increasing amount of literature on Business Model Innovation, a sound theoretical foundation is still missing, which is also true for the concept of business models itself (Schneider & Spieth, 2013). Like the Business Model Innovation literature, the Business Model existing literature is not very well structured, but despite Porter’s (2000) early doubt in the Business Model concept, many scholars argue that a business model can provide a concise framework that explains how firms create and capture value, as well as clarify how enterprises monetize their innovations (De Reuver, Bouwman, & Haaker, 2013). One of the strengths of business models is that it provides a narrative that lays out the activities and structure of the business, which can improve execution (Magretta, 2002).

Indeed, the reason for becoming and then being a sustainable, profitable and scalable entity for a new firm (and for that matter for a non-profit but value-adding and value-maximizing new organization) is centered around the value proposition and business model concepts and especially in a knowledge-based and knowledge-driven context (Carayannis, Barth, & Campbell, 2012; Carayannis, Edgeman, & Sindakis, 2013; Carayannis, Provance, & Givens, 2011; Carayannis, 2008). Therefore, developing a grounded theory of an organic typology and adaptive taxonomy of business models with the capacity to evolve into more effective and efficient mechanisms of value creation, as well as value unlocking, capturing and leveraging, may indeed...
be a core element of the current and emerging state of the art in related organization science, theory, policy and practice matters. This could be especially the case concerning co-creation, co-competition, co-evolution and co-specialization competences driven by higher order learning processes (Carayannis & Campbell, 2010, 2012, 2009; Carayannis, Edgeman, et al., 2013; Carayannis & Provan, 2007; Carayannis, 2008). This has particular implication in the emerging and increasingly influential open innovation ecosystems approach to the study of the nature and dynamics of competitive strategy in knowledge-driven environments. Indeed, we consider targeted open innovation (Carayannis & Korres, 2013) to be the core operationalization context of the emerging grounded theory, typology and taxonomy of business model innovation and within this context the case of smart specialization strategies as an enabler of sustainable differentiation via focusing on financially, socially as well as environmentally sustainable technology and market niches (Carayannis, Clark, Valvi, Stone, & Sharifirad, 2013; Carayannis & Korres, 2013).

Velamuri et al. (2013) note that Business Model Innovation is particularly interesting for enterprises facing commoditization, such as manufacturing firms. This is because of increasing cost-pressure, difficulties in differentiation, and threats of easy substitution. This is mainly true for organizations in developed countries, but it is also a reality that is faced by manufacturers in developing countries. When developing countries move towards the level of developed countries, labour cost, and labour expectations increase and their competitive advantage is vanishing. The present case shows how business model innovation can be used to overcome commoditization challenges partly by moving from a business model focused on the trade of goods to a business model focused on the trade of tasks (Carayannis et al., 2011). In addition, this paper aims to address how organization sustainability and resilience can be achieved with business model innovation and the role organizational design, governance and different stakeholders (customers, clients) have in the process. The results provide insights to manufacturers’ in developing countries can overcome their dependence on commoditized products and OEM manufacturing while maintaining a sustainable ecosystem.

The following sections discuss the existing literature on business models and business model innovation, before the different elements of the business model are set into the context of organizational sustainability and resilience, which sets the stage for the empirical analysis. Subsequently, the paper outlines the research approach taken before the cases are described in detail and findings are evaluated, as well as comprehensively discussed. Finally, implications for theory, policy and practice and future research are outlined at the end of this paper.

2. Business Model

The concept of business models and consequently business model innovation has its foundation in corporate practice, strategic management and industrial economics (Aspara, Hietanen, & Tikkanen, 2009). It received increasing attention during the late 1990’s and early 2000s (e.g. Amit and Zott (2001), Petrovic et al. (2001), or Applegate (2000), among others) due to the emergence of internet-based businesses (Spector, Santos, & Van der Heyden, 2009). Despite the concept of Business Models being first mentioned in 1947 (Spector et al., 2009) there is no academic definition that has been agreed upon (Goethals (2009), Mäkinen and Seppänen (2007), Schneider and Spieth (2013) and this is therefore also true for business model innovation (Schneider & Spieth, 2013). Partially, the reason can be found in that the term “business model” appeared in the popular press, due to developments in the entrepreneurship community (George & Bock, 2011). De Reuver et al. (2013) distinguish between a European and American School of business models, where the former focuses on modelling and design approaches and the latter focuses on classifications of business models and its use in open innovation. The latter approach is an abstract systemic description of interconnected activities (Abdelkafi, Makhbotin, & Posselt, 2013). Especially Zott et al (2011) understand Business Models as a new holistic, systemic way of analysing organizations bridging traditional units of analysis, by describing what organizations do and how they do it. A business model is then an activity-centered, structural description of a firm’s relations with all its internal and external stakeholders and has its roots in strategic management thinking (Zott et al., 2011; Christoph Zott & Amit, 2008).

Thus, business models are not a strategy but constitute the core and driver of a strategy as well as the key for decoding, understanding and effectively communicating a strategy both within an organization as well as across its business ecosystem. Zott and Amit (2008) showed that a product market strategy and a business model are indeed different concepts and that their combination affects a firms market value. However, Casadesus-Masanell and Ricart (2010) argue that strategy and business model overlap. It enables external observers to understand a firm’s strategy by looking at its business model, as the business model reflects the realized strategy of an organization. Early definitions date back to Timmers (1998), Amit and Zott (2001), Chesbrough and Rosenbloom (2002), Magretta (2002), and others (see Zott, Amit and Massa (2011) for a comprehensive list). Shafer, Smith and Linder (2005) found twelve different definitions in between 1998 and 2002, encompassing 42 different business model components.

The definitions fit into four themes, strategic choices, creating value, capturing value and value networks. They conclude that a business model is reflecting the strategic choices and their operating implications, which helps to communicate, analyze, test and validate the cause-effect relationships that derive from the strategic choices made (Shafer et al., 2005). Similarly, Zott, Amit and Massa (2011) list ten general level definitions for business models and suggest that existing literature has mainly addressed business models under the view of a new analytical approach, as a holistic perspective on how enterprises do business, stressing organizational activities, and emphasizing value creation.

George and Bock (2011) established six themes on which business models seem to reflect upon. 1) Organizational Design, 2) resources based-view of the firm, 3) narrative and sense making, 4) the nature of
innovation, 5) the nature of opportunity, and 6) transactive structures. However, their research shows that practitioners relate a business model predominantly to performance, survival and opportunity exploitation. The business model, therefore, reflects the architecture of an organization to accomplish a specific purpose, usually value creation. In summary, business models focus at least on value creation and value capturing aspects of businesses (C. Zott et al., 2011).

In a sense, this plethora of views and variants of business models may indeed reflect that emergent stage of the theory around business models and hence business model innovation perspectives.

3. Value Proposition

While systemic frameworks and definitions of Business Models are useful they also tend to be generic, as their abstraction level is higher, since they do not deal directly with activities and business patterns (Abdelkafi et al., 2013). A less abstract way of defining Business Models evolved around value-based business models. The publications by Osterwalder and Pigneur (2010), Johnson (2010), and Abdelkafi el al. (2013) offer frameworks that focus on definitions of Business Models that have the concept of value at their core.

Osterwalder and Pigneur (2010) developed the Business Model Canvas around the Value Proposition, and defined a Business Model as “a rational of how an organization creates, delivers and captures value (Osterwalder & Pigneur, 2010, p. 14).” Their Business Model Canvas is constructed around Value Propositions. Johnson (2010) defines the Business Model as a “representation of how a business creates, delivers value, both for the customer and the company.” His Business Model includes four interconnected key elements, customer value proposition, profit formula and the closely linked key resources and processes, which altogether grow the rules, norms, and success metrics of a business. Abdelkafi et al. (2013, p. 12) follow a similar approach by defining the Business Model as a description of “how a company communicates, creates, delivers, and captures value out of a value proposition.” Their framework (Figure 1) captures how each aspect is carried out in the organization.

![Figure 1: Business Model Framework (source: Abdelkafi et al., 2013, p. 12)](image)

Value Proposition in the center is defined by Osterwalder and Pigneur (2010, p. 22) as “the bundle of products and services that create value for a specific Customer Segment”. The surrounding aspects explain how from this proposition, value is created, captured, delivered and communicated. A value proposition is by definition only relevant for a specific or several specific customer segments, wherefore, it has to be communicated appropriately, which includes selecting useful channels and the right content. Value creation addresses the question with whom and how processes are carried out and resources are transformed. Value delivery addresses who the value proposition is addressed to and how it will be delivered to them. Finally, value capture focuses on how revenue is generated and how costs are kept under control (Abdelkafi et al., 2013). Indeed, we consider the value proposition to be the enabling foundation for the conceptualization and implementation of a business model or models as it encapsulates the unique, hard to expropriate and/or emulate as well as superior value-adding in a financially, socially and environmentally sustainable manner leading to sustainable entrepreneurship and robust competitiveness regimes (Carayannis, Alexander, & Ioannidis, 2000; Carayannis et al., 2011; Carayannis & Campbell, 2009; Carayannis, Clark, et al., 2013; Carayannis & Korres, 2013; Carayannis & Provance, 2007, 2008; Carayannis & Wang, 2012).

The research adopts Abdelkafi’s et al. (2013) definition and framework as it allows to discuss different pattern in a less abstract nevertheless comprehensive way. It enables to examine a business more closely and explore activities carried out in the context, eventually easing the operationalization of business model research. It also allows exploring the different business patterns in the selected cases and allows comparison of the business model innovation approaches. A business model in general allows conceptualizing the interrelated strategies and relationships among the different components, assess the logic and consistency of a firm’s operating framework (Morris, Schindehutte, & Allen, 2005). Furthermore, a predefined framework enables to define business model innovation as an evolution or revolution of an existing business model. In short: If one or several aspects of the business model denoted in the framework change, it is possible to speak about a development or an innovation of the business model. In addition, innovation may also be driven by transformations in the way different aspects of a business model relate to and interact with each other.

4. Business Model Innovation

Schneider and Spieth (2013) recently summarized the current state of Business Model Innovation research that focuses on three core perspectives:
a. the theoretical foundations of the resource-based view of the firm (Barney, 1991),
b. the dynamic capabilities view of the firm (Teece, Pisano, & Shuen, 1997), and
c. the strategic entrepreneurship view (Hitt, Ireland, Camp, & Sexton, 2001; Kuratko & Audretsch, 2009).

The resource based-view argues that an organization’s competitive advantage is based on their different, unique and non-substitutable resources (Barney, 1991). Dynamic capabilities in the context of the resource-based view means an active integration, or in business model terms, reconfiguration of the capabilities and organizational processes, in order to gain a competitive advantage from them (Teece et al., 1997). This in fact re-assembles the view of Spector, Santos and Van der Heyden (2009) who defined Business Model Innovation (BMI) as “a reconfiguration of activities in the existing business model of a firm that is new to the product/service market in which the firm competes” (2009, p. 14) and who call BMI a way of lean innovation, since resources and other capabilities are already inherent in the organization, and investment can often be kept at a minimum. Similarly, Lindgardt et al. (2009) state that BMI can be embedded in the existing core business, which allows to capitalize on existing capabilities, or integrated into a new firm, as suggested by Christensen (1997) when dealing with disruptive innovations.

The third incorporated perspective is strategic entrepreneurship, which combines internal situation and external opportunity perspectives (Schneider & Spieth, 2013). Schneider and Spieth developed a business model research framework based on the distinction of business model development and business model innovation, where the former is a continuous change and the latter is a response to changing sources of value creation. Consequently, BMI is dominantly rooted in strategic entrepreneurship, while business model development is rooted in the concepts of resource-based view and dynamic capabilities perspective. A business model is a constantly adjusting and dynamic system based on internal and external changes, that might be either incremental or radical (Bucherer, Eisert, & Gassmann, 2012). As a result, it will not be possible to predict the innovation of a business model by just looking at an organization’s existing business model. The business model only reflects the status quo and not the strategic choices organizations might make (Casadesus-Masanell & Ricart, 2010).

Similarly, Aspara et al (2009) argue that BMI can be regarded as a strategic choice of a business or as a continuous strategic orientation. It is seen as valuable in stable economic situations, where businesses often face the need to completely reinvent themselves (Lindgardt et al., 2009), whereas Business Models seem to be more stable during times of success, as the ‘path ahead’ seems to be obvious (Schneider & Spieth, 2013). Cost reduction and flexibility are among the most compelling reasons for organizations to engage in business model innovation, as BMI allows specialization and seizing emerging opportunities quickly (Pohle & Chapman, 2006).

Several authors (e.g. Bucherer et al., 2012; Sorescu, Frambach, Singh, Rangaswamy, & Bridges, 2011) distinguish between internal and external drivers that can lead to BMI, by aligning internal capabilities or adapting to external changes, like technological developments (H. Chesbrough, 2010) or changing customer values (McGrath, 2010). Indeed, the process of implementing an innovative business model seems to be driven by acting on internal and external opportunities and threats (Bucherer et al., 2012).

So as to find an appropriate business model to replace the existing one, scholars have suggested experimentation (H. Chesbrough, 2010; McGrath, 2010), since organizations are acting in an uncertain area. Therefore, similar to the Lean Start-up approach (Ries, 2011), popular in the entrepreneurship community, a discovery driven approach could be used, enabling organizations to learn about their newly developed business models quickly and at low cost (McGrath, 2010). In addition and in complementarity to this approach, the processes of exploration and exploitation as well as the act of creating opportunities through entrepreneurial action are important aspects of the emerging BMI body of knowledge and theoretical framework, in our view (March, 1991; (Chandler, DeTienne, & Lyon, 2003; Mitchell, Mitchell, & Smith, 2008; Raisch, Birkinshaw, Probst, & Tushman, 2009; Zahra, 2007). Similarly, Bucherer (2012) found that BMI can be either run in parallel to an existing business model or can go so far as to establish a new entity, either internally as a business unit, or externally as a new venture.

It has been argued that making the strategic choice to completely change or alter an existing business model will show significant sustainable business performance improvements (Lindgardt et al., 2009). Despite the BMI praise, Aspara et al. (2009) found that BMI alone will not likely result in greater business performance, however, in combination with a second strategic focus, namely, replication of effort as covered in the quoted study, will yield better performance. This finding reinforces our views as well focusing on the importance of higher order learning to achieve higher levels of organizational sustainability and excellence discussed earlier.

5. Business Model Innovation, Organizational Design and Governance

Osterwalder (2004) notes that the Business Model is situated within a triangle of Business Strategy, Information and Communication Technologies (ICT), and Business Organisation, the latter including organizational structure, departments, units, processes, and workflow. He notes that changes within the Business Model will effectively change how the organization is designed. Accordingly, Carayannis and Provance (2008) have argued that innovation emerges from posture, the organizations position within a business ecosystem, propensity, as a reflection of processes routines and capabilities including the organizational culture and performance (3P), which are not only financial but also products, patents and environmental impacts. Organizational design for innovation is then the effective alignements of the organization to the firm’s business model in order create an optimal environment for the 3P’s. Similarly Zott
and Amit (2010b) have argued that the business model represents an activity system of a firm and that its design around content (what), structure (how) and governance (who) should address one/or several themes around novelty of content, structure and governance, lock-in of stakeholders, complementarities of activities, and efficiency to reduce transaction cost.

This poses the question where Business Model Innovation originates within an organization, and what kind of leadership style is needed to drive Business Model Innovation. Established firms in particular, face the barrier of responsibility in regard to BMI. In large organizations, several stakeholders could potentially be responsible for innovating the business model, but top management is often assigning the responsibility to mid-level management. This often lacks the requisite competence, experience, expertise and authority to properly shape, drive and leverage BMI, and that eventually results in a leadership gap and even failure (H. Chesbrough, 2007; Spector et al., 2009). This is a reason why smaller firms might be more successful, as they face less constraints, can adapt quicker, and have a less extensive organizational structure (Aspara et al., 2009) along the themes of organizational resilience, robustness and sustainability earlier discussed. Accordingly, De Waal (2006) has argued that organizational design in high performance organisations should stimulate cross-functional and cross-organizational collaboration, simplify the organization by reducing barriers around units, foster knowledge sharing and be able to continuously align the business with the ever changing internal and external environment. These changes however, can only be mandated by the top management. Business Model Innovation, particularly such that could lead to market disruption, needs organizational re-design which might explain why established firms tend to be more successful at sustaining innovations, while being less successful in BMI per se, while firms new to a market are more likely to succeed in business model innovation. In this regard Spector et al. (2009) consider relational linkages between internal and external (partners, supplier, customers) units and transactional linkages of activities of these give units and their governing mechanisms as vital to be addressed in the organizational design. Governance in particular, addresses the problem of power distribution, control and hierarchy.

It might be these governance issues that predominantly hinder business model innovation as the conflicting interests between the configuration of existing business assets and potentially new ways of doing business contradict the dominant logic a firm follows. Often BMI makes several capabilities and partners obsolete, which conversely means that new skills and knowledge are required organization-wide, thus triggering defensive routines and other organizational inertia and resistance to change and learning symptoms (C. Argyris & Schön, 1987; Chris Argyris, 1985). It potentially changes the scope of the corporation, impacts other departments, and risk exposure (Spector et al., 2009).

6. Organizational Sustainability, Intelligence, and Resilience

Several studies have reported that the main goal of firms is to create wealth and profits for shareholders, putting social and environmental ‘aspects’ as secondary under the main business goal (e.g. Stormer, 2003). Other studies mention that corporations have to undertake initiatives and operate in such way that will address social and ecological degradation, developing new business models that would lead them to become integrated entities that operate beyond the economic profit, creating social and environmental value (e.g. Doppelt, 2003; Dunphy, Griffiths, & Benn, 2003). Nidumolu et al. (2009) argue that sustainable development is the only way available for enterprises’ growth, decreasing production costs and generating additional revenues from novel offerings or business expansion. Their empirical study found that (p. 2) “sustainability is a mother lode of organizational and technological innovations that yield both bottom-line and top-line returns.” Although this path is not easy - with those firms facing the challenges of the five stages of change (Nidumolu et al., 2009, p. 5): viewing compliance as opportunity; making value chains sustainable; designing sustainable products and services; developing new business models, and creating next-practice platforms-, they present this strategy as the competency for businesses to develop future’s competitive advantage, which is also emphasized as different management standards such as ISO 14001 address sustainability issues (Hall & Wagner, 2012). Considering the role of different stakeholders, particularly partners, clients and customer, in achieving organizational sustainability is fruitful as the organizations can position themselves as sustainable leaders. Sorescu et al (2011) for example, name sustainable sourcing and business practices as means of locking in in customers, as part of a customer engagement strategy to increase loyalty and positive associations with the brand.

Likewise, Stubbs and Cocklin (2008) suggest that the current business model must be transformed, incorporating social and environmental priorities for organizations to become sustainable. Scholars have raised the issue of integration of economic, social, and environmental aspects in business operation (e.g. Elkington, 1998; Savitz, 2006). For example, Carayannis and Campbell (2010) who underlined the importance of ecology in business operations developed an inter-disciplinary and trans-disciplinary framework of analysis for sustainable development. Based on the Triple (university-industry-government relations) and Quadruple (university-industry-government-civil society relations) Helices (Carayannis & Campbell, 2009), they introduced the broader and more comprehensive concept of Quintuple Helix (Carayannis et al., 2012) which frames knowledge and innovation in the context of the natural environment, and can be interpreted as an approach in line with sustainable development and social ecology. While the Triple Helix recognizes the importance of higher education for innovation and the Quadruple Helix incorporates the principles of and requires a coevolution with the knowledge society and the knowledge democracy for knowledge creation and innovation, the Quintuple Helix is ecologically sensitive as it emphasizes on the socio-ecological transition of society and economy (Carayannis et al., 2012). Quintuple Helix is the system that sets a common ground between ecology, knowledge, and innovation, creating the synergies between economy, society, and
democracy. Consequently, organizations should operate within those frameworks and adopt such business models aiming also to provide solutions to societal and environmental challenges (apart from seeking economic profit), as “such global problems are too complex to be solved solely by political actors” (Hansen, Grosse-Dunker, & Reichwald, 2009, p. 684). Carayannis et al. (2012) use the example of global warming, mentioning that the Quintuple Helix innovation model can be applied with great potential. Additionally, sustainable development provides the framework for innovation and business expansion, through new regulations that push for innovation and new ideas that lead to business growth, the regulatory push and vision pull model (Day, 1998; Hockerts, 2008; Preuss, 2007). Putting all these together, we see that sustainability innovations maintain and increase the overall capital stock (social, economic, and environmental) of a firm (Hansen et al., 2009), with ethics and culture (people) being the cornerstones of this framework.

In this context, it is often perceived that globalization serves as both a catalyst of accelerated development as well as an agent of chaotic disruption resulting in socio-economic and political dislocations. In light of this, a key idea may be that heterogeneity could be understood as a mind-set and a practice where complexity and diversity are leveraged strategically in a manner that promotes sustainable entrepreneurship.

We define sustainable entrepreneurship as:

> the creation of viable, profitable and scalable firms that engender the formation of self-replicating and mutually enhancing innovation networks and knowledge clusters leading towards what we call robust competitiveness. (Carayannis, 2009).

We define robust competitiveness as:

> a state of economic being and becoming that avails systematic and defensible “unfair advantages” to the entities that are part of the economy and is built on mutually complementary and reinforcing low-, medium and high technology, public and private sector entities (government agencies, private firms, universities, and non-governmental organizations). (Carayannis, 2009).

Although there is a relationship between organizational resilience and organizational robustness, they are neither identical, nor are they of necessity fully compatible: that is, a set of strategies and actions that maximize resilience may not be identical to the set of strategies and actions maximizing robustness. As such, a critical organization design consideration is determination of an enterprise form that jointly optimizes resilience and robustness. Whenever there are differences in the sets of strategies and actions maximizing resiliency and robustness, the organization should exercise care to elaborate and make informed choices among the trade-offs between resiliency and robustness that ultimately constrain any choice of strategies, actions, and organization design including and in particular that of BMI choice and evolution (Aspara et al., 2009; Carayannis & Provance, 2008).

Just as organization design is important to resilience and robustness, so innovation is a documented resilience enabler. Innovation and organization design are also critical to Sustainable Enterprise Excellence or SEE (Edgeman & Eskildsen, 2012) where:

**Sustainable Enterprise Excellence balances the complementary and competing interests of key stakeholder segments, including society and the natural environment and increases the likelihood of superior and sustainable competitive positioning and hence long-term enterprise success that is defined by high-level organizational resilience and robustness and by continuously relevant and responsible governance, strategy and actions that produce superior results.**

This is accomplished through organizational design and function that emphasize innovation, enterprise intelligence & analytics, operational, supply chain, customer-related, human capital, financial, marketplace, societal, and environmental performance. Sustainable Enterprise Excellence integrates ethical, efficient and effective (E3) enterprise governance with 3E (equity, ecology, economy) Triple Top Line strategy throughout enterprise culture and activities to produce Triple Bottom Line 3P (people, planet, profit) results that are simultaneously pragmatic and innovative and that provide foresight suggestive of next best practices and sources of competitive advantage.

Figure 2 aims to illustrate the linkage between those concepts, placing business model innovation and organizational sustainability at the heart of the business phenomenon. It shows that innovation and organization design along with enterprise excellence form and enhance a firm’s organizational intelligence leading to robust competitiveness and sustainable entrepreneurship. The latter also advances organizational resilience leading to innovations, enriching the capabilities of excellence of the organization. This is consistent with Levinthal and Rerup (2006), who argue that, among other processes, the commitment to resilience is likely to lead to an active awareness in organizations (the mindfulness concept, (Langer, 1989)), which is regarded as an openness to new information and a disposition to assess context from different angles.

**Excellence and Resilience (adapted from Carayannis, Edgeman, & Sindakis, 2013).**

Within this framework, this study aims to explore the ways and means by which sustainability is created, focusing on a lighting manufacturing organization in Thailand (Please see the research design below). Hall and Wagner (2012) analyzed the impact of how integrating sustainability aspects into the business model of manufacturing firms can help create competitive advantages. They argue that integrating sustainable metrics and measures can be the foundation for competitive advantage as it allows reducing inadequacies usually caused by deviating from objectives as well as diverging objectives (such as financial vs. social vs. environmental). They propose that business models based on cross-functional problem solving perform economically and ecologically better than those using a modular approach. However, cross-functional coordination leads to a less tight integration with regulatory bodies in the case of process innovation.
Based on Schaltegger et al’s (2012) argument that the degree of business model innovation impacts corporate sustainability strategies, and therefore, the overall performance and competitiveness of the organization, the authors also plan to conceptualize and empirically corroborate the assumption that business model innovation is the driver of sustainable growth in the case organization.

7. Research Design
Since current research on Business Model Innovation and Organizational Sustainability is still in the emergent phase, an exploratory qualitative research approach was chosen based on case-study research (Eisenhardt, 1989; Yin, 2009). A qualitative, case-study-based approach allows unveiling and building theory when the phenomenon studied is not clear or little is known. It considers complex patterns and context specific factors as well as causal relationships. The authors conducted an exploratory case study. The data was studied in an iterative way allowing for creation of new relationships that explore possible explanation for the studied phenomenon.

Since the study required information on the conception, implementation and evolution of the business model, our objective was to interview the most senior executives. Company data was collected through interviews, historical financial data and documents relevant in the business model innovation process. Interview with 8 senior executives, including the CEO and Managing Director, were conducted. The questions were open-ended and semi-structured. The interviews were conducted in English language with a Thai translator present to clarify concepts and questions if remarks arose. We also collected past financial data, product and general company information as well as documents relevant to the business model innovation process. Publicly available data, web presence and media coverage were considered where it added additional information. Where data was only available in Thai language, translations were conducted and checked for validity and reliability by a second translator.

The interviews lasted between 20 and 60 minutes and were held on-site. All interviews were taped and transcribed before the analysis of the data. We first clarified the concepts of business model innovation and organizational sustainability to the interviewees to ensure the concepts were addressed correctly. In the second step, the open-ended questions were asked regarding the mentioned topics. The open-ended questions were developed by the authors and focused on when, why, and how the new practices were developed and implemented as well as on the practical changes these implementations had on the organization, in terms of new offerings, the leveraging of existing and new knowledge and improvement of technologies that would enable market leadership, or improve organizational sustainability in any way. At the end of the interview we allowed for comments to give the interviewees the opportunity to add information they deemed useful for the study.

8. Case Lee KichareonSeang Co.Ltd.
Lee KichareonSeang Co.Ltd. (LKS) was founded 44 years ago and is Thailand’s largest lighting manufacturer, and is owned by Lee KichareonSeang Co.Ltd consists of six companies all focusing on different parts of the lighting manufacturing, packaging and sales (Figure 3). The particular interested of this research is on LeKise Lighting (LKL), which was established in 2009.

Lee KichareonSeang Co.Ltd started as an OEM manufacturer 44 years ago and has since then technologically collaborated with Hitachi Japan to produce various lighting solutions. Lee KichareonSeang Co.Ltd is the first and one of the largest providers of T5 and later T8 tube lighting in Thailand and is now the first Thai organization to introduce LED lighting to the country. Among their clients are companies like Toshiba, Panasonic, and Philips. In 2009, the company established its own branding under LeKise Lighting (LKL) and started selling lighting products under its own brand in Thailand and to various countries across South-East Asia. In the same year, LKL started to invest in R&D to improve existing products and meet customer expectations. In 2010, LKL expanded its business by creating a service solution around lighting, called 1-Stop-Lighting Service. This full service solution, encompassing products customized for clients, installation, and extensive customer relationship services was designed to differentiate LKS from competitors and further increase independence from OEM manufacturing. In 2011, LKS became the first manufacturer to start developing and selling LED lighting in Thailand. The evolution of the business model is summarized in Table 1. LeKise was forced to innovate its business model due to changing market conditions. LED lights are slowly replacing fluorescent lights in Thailand and around the world, which results in major problems for
lighting manufacturers. While fluorescent lighting is based on specific lighting technologies, LED lighting is using electronic circuits, which can in theory be produced by every provider of electronic appliances. This expands the competition in the lighting industry considerably. Not only is LED lighting much more energy efficient, the LED lights lifetime is much longer as well. With increasing lifetime and increasing adoption sales are likely to decline in the long run, wherefore new revenue sources have to be explored.

OEM manufacturing has been the backbone of Lee KichareonSeang Co.Ltd for 44 years. It came forward, however, that OEM manufacturers face the problem of increasing labour, raw material and energy cost, as well as price pressures from their clients. The Managing Director pointed out that this is one of the main reasons for Lee KichareonSeang Co.Ltd. to establish LeKise Lighting. The company had positioned itself as an OEM manufacturer delivering reliable and quality of products at competitive price to customers. LKL had adopted the manufacturing process, technology and quality control from its Japanese counterparts. However, one manager pointed out that the Lee KichareonSeang Co.Ltd is in fact not able to compete on price anymore, due to Chinese competition. He pointed out that in OEM manufacturing; LKS is only able to compete on quality.

“We sell our products in a good price and the quality is beyond the price they paid. That means customer will think that our product is worth paying for. For example, a lamp has its lifetime at 22,000 hours which customer can use for 4 years and they only pay about 30-50 Baht for it. “

The LeKise Lighting brand is manufactured by Lee KichareonSeang Co.Ltd, which modifies the production to fit the LeKise Lighting brand. As an OEM manufacturer, LKS delivers products to the USA, Middle-East Northern Africa, and South-East Asia, including Thailand. Under this brand, LeKise Lighting sales products to international customers across Asia and through retailers like Tesco Lotus to end users.

Table 1 Changes in the LKS Business Model

<table>
<thead>
<tr>
<th>Before establishing LeKise Lighting</th>
<th>With LeKise Lighting</th>
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<tbody>
<tr>
<td><strong>Value Proposition</strong></td>
<td>Lighting Products</td>
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<tr>
<td><strong>Value Communication - Story for communicating value</strong></td>
<td>High quality lighting products</td>
</tr>
<tr>
<td><strong>Value Communication – Channels for communicating value</strong></td>
<td>• Social Responsibility Projects</td>
</tr>
<tr>
<td></td>
<td>• On- and Offline Media (TV/Websites)</td>
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<td></td>
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<tr>
<td><strong>Value Creation – Key partnerships</strong></td>
<td>• Hitachi</td>
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<td></td>
<td>• Raw material suppliers</td>
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<tr>
<td></td>
<td>• Mainly internal LKS Group partners</td>
</tr>
<tr>
<td></td>
<td>• OEM Partners</td>
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<td></td>
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<tr>
<td><strong>Value Creation Key resource and processes</strong></td>
<td>• Raw Materials</td>
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<td></td>
<td>• Sales Team</td>
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<tr>
<td></td>
<td>• Manufacturing process</td>
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<tr>
<td><strong>Value Capture – Cost Structure</strong></td>
<td>• Manufacturing</td>
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<tr>
<td><strong>Value Capture - Revenue Streams</strong></td>
<td>• Wholesale</td>
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<td></td>
<td>• OEM Products</td>
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<tr>
<td></td>
<td>• Export</td>
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<tr>
<td><strong>Value Delivery – Customer Segments and relationships</strong></td>
<td>• Wholesale</td>
</tr>
<tr>
<td></td>
<td>• OEM clients</td>
</tr>
<tr>
<td><strong>Value Delivery – Distribution Channels</strong></td>
<td>• Direct sales to wholesale customers</td>
</tr>
</tbody>
</table>
LeKise Lighting has not only established a LeKise brand but has introduced new services, called 1-Stop Lighting Services. Originally LeKise would only deliver products to large construction projects. In case of quality issues the clients would contact LeKise and the company would send a team to fix the issues. The new service offer changed this process completely. Through the 1-Stop Lighting Service LeKise provides clients with an integration customized products, customized lighting design, installation services, called power serve, and customer relationship management and customer social responsibility programs, which includes an energy saving consulting service. This changes the value proposition of LeKise entirely. In the interviews, it was repeatedly pointed out that the value proposition is communicated as a lighting solution rather than a lighting service. The lighting solutions are the main differentiator from its competition for LeKise.

“Before LeKise had the 1 Stop Service they separated the market into consumer market and project market. Before they tried to develop the one-stop-service they were thinking about how to customize the project segment of the market. We felt that LeKise is not just selling the product. The project market is the solution. It's not just the product and service sales but also the solution to customers.”

“Right now we are already in the top 2 of the lighting companies in Thailand…for LeKise lighting our goal has changed, for example solutions. We try to compare with the local solution providers; we are still trying to find out who is the leading Thai organization in the solution market. The question is, if it can be LeKise.”

LeKise was the first full solution provider in Thailand. While one could expect the provision of customized solutions would be the main distinction between LKL and its competitors, the customer relationship management and customer social responsibility activities are giving LeKise Lighting another edge, as competitors in Thailand do not operate such departments. The message that is conveyed through marketing efforts is that LKL products can save energy and preserve the environment. Upon introduction of the service off- and online marketing campaigns that target particularly cost minimisation topics in joint effort with the Electricity Generating Authority of Thailand, while the focus is now changing to point-of-sales marketing and social responsibility, particularly reforestation, campaigns. The point-of-sales marketing allows demonstrating the products, but on-site tests for potential solution clients are available as well.

The implementation of solutions has altered LeKise Lighting key processes significantly. While originally the key processes were solely based on ISO standards and KPIs they are now including customer relationship and corporate social responsibility processes. The integrated approach does require IT solutions that can handle the management of different departments also collaboration between departments are much more integrated and resource allocation has been becoming a major difficulty.

“After we introduced the 1-Stop Service, processes and resources have changed dramatically. For 1-stop-service we need to combine four different teams in order to be able to do one stop service. Creating the product, designing, both have to design and create products that meet customer requirements and satisfy them. The service team needs to know different types of installations, which installation system is best for each location. The CRM team has to follow up with customers and maintain a good relationship. Before the 1-Stop-Service had only the production and sales team, but after we need to have four teams.”

“There is an IT structure to control the resources and respond to customer requirements. The CRM system can and is used to collect the customer data. All these systems are linked together, so it’s quite easy to monitor.”

About 10% of the LeKise’s revenue is now invested into R&D. R&D focuses mainly on improving current products. Investment in R&D became necessary as the lighting industry is moving towards LED lighting. R&D is also working closely with the lighting design departments and sourcing and quality department as different conditions and designs require a variety of different materials. In particular, the R&D department is looking into opportunities to develop more environmental friendly products, with longer lifetime and based on modules that can be reused for other products in order to be able to reduce cost and decrease production lines. LeKise’s production also complies with several ISO standards such as ISO 9001, ISO 14001, and ISO 170025. Partnership management and collaborations have become significant for LeKise Lighting. In terms of supply chain, LeKise “resides in the middle and relies heavily on up- and downstream partners.”

Suppliers are considered close business partners and are integrated in the R&D process, which is also possible as many suppliers are part by Lee KichareonSeang Co.Ltd, or belong to family members that own Lee KichareonSeang Co.Ltd. Upstream partners are designers, consultants and contractors, who have to bid for LeKise Lighting project offers. However, the integration of partners goes deeper. LeKise is actively approaching customers to share their experience and needs and has implemented a customer knowledge management process, which is used to improve existing products and services based on customer feedback.

LeKise is also partnering with the Thai government on lighting projects to reduce the governments ecological footprint, more importantly on a partner level, LeKise is part of the committee that sets the production and environmental standards that manufacturers have to follow. Furthermore, LeKise has been and is currently involved in special government programs that helped to drive adoption of more ecological friendly lighting products. The government has worked with LKL on providing interest free loans to project clients if they adopt the latest technology. The loan is paid back to the government on a monthly basis according to the monthly savings the customers have through adopting the new technologies, increasing not only LeKise’s customer base, but also reducing Thailand’s ecological footprint.

The provision of services has also affected human resource practices. Before the introduction of services and brands, the education level of new employees was not significant. Employees in manufacturing can choose to get paid on a daily basis and are free to leave the company from one day to the other, as it ‘only
takes few hours’ to master working at most of the machines. Since establishing international sales and 1-Stop-
Services, “about 80% of new hires have a bachelor degree. The employees need higher skills and a better
educational background.” As part of its HR efforts, LeKise is offering a mini MBA and other training
programs to its management employees. Obviously, this affects the cost structure significantly. Where
previously raw materials and manufacturing where major expenses, human resources is now an increasing cost
factor. While the cost structure was at first very simple, only reflecting raw material and manufacturing,
administration and shipping, it has become very complex. B2B (Business to Business) and B2G (Business to
Government) projects are now considered as one of the major revenue streams but calculating their price
remains a challenge, as every project is completely customized. The sales team has now to estimate cost that
will arise during the projects propose the project price and estimate to the top management before it can offer
the project estimate to the customer. A major part of the cost is now related to human resources, R&D and
warehousing of spare parts, which are needed to act on warrantee cases immediately. However, while the 1-
Stop-Services increase the complexity of the cost structure, it also increases revenue. The volume of B2B and
currently B2G projects sales increases yearly by about 50% and make up a significant amount of revenue for
LeKise.

In order to be able to deliver new services, LeKise Lighting had to restructure itself significantly.
While originally only focusing on sales and manufacturing, it has had to change to a company that provides
services. Not only had the organizational structure to change, but the mind-sets of employees. In itself LKL, as
part of Lee KitchareoSaeng, was set up to enable the group to deliver new products and services to the
lighting market. When LeKise Lighting had to adapt to the market situation due to the increasing adoption of
LED lighting and their introduction of the 1-stop-service LKL had to change again.

“We are the organization that is really good at adapting or changing. We are very flexible. All
employees can easily adapt to change. When the LED technology came in the existing organization
structure and unit was not enough to drive the whole organizational changes necessary. So we set up
a new unit.”

Part of the restructuring was reducing the amount of functions performing the same tasks and having
the same accountabilities across the organization, this allowed establishing the new structure to foster
sustainable growth and competition along the way. LKL also established the overseas subsidiaries to create
more efficient supply chain activities at competitive costs and operations allowing staying close to market and
rendering services faster. LKL also implemented product-marketing teams dedicated to manage the Product-
Life-Cycle of major product groups as well as executing a multi-generation product development plan for the
upcoming 3 years which allows LKL to stay ahead of the competition. These teams are supplemented by
Chinese based sourcing teams that help accessing new technologies at low cost. LeKise describes itself as a
very flexible and adapting organization, with an emphasis on quality management and innovation. The firm is
designed to meet customer requirements and it is possible to change process depending on customer needs.
However, change is mainly driven by the CEO himself. In all conducted interviews the managers pointed out
that the vision and strategy are provided by the top management and disseminated through meetings, emails
and bulletins to the different management levels and departments.

“Our CEO looks into long term success of the organization. He teaches all employees that we always
have to be one step ahead of others.”

One manager noted that the approach works very well for LeKise because the CEO and Managing
Director are both actively involved in the day to day operations of the firm. This is in accordance with several
managers noting that the organization in itself is very conservative. The CEO and top management develops a
three to five year strategy for LKL, which is then translated into key performance indicators (KPIs) by the
head of departments. Value creation is enhanced by measuring organizational results against the KPIs and
meetings are called for to be able to quickly react to market changes if the KPIs are not met. Part of the KPIs is
also to reduce cost and awareness programs and competitions are run to increase mindfulness about cost
saving issues. However, despite being described as conservative and following a managerial ‘top-down’
approach, employees are encouraged to share their ideas, make suggestions to improve practices and minimize
cost, as well as suggest projects LKL should embark on. In fact, the CEO described every single employee as
crucial for the fulfillment of the organizational strategy.

9. Discussion and Conclusion
Based on the one empirical case study (LKS), some preliminary findings can be deduced as an emerging set of
indicators that may be reinforcing some of our theoretical tenets outlined above. It comes forward, for
example, that LKS takes the advantage of current resources and knowledge in order to develop and establish its own brand (LKL), aiming to fill the gap in the local market and compete with larger firms that still collaborate with under the OEM framework. This is consistent with the views of Barney (1991), Teece et al (1997), Spector et al (2009) that companies that manage to reconfigure their capabilities and organizational processes are able to innovate and therefore, compete and survive in the global competitive landscape. Likewise, this case company verifies the arguments of Lindgardt et al (2009), Christensen (1997), and Schneider and Spieth (2013), who used the term strategic entrepreneurship to describe corporate entrepreneurial initiatives as tools for BMI (e.g. when organizations utilize current competencies and resources to develop new units or new ventures). Therefore, we see that LKS links, proves and practically enriches the three core perspectives of BMI given by Schneider and Spieth (2013).

This study also corroborates on the opinion of Aspara et al (2009), and Pohle and Chapman (2006) that this continuous strategic orientation to innovation and flexibility – two core components of sustainability and resilience – is characterized by proactiveness as it allows firms to appreciate future risks and take the necessary actions to obviate competitors; check on global technological advancements (in this case by adopting, adapting and developing innovations for the local market); respond to environmental changes (by designing lighting products that save energy); and meet customers’ needs (by developing high quality customised lighting solutions). LKS seems to be a good example of a company in SE Asia that adopts BMI, readapting its structure, developing and establishing a new business, and adjusting the balance of production – investing more on producing LKL products and less on OEM – responding in that way to the challenges of the present time. This study also underlines the ambidexterity that is required for successful BMI, leading companies to create opportunities for growth, and so, prevent decay.

Here comes the ability of the company not to develop its strategy and count only on the benefits of the short-term goals, but also to consider long-term planning as the tunnel to success and sustainability. In other words, “the ability of an organization to focus on both the short and the long term is one of the key critical enterprise success factors and this balance can be achieved by relying and leveraging technological learning processes at multiple levels within the organization” (Carayannis, 1998, p. 699). This highlights the importance of higher order technological learning (HOTL) capabilities that produce enhanced and innovative organizational routines that, in turn, lead to enterprise excellence (Carayannis, Edgeman, & Sindakis, 2013). LKS and its BMI example illustrate the importance and influence of organization design on the development of innovation and proves Osterwalder’s notion that Business Model is positioned at the centre of the Business Strategy, Information and Communication Technologies (ICT), and Business Organisation triangle. This is shown clearly in Table 1, where the key partnerships, resources and processes as well as the cost structure have been modified according to the new Business Model Development framework of the company. Similarly, we see that posture, propensity, and performance have also been revised and updated, setting up the framework for the company to be competitive (changing its position within the business ecosystem - from an OEM to own brand and product developer - adapting and adopting routines and culture for innovation development; and improving the performance and environmental impact).

This study also enhances De Waal’s (2006) argument about cross-functional and cross-organizational collaborations. Table 1 shows the differences from before to after the establishment of LKL. In the new context, we see that the key partnerships have been enriched and developed mainly with partners that influence the production of high-quality customized outcomes (suppliers, lighting designers, and lead customers); provide solutions for cost reduction (suppliers and contractors); and optimal product distribution (wholesale and retail distribution). Therefore, we can assume that successful BMI requires an integration of the stakeholders into the design, production, and distribution process, following the same rules and aiming to achieve the same results in terms of values (quality) and performance (quantity).

To sum up, we see that organizational sustainability, excellence, and resilience require the application of a BMI within a new Business Innovation Framework that would incorporate resources, dynamic capabilities, and corporate entrepreneurship to develop such competitive advantages and explore new business opportunities that would allow firms to remain sustainable. Moreover, the emphasis on innovation, flexibility, and ambidexterity is prerequisite for successful BMI development in addition to HOTL and organization design for innovation that act as enablers of enterprise excellence. Finally, we argue that cross-organizational and cross-functional collaborations are factors of success and facilitate the implementation of BMI. Clearly, this is work in progress in terms of the collection of empirical data and we expect to have additional empirical validation in the near future.

On the matter of the move from trade in goods to trade in tasks (see Carayannis, 2011 above) we see confirmation on this based on the following quote below:

“...In order to be able to be able to deliver new services LeKise Lighting had to restructure itself significantly. While originally only focusing on sales and manufacturing it has had to change to a company that provides services. Not only had the organizational structure to change but the mind-sets of employees. In itself LKL as part of Lee Kitchareonsaeng was set up to enable the group to deliver new products and services to the lighting market.”

In addition, we see in the following quote an affirmation of the LKS’s capacity to engage in BMI and re-invent itself in the process possibly not only sustaining but also enhancing its value proposition:

“When LeKise Lighting had to adapt to the market situation due to the increasing adoption of LED lighting and their introduction of the 1-stop-service LKL had to change again.”
“We are the organization that is really good at adapting or changing. We are very flexible. All employees can easily adapt to change. When the LED technology came in the existing organization structure and unit was not enough to drive the whole organizational changes necessary. So we set up a new unit.”

Of course, one should take such pronouncements with a grain of salt to be further corroborated via the use of financial results which seems to be reinforced in Figure 3. In addition, sustainability, resilience and robustness are demonstrated in the manner that LKS seems to have been adapting as well as re-allocating resources to provide a strong foundation for future performance and competitiveness based on quality-centric and less cost-centric differentiation:

LKS describes itself as a very flexible and adapting organization. The firm is designed to meet customer requirements and it is possible to change process depending on customer needs. However, change is mainly driven by the CEO himself. In all conducted interviews the managers pointed out that the vision and strategy are provided by the top management and disseminated through meetings, emails and bulletins to the different management levels and departments.

“Our CEO looks into long term success of the organization. He teaches all employees that we always have to be one step ahead of others.”

Moreover, it is interesting to note that this adaptive flexibility is combined with a rather overall conservative culture for LKS per the quotation below. This apparent contradiction seems to be effectively managed and even leveraged for enhancing results via the organic, top-down and bottom-up as well as mid-level out approach at LKS – that may be reflective of the Quadruple Innovation Helix concept at the micro level (see references in text above). One manager noted that the approach works very well for LKS because the CEO and Managing director are both actively involved in the day to day operations of the firm. This is in accordance with several managers noting that the organization in itself is very conservative. The CEO and top management develops a three to five year strategy for LKL, which is then translated into key performance indicators (KPIs) by the head of departments. Value creation is enhanced by measuring organizational results against the KPIs and meetings are called for to be able to quickly react to market changes if the KPIs are not met. Part of the KPIs is also to reduce cost and awareness programs and competitions are run to increase mindfulness about cost saving issues. Particularly interesting is the change in marketing efforts. LKL used to promote products as cost saving rather than energy efficient and social responsible. One could argue that this is indeed implicit in the message of cost saving; however, LKSLighting did change the scope of its marketing efforts completely by setting up a corporate social responsibility and customer relationship management unit. This emphasises now on advertising sustainable products and services through mainly corporate social responsibility activities. It is noteworthy that Thailand was victim to an extensive flood in 2011. Prior to that it was shown that such incidents can have an effect on the interest of organizations in creating value, even in terms of corporate social responsibility. While the aftermath of the flood, who’s victim several of LKS’s competitors were, might have triggered corporate social responsibility initiatives, LKS’ products and services can easily be aligned to CSR practices, after all LED technologies allows for decreasing energy consumption. This allows LKS to apply corporate social responsibility practices not only in times of need, out of philanthropy, but also to increase the triple bottom line results in a sustainable manner. It is a practice that can be used to reach organizational growth by achieving environmental friendly and societal beneficial goals at the same time. While every firm can, in theory, implement corporate social responsibility schemes, the case of LKS is different as CSR and CRM are both results of a large organizational restructuring as part of an innovation in the business model. All in all, the LKS case study seems to be the first in a series of empirical validation steps that has already provided some interesting and encouraging insights into whether, when, how and why organizational sustainability, resilience and excellence can be best served by BMI.

10. Limitations and Implications for Future Research

LKS serves as an example case of business model innovation serving organizational sustainability, resilience and excellence. However, LKS is only one case and while the data is rich and valuable, its limitations have to be acknowledge. As such, the study cannot claim generalizability, or causality. Organizational reality is not only determined by the firm’s actions, but also by its competitors and environmental causes and the data is not sufficient enough to make such claims. In addition, the study cannot claim to offer a representative picture, as we note above that the LKS case is a unique case that overcomes the OEM manufacturing trap by innovating its business model and aligning it to financial, environmental, and societal goals. To clarify if Business Model Innovation can serve organizational sustainability, resilience and excellence, comparative case studies across multiple organizations in different settings would determine if BMI can consistently be a drive for such goals and quantitative research would allow unravelling patterns that are conductive to BMI being a driver for organizational sustainability. The LKS case provides initial insights how BMI can serve organizational sustainability, resilience and excellence; however, future research is need to develop comprehensive insights. First, the study can be extended to a comparative case study aiming to provide insights in potential patterns and processes that would lead to further research in this area by quantitative means. Second, extending the study beyond manufacturing firms to organizations operating in the service sector would allow to get insights how and if organizations with a potentially lower ecologic footprint can align their business model with sustainable goals. Third, the role of the value networks has not been discussed in the present study. It would certainly be of value to see how suppliers/partners and customers actually drive or inhibit firms’ in aligning their business model with ecological, societal and financial goals.
Chapter 3:

Dimensions of Entrepreneurial Behavioural Beliefs, Attitude Toward Entrepreneurship and Entrepreneurial Intention

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Abstract:
The present research investigated the structure of entrepreneurial behavioural beliefs, attitude toward entrepreneurship and entrepreneurial intention. Two hundred twenty-seven Greek tertiary education students (114 males, 113 females) participated in the study. Our findings showed that the various entrepreneurship outcomes, linked to the behavioural beliefs, are distinguished into intrinsic (intangible/psychological) and extrinsic (tangible/physical), and that attitude toward entrepreneurship is best represented by a three-factor model consisting of instrumental attitude, affective attitude and opportunity cost. Moreover, our results revealed that intention for entrepreneurship consists of two dimensions which can be labelled entrepreneurial intension and nascent entrepreneurship.

Keywords: entrepreneurship, behavioural beliefs, attitude, intention.

JEL classification: L26, J24

Entrepreneurial behavioural beliefs, attitude toward entrepreneurship and entrepreneurial intention have been extensively examined within the framework of the theory of planned behaviour (TPB). However, much fewer studies have explored the more affective aspects of behavioural beliefs and attitude itself, in addition to the more instrumental aspects of these constructs usually examined (Dawson, Henley, & Latreille, 2009; French, Sutton, Hennings, Mitchell, Wareham, Griffin, Hardeman, & Kinmonth, 2005; Kolvereid, 1996a, 1996b; Kolvereid & Isaksen, 2006; Kraft, Rise, Sutton, & Roysamb, 2005).

The focus of this study is on the structure of entrepreneurial behavioural beliefs, attitude toward entrepreneurship and entrepreneurial intention. Using a confirmatory factor analysis approach support is provided that entrepreneurial outcomes, viewed as rewards, are distinguished into intrinsic (intangible/psychological) and extrinsic (tangible/physical) and that attitude toward entrepreneurship contains three separable components, one being instrumental or cognitive in nature, the other being experiential or affective and the third representing opportunity cost, that is the personal and financial sacrifices one is willing to incur for the sake of the entrepreneurial venture. Evidence is also found that intention for entrepreneurship consists of two dimensions which can be labelled entrepreneurial intension and nascent entrepreneurship.

1. Theoretical framework
1.1 Entrepreneurial intention

Bird (1992: 11) defined intention as “a state of mind directing a person’s attention, experience and behavior towards a specific object or method of behaving”. According to Boyd and Vozikis (1994: 64) an entrepreneurial intention is “the state of mind that directs and guides the actions of the entrepreneur toward the development and implementation of the business concept”. Along a similar line, Fini, Grimaldi, Marzocchi, and Sobrero (2012) suggest to keep in mind that entrepreneurial intention reflects a state of mind directing a person’s attention and action toward the enactment of entrepreneurial behaviour.

In an attempt to clarify the construct of intention – in particular entrepreneurial intention – Thompson (2009: 676) suggested that “individual entrepreneurial intent is perhaps most appropriately and practically defined as a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future”.

According to Bird (1988: 442) “entrepreneurs’ intentions guide their goal setting, communications, commitment, organization, and other kinds of work”. Similarly, Krueger, Reilly, and Carsrud (2000: 412) argue that intentions are “the single best predictor of any planned behavior, including entrepreneurship”. For Thompson (2009: 670) “entrepreneurial intent is substantially more than merely a proxy for entrepreneurship – it is a legitimate and useful construct in its own right that can be used as not just a dependent, but as an independent and a control variable”.

Chapter 3:
1.2 Attitude toward entrepreneurship

Deeply connected to intentional and volitional behavior are beliefs and attitudes (Elfving, 2008). Attitude toward a behavior is as a person’s overall evaluation of performing the behavior in question (Ajzen, 1991; Fishbein & Ajzen, 1975; Mather & Romo, 2007; Schwarz & Bohnet, 2001). Fishbein and Ajzen (1975: 6) define an attitude as “learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object”. A similar definition adopt Eagly and Chaiken (1993) who view attitude as “psychological tendencies expressed by evaluating a particular entity with some degree of favour or disfavour”. For Soutaritis, Zeberinati, and Al-Laham (2007: 570), “attitude towards self-employment is the difference between perceptions of personal desirability in becoming self-employed and organisationally employed”. According to Fini et al. (2012: 390) “attitude toward behavior, refers to the degree to which a person has a favorable or unfavorable appraisal of the behavior under scrutiny”.

Theoretical and empirical evidence suggest that attitude should not be deemed a one-dimensional construct, as overall evaluation often contains two separable components, one being instrumental or cognitive in nature and the other being experiential or affective (Ajzen, 1991; French et al., 2005; Kraft et al., 2005; Rhodes & Cournay, 2003; Trafimow & Sheeran, 1998).

The instrumental component refers to a more cognitive consideration of the extent to which the behaviour achieves something valuable or advantageous and corresponds to the thoughts, knowledge and perceptions we have about the object which commonly take the form of beliefs. The experiential/affective component refers to emotions, feelings (e.g., joy, satisfaction) and drives engendered by the prospect of performing a behaviour.

1.3 Behavioural beliefs

The Fishbein and Ajzen’s (1975) expectancy-value model of attitude postulates that attitude toward a behaviour develops from the total set of accessible behavioural beliefs people hold about the object of the attitude, linking the behaviour to various outcomes and other attributes. Because the outcomes or attributes linked to the behaviour are already valued in some way, an attitude toward the behaviour is automatically and simultaneously created (Ajzen, 1991, 2006). In other words, expectancy-value theory argues that the tendency to behave in a certain way is predicted by the expectation that a behaviour will be followed by a given outcome, as well as the value that the individual assigns to that outcome.

Outcomes are viewed as rewards of one’s efforts and these rewards may be intrinsic (intangible/psychological) or extrinsic (tangible/physical) (Chell, 2001). Intrinsic rewards vest in the activity itself and include the independence, autonomy, freedom and control gained by being one’s own boss, an opportunity for creative expression, personal growth, recognition, challenge, excitement, satisfying a need for achievement, and self-fulfillment arising from accomplishing personal goals and expectations. Extrinsic rewards typically refer to obtaining monetary benefits and success (Aspaas, 2004; Chell, 2001; Kuratko, Hornsby, & Naffziger, 1997; Robichaud, McGraw, & Roger, 2001).

2. Aims and predictions

The aim of this study was to investigate the structure of entrepreneurial behavioural beliefs, attitude toward entrepreneurship and entrepreneurial intention. Based on the aforesaid literature review, the following specific predictions are made:

Prediction 1. Behavioural beliefs are best represented by a third-order factor model where entrepreneurial outcomes are distinguished into intrinsic and extrinsic.

Prediction 2. A model specifying instrumental and affective components of attitude provides a better fit than a model where these two components collapse into one factor.

No prediction can be made regarding the dimensions of entrepreneurial intention.

3. Method

3.1 Sample

Two hundred twenty-seven Greek tertiary education students (114 males, 113 females) from the University and the Technological Institute of Central Greece participated in this cross-sectional study. The mean age and standard deviation of the students was 21.1 ± 1.8 years. Their grade point average based on a 10.0 grading scale was 6.9 ± 0.8.

Out of the total number of participants, 106 were studying at the University of Central Greece (52 at the Department of Economic Regional Development and 54 at the Department of Informatics with Applications in Biomedicine). Out of the 111 remaining students, 43 were studying at the Faculty of Health and Caring Professions and 74 were studying at the Faculty of Technological Applications of the Technological Institute of Central Greece. Four participants did not report their Department of studies.

3.2 Measures

Behavioural beliefs were assessed using five belief-based measures of entrepreneurship as identified by Kolvereid (1996a, 1996b), and Kolvereid and Isaksen (2006): economic opportunity, autonomy, authority, self-realization and challenge. Two items were used as indicators of each dimension. The items tapping the outcomes of entrepreneurship are listed in Table 1.
Note that the items of the economic opportunity sub-scale tap monetary extrinsic rewards of entrepreneurship, whereas all other items assess intrinsic rewards. In specific, the items of the autonomy and the authority sub-scales assess the control one feels in position of exerting over life; the items of the self-realization sub-scale tap the opportunity for creative expression and the accomplishment of personal goals; and the items of the challenge sub-scale assess personal challenge of an interesting and motivating career.

Table 1: Items for the assessment of the outcomes of entrepreneurship

<table>
<thead>
<tr>
<th>Economic opportunity</th>
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</thead>
<tbody>
<tr>
<td>1. To earn enough money.</td>
</tr>
<tr>
<td>2. To keep a large proportion of the result.</td>
</tr>
<tr>
<td>Autonomy</td>
</tr>
<tr>
<td>3. To have independence at work.</td>
</tr>
<tr>
<td>4. To be your own boss.</td>
</tr>
<tr>
<td>Authority</td>
</tr>
<tr>
<td>5. To have the power to make decisions.</td>
</tr>
<tr>
<td>6. To issue orders down the chain of command.</td>
</tr>
<tr>
<td>Self-realization</td>
</tr>
<tr>
<td>7. To realize your dreams.</td>
</tr>
<tr>
<td>8. To take advantage of your creative needs</td>
</tr>
<tr>
<td>Challenge</td>
</tr>
<tr>
<td>9. To have an interesting job.</td>
</tr>
<tr>
<td>10. To have a motivating job.</td>
</tr>
</tbody>
</table>

Notes: Items #1 and #6 are self-constructed. Behavioral beliefs strength was assessed by asking respondents to rate on a 7-point scale, with extremely unlikely (=1) and extremely likely (=7) as the anchors, the likelihood that each of the outcomes described in the 10 statements would be an outcome of entrepreneurial activity. Higher score on an item indicated higher likelihood that entrepreneurship will produce the outcome in the statement.

Outcomes evaluation was assessed by asking the respondents to rate on a 7-point scale, ranging from 1 (extremely undesirable) to 7 (extremely desirable), how desirable is for them in their future career path each of the 10 outcomes of entrepreneurship, as described in the behavioral beliefs strength scale. The higher the score on an item, the higher the subjective desirability of the outcome in the statement.

Table 2: Scale for the measurement of attitude

| 1. Being an entrepreneur implies more advantages than disadvantages to me. | Lihán & Chen, 2009 |
| 2. A career as entrepreneur is (totally) attractive for me. | |
| 3. If I had the opportunity and resources, I would love to start a firm (business). |
| 4. Being an entrepreneur would entail great satisfactions for me. | |
| 5. I would rather own my own business than earn a higher salary employed by someone else. | Kolvereid & Isaksen, 2006; Gundry & Welch, 2001 |
| 6. I would rather own my own business than pursue another promising career. |
| 7. I am willing to make significant personal sacrifices in order to stay in business. |
| 8. I would work somewhere else only long enough to make another attempt to establish my business. |
| 9. Being an entrepreneur evokes mainly positive thoughts. | Leroy et al., 2010 |
| 10. Entrepreneurship would present more up than downsides. |

Attitude toward entrepreneurship was assessed with a scale developed utilizing items from existing and widely used scales. The items of the scale, along with their source, are listed in Table 2. To account for the dimensionality of attitude toward entrepreneurship theorists (e.g., Ajzen, 2006; Francis, Eccles, Johnston, Walker, Grimshaw, Foy, Kaner, Smith, & Bonetti, 2004) have proposed that measurement of this construct should involve the use of items which are evaluative in nature. In addition, these items should reflect the two qualitative components of evaluation, the instrumental/cognitive and the experiential/affective.

In this scale, items #1, #9 and #10 represent the instrumental component of attitude, while items #2, #3 and #4 represent its affective component. The remaining items of the scale (#5, #6, #7 and #8) assess the personal and financial sacrifices one is willing to incur in order to become self-employed and are referred to as opportunity cost (Gundry & Welch, 2001). Gasser (2006, p. 611) defined opportunity cost as “the foregone benefit of the next available alternative as a consequence of making a choice”.

Respondents were asked to indicate their level of agreement with the statements of the scale from 1 (total disagreement) to 7 (total agreement). A high score on an item, factor, or the full scale indicated a positive attitude toward entrepreneurship.

Entrepreneurial intention was assessed using the items listed in Table 3, along with their source. Respondents were asked to indicate their level of agreement with the statements of the scale from 1 (total disagreement) to 7 (total agreement). A high score on an item, factor, or the full scale indicated a stronger intention toward entrepreneurship.
Table 3: Entrepreneurial intention scale

<table>
<thead>
<tr>
<th></th>
<th>Items</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My professional goal is to become an entrepreneur.</td>
<td>Lühän &amp; Chen, 2009</td>
</tr>
<tr>
<td>2</td>
<td>I will make every effort to start and run my own firm (business).</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I am determined to create a firm (business venture) in the future.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I have very seriously thought of starting a firm.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I consider it to be very likely that in the future I will be running my own firm.</td>
<td>Van Gelderen et al., 2008</td>
</tr>
<tr>
<td>6</td>
<td>I read books on how to set up a firm.</td>
<td>Thompson, 2009</td>
</tr>
<tr>
<td>7</td>
<td>I spend time learning about starting a firm.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I plan to launch my own business some day.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I attend seminars and conferences that focus on a &quot;start your own business planning&quot;.</td>
<td>McGee et al., 2009</td>
</tr>
<tr>
<td>10</td>
<td>I participate in seminars that focus on writing a business plan.</td>
<td></td>
</tr>
</tbody>
</table>

3.3 Statistical analysis

All analyses were performed using SPSS v21.0 and AMOS software for structural equation modelling (Arbuckle, 2012) and employing the full information maximum likelihood procedure to deal with missing values and correlation matrix.

In order to explore the factorial validity of each scale, its items were subjected either to both exploratory (EFA) and confirmatory factor analysis (CFA) or to CFA only. If no a priori structure is assumed for a scale, using SPSS, the data of the participants was submitted to a random split-half to allow for an initial EFA in order to identify a viable factor structure. Then, a CFA was conducted in the other split-half to confirm the exploratory model and, if possible, to refine the model.

EFAs were performed using principal component analysis with an oblique rotation, which assumes factors to be correlated with each other (Jennrich & Sampson, 1966). The sample adequacy and the suitability of the data for factor analysis were examined with the Kaiser-Meyer-Olkin (KMO) coefficient and the Barlett sphericity test. The number of factors retained in each EFA was determined by Kaiser’s (1960) criterion which states that the number of factors to be extracted is equal to the number of eigenvalues of the correlation matrix that are greater than one.

For questionnaires with a theoretically postulated factor structure confirmatory factor analysis was employed to validate whether the items we have chosen to assess the latent constructs, in fact reflect these constructs in a statistically reliable manner. For each construct, a particularly parsimonious a priori model was posited in which each measured variable was allowed to load on only the factor it was theorized to fall under, and one item loading in each factor was fixed at 1 for model identification.

All a priori models tested were based on the restrictive assumption that the error terms of the items measuring each construct were uncorrelated. However, when an a priori model did not adequately fit the data, the modification indices were then assessed to identify potential improvements to model fit by allowing certain error terms to correlate. Correlated error terms are not unusual in the validation of assessment instruments, while their presence can also reflect certain method effects, especially perceived redundancy or overlap in item content (ten Klooster, 2008; Marsh & Grayson, 1995).

Researchers recommend that error correlations between items within the same factor should only be added if they can be justified theoretically and interpreted substantively (ten Klooster, 2008; Joreskog & Sorbom, 1988), as in the case when similar response formats are used for survey items (Evans, Glendon, & Creed, 2007). Error correlations between items across factors should be incorporated only for items with parallel wordings, as in this case it is possible that the matching indicators across the two scales would be correlated, resulting in biased parameter estimates and consequently posing statistical problems to the structure of measurement errors (Magson, Bodkin-Andrews, Craven, Nelson, & Yeung, in press).

Xu, Marsh, Hau, Ho, Morin, and Abduljabbar (2013), and Marsh and Hau (1996) argue that such correlations of uniquenesses must be posited even as a priori because failing to include these correlations will result in biased estimations of path coefficients between the corresponding latent constructs in the structural model. Marsh, Roche, Pajares, and Miller (1997) recommended that the residuals between parallel worded items should be allowed to correlate in order to obtain more accurate estimates and avoid inflating the correlation between the factors.

Fit indices used to determine goodness of fit included the ratio $\chi^2 / df$, the comparative fit index (CFI; Bentler, 1990), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993). Typically, $\chi^2 / df$ is considered adequate when less than 5 and good when less than 3 (Kline, 2010; Marsh & Hovecar, 1985). The comparative fit index is a relative fit index used to compare each model to a baseline independence model (a model where all the correlations or covariances are zero) with values above 0.90 representing an adequate fit and above 0.95 a good fit (Hu & Bentler, 1999). Similar values apply for TLI. The RMSEA is an adjusted fit index with values of 0.05 or smaller representing close fit, below 0.08, reasonable fit; below 0.10, minimally acceptable fit; and above 0.10, unacceptable fit (Browne & Cudeck, 1993). RMSEA is considered one of the most useful indicators of model fit (Byrne, 2001).
Competing factorial or structural models were compared by performing a chi-square difference test, when the models compared had a nesting relation, and by using Akaike’s information criterion (AIC), when the models compared were non-nested, with smaller values of AIC indicating improvement in fit (Hagenaars & McCutcheon, 2002; Kaplan, 2000). We recall that any two models are nested as long as the set of parameters estimated in the more restrictive model is a subset of the parameters estimated in the less restrictive model (Marsh, 1994).

If a relatively large increase in degrees of freedom is coupled with a relatively small increase in the chi-square statistic, in which case the chi-square difference is not statistically significant, then the constrained model does not fit worse than the unconstrained model and it should be preferred as more parsimonious (O’Connell & McCouche, 2008). Some researchers (e.g., Chen, Sousa, & West, 2005; Cheung & Rensvold, 2002; Vandenberg & Lance, 2000) have noticed that, in evaluating nested models, the CFI change is independent of both model complexity and sample size, and suggested that the null hypothesis of no difference should be rejected, when the reduction in CFI is .01 or more.

4. Results
4.1 Dimensions of behavioural beliefs
Based on the theoretical approaches to the rewards of entrepreneurship and the a-priori five-factor structure of the scales, alternative factor models were tested and compared using confirmatory factor analyses. Each analysis included all 20 items from both scales, while factorial invariance, that is the same factor structure, was postulated across the two scales. The models compared were: (a) a model with five first-order correlated factors: economic opportunity, autonomy, authority, self-realization and challenge; (b) a model with five first-order factors and two second-order correlated factors: ‘self-fulfilment’ consisting of the self-realization and challenge first-order factors, and ‘control over career’ consisting of the autonomy and authority first-order factors; and (c) a model in which the self-fulfilment and control over career second-order factors loaded on a third-order factor labelled ‘intrinsic rewards’. We recall that a higher-order factor underlies correlations between lower-order factors.

Due to the identical wording of the indicators (belief strength and outcome evaluation items) the residuals between identically worded items across the two scales were allowed to correlate in order to obtain more accurate estimates and avoid inflating the correlation between belief strength and outcome evaluation corresponding factors.

The fit indices of the above described competing models are presented in Table 4. As suggested by the Akaike information criterion (AIC) and the other data in Table 5, the third-order factor model fitted better than the other two models, thus verifying Prediction 1. Moreover, the best fitted model had a close fit to the data. In this model, all loadings and correlations were substantial and significant at \( p < .001 \). In addition, the squared multiple correlations of the indicators ranged from .54-.82, indicating that a large portion of variance was accounted for in each indicator by its underlying factor.

The Cronbach alphas of economic opportunity, autonomy, authority, self-realization and challenge dimensions were found equal to .79, .83, .81, .80 and .88, respectively, for the beliefs strength scale, and equal to .75,.79,.76,.77 and .89, respectively, for the outcomes evaluation scale.

Table 4: Fit statistics for competing models of the factor structure of the beliefs strength and the outcomes evaluation scales

<table>
<thead>
<tr>
<th>Model</th>
<th>( \chi^2 / df )</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>AIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five first-order factors</td>
<td>1.741</td>
<td>0.948</td>
<td>0.968</td>
<td>0.058</td>
<td>390.220</td>
</tr>
<tr>
<td>Five first-order factors and two second-order factors (self-fulfilment, control over career)</td>
<td>1.709</td>
<td>0.950</td>
<td>0.964</td>
<td>0.056</td>
<td>380.192</td>
</tr>
<tr>
<td>Five first-order factors, two second-order factors (self-fulfilment, control over career) and one third-order factor (intrinsic rewards)</td>
<td>1.671</td>
<td>0.953</td>
<td>0.965</td>
<td>0.055</td>
<td>373.319</td>
</tr>
</tbody>
</table>

4.2 Dimensions of attitude
Following the theoretical approaches to attitude and the empirical evidence on its components various competing models were tested using a nested confirmatory factor modelling approach: a three-factor model, a two-factor model and an one-factor model.

We first estimated a three-factor model, M3, in which items #1, #9 and #10 were allowed to load on only a factor labelled ‘instrumental attitude’, items #2, #3 and #4 were allowed to load on only a factor labelled ‘affective attitude’, and items #5, #6, #7 and #8 were allowed to load on only a factor labelled ‘opportunity cost’. In model M3, the correlations between the three factors were freely estimated. Next, we fitted to responses a two-factor model, M2, obtained by constraining the correlation between instrumental attitude and affective attitude at 1. Setting this correlation to 1 collapses the two factors into one factor, consisting of the instrumental and affective items resulting in model M2 to be nested within model M3. The one-factor model, M1, was obtained by constraining the correlations of the opportunity cost factor with the instrumental and affective factors at 1 resulting in model M1 to be nested within model M2. To accomplish this we fixed the latent variable’s variances to 1, rather than fixing factor loadings to 1.
The fit indices of the above mentioned competing models and the chi-square difference tests conducted in order to compare alternative, nested models, are presented in Table 5. The data in Table 5 show that the three-factor model fitted better than the other two models. In addition, the overall fit of the three-factor model was acceptable. To improve the overall model fit, modification indices were then assessed and the model has been modified by allowing residuals to correlate between items #5 and #6 in the opportunity cost factor. The correlation between the residuals of items #5 and #6, which may be attributed to the common content and wording shared by these two items, is justified and would not alter the meaning or interpretability of our model.

The comparison of the two models using a chi-square difference test revealed that the model with the one pair of correlated error terms was a significantly better fit than the unmodified model \[ \Delta \chi^2 = 19.930, \ A df = 1, \ p < .001 \]. Moreover, the changes of the standardized factor loadings were less than .10. The modified model had a reasonable fit to the data \[ \chi^2 / df = 2.157, \ TLI=0.968, \ CFI=0.978, \ RMSEA=0.072 \]. All loadings and correlations were substantial and significant at \( p < .001 \). Moreover, the squared multiple correlations of the indicators ranged from .46-.83, indicating that a large proportion of variance was accounted for in each indicator by its underlying factor.

High Cronbach alphas of .90, .86 and .87 were obtained for the affective, instrumental and opportunity cost components, respectively.

<p>| Table 5: Fit statistics for competing models of the factor structure of attitude |
|--------------------------------|--|--|--|--|--|--|--|</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>( \chi^2 )</th>
<th>( df )</th>
<th>( \chi^2 / df )</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>Models compared</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 Two factors</td>
<td>66.793</td>
<td>32</td>
<td>2.121</td>
<td>0.953</td>
<td>0.966</td>
<td>0.087</td>
<td>M1-M3</td>
</tr>
<tr>
<td>M2 One factor</td>
<td>112.470</td>
<td>33</td>
<td>3.458</td>
<td>0.939</td>
<td>0.951</td>
<td>0.104</td>
<td>M2-M3</td>
</tr>
<tr>
<td>M3 Three factors</td>
<td>246.703</td>
<td>35</td>
<td>7.129</td>
<td>0.833</td>
<td>0.870</td>
<td>0.164</td>
<td>M1-M3</td>
</tr>
</tbody>
</table>

These results verify Prediction 2 that attitude toward entrepreneurship is best represented as multidimensional construct consisting of affective and cognitive dimensions.

4.3 Dimensions of intention
Since no assumption was made about the dimensionality of the scale assessing entrepreneurial intention, first, an EFA of the items of the scale was performed on the first random split-half sample to identify a viable factor structure. The compliance of the data with the factor analysis was ascertained with Kaiser–Meyer–Olkin (KMO) and Barlett sphericity test. KMO was found equal to 0.86 and Barlett’s sphericity test was found to be meaningful \[ \chi^2 (45) = 743.317, \ p < 0.001 \], indicating that the scale is in compliance with the factor analysis. The analysis yielded two eigenvalues greater than 1 (equal to 5.215 and 1.940) suggesting, according to Kaiser’s criterion, that two factors should be extracted. These two factors explained the 71.6% of the total variance. The factor structure of the scale was very clear. In specific, all items had primary loadings over .57, with only two cross-loadings being slightly above the recommended cut-off level of .30 (Tabachnik and Fidell, 1996). Under this two-factor solution, items #1, #2, #3, #4, #5 and #8 were grouped in one factor which can be labelled ‘entrepreneurial intention’ \( (\alpha = .94) \), while the remaining four items loaded onto the second factor which can be labelled ‘nascent entrepreneurship’ \( (\alpha = .86) \).

The two-factor model for intention was subsequently verified through confirmatory factor analysis conducted on the second random split-half sample. The results of the analysis showed that the model had an acceptable fit to the data \[ \chi^2 / df = 3.127, \ TLI=0.958, \ CFI=0.970, \ RMSEA=0.097 \]. These fit indices were achieved by allowing correlated errors between two pairs of items all of which are from the nascent entrepreneurship factor. Incorporating these correlated errors in the model was considered acceptable on the basis of the similarities in the content of the items involved.

5. Discussion
This study focused on the structure of entrepreneurial behavioural beliefs, attitude toward entrepreneurship and entrepreneurial intention. In common with previous research examining the dimensions of attitude toward entrepreneurship the data in our study supported a three-factor model consisting of instrumental attitude, affective attitude and opportunity cost. Our findings add to the literature regarding the dimensionality of attitude toward entrepreneurship, which provides adequate evidence for the distinction of attitude into two sub-types: instrumental and affective (French et al., 2005; Kraft et al., 2005; Rhodes & Courneya, 2003; Trafimow & Sheenan, 1998). It should however be noted that, although instrumental and affective attitude emerged as distinct factors in our factor-analytic investigation of the data, these factors are both evaluative in nature and, as such, it is expected to be interrelated.

Davidsson (1995), in his economic-psychological model of determinants of entrepreneurial intentions, included payoff among the variables of the domain attitude. For Davidsson (1995), payoff is a composite of beliefs concerning the workload, risk, and financial gain to be expected by a business founder and concerns the type of expected outcomes that would typically be included in an explanatory model based on microeconomic utility theory. Gassar (2006) provided evidence that an entrepreneur’s opportunity cost are a significant determinant of the intended scale of venturing activity.
The analysis of the scale assessing entrepreneurial intention revealed two factors, one of which was labelled nascent entrepreneurship. Some researchers have challenged the view that entrepreneurial activity is a static process with two outcomes – to engage or to refrain from it – and put forth a dynamic approach that discriminates between pre-birth, birth, and post-natal stages of entrepreneurship, which may have different antecedents, with the pre-birth stage often being referred to as latent or nascent entrepreneurship (Grilo & Thurik, 2005, 2008; Masuda, 2006; Reynolds, 1997; Van der Zwan, Thurik, & Grilo, 2010; Van Gelderen, Thurik, & Bosma, 2005). Latent entrepreneurship (hidden or potentially existing but not yet realized) is defined as the preference for entrepreneurship over paid employment and it is visible in people who are willing and able to become entrepreneurs but have not yet decided to start a business, while nascent (emerging) entrepreneurship refers to individuals who have made a decision and are taking some action toward creating a new business (Blanchflower, Oswald, & Stutzer, 2001; Verheul, Thurik, Grilo, & Zwan, 2012).

6. References


Chapter 4:

A Structural Equation Model of the Relations Among Behavioural Beliefs, Attitude Toward Entrepreneurship and Entrepreneurial Intention

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Abstract:
The present research investigated the associations among behavioural beliefs, the dimensions of attitude toward entrepreneurship and entrepreneurial intention using a structural equation modelling approach. Two hundred twenty-seven Greek tertiary education students (114 males, 113 females) participated in the study. Our findings revealed a pattern of differential effects of the attitude dimensions on entrepreneurial intention, with affective attitude having a stronger predictive value than instrumental attitude. Evidence was also obtained for the validity of the Fishbein-Ajzen’s expectancy-value model of attitudes, which postulates that belief strength and the corresponding belief strength/outcome evaluation cross product each contributes significantly, positively, and independently to the prediction of attitude.

Keywords: entrepreneurship, attitude, intention, expectancy-value model.

JEL classification: L26, J24

Many studies have examined the relation between attitude toward entrepreneurship and entrepreneurial intention within the framework of the theory of planned behaviour (TPB). According to this theory, attitudes toward a behaviour are predicted by salient behavioural beliefs in combination with outcome evaluations. In turn, attitudes lead to intention to perform a behaviour, and on to behaviour itself. However, much fewer studies have examined the more affective aspects of behavioural beliefs and attitude itself, in addition to the more instrumental aspects of these constructs usually examined (Dawson, Henley, & Latreille, 2009; French, Sutton, Hennings, Mitchell, Wareham, Griffin, Hardeman, & Kinmonth, 2005; Kolvereid, 1996a, 1996b; Kolvereid & Isaksen, 2006; Kraft, Rise, Sutton, & Roysamb, 2005).

The focus of this study is on the antecedents of attitude toward entrepreneurship and its relation to entrepreneurial intention. Using a structural equation modelling approach support is provided for the Fishbein and Ajzen’s (1975, 2010) expectancy-value model of attitudes according to which attitude toward entrepreneurship is predicted by the expectation that entrepreneurship will be followed by a given outcome, as well as the value that the individual assigns to that outcome. Our findings further show that the dimensions of attitude toward entrepreneurship exert a differential impact on entrepreneurial intention, with affective attitude appearing to be more strongly related to intention than instrumental attitude.

1. Introduction
Understanding entrepreneurship is considered important, because, evidently, economic development is strongly influenced by entrepreneurial activities (Stam, Bosma, Van Witteloostuijn, De Jong, Bogaert, Edwards, & Jaspers, 2012). Thus, explaining and predicting the choice of an entrepreneurial career has been and still remains an important research issue (Pruett, Shinnar, Toney, Llopis, & Fox, 2009). Towards identifying the factors that shape the entrepreneurial decision several explanatory models of entrepreneurship determinants have been developed (Kennedy, Drennan, Renfrow, & Watson, 2003).

However, the extant literature has shown that models of the determinants of entrepreneurial behaviour, focusing on how psychological traits, demographic, and situational factors distinguish entrepreneurial individuals from non-entrepreneurial individuals, were disappointing with respect to both explanatory power and predictive validity (Hindle, Klyver, & Jennings, 2009; Krueger, Reilly, & Carsrud, 2000). The failure of situational and personality measures to significantly predict entrepreneurial activity suggested another approach (Krueger et al., 2000) and, as a reaction, different entrepreneurial intention models developed (Hindle et al., 2009; Krueger et al., 2000).

The basic rationale behind the intention models is that most behaviours of social relevance are under volitional control and are thus predictable from intention (Ajzen & Fishbein, 1980: p.41). This view is supported by existing research which reveals that intentions are the best single predictor of such volitional behaviors (Ajzen, 1991; Bagozzi, Baumgartner & Yi, 1989; Sutton, 1998, as cited in Fini, Grimaldi, Marzocchi, & Soberro, 2012). For Ajzen (2002a), intention is assumed to be the immediate antecedent of behavior. Meta-analyses show that intention toward a behavior would be a strong predictor of that behavior (Armitage & Conner, 2001; Sutton, 1998). Souitaris, Zerbinati, and Al-Laham (2007) indicate that intention proved to be the best predictor of planned behaviour, particularly when that behaviour is rare, hard to observe, or involves unpredictable time lags.
Many scholars argue that the decision to become an entrepreneur may be plausibly considered as voluntary and conscious, and that setting up a business involves careful planning and a thinking process which is highly intentional (Autio, Keeley, Klofsten, Parker, & Hay, 2001; Bird, 1988; Krueger et al., 2000). Thus, entrepreneurship has been seen as a good example of planned intentional behaviour and therefore applicable for intention models (Autio et al., 2001; Bird, 1988; Davidson, 1995; Fayolle, 2006, 2007; Krueger et al., 2000; Shapero & Sokol, 1982). In this sense, entrepreneurial intentions would be the first step in the evolving and, sometimes, long-term process of venture creation, and a previous and determinant element towards performing entrepreneurial behaviours (Fayolle & Gailly, 2004; Kolvereid, 1996a, 1996b; Lee & Wong, 2004, as cited in Liñán & Chen, 2006).

The overall tenet of the intention models is that intention is the immediate antecedent of behaviour, while in turn intention is determined by attitudes, and attitudes are affected by exogenous influences (such as traits, demographics, and situational variables) (Ajzen, 1991; Krueger et al., 2000; Shapero & Sokol, 1982). A more favourable attitude would increase the intention to carry out the intended behaviour (Fini et al., 2012; Liñán, 2004). Without a positive attitude towards a behavior one is not likely to intend to engage in the behavior. (Elfving, 2008).

As such, intentions toward behavior are absolutely critical to understanding other antecedents and serve as important mediating variables between the act of starting a business venture and potential exogenous influences which affect attitudes and indirectly intentions and behaviour (Krueger et al., 2000; Shapero & Sokol, 1982). Intentions and their underlying attitudes are perception-based, which should mean they are learned, and accordingly, they will vary across individuals and across situations (Krueger et al., 2000). Researchers note that, like individuals who do not exist in isolation, attitudes do not similarly exist in isolation (Robinson, Stimpson, Huetner, & Hunt, 1991). Thus, as attitudes are relative less stable than personality traits, they can change according to time and situation in virtue of individual’s interaction with the environment (Liñán, 2004; Robinson et al., 1991). In this manner, the attitude approach would be preferable to the trait or the demographic approaches (Robinson et al., 1991; Krueger et al., 2000, as cited in Liñán, 2004).

A variety of intention models have been proposed and tested by entrepreneurship researchers. However, the model of intentions that has received predominant attention over the past two decades has involved the theory of reasoned action (TRA; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), which primarily deals with the connection between attitude and behavioral intention, and its extension, the theory of planned behavior (TPB; Ajzen, 1985, 1991). In a variety of settings, including health promotion, new technology acceptance, social networking and entrepreneurship (e.g., French et al., 2005; Hales, Evenson, Wen, & Wilcox, 2010; Krueger et al., 2000; Pelling & White, 2009; Truong, 2009; Van der Heijden, 2003), it has been shown repeatedly that the TPB is successful at predicting not only intention to perform a variety of behaviors, but also whether or not those behaviors are performed (Armitage & Conner, 2001, cited in French et al., 2005).

The reasons for the TPB having become the prevailing model for the explanation of behavioural intentions (Krueger & Brazel, 1994) are its parsimony, conceptual clarity and ability to be used in many different behavioural domains (French et al., 2005; Tegtmeyer, 2012).

The TRA consists of three major constructs (behavioural intention, subjective norm, and attitude) and implies that the immediate antecedent of a specific voluntary deliberative behavior is a person’s intention to engage in the behaviour, while intention follows from the person’s attitudes and subjective norm. In order to expand the applicability of the model of the TRA and respond to the critique that this theory is unsuitable for some types of behaviour (e.g., Bagozzi, 1992; Bagozzi & Dholakia, 1999; Bagozzi & Warshaw, 1990), Ajzen (1985, 1991) developed further the TRA and proposed the TPB by adding an additional construct, perceived behavioural control. As a general rule, TPB suggests that the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person’s intention to perform the behavior in question. Finally, given a sufficient degree of actual control over the behavior, people are expected to carry out their intentions when the opportunity arises (Ajzen, 2002b).

For detailed discussion of definitions and dimensions of entrepreneurial intention and attitude toward entrepreneurship we refer to Vamvakka and Botsaris (2014).

2. Theoretical framework

2.1 The attitude-intention relation

Kim and Hunter (1993) conducted a series of meta-analyses, integrating the findings of 92 attitudes-behavioral intentions correlations and 47 behaviors-behavioral intentions correlations, and found that attitudes explain over 50% of the variance in intentions and intentions account for over 30% of the variance in behavior. Krueger et al. (2000) note that, explaining 30% of the variance in behavior compares favorably to the 10% typically explained directly by trait measures or attitudes. A similar conclusion was reached by a meta-analysis of meta-analyses done by Sheeran (2002) who found that intentions account for 28% of the variance in behavior, on average, in prospective studies. In a meta-analysis of 23 studies, Hausenblas, Carron, and Mack (1997) found a weighted average correlation of .52 between attitude and intention. In another meta-analysis of Armitage and Conner (2001), conducted with 185 independent empirical tests of the theories of reasoned action and planned behaviour reported in 161 journal articles and book chapters, the average correlation between attitude and behavioural intentions was found equal to .49.
There is substantial evidence that affective and cognitive attitudes are distinguishable from each other, and that both seem to be important determinants of at least some intentions (Trafimow, Sheeran, Lombardo, Finlay, Brown, & Armitage, 2004). A number of studies examined the relative contribution of affective and cognitive attitudes to predict behavioural intentions for a variety of behaviours (French et al., 2005; Kraft et al., 2005; Trafimow et al., 2004). In general, these studies revealed that affective attitude tends to have a higher predictive power than cognitive attitude in more behaviours.

2.2 The expectancy-value model of attitudes
The Fishbein and Ajzen’s (1975) expectancy-value model of attitudes postulates that attitudes toward a behaviour develop from the total set of accessible behavioural beliefs people hold about the object of the attitude, linking the behaviour to various outcomes and other attributes. Because the outcomes or attributes linked to the behaviour are already valued in some way, an attitude toward the behaviour is automatically and simultaneously created (Ajzen, 1991, 2006). In other words, expectancy-value theory argues that the tendency to behave in a certain way is predicted by the expectation that a behaviour will be followed by a given outcome, as well as the value that the individual assigns to that outcome.

Ajzen (1991, 2006) expressed this two-element process by means of the symbolic equation

\[ A_B = \sum_{k=1}^{K} b_k \epsilon_k \]

where \( A_B \) is the attitude toward the behaviour and \( b_k \) is the strength of each belief which is combined in a multiplicative fashion with the subjective evaluation \( \epsilon_k \) of the beliefs attribute, and the resulting products are summed over the n salient beliefs.

This symbolic equation allows us to explain why persons holding different beliefs may exhibit identical attitudes, and vice versa, as in the case of two people who may hold an equally strong belief that entrepreneurship involves facing new challenges, but one of them may view these challenges as very important to consider when he or she is to decide his or her future career path while the other may consider them less important (Moriano, Gorgievski, Laguna, Stephan, & Zarafshani, 2012).

Outcomes are viewed as rewards of one’s efforts and these rewards may be intrinsic (intangible/psychological) or extrinsic (tangible/physical) (Chell, 2001). Intrinsic rewards vest in the activity itself and include the independence, autonomy, freedom and control gained by being one’s own boss, an opportunity for creative expression, personal growth, recognition, challenge, excitement, satisfying a need for achievement, and self-fulfilment arising from accomplishing personal goals and expectations. Extrinsic rewards typically refer to obtaining monetary benefits and success (Aspaas, 2004; Chell, 2001; Kuratko, Hornsby, & Nafziger, 1997; Robichaud, McGraw, & Roger, 2001).

Evidence for the validity of the expectancy-value hypothesis would be obtained if addition of the composite belief term in a regression analysis accounts for additional variance in attitude, over and above the predictive validity afforded by the belief strength scores and the evaluation scores (Fishbein & Ajzen, 2010).

3. Aim and predictions
The aim of this study was twofold:

1. to provide empirical evidence for the assumption of a multiplicative combination rule for the effects of beliefs strength and outcomes evaluation on overall attitude, and
2. to investigate whether the affective and cognitive dimensions of attitude toward entrepreneurship exert a differential impact on entrepreneurial intention.

Based on the aforementioned literature review, the following specific predictions are made:

Prediction 1. Belief composite accounts for additional variance in attitude, over and above the predictive validity afforded by belief strength.

Prediction 2. Affective attitude is more strongly related to entrepreneurial intention than instrumental attitude.

4. Method
Sample
Two hundred twenty-seven Greek tertiary education students (114 males, 113 females) from the University and the Technological Institute of Central Greece participated in this cross-sectional study. The mean age and standard deviation of the students was 21.1 ± 1.8 years. Their grade point average based on a 10.0 grading scale was 6.9 ± 0.8.

Out of the total number of participants, 106 were studying at the University of Central Greece (52 at the Department of Economic Regional Development and 54 at the Department of Informatics with Applications in Biomedicine). Out of the 111 remaining students, 43 were studying at the Faculty of Health and Caring Professions and 74 were studying at the Faculty of Technological Applications of the Technological Institute of Central Greece. Four participants did not report their Department of studies.

Measures
Behavioural beliefs were assessed using a scale developed by Vamvakia and Botsaris (2014) which measures five potential outcomes of entrepreneurship: economic opportunity (e.g., earn enough money), autonomy (e.g., have independence at work), authority (e.g., have the power to make decisions), self-realization (e.g., take advantage of creative needs) and challenge (e.g., have a motivating job). Two items were used as indicators of each dimension.
Vamvaka and Botsaris (2014) provided evidence that this scale is best represented by a third-order factor model in which the five belief-based measures of entrepreneurship are first-order correlated factors, the self-realization and challenge first-order factors load on a second-order factor labelled self-fulfilment and the autonomy and authority first-order factors load on another second-order factor labelled control over career, while these two second-order factors load on a third-order factor labelled intrinsic rewards.

Behavioral beliefs strength was assessed by asking respondents to rate on a 7-point scale, with extremely unlikely (=1) and extremely likely (=7) as the anchors, the likelihood that each of the outcomes described in the 10 statements would be an outcome of entrepreneurial activity. Higher score on an item indicated higher likelihood that entrepreneurship will produce the outcome in the statement.

Outcomes evaluation was assessed by asking the respondents to rate on a 7-point scale, ranging from 1 (extremely undesirable) to 7 (extremely desirable), how desirable is for them in their future career path each of the 10 outcomes of entrepreneurship, as described in the behavioral beliefs strength scale. The higher the score on an item, the higher the subjective desirability of the outcome in the statement.

According to the theory of planned behaviour, attitude toward behaviour is predicted by a behavioural belief composite which is the summation of all salient cognitive beliefs multiplied by the respondents’ subjective evaluation of these beliefs. For both statistical and theoretical reasons, it is suggested (Ajzen, 1991; Francis, Eccles, Johnston, Walker, Grimshaw, Foy, Kaner, Smith, & Bonetti, 2004b) that, when creating this multiplicative composite, behavioural beliefs should be measured on a unipolar scale (+1 to +7), as belief strength is defined as the subjective probability that a given behaviour will produce a certain outcome, constituting therefore a unidirectional concept which would seem reasonable to be measured on a unipolar scale analogous to the 0-to-1 scale of objective probabilities. In contrast, outcome evaluations should be re-coded into a bi-polar scale (1 = –3 to 7 = +3), as they are weights and, as such, they may be negative, zero or positive and they reflect the differential impact of behavioural beliefs on attitudes (Francis et al., 2004b). Reliabilities of the five belief composite-based measures were obtained by means of Cronbach’s alpha coefficients that were equal to .79, .82, .80, .79 and .87 for economic opportunity, autonomy, authority, self-realization and challenge, respectively.

Attitude toward entrepreneurship was directly assessed with a scale developed by Vamvaka and Botsaris (2014). The scale consists of items tapping three dimensions of attitude toward entrepreneurship: affective attitude, comprised of 3 items (e.g., being an entrepreneur would entail great satisfactions for me, \( \alpha = .90 \)), instrumental attitude, comprised of 3 items (e.g., being an entrepreneur implies more advantages than disadvantages to me, \( \alpha = .86 \)), and opportunity cost, comprised of 4 items (e.g., I would rather own my own business than earn a higher salary employed by someone else, \( \alpha = .87 \)). The items of the opportunity cost dimension assess the personal and financial sacrifices one is willing to incur in order to become self-employed and are referred to as opportunity cost (Gundry & Welch, 2001).

Respondents were asked to indicate their level of agreement with the statements of the scale from 1 (total disagreement) to 7 (total agreement). A high score on an item, factor, or the full scale indicated a positive attitude toward entrepreneurship.

Entrepreneurial intention was assessed using a scale developed by Vamvaka and Botsaris (2014). This scale consists of two dimensions: entrepreneurial intention, comprised of 6 items (e.g., My professional goal is to become an entrepreneur, \( \alpha = .94 \)) and nascent entrepreneurship, comprised of 4 items (e.g., I attend seminars and conferences that focus on “start your own business planning”; \( \alpha = .86 \)).

Statistical analysis

All analyses were performed using SPSS v21.0 and AMOS software for structural equation modelling (Arbuckle, 2012) and employing the full information maximum likelihood procedure to deal with missing values and correlation matrix.

The network of relations among the constructs under investigation was tested using structural equation modelling (SEM) (Arbuckle, 2012). The constructs examined in each SEM were treated as latent variables to control for random measurement error and get unbiased estimates of effects (Green, Salovey, & Truax, 1999).

Each of the latent variables was measured either by single-item indicators for constructs assessed by a small number of items or by indicators formed by aggregating the items of the corresponding scale into parcels. Little, Cunningham, Shahar, and Widaman (2002) argue that using item parcels as indicators produces more reliable latent variables than individual items. The grouping of items was based on their content with items of similar content grouped together.

In a structural model with latent constructs, parameter estimates represent factor loadings relating latent factors to their indicators, path coefficients relating latent constructs consistent with an a priori model, residual factor variances and covariances among latent constructs where no path coefficients are hypothesized, and residual variances and covariances associated with individual items (Marsh & Yeung, 1998).

In all figures illustrating structural models, latent constructs are represented as ovals and measured variables and multiple indicators of the latent constructs as rectangles. Single-arrowed paths represent hypothesized directional relationships and path values are standardized regression coefficients. Curved double arrow-headed lines represent correlations between constructs or between construct residuals.
Fit indices used to determine goodness of fit included the ratio $\chi^2 / df$, the comparative fit index (CFI; Bentler, 1990), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993). Typically, $\chi^2 / df$ is considered adequate when less than 5 and good when less than 3 (Kline, 2010; Marsh & Hovecar, 1985). The comparative fit index is a relative fit index used to compare each model to a baseline independence model (a model where all the correlations or covariances are zero) with values above 0.90 representing an adequate fit and above 0.95 a good fit (Hu & Bentler, 1999). Similar values apply for TLI. The RMSEA is an adjusted fit index with values of 0.05 or smaller representing close fit, below 0.08, reasonable fit; below 0.10, minimally acceptable fit; and above 0.10, unacceptable fit (Browne & Cudeck, 1993). RMSEA is considered one of the most useful indicators of model fit (Byrne, 2001).

5. Results

Correlational analysis

After the factor analyses were performed, a score was calculated for each construct by adding together all the items comprising the corresponding subscale to obtain a total score for each. The correlations among the constructs are presented in Table 1. The data in Table 1 show that the attitude-intention correlations found in our study fall within the range of those reported in relevant reviews. However, the relations of behavioural beliefs construct used in these studies was outcomes evaluation while the beliefs construct in Table 1 is beliefs composite.

Table 1: Pearson r correlations among the analysis variables

<table>
<thead>
<tr>
<th>Construct</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>7</th>
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<tr>
<td>Beliefs composite</td>
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<td>1. Economic opportunity</td>
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<td>2. Autonomy</td>
<td>0.53</td>
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<td>3. Authority</td>
<td>0.54</td>
<td>0.71</td>
<td>0.00</td>
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<td>4. Self-realization</td>
<td>0.46</td>
<td>0.61</td>
<td>0.81</td>
<td>0.67</td>
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<td>5. Challenge</td>
<td>0.41</td>
<td>0.57</td>
<td>0.40</td>
<td>0.40</td>
<td>0.67</td>
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<tr>
<td>Attitude</td>
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<tr>
<td>6. Instrumental attitude</td>
<td>0.42</td>
<td>0.40</td>
<td>0.38</td>
<td>0.27</td>
<td>0.50</td>
<td>0.47</td>
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<tr>
<td>7. Affective attitude</td>
<td>0.41</td>
<td>0.40</td>
<td>0.37</td>
<td>0.39</td>
<td>0.42</td>
<td>0.35</td>
<td>0.75</td>
<td>0.75</td>
<td>1.00</td>
<td>0.41</td>
</tr>
<tr>
<td>8. Opportunity costs</td>
<td>0.34</td>
<td>0.41</td>
<td>0.39</td>
<td>0.26</td>
<td>0.32</td>
<td>0.30</td>
<td>0.68</td>
<td>0.68</td>
<td>0.69</td>
<td>0.68</td>
</tr>
<tr>
<td>9. Entrepreneurial intention</td>
<td>0.37</td>
<td>0.40</td>
<td>0.35</td>
<td>0.27</td>
<td>0.40</td>
<td>0.26</td>
<td>0.50</td>
<td>0.50</td>
<td>0.52</td>
<td>0.51</td>
</tr>
<tr>
<td>10. Nascent entrepreneurship</td>
<td>0.23</td>
<td>0.27</td>
<td>0.34</td>
<td>0.24</td>
<td>0.30</td>
<td>0.24</td>
<td>0.47</td>
<td>0.47</td>
<td>0.50</td>
<td>0.51</td>
</tr>
</tbody>
</table>

Note: All correlations are statistically significant at the .001 level (two-tailed tests).

For example, in a study by Kolvereid (1996b), the correlations of economic opportunity, autonomy, authority and self-realization with intention were found equal to .11, .32, .31 and .20, respectively. In another study by Kolvereid and Isaksen (2006), the corresponding correlations were found equal to .21, .07, .13 and .11. In the same study, the correlations of economic opportunity, autonomy, authority and self-realization with attitude, as measured by the sub-scale used in our study to assess opportunity costs, were found equal to .26, .28, .20 and .23, respectively. We attribute this difference in the magnitude of correlations to the fact that the beliefs construct used in these studies was outcomes evaluation while the beliefs construct in Table 1 is beliefs composite.

Testing Fishbein and Ajzen’s expectancy-value model of attitudes

Toward testing whether belief strength and the corresponding belief strength/ outcome evaluation cross product each contributes significantly, positively, and independently to the prediction of attitude, we first recoded each outcome evaluation item into a bi-polar scale and then we multiplied each behavioural belief item score with its corresponding outcome evaluation item score to obtain a composite score for each item of the five belief-based measures of entrepreneurship. However, instead of using aggregate measures in a regression analysis obtained by summing the belief strength scores ($\sum_{k=1}^{10} b_k$) and the product scores for each of the 10 belief strength and outcome evaluation combinations ($\sum_{k=1}^{10} b_k e_k$) we adopted a structural equation modelling approach where belief strength and belief composite were treated as latent constructs to control for random measurement error and get unbiased estimates of effects (Green et al., 1999).

Each of these two latent constructs was measured by three item parcels as indicators: economic opportunity, control over career and self-fulfilment. The economic opportunity score was produced by averaging the two items of the corresponding sub-scale, while the four items of the autonomy and the authority sub-scales, and the four items of the self-realization and the challenge sub-scales were averaged to produce a control over career score and a self-fulfilment score, respectively.

Overall attitude was also treated as latent construct formed by parcelling the scale for the direct measurement of attitude into three parcels comprised of the average of the items of the affective, the instrumental and the opportunity costs sub-scales. The model used to test the expectancy-value approach to attitude toward entrepreneurship is illustrated in Figure 1.
In this model, direct paths were hypothesized from the latent constructs of beliefs strength and beliefs composite to the latent construct of attitude. Due to the identical wording of the item parcels indicators of beliefs strength and beliefs composite we allowed residuals to correlate between the matching indicators across the two constructs (Magson, Bodkin-Andrews, Craven, Nelson, & Yeung, in press; Marsh & Hau, 1996; Xu, Marsh, Hau, Ho, Morin, & Abduljabbar, 2013). The theoretical model proposed and tested fitted the data well ($\chi^2 / df = 2.100$, TLI = 0.969, CFI = 0.982, RMSEA = 0.070).

The structural coefficients for the model are presented in Figure 1 with standardized values. The path from beliefs composite to attitude was significant at the $p = .05$ level (critical ratio = 2.354, $p = .02$), whereas the path from beliefs strength approached statistical significance (critical ratio = 1.853, $p = .06$). These findings support the Fishbein and Ajzen’s (2010) expectancy-value model of attitudes and verify Prediction 1.

**Figure 1:** Path model predicting the effects of beliefs strength and beliefs composite on attitude
Exploring the attitude-intention relation

The conceptual framework for exploring the relations among behavioural beliefs, attitude and intention is presented in Figure 2. In this model, behavioural beliefs, attitude and intention were treated as latent constructs. Consistent with the TPB and the results obtained when testing the Fishbein and Ajzen’s expectancy-value model of attitudes, behavioural beliefs were represented by the latent construct of beliefs composite measured by three item parcels as indicators: economic opportunity, control over career and self-fulfilment.

To investigate whether the attitude dimensions have a differential impact on intention, attitude was represented by three latent constructs: affective attitude, instrumental attitude and opportunity costs. Affective attitude and instrumental attitude were each measured by the three items of the corresponding sub-scale. The construct of opportunity costs was formed by parcelling the items of the corresponding sub-scale into two parcels.

Entrepreneurial intention and nascent entrepreneurship were each measured also by two indicators formed by aggregating the items of the corresponding sub-scale into two parcels.

**Figure 2:** Conceptual path model of expected relationships among beliefs composite, attitude dimensions, intention and nascent entrepreneurship

In the model illustrated in Figure 2, direct paths were allowed from beliefs composite, which was treated as the independent variable, to affective attitude and instrumental attitude. Noting that opportunity costs, as measured in our work, represent one’s preference for entrepreneurship, affective attitude and instrumental attitude were, in turn, allowed to impact opportunity costs, as suggested by Ajzen’s (1991) TPB. By further viewing preference for entrepreneurship as reflecting what Ajzen and Fishbein (1980) referred to as choice intentions, a direct path was postulated from opportunity costs to entrepreneurial intention, since the effect of choice intentions is predominant over behavioural intentions (Kolvereid, 1996a; Verheul et al., 2012).
We also hypothesized that intention directly affects nascent entrepreneurship. This direct path is in accordance with the TPB that intention is assumed to be the immediate antecedent of behaviour and the view that entrepreneurial activity is not a static process with two outcomes – to engage or to refrain from it – but a dynamic process that discriminates between pre-birth, birth, and post-natal stages of entrepreneurship, which may have different antecedents, with the pre-birth stage often being referred to as latent or nascent entrepreneurship (Grilo and Thurik, 2005, 2008; Masuda, 2006; Reynolds, 1997; Van der Zwan, Thurik, & Grilo, 2010; Van Gelderen, Thurik, & Bosma, 2005). Latent entrepreneurship (hidden or potentially existing but not yet realized) is defined as the preference for entrepreneurship over paid employment and it is visible in people who are willing and able to become entrepreneurs but have not yet decided to start a business, while nascent (emerging) entrepreneurship refers to individuals who have made a decision and are taking some action toward creating a new business (Blanchflower, Oswald, & Stutzer, 2001; Verheul, Thurik, Grilo, & Zwan, 2012).

Finally, we allowed residuals to correlate between control over career and self-fulfilment, as these two constructs share a higher-order factor of intrinsic rewards.

The theoretical model proposed and tested fitted the data well (\( \chi^2 / df = 2.735 \), TLI = 0.922, CFI = 0.939, RMSEA = 0.088). Moreover, none of the direct paths not included in the model had a modification index greater than 5.

However, in this model the direct path from instrumental attitude to opportunity costs was not significant although approached significance (critical ratio = 1.687, p = 0.09). The total effect of instrumental attitude on both intention and nascent entrepreneurship was roughly half as great as that of affective attitude (total effect of affective attitude on intention = 55.0, total effect of instrumental attitude on intention = 28.0, total effect of affective attitude on nascent entrepreneurship = 38.7, total effect of instrumental attitude on nascent entrepreneurship = 19.7).

This is consistent with the research findings from the literature (French et al., 2005; Kraft et al., 2005; Trafimow et al., 2004) that affective attitude tends to be more strongly connected to intention than instrumental attitude.

Overall, the model explained the 76.5% of the variance in intention and the 42.7% of the variance in nascent entrepreneurship. These findings are consistent with the findings of review studies which concluded that attitudes explain over 50% of the variance in intentions (Kim & Hunter, 1993; Sheeran, 2002).

6. Discussion

The focus of this study was on the antecedents of attitude toward entrepreneurship and its relation to entrepreneurial intention. The predictions of the study were tested with the estimation of structural latent models using AMOS.

Consistent with previous studies, our findings suggest that affective attitude is a stronger predictor of intention than instrumental attitude. Attitude is one of the central constructs in the theories of reasoned action and planned behaviour. As implied by its name, the theory of reasoned action suggests that cognitive attitudes should be more strongly related to intentions, as intentions are presumed to be based on an expectancy-value model of attitudes, which takes into account both the subjective probability and the value of various potential outcomes produced by a given behaviour (Trafimow et al., 2004). On the other hand, research from an evolutionary perspective (e.g., Damasio, 1994; Johnston, 1999) suggests that affect provides the motivational power for behaviours and should, therefore, be more important than cognition for predicting most intentions.

Trafimow et al. (2004) noted that some people are more under affective control, across behaviours, whereas other people are more under cognitive control, and concluded that the predictive validity of affect and cognition in determining entrepreneurial intention should depend upon whether participants in a study are affectively or cognitively controlled.

Another interesting finding of our study is that belief composite was able to explain additional variance in attitude beyond that explained by belief strength. Commenting on those investigators who challenged the assumption of a multiplicative combination rule for the effects of beliefs strength and outcomes evaluation on overall attitude, Fishbein and Ajzen (2010, p. 117) argue that “on strictly theoretical grounds, there is no logic in predicting attitude from belief strength without taking the evaluative implication of the belief into account or in predicting attitude from outcome evaluation without knowing whether the outcome is considered likely or unlikely.”

A number of authors argue that using multiplicative composites is unsatisfactory from a statistical point of view and give a number of reasons why the multiplicative approach is flawed (for a review, see Francis et al., 2004b). French and Hankins (2003) recommend either the use of alternative analytic strategies, such as experimental designs and ANOVA analyses, or the use of individually salient beliefs rather than ‘modal’ beliefs. This view has been disputed by Francis et al. (2004b) who see it as leading to an uncomfortable pair of options.
We argue that multiplying the strength of each belief by the corresponding subjective evaluation, and summing these cross-products over all salient beliefs to obtain on overall index of belief composite can obscure important distinctions between subtypes of behavioural beliefs. On these grounds, in our study we adopted a structural equation modelling approach where belief strength and belief composite were treated as latent constructs measured by use of multiple indicators to control for random measurement error and get unbiased estimates of effects, but also to analyse data at the item or item-parcel level.

7. References


Chapter 5:

Managing corporate culture through sociotechnical approach: a Russian perspective

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Professor Lipetsk State Pedagogical University, Russia

Abstract:
Cultural management is very important in the business world of today. Top managers of Russian companies have recognized the importance of cultural management in helping big industrial enterprises to innovate and develop through both value-based behavior and setting the right tone at the top. The core purpose of my scholarly work is to answer the question how to get the full lot from managing corporate culture. How to build an effective internal environment enabling to prevent deficiencies. What kind of impact do different approaches to managing corporate culture have? Are they useful and implementable in Russian holding companies? This was achieved by analysis of several different approaches and conducting a survey coupled with content analysis of corporate documents that describe leaders actions. Based on this research I came to conclusions towards effectiveness of sociotechnical approach which has proved to be complete and showed implementable validity. As a part of my paper presentation I’d like to illustrate a model of designing and managing organizational culture based on sociotechnical approach, aiming at providing practical help for organizations through spatial planning and evaluating new forms of work organization within modern working environments as well as local territory development.

JEL category: D2, L2, M000

1.Introduction
Russian companies face many changes to keep up with the challenges of globalization and international business. In order to survive in an increasingly competitive global marketplace organizations need to design and manage themselves appropriately. Managerial problems have been the subject of a great deal of recent research. In attempt to understand which managing techniques should be used towards a complex phenomena with systemic nature we bring together views from various research in the areas of organizational culture and performance effectiveness, business process reengineering, job design and complex systems.

The object of the research is corporate culture, the target company is a large industrial organization, namely representing a steel industry, performing on the global arena.

No doubt that a large industrial enterprise can be regarded as a complex system, comprising many interdependent factors. As it was stated by Brian Uzzi and Luis Amaral ‘in contrast to simple systems..., which have a small number of well-understood components, or complicated systems,..., which have many components that interact through predefined coordination rules (Perrow, 1999), complex systems typically have many components that can autonomously interact through emergent rules (Amaral and Uzzi, 2007, p. 1033). It’s also a matter of managing interactions between actors within the prescribed rules but that may change over time as the agents adapt to their environment and learn from their experiences (Amaral and Uzzi, p.1034; Epstein and Axtell, 1996; Wolfram, 2002).

So viewing a large industrial enterprise a cornerstone for successful regional development we can define it as a synopsis of interacting individuals, embedded in the complex system, the elements of which are tied together so that any change might cascade through the system and provide a modification of result.

There is a plethora of factors influencing corporate culture. Along with internal features we should take into account features of the industry an organization operates in. Having analyzed theoretical aspects of differentiation among the industries we have developed some perceptions towards functioning of organizations in manufacturing industry.

Manufacturing industry can be described as a highly structured organization with standardized and often prescribed processing of transformation inputs into the completed task or order with high cause-effect relationships and intensive problem-solving activities (Mintzberg H, 1995).

The researchers in the fields of uniqueness of a corporate culture in different industries state that manufacturing is conducive to formal control mechanisms because processes and products are more tractable (Chatman and Jehn, 1994, p. 524; Bravermann, 1974). So industrial enterprises rely more on technological control mechanisms, rather than social ones, such as cultural values to direct actions of members. We assume that industrial companies will be more likely to emphasize innovation and team orientation in their cultures since the projects require nonroutine problem solving while meeting customer needs to achieve a necessary outcome.
2. The corporate culture framework

According to a growing number of research, the notion of corporate culture lacks noticing the specifics of industrial companies and so-called organizational identity and does not sufficiently consider the interrelations between technical and social systems. Often, the traditional set of components is put far too generally to assess the underlying cultural factors that determine survival and systemic equilibrium of a company and are down to a set of unconscious values, espoused and practiced norms, ideas, actions, and myths.

We believe that such intangible organizational issues as behavior, culture, resilience could benefit substantially from sociotechnical system thinking. There exist several other prominent sociotechnical methods, for example Human Factors Analysis and Classification System (HFACS)\(^1\), AcciMap Approach (Branford, 2001) and System-Theoretic Accident Model and Processes (STAMP)\(^2\). Though they are focused primarily on dealing with accidents or any other sort of risk exposure, they definitely meet the challenge of responding appropriately to risks of both technical and non-technical nature.

The interrelated nature of technological and social aspects of the workplace was first founded by Trist and Bamforth (Trist and Bamforth, 1951; Trist et al., 1963). In fact, as Denison has noted (1982), ‘behavioral scientists have focused far more on the social than on the fit between the social and the technical systems, and in doing so, they have probably ignored the most central tenet of the theory.’ Denison further states that new opportunities for studying the joint optimization of the social and technical systems will be presented by the emerging study of management, technology, and organizations.

Our company is developing an integrative framework of organizational culture built on the sociotechnical system design, which is based on sociotechnical theory of Cherns (1976, 1987), which advocates consideration of both technical and social factors when seeking to promote change within an organization. It’s worth noting that our approach is comprehensive, which takes into account all of the challenges an industrial company might have due to identification of key system factors of social and technical subsystems along with considering the implication of the external environment in which the system is embedded.

Sociotechnical system (STS) thinking has been advanced and applied internationally for around 60 years by both researchers and practitioners. The strong contribution to the constant evolution and contemporary development of this philosophy was made by such researchers as Chris W. Clegg, Matthew C. Davis, Rose Challenger, Dharshana N.W. Jayewardene, Baxter and Sommerville, Carayon, Waterson and others.

According to Challenger and Clegg (2011), organizational systems could be represented in the form of a hexagon, using six interrelated elements, as summarized in figure 1.

![A sociotechnical hexagon](source: Matthew C. Davis et al (2014))

Organizational culture of the industrial enterprise from sociotechnical viewpoint can be defined as an integral consistency of mutually bounded and value justified ways of organizing social and technical processes, evolving an effect of synergy and identifying the enterprise in the external environment and optimizing an internal environment.

The proposed framework is also a kind of risk management tool, as cultural assessment of all of the rest 5 components of sociotechnical design is a fundamental basement for risk response and making managerial decision making.

From STS viewpoint, an organizational culture of industrial company can be characterized by the nine sets of indexes. We argue that technical system of industrial organization is represented by the categories of technology and infrastructure while the social system is represented by people and processes, whereas goals aim at supporting the strategic company initiatives and determine a way of how both subsystems will be functioning.

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Russian scholars focusing on sociotechnical theory provide a strong line of argument supporting the statement that sociotechnical knowledge will represent a fundamental ground of managerial culture in the 21st century (Dyatchenko et al., 2006).

Conceptualization of corporate culture framework is presented below.

<table>
<thead>
<tr>
<th>Category</th>
<th>Index</th>
<th>Scale</th>
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<tbody>
<tr>
<td>Goals</td>
<td>Mission</td>
<td>Strategic direction and intent</td>
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<td>Goals and objectives</td>
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<td>Vision</td>
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<td>Satisfaction index</td>
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<td>Intensity</td>
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<td>A degree of spontaneous adaptation</td>
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<td>People</td>
<td>Consistency</td>
<td>Core values</td>
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<td>Agreement</td>
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<td>Coordination and integration</td>
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<td>Motives</td>
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<td>Loyalty</td>
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<td>Processes/Procedures</td>
<td>Information and communication</td>
<td>Frequency of interactions</td>
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<td>The interplay between functions</td>
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<td>Cross system relationships</td>
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<td>Group functioning</td>
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<td>Supervisory leadership</td>
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<td>Peer leadership</td>
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<td>Involvement</td>
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<td>Creating change</td>
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<td>Customer focus</td>
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<td>Organizational learning</td>
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<tr>
<td>Building/Infrastructure</td>
<td>Satisfaction with the conditions of work</td>
<td>Quality of premises</td>
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<td>Innovative building technologies</td>
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<td>Equipment</td>
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3. Survey results of a corporate culture of a large industrial Russian company

The survey was held on three organizational levels: macro-, mezzo- and micro level. To meet the representative criteria of the sample we used a Paniotto methodology (Paniotto, 1986). The first group of respondents included 35 executive managers, the second group was comprised of 400 department managers and the last sample included 5000 of work staff.

The survey revealed that employees are familiar with the proposed by top managers values and in majority they are strongly held and widely shared. These findings demonstrate some core values that are shared across the entire organization. Efficiency is regarded as a core value in the company and all the initiatives are aimed at increasing efficiency not only in production but also in the management system.

A Japanese philosophy of lean production, created by the Toyota Motor Corporation has formed the foundation for the technical subsystem of the company. The program aims at ensuring lean use of all resources and optimizing all upstream and midstream operations. The main idea of the Company production system is to increase productivity without capital expenditure.

The main discrepancy of the assessed corporate culture components could be defined as resilience of organizational structure, which is revealed in the inconsistencies of interrelations, overlapping and duplication of functions, differences between official administrative structure and existing internal connections. Though relevant performance indicators (sales growth, profitability, quality, product development) prove satisfying governance on overall enterprise, increase in organizational structure stability and consistency of operations and actions would contribute to achieving a constant success in the long-term perspective.

We consider that technology is more or less a constant variable, while the social system of the factory is mostly determined by the plethora of different factors. The social potential is used insufficiently, which results in the existence of employee satisfaction rate potential, explicit and implicit discrepancies and even conflicts. Social consequences of technological changes are not always planned.

Regarding these findings we become exposed to the necessity to plan and manage the social factors. The main purpose of managing corporate culture within a complex system like industrial enterprise is to find an optimal balance of rigid and strict management approaches as well as flexible and democratic practices. Improvement of the system of social interaction based on individual qualities will eventually provide an increase in planning quality, effectiveness and efficiency improvement.
The choice of techniques for managing corporate culture from sociotechnical perspective, is based on consideration of five key elements, representing both social and technological subsystems of the industrial enterprise. They are: goals, people processes, technology and infrastructure. The new technical and social programs should be based on a preventing approach towards the management of risks through application of a unified methodology to introduce the most advanced measures. Sociotechnical thinking can be undertaken in a predictive way (rather than after the event). Thus value creation strategy should be built upon three competitive advantages:

- sustainable growth capabilities;
- safe and efficient processes;
- flexibility.

These cultural issues are considered essential for organizational survival because they maintain the organization as a bounded unit and provide it with a distinct identity. It considers decision making practices, communication flow, motivational conditions, human resource primacy, lower level influence and technological readiness.

We recommend top management to aim at switching from a rigid and bureaucratic organization, that cause defensive routines, forcing people behave as victims because of the struggle of getting into trouble by taking initiatives or risks, resulting in obsessional control and compulsive dominance. Traditionally organizations have adopted a vertical structure thereby reducing the potential for synergy in terms of processes and learning across the organization.

We’ve revealed a strong necessity to improve cross-functional business processes to achieve bottom-line savings and up skilling the team to enhance skills of sociotechnical thinking on a regular basis.

4. Sociotechnical corporate culture management approach

All management tools which have potential benefits for the corporate culture were organized within two groups: the first aimed at improving technical subsystem, the second group is targeting social factors of corporate culture.

**Technical subsystem.** The management concept considers linking together planned and spontaneous interactions, in other words a problem of uncertainty and innovation. We argue that it is worth to be considered, regarding that tough and rigid influence would stifle individual initiative and creativity, which proved to be the main variables of corporate culture according to the survey. A strong contribution to this issue is given by Chris Clegg, arguing that ‘whilst options exist, organizations typically choose to simplify jobs, a strategy which may well be ineffective, especially under conditions of uncertainty (Chris W. Clegg, 1984). An additional goal is to create a flexible ‘learning system’ - a work system which is able to adapt and adjust within a constantly changing environment. In order to create a learning system, members of the work system must have usable and understandable guides of the best available technologies and a creative mindset (Accermann, 1999).

Regarding business process redesign (BPR) as a tool to modify and improve the technological subsystem of industrial company we should take into account that it deals with changes. In order to allow the company to breakthrough via overcoming long-standing insufficient business rules we should provide transformation of social factors of organizational culture. In its turn corporate culture can be a great stimulus for BPR.

**Social subsystem.** To meet the goal mentioned above we suggest 3 directions of improving capacity.

The fundamental upper level capacity considers innovation which includes several steps: encouraging the development of each team member and their willingness to take risks, developing breadth of vision and intuition, knowledge of external sources, supplying training and mentoring. On the middle level we should consider a capacity to choose a direction, which include: setting priorities, strategic focus on the team’s overall aims and goals, developing employees and implementing initiatives which help the company to grow.

On the front level we suggest to develop a capacity for agreed action, which include: encouraging constructive criticism, finding the rationality in every point of view.

To ensure that the proposed practices will be effectively implemented and used within the groups of different organizational subcultures, we have formulated the following recommendations.

We argue that the job design should be on the one hand flexible and interactive, on the other hand rigid and hierarchical. As it was noted by K. Henderson (1998) ‘the manner in which different design tools both engage and restrict participation in diverse settings reveals the importance not only of the tools, but also of the culture they help build.’ Besides she states that ‘politics in the form of management prerogatives can be built into a design tool, influencing the range of creativity and innovation in a given sociotechnological setting’. A learning organization assumes treating people as main participants in the interactions that construct new technologies. Thus the flexibility of collaborative practices around technology and problem-solving and decision-making practices is crucial.

5. Conclusion

The paper introduces the framework of creating, nurturing and managing a corporate culture using the approach, which combines both social and technical factors, resulting in improvement of opportunities in such areas as goals, people, processes, technology and infrastructure. This perspective considers corporate culture as a method of increasing value for business and improving performance, including promoting quality improvement and innovation, leveraging technology. The idea of managing corporate culture in terms of
sociotechnical principles reveals the correlation between formal and informal practices, the perception of hindsight versus foresight. We have discussed the use of both soft and hard techniques for managing corporate culture. The former plays an important role in managing the complexity and ambiguity associated with the multiple perspectives of corporate culture and the direction the organization is pursuing.

We have come across the number of urgent issues, including the role of strategy making, the promotion of communication and creativity, the role of social factors in building an effective learning environment.

The strong contribution to the process of using ‘soft’ methods could be achieved by further development of the theory and implementation of Soft Systems Methodology (SSM). The interconnections between tools for the corporate culture management and organizational performance is the matter of further research.

6. References
Cherns, A. The principles of sociotechnical design. Human Relations, 29 (8), 1976, pp. 783-792.
Section 10: Sustainable Communities; Social Development and Education
Chapter 1:

Measuring Efficiency in Education: The DEA Method

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Abstract:
This paper aims to analyze the framework of education and to measure the efficiency of education by means of the Data Envelopment Analysis method.

The Data Envelopment Analysis is a nonparametric method used in operations research and in economics for estimating production frontiers. It can be used to measure empirically the efficiency of decision making units (DMUs).

Measuring efficiency in education is of high priority because substantial investments in education are made by EU contributing to the accumulation and growth of human capital. Education, training and lifelong learning are important "levers" that contribute to economic growth and enhancing competitiveness. The skills acquired by the employees through training and lifelong learning contribute to raising the competitiveness of firms, to achieving economic growth and in meeting their social responsibilities.

The educational process at all levels is not just a simple truth that is continuously verified. It is the basis upon which Europe stands. It is a collective investment of high priority which contributes to the macro- and micro-economic objectives of the EU economies. It contributes to the harmonious social growth of the EU countries and to the formation of peoples’ intellectual culture.

Keywords: Education; measuring efficiency; Data Envelopment Analysis Method.

1. INTRODUCTION
1.1 Education
As from the treaty of Maastricht and with a starting point the two “White Bibles”, the EU has already began investing in education and in the on-going professional training. The first “White Bible”, in 1994, concerned growth, competitiveness and employment. The second “Bible”, in 1995, has given particular accent to education and training. In 1997, the European Union with the treaty of Amsterdam developed a coordinated strategy for employment contributing to the creation of specialized human resources via the possibility of access to on-going learning. As from the beginning of the new millennium, in Lisbon, in March 2000, it is declared that education is one of the most important issues for the European Union which is the most developed knowledgeable society at world level. In March 2003, the European Council decides to make substantial investments in human capital and to establish a knowledge-based economy (European Commission, 2003). Thus by investing in human capital, the competitiveness is enhanced leading the economies to high rates of economic growth and to full employment. Finally this creates a knowledge-based economy (European Commission, 2003).

Education is a fundamental right of everybody. It enhances social and cultural growth contributing to the acquisition of knowledge and dexterities. Education covers all scientific areas and is an enacted form of teaching that is carried out in educational institutions both public and private.

The United Nations, report that education should aim at the complete growth of human personality and to aid the respect of human rights and fundamental freedoms. It should promote friendship between nations and should encourage the growth of activities of the United Nations in order to maintain peace (United Nations, 1948).

With regard to the definition that the World Bank gives for education, it reports that education is for all, elderly and youngsters, in order to acquire knowledge and be able to read and write. Their three pylons of strategy are: invest fast, invest intelligently and invest for all. This strategy that they applied correctly reflects the best idea for what it can work in education, emanating from their world consultations with governments, schoolteachers, students, parents and citizens in 100 European cities.

Education constitutes an activity which is biased toward future consumption and current investment. It has a future output that enhances and improves knowledge, creates opportunities for the individuals to offer their services in the private or public sector and generates economic benefits as well as utilities.
The cost of education is divided into private, which covers the cost paid by the individuals, and in social which covers the cost paid by the state for education. The utilities from education also can be divided into private and social and they take the form of finances and not economic utilities, individual and social.

1.2 Education and economic growth in the European Union

Education constitutes an integral and particularly important factor, which contributes to the economic growth of a country. Between education and the economy there exists a process of continuous adaptation and intense interdependence: changes in the operation of economy, as for example the industrial revolution, place in movement forces that radically alter the character of education and vice versa. New technologies that emanate from the education system and its development fundamentally affect economic relations.

In the report of Team of Work of European Committee, which was constituted on the subject “the application of education and training 2010”, it was reported that the essential annual increase of investments in human resources, through education and training, is the key to the intensification of the place of Europe in the sector of economy and the aid of social cohesion in the 21st century. More concretely, it is marked that education, training and life learning play a vital role in the growth of economies and societies.

Investments in education have a long-term output, which are difficult to calculate. In most countries these investments are made by the public sector. However, public funds are limited and a particular accent is given to the increase of investments in education from the private sector. Moreover, private level, profits exist at an individual level with the significance of the quality of life, the rise in the standard of living and active social role (Papageorgiou and Katzidima, 2003).

For evaluation purposes, the use of economic resources is given particular accent in terms of efficiency and ethics which are very important for the efficient management of the public budget and for the improvement of the quality and effectiveness of educational systems in the European Union (European Commission, 2004 v). Of first significance concern in education is the relation “surges – flows”. Of second significance concern is the fact that currently, the schools in the educational system include students with individual characteristics that follow the same educational frame, capable to ensure equality and success for all. Of course, not taking into consideration the negative impact of external factors such as the family’s economic situation and the place of residence of students (Commission of the European Communities, 2005).

A characteristic example, are the research results in schools of Secondary Education, where it is found that the school escape is smaller, when the available financial expenditures in education and training are bigger (Ruseas & Vretakou, 2006).

2. LITERATURE REVIEW

2.1. Data Envelopment Analysis

The development of nonparametric methods such as the Data Envelopment Analysis (DEA) (Charnes et al., 1978) has resulted in burgeoning literature on efficiency assessments of decision making units (DMUs) across different industries. Part of the usefulness of DEA relies on the fact that, besides producing a ranking of sampled institutions based on efficiency measured by a technical efficiency score, it also identifies the over-use of specific resources that cause any given institution to fall where it does in the analysis, providing as well a custom list of peers for any given institution. These peer institutions are the ones to whom an administrator should look when trying to determine to what extent operational procedures might be copied – or at least learned from – in order to address the over – use of resources. Data envelopment analysis (DEA) is used to empirically measure production efficiency of decision making units (or DMUs). Although DEA has a strong link to production theory in economics, the tool is also used for benchmarking in operations management, where a set of measures is selected to benchmarking, the efficient DMUs, as defined by DEA, may not necessarily form a “production frontier”, but rather lead to a “best-practice frontier” (Cook, Tone and Zhu, 2014)

DEA is referred to as “Balanced Benchmarking” by Sherman and Zhu (2013). Non-parametric approaches have the benefit of not assuming a particular functional form/shape for the frontier. However they do not provide a general relationship (equation) relating output and input. “The framework has been adapted from multi-input, multi-output production functions and applied in many industries. DEA develops a function whose form is determined by the most efficient producers. This method differs from Ordinary Least Squares (OLS) statistical technique that bases comparisons relative to an average producer. Like Stochastic Frontier Analysis (SFA), DEA identifies a “frontier” on which the relative performance of all utilities in the sample can be compared: DEA benchmarks firms only against the best producers” (Berg, 2010) (Figure 1).

![Figure 1: From multi-input, multi-output production functions](image)
3. METHODOLOGY
3.1. CCR DEA Model
To allow for applications to a wide variety of activities, we use the term Decision Making Unit (=DMU) to refer to any entity that is to be evaluated in terms of its abilities to convert inputs into outputs. These evaluations can involve governmental agencies and not-for-profit organizations as well as business firms. The evaluations can also be directed to educational institutions and hospitals as well as police forces or army units for which comparative evaluations of their performance are to be made.

We assume that there are “n” DMU’s to be evaluated. Each DMU consumes varying amounts of “m” different inputs to produce “s” different outputs. Specifically, DMU _j_ consumes amount _x_{ij} _of input “I” and produces amount _y_{ij} of output “r”. We assume that _x_{ij} ≥ 0 and _y_{ij} ≥ 0 and that each DMU has at least one positive input and one positive output value.

We now turn to the “ratio-form” of DEA. In this form, as introduced by Charnes, Cooper, and Rhodes (1978) the ratio of outputs to inputs is used to measure the relative efficiency of the DMU _j_ = DMU _o_ to be evaluated relative to the ratios of all of _j_ = 1, 2, 3……., _n_ DMU _j_. We can interpret the CCR construction as the reduction of the multiple-output/multiple-input situation (for each DMU) to that of a single “virtual” output and “virtual” input. For a particular DMU the ratio of this single virtual output to single virtual input provides a measure of efficiency; that is a function of the multipliers. CCR named after its development by Charnes, Cooper and Rhodes in 1978. This is the first and fundamental DEA model, built on the notion of efficiency as defined the classical engineering ratio. This model calculates an overall efficiency for the unit in which both its pure technical efficiency are aggregated in a single value. The obtained efficiency is never absolute as it is always measured relative to the field (Banker, Charnes, Cooper: 1984).

Below, figure 2 presents a hypothetical plan with inputs and outputs that uses three different technologies: Constant Returns to Scale (CRS), Variable Returns to Scale (VRS) and Non-Increasing Returns to Scale (NIRS). The vertical distance of a point ( _x_i, _y_i_ ) or ( _x_j, _y_j_ ) with maximum levels of production capacity, the respective cases CRS/VRS/NIRS, give us the technical inefficiency for each technology. The Scale Efficiency (SE) is calculated according to Banker et al (1984) as: TE (CRS)/TE (VRS) (Figure 2).

**INPUT AND OUTPUT PLAN**

![Hypothetical Plan with three different technologies](source: Coelli, 1997)

3.2. Higher Education Performance Evaluation using DEA: An overview
The growing public concern with performance and efficiency in the higher education sector is partly justified, on the one hand, by the massive expansion of a growing and increasingly diverse population of students in higher education, and on the other hand, by the gradual process for greater independence from the Government budget – which has been hastened by the current economic challenges and the associated financial constraints, leading to additional pressures for a greater autonomy of High Education Institutions (HEIs).

Although for the majority of studies (using DEA), the data analyzed is cross-sectional, with each decision making unit (DMU) – in this case the country – being observed only once. Nevertheless, data on DMU’s are often available over multiple time periods. In such cases, it is possible to perform DEA over time, where each DMU in each time period is treated as if it is an average data for the 1999-2007 period in order to evaluate long – term efficiency measures as education process is characterized by time lags in up to 37 EU (plus Croatia) and OECD countries. The program used for calculating the technical efficiencies is the DEA frontier software. The data are provided by Eurostat, OECD UNESCO and the World Bank’s World Development Indicators database.

The specification of the outputs and inputs is a crucial first step in DEA, since the larger the number of outputs and inputs included in any DEA, the higher will be the expected proportion of efficient DMU’s, and the greater will be the expected overall average efficiency (Chalos, 1997). Common measures of tracking output in education used in previous studies are based on graduation and/or completion rates (Johnes, 1996; Jafarov & Gunnarsson, 2008), PISA scores (Afonso & Aubyn, 2005; Jafarov & Gunnarsson, 2008) pupil-teacher ratio and enrolment rate (Jafarov & Gunnarsson, 2008).
Hence, similar to the former empirical literature, in this analysis the data set to evaluate education sector efficiency (at different levels) includes input data, i.e. (public) expenditure per student, tertiary (% of GDP per capita) or total expenditure on education (in % of GDP) and output/ outcome data, i.e. school enrolment, tertiary (% gross) teacher/public ratio, primary completion rate, total (% of relevant age group), unemployment with tertiary education (% of total unemployment), labor force with tertiary education (% of total) and PISA 2006 average score. There are up to thirty-seven countries included in the analysis (selected EU-plus Croatia and OECD countries). Different inputs and outputs/outcomes has been tested in four models (Table 1).

**INPUT AND OUTPUT PLAN WITH DEA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Inputs</th>
<th>Outputs/Outcomes</th>
</tr>
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</table>
| 1 (Primary) | Expenditure per student, primary (% of GDP per capita) | • School enrolment, primary (% gross)  
• Pupil-teacher ratio in primary education  
• Primary completion rate, total (% of relevant age group) |
| 2 (Secondary) | Public expenditure per pupil as a % of GDP per capita. Secondary. | • PISA 2006 Average  
• School enrolment, secondary (% gross)  
• Pupil-teacher ratio. Secondary. |
| 3 (Tertiary) | Expenditure per student, tertiary (% of GDP per capita) | • Unemployment with tertiary education (% of total unemployment)  
• Labor force with tertiary education (% of total)  
• School enrolment, tertiary (% gross) |
| 4 (Total) | Total expenditure on education, (in % of GDP) | • PISA 2006 Average |

Sources: 1 UNESCO; 2WORLD BANK; 3 OECD

4. **CONCLUSION**

The education is a process always topical and diachronic which is directly related to the social, cultural and economic life of individuals. It has been always been essential, because it enhances the social and human growth, thus contributing to the acquisition of knowledge and dexterities. The EU has an important role to play in achieving this objective by promoting education and life-long training and learning for individuals through the different EU programmes that exist and the ones that possible have to be initiated so that EU to be able to fulfill its vision as a humane centre identity.

The financial assistance that the EU already provides to the member countries, through the EU programmes that cover education, is of great importance for the countries which are in need for substantial investments in education.

The Streem (1989) sees the process of growth through the progress and dimensions of production and incomes, conditions of production, life standards (diet, accommodation, health, and education), behaviors and attitudes; as for the work, the institutions and the tactics that are followed. Thus we lead to the conclusion that growth is a multidimensional process with a number of aims and objectives, where the dimensions are social, political and cultural. Certainly, “growth” as a process cannot be synonymous to “economic growth” as the last one appears to benefit people in an unequal way.

This paper contributes to the literature by suggesting DEA as a method by which efficiency in education can be measured and thus making it possible to compare efficiency achievements in education with quality standards. This practice will tend to stimulate the educational process, contributing to increasing the national standard of living and achieving high rates of social growth.

5. **REFERENCES**


European Commission, Implementation of Education and Training 2010. Work Programme:
  Paper adopted jointly by the Council and the Commission.
Jafarov, E., & Gunnarsson, V. (2008). Government Spending on Health Care and Education in
  Croatia: Efficiency and Reform Options; International Monetary Fund; IMF Working
  Paper; WP/08/136
  18-33
  Eptalofos
United Nations (1948). Universal Declaration of Human Rights. It was published 12 November
School Bullying as a Social Construction

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Abstract:
This research study is an attempt to approach the social construction of the phenomenon of bullying through teachers' narratives. Eighteen semi-structured interviews were performed. The empirical material revealed that the phenomenon of bullying is a socially constructed reality, which is reinforced and consolidated by individual as well as social factors.

Keywords: Social Construction, School Bullying, Elementary School

1. Introduction
The publication of Olweus’ book, "Aggression in the schools: Bullies and whipping boys" marked the beginning of the systematic study of bullying in Sweden in 1978 (Smith & Brain, 2000). According to Olweus, (1993) school bullying or victimisation is defined as "repeated negative, ill-intentioned behavior by one or more students directed against a student who has difficulty defending himself or herself. Most bullying occurs without any apparent provocation on the part of the student who is exposed". Violence in schools is formed from the terms, conditions and dimensions that we construct (Artinopoulou, 2001). In 1966 Berger and Luckmann wrote a book called "The social construction of reality" in which they stated that the phenomena of social life are reproduced through social processes. Society is understood in terms of an ongoing dialectical process composed of the three phases of externalization, objectivation and internalization (Berger & Luckmann, 1966:149). The Constructivist theory suggests that there are multiple realities, considering that each person constructs his/her own reality (Barbour, 2008:28). What we regard as true, which of course varies historically and cross-culturally, is thought as our current accepted ways of understanding the world. These ways of understanding are the result of the social processes and interactions among people and they are not the consequence of the objective observation of the world (Burr, 2003:3-5). The framework through which the events, results and situations are realized, comprehended, get their meaning and are evaluated is school premises. Daily interaction is forming every student’s reality. That means that the student undertakes roles through interaction with other significant others, adopts attitudes and forms personal identity (Blackledge & Hunt, 2000:319).

It is noteworthy that in most studies – both in international and Greek literature - the social construction of bullying mainly arises only through the perceptions and experiences of students (Hamarus & Kaikkonen, 2008; Bibou-Nakou, et al., 2012; Thornberg, et al., 2013). Teachers’ perceptions about the construction of the phenomenon under investigation, is a research field in few studies (Timm et al., 2011). The purpose of this research study was to approach the social construction of bullying based on teachers’ perceptions, who teach in Primary Schools of Lesvos Island.

2. Sample
The sample was selected according to Mantzoukas (2007) and is based on the subjective knowledge of the interviewer for its characteristics (sample feasibility). It was considered appropriate for the research study to include teachers of both sexes, in order to identify possible differences in their perceptions. The teachers were selected using criterion, such as work permanence, scientific training, urbanity, the functionality of the school environment in which they work and their work experience. Finally, eighteen interviews were performed.

3. Methodology
In this survey, a qualitative method was selected, and especially semi-structured interviews because the overall purposes of qualitative research, drawing from the philosophy of constructionism, are the understanding of how people give a meaning to their lives, delineate the process (rather than the outcome or
4. Results – Interpretation

The results from the research revealed the factors that contribute to the social construction of bullying, such as the individual characteristics of students, the Stereotypes of Teachers and Families, the dimensions of the school environment, the teachers’ lived experience during their student years and the influence of the media on the phenomenon of bullying. The factors leading to the social construction of the phenomenon of school bullying were the result of both the teachers’ stereotypical perceptions and prejudices and the students’ individual characteristics. They were the following:

- Nationality: E17: First and foremost there are the stereotypes. What do you think of the man who comes from Albania and Bulgaria here? How do you get round that? So….when you have that in mind you should behave considering all these parameters…. Yes, we have stereotypes to a great extent…. Even I have caught myself thinking that if I didn’t have so many foreign students I could have a better level in class”, E12: Greek students feel threatened. They have the ideology of their home “that foreign people will harm us”, sex E9: From our mentality, That is, we may consider girls more girls, while boys stronger. E8: Perhaps, we as teachers and parents teach boys that their role is to be strong, to survive, to have power, and differences in appearance E16: if someone is a bit fat. ‘Well, the fat kids face racism, E9: The type of body, the long hair, the tone of voice, the earrings, can become a cause for victimization, depending on how they are perceived, E8: Disability. When a child - it happened at school - was walking with difficulty …. limping. Well, he/she received too many negative comments eg. ridicule, mockery and school performance E7: children who are good students, and perhaps this is one reason that motivates others to create trouble. The terms, in which we understand the world and ourselves, are social constructs, that is, “products” of a particular historical and cultural condition (Burr, 1995). Traditional and stereotypical perceptions placed upon children originating from different cultural environments (Kalati, et al., 2010) as well as gendered perceptions socially defined, explain how social norms and stereotypes influence the ways in which the occurrence of bullying is formed (Rigby, 2008). Thus, for example according to the construction of “hegemonic masculinity” (Jimerson et al., 2006:329) boys not only intimidate girls, but also boys who do not have clearly defined gender identity will display effeminate behavior (Renold, 2001). Although such behaviors are often seen as “normal” (Salisbury & Jackson 1996:105). The concept of difference, either cultural or biological, is associated with the devaluation and the divergence that leads to the perception of “not belonging to a team”. Our perceptions on the body and the ideal weight are a social and cultural construction, which depend on the specific historical and social framework. These perceptions, about the body, are transferred through interaction among children and affect their relationships with their peers at school in a negative way (Sobel and Maurer, 1999:234). Diversity) and strangeness result in indirect exclusion that can be discreet, or in isolation on the other hand which can be direct and physical (Hamarus & Kaikkonen, 2008:337).

Throughout our empirical material, it emerges that family factors contribute to the social construction of the phenomenon of bullying, such as standards based on family perceptions related to the socially constructed nature of femininity and masculinity. E5: They had exactly the same behavior. The parents were proud of him, because he was a boy. His parents occupation and their general socioeconomic status E2: Let’s say that what I’ve already seen and discussed with other teachers is that police officers’ children have a tendency in violence E18: Hey, because power, money gives a kind of power. A child, whose family has money, behaves in a different way. He/She is more confident and does not become victimized easily and knows how to defend himself/herself. What we regard as true is the resulting product of interactions among individuals (Burr, 2003:3-5). According to Dimou (2003: 153) there is a constructed idea that students from disadvantaged backgrounds do not qualify and do not always reflect the behavior and performance in school norms, and are subsequently defined negatively as “deviants”. The teachers of our sample have experienced or were witnesses of violent behaviors towards other children. E20: that was what I had experienced when I was a student, because my father was a builder. E18: I had seen the violence of teachers on these children, who were usually socially weak, no doubt about it, most importantly they were both socially weak and had a weak school performance and teachers would take it out on them. E1: When we were in our youth, violence was a type of game ….. But now these phenomena have taken alarming (dangerous) dimensions. They believe that the negative emotions that they experienced during their childhood years result in a different treatment of students who are being victimized. E3: I can’t say that it’s in a great extent, but I have to admit that it is something that has affected me inside. When someone new comes to class, I remember those early scenes …. Research studies refer that almost all the teachers who were bullied as children and several felt the effects persisted they carry this message forward into adulthood (Mishna et al. 2005: 729). Moreover, all these affect the way they respond and handle the bullying incidents, something that it is confirmed in literature by Holt et al. (2011:125).

Teachers recognize that factors often associated with the type of the school environment, contribute to the identity construction of the bully and the victim. They argue that, according to the way school perceives “difference”, being transferred to a new school may constitute a reason for victimization, or maybe not. E9: In fifth grade I changed schools, I experienced a total rejection by teachers and students and today I can say that I was repeatedly bullied. In six months, my father was transferred to a village on the island and I found myself in another school with very calm conditions. Also, teachers thought that they should serve as role models for students. E1: It is possible that we (the teachers) are to blame as we come across as the leader, the one responsible for everything, maybe they also want to substitute the teacher. According to Kallioti, et al. (2002: 36) the prestige, the power and the attractiveness of teachers can provide incentives, so that the child...
wants to imitate them. The size of the school plays a key role in the occurrence or non – of bullying. It is supported that, in small school facilities, important efforts have been made to reduce bullying as much as they can with the development of positive relationships between teachers - students being a key factor - something which doesn’t happen in urban areas where the relationships developed at school are more impersonal. In most schools, teachers often point out that there is a preexisting perception about students who do not comply with school regulations, a process which inevitably leads to the identification of specific students with a formal or informal characterization. This characterization is accepted from the students, who regard themselves as victims or bullies and they think that this is an integral part of their identity. E12: He is a "dangerous" student. The previous teacher was always referring to this child and his behavior, as if it was not an unreasonable behavior. The teacher’s expectations of his/ her students are adjusted to the above stereotypes (Blackledge & Hunt, 2000: 391). E2: Let’s talk about what school promotes. ..... When as a teacher and part of the system, I promote only the good students, the other students who do not perform that well might resort to beating.

Based on our empirical material, it seems that teachers’ perceptions are also affected by what emerges from media. E4: three or four days ago, in discussions in NET, I heard that we are fourth in the world in bullying. That is, by the media. I believe that it is a growing phenomenon, which has been arisen the past few years. The generalized perception of teachers that even though the phenomenon of bullying has been taking place all the previous years in recent years it has grown to a great extent, seems to be partly mediated through media projections. The special role of media gives them strength and power, in such a degree that more or less they seem to define our perception about reality and incidents which do not take place in our immediate environment (Malapetza & Charogianni, 2004:39). It is noted by teachers that the media serve specific interests and through exaggeration try to attract the audience. The media constitute the identity of the perpetrator and attribute causes of behavior either in family factors, or individual personality traits and stereotypes. E2: It comes out through TV series, Video Games, TV shows, comics, which we provide: a role model of the "superhero" who can do everything, control everyone and even the specific type of the victim. E17: Usually, it is either the family to blame or the child’s physiology etc. we set a society by side, as well as poor conditions and all the rest that the Media usually do. In a survey of Terenghi (2012) it is noted that the construction of the abusers’ and victims’ identity, is due to specific stereotyped ways of newspapers to depict bullies and victims.

5. Conclusions
According to our empirical material, factors such as cultural relativity (relativism), prejudices and stereotypes regarding the socio - economic level and ethnicity are thought to contribute to the construction of school bullying. The stereotypical perceptions and prejudices concerning the criteria that form the evaluation of the phenomenon have been socially established by the scientific community, creating a regulatory framework through which we interpret and recognize the social construction of bullying. The constructed image of the "other" is transferred to children, resulting to a state of competition and hostility towards children of different socio - cultural backgrounds and different characteristics. The way in which the others conceptualize, encounter and interpret their behavior in everyday interaction, depends on what we already know about them, as well as in formulations "commonly accepted" and still valid until they are disputed (Blackledge & Hunt, 2000). The media amplify the scientifically constructed reality over the characteristics and factors and build up a regulatory conception on the phenomenon of bullying. Phenomena of social life are reproduced through the social processes (Berger & Luckmann, 1966). The socially constructed diversity of children from low socioeconomic backgrounds causes their victimization. Historically, it has been proven that people who possess the greatest social and economic power, form / arrange the cultural tools of the interpretation of reality, building up the patterns of integration and divergence in society (Descartes, 2012). Meanwhile, the teacher contributes to positive school spirit together with his/ her colleagues and interprets the phenomenon of bullying via the student’s experiences, the school routine and the influence of contextual factors (scientific community, the media, stereotypes) (Blackledge & Hunt, 2000).

In conclusion, the phenomenon of bullying is constructed throughout the lived experiences of teachers, social interaction, stereotypes and prejudices of the family and school regarding the subject’s gender, ethnicity and socio - economic level based on the process of externalization, objectification and internalization. The Media play a significant and important role. Therefore, through the teachers’ perspective, it is recognized that bullying is a reality which can be constructed and reconstructed according to the criteria and framework in which it appears. It is necessary for the educational policy to create the appropriate conditions for the teachers’ redefinition, through critically oriented training procedures. The teacher needs the theoretical and regulatory tools in order to subvert the constructed - as problematic - situation, since it is a reflection of the typical regulatory image of bullying.

6. References
Barbour, R. S. Introducing qualitative research: A student guide to the craft of doing qualitative research, London, Sage, 2008.


Mantzoukas, S. ‘Qualitative research in six easy steps. The epistemology, the methods and the presentation’, *Nosileftiki*, 46, 1, 2007, pp. 88-98.


Intercultural interactions in compulsory education in Chios island

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Abstract:
The purpose of this paper is to explore the interactions of basic members of the educational community in compulsory education in Chios island. The sample came from 166 native and immigrant students. The findings revealed the positive intercultural interaction among the members of the educational community, along with the cautiousness for intercultural interaction from a small part of the students' population.

Keywords: Interculturalism, social networks, compulsory education

1. Introduction
The integration of immigrants in society is a process that creates inequality, social discrimination and xenophobic-racist reactions, especially in the time of economic crisis (Androutsou & Askouni, 2011:10). Today, Greece ranks among the countries with the highest percentages of immigrants (about 10%) among the EU Member States (Zografakis et al., 2009:12). Most immigrants come from Europe (80%), the rest are 14% Asians, 3.2% Americans and just 1% Africans. (IMEPO, 2009:47). Greece is the only country in the EU, where a nationality of immigrants (Albanian) exceeds 50% of the total of immigrants who live in the host country (Baldwin-Edwards, 2004).

The immigrant students who participated in Greek education were 41, 455 in 1995, 93, 650 in 2001 and 130, 114 in 2003 and thereby the reduction of the students' population that occurred in the 1990s, was equalized by the big influx of immigrant /repatriated students in Greek education (Katsikas & Therianos, 2004:246). During the school years 2006/2007 and 2007/2008 the number of immigrant students came up to 66, 187 in Primary schools and 36, 001 in Junior High schools and 70, 594 in Primary schools and 36, 28 in High schools respectively (National Statistical Service of Greece, 2009: 88). Chios in total of 53, 408 residents, according to the 2001 census, has 2, 630 immigrants (5% of the total population of the island), (Zografakis et al., 2009:56-57).

The coexistence of native and immigrant students within the school led to the formulation of new educational policies which aimed at the smooth integration of immigrant students in the educational system of the country. The demand for intercultural education resulted from the need for cooperation and coexistence of different cultural identities within the same society (language, religion, ethnicity, culture) and mainly because of the necessity of management of otherness at school (language, religion, culture, way of life) (Gkotobos, 2008). Intercultural education is not only directed to minority groups but to the entire education, that is to native students as well (Gkobaris, 2001), focuses more on the interaction among the cultures in question, mainly on the two-way flow of cultural elements (Gkotobos, 2001: 43-44) and refers to relationships and to the renegotiation of existing relationships (Katsikas & Politou, 2005: 23). So, in the early '80s “Welcome classes” and "Supporting tuition” classes were established. These were designed to help students become members of the Greek school and social environment (Dafermakis, 2007: 106). Important point of the educational policy is the integration of the conception for the utilization of the language and the cultural identity of the “other” students in the conext of the Cross-Thematic Curriculum Framework (Dafermakis, 2007: 110).

Despite the educational interventions, however, which aim at the facilitation of the immigrants' integration into the educational system, the presence of many immigrants in classes is still considered as a problem. The immigrants' children often face several problems at school (social stigma, Greek language learning difficulties, marginalisation). Teachers, by surveys that have been done, are not ready to manage mixed classes, they feel unprepared and are often frustrated. As a result teachers are led into stereotypical interpretations and negative behaviours (Androutsou & Askouni, 2011: 19, Cummins, 2011). Students' social networks (parents, friends, teachers) play a dominant role in conceptualizations and in exposed behaviours. The analysis of social networks and their adding value in social life emphasizes the promotion of socialization
of individuals, the influence of their identity and behaviour (Portes & Sensenbrenner 1993), the strengthening of interaction (Putnam, 2000) and the usurpation of cultural capital (Bourdieu, 1985).

The purpose of this paper is to explore the intercultural interactions of basic members of the educational community in compulsory education in Chios island.

2. Methodology and Sample

The sample came from 166 students. A number of 43 boys and 40 girls participated per team. 83 students were immigrants and 34 were born in Greece (41%), whereas 49 in their country of origin (59%). Cautious sampling of all social classes was applied for the selection of the sample.

3. Research tool

The questions of the questionnaire used in this survey were related to demographic characteristics and students' views on integration in the educational and social environment and were based on relevant findings of the International and Greek bibliography and were also based on the experience of researchers in intercultural topics.

4. Findings

As regards to the groups that students choose, 68.7% of native students responded that their groups consist of both native and immigrant students (mixed groups) while the others (31.1%) replied that their friends are natives only. On the other hand, 68 immigrant students (81.9%) replied that their groups consist of both natives and immigrants, 13 immigrants (15.7%) replied that their friends are natives only and 2 immigrants (2.4%) replied that their friends are only immigrant students.

Table 1: Making up of the group (p=0, 26> 0, 05)

<table>
<thead>
<tr>
<th>Group</th>
<th>Natives</th>
<th>Immigrants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natives</td>
<td>26</td>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td>Natives and immigrants</td>
<td>57</td>
<td>68</td>
<td>125</td>
</tr>
<tr>
<td>Immigrants</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>83</td>
<td>83</td>
<td>166</td>
</tr>
</tbody>
</table>

Both immigrant and native students replied that the persons who can help them more in a difficult moment are their parents (50.6% immigrants and 73.5% natives). Secondly, immigrant students wait for help for their brothers/sisters (22.9%) and then for their friends (16.9%). For natives, after their parents, their friends were their second choice (13.3%).

Table 2: Persons who help (p=0, 13>0, 05)

<table>
<thead>
<tr>
<th>Origin</th>
<th>Teachers</th>
<th>Friends</th>
<th>Parents</th>
<th>Br/Sist</th>
<th>Relatives</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natives</td>
<td>1</td>
<td>11</td>
<td>61</td>
<td>7</td>
<td>3</td>
<td>83</td>
</tr>
<tr>
<td>%</td>
<td>1,2</td>
<td>13,3</td>
<td>73,5</td>
<td>8,4</td>
<td>3,6</td>
<td>100</td>
</tr>
<tr>
<td>Immigrants</td>
<td>0</td>
<td>14</td>
<td>42</td>
<td>19</td>
<td>8</td>
<td>83</td>
</tr>
<tr>
<td>%</td>
<td>,0%</td>
<td>16,9</td>
<td>50,6</td>
<td>22,9</td>
<td>9,6</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>25</td>
<td>103</td>
<td>26</td>
<td>11</td>
<td>166</td>
</tr>
<tr>
<td>%</td>
<td>6,1</td>
<td>15,1</td>
<td>62,0</td>
<td>15,7</td>
<td>6,6</td>
<td>100</td>
</tr>
</tbody>
</table>

In the question about the individuals who they would trust more, 67 native students (80.7%) replied that they would trust natives (people of the same origin with them) and 16 students (19.3%) replied that they would trust and people with different origin. As far as immigrant students are concerned, 49 students (59%) replied that they would trust people of the same origin with them and 34 (41%) replied that they would trust and persons with different origin.

Table 3: Persons who you trust (p=0, 02<0, 05)

<table>
<thead>
<tr>
<th>Group</th>
<th>Natives</th>
<th>Immigrants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons with the same origin with me</td>
<td>67</td>
<td>49</td>
<td>116</td>
</tr>
<tr>
<td>%</td>
<td>80,7</td>
<td>59</td>
<td>69,9</td>
</tr>
<tr>
<td>Persons with different origin with me</td>
<td>16</td>
<td>34</td>
<td>50</td>
</tr>
<tr>
<td>%</td>
<td>19,3</td>
<td>41</td>
<td>30,1</td>
</tr>
<tr>
<td>Total</td>
<td>83</td>
<td>83</td>
<td>166</td>
</tr>
<tr>
<td>%</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

In the sentence, "I think my teachers/professors show more interest in natives compared to students with different origin", 62 native students (74.7%) replied that they "disagree" or "strongly disagree", 14 students (16.9%) replied they "neither agree nor disagree" and 7 students (8.4%) replied that they "strongly agree" and "agree". As far as immigrant students are concerned, 38 students (45.8%) replied that they "disagree" or "strongly disagree", 25 students (30.1%) replied they "neither agree nor disagree" and 20 students (24%) replied they "strongly agree" and "agree" that teachers show more interest in natives.

Table 4: Teachers’ interest (p=0, 03<0, 05)

<table>
<thead>
<tr>
<th>Origin</th>
<th>SD</th>
<th>NA/D</th>
<th>A</th>
<th>SA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natives</td>
<td>39</td>
<td>23</td>
<td>14</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>%</td>
<td>47,0</td>
<td>27,7</td>
<td>16,9</td>
<td>2,4</td>
<td>6,0</td>
</tr>
<tr>
<td>Immigrants</td>
<td>24</td>
<td>14</td>
<td>25</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>
In the sentence, "my classmates and my teachers/professors respect my language, my religion etc.," 57 immigrant students (68.7%) replied that they "strongly agree" & "agree" (that is their classmates and teachers respect their diversity), 17 students (20.5%) replied that they "neither agree nor disagree" and 9 students (10.8%) replied that they "disagree" (that is they do not respect their diversity).

Table 5: Respect of immigrants' language and religion (p=0, 02<0, 05)

<table>
<thead>
<tr>
<th>Origin</th>
<th>SD</th>
<th>D</th>
<th>NA/D</th>
<th>A</th>
<th>SA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natives</td>
<td>0</td>
<td>1</td>
<td>12</td>
<td>39</td>
<td>31</td>
<td>83</td>
</tr>
<tr>
<td>%</td>
<td>0</td>
<td>1.2</td>
<td>14.5</td>
<td>47</td>
<td>37.3</td>
<td>100</td>
</tr>
<tr>
<td>Immigrants</td>
<td>2</td>
<td>21</td>
<td>24</td>
<td>39</td>
<td>7</td>
<td>83</td>
</tr>
<tr>
<td>%</td>
<td>2.4</td>
<td>25.3</td>
<td>32.8</td>
<td>47.0</td>
<td>8.4</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>22</td>
<td>36</td>
<td>68</td>
<td>38</td>
<td>166</td>
</tr>
<tr>
<td>%</td>
<td>1.2</td>
<td>13.3</td>
<td>21.7</td>
<td>41</td>
<td>22.8</td>
<td>100</td>
</tr>
</tbody>
</table>

As far as the same opinion is concerned, that is "my parents often communicate with my teachers, in order to be informed about my progress" 70 native students (84.3%) replied that their parents often communicate (agree & strongly agree) and 12 replied that they "neither agree nor disagree" whereas as far as the immigrants are concerned, 36 students (43.3%) replied that their parents often communicate with their teachers (agree and strongly disagree), 24 students (28.9%) replied they "neither agree nor disagree" and 23 students (27.7%) replied they "disagree" or "strongly disagree".

Table 6: Communication between parents and teachers (p=0, 00<0, 05)

<table>
<thead>
<tr>
<th>Origin</th>
<th>2nd Generation Immigrants</th>
<th>1st Generation Immigrants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natives</td>
<td>N</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>%</td>
<td>0</td>
<td>14.7</td>
<td>23.5</td>
</tr>
<tr>
<td>Immigrants</td>
<td>N</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>%</td>
<td>4.1</td>
<td>32.7</td>
<td>32.7</td>
</tr>
<tr>
<td>Total</td>
<td>N</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>%</td>
<td>2.4</td>
<td>25.3</td>
<td>28.9</td>
</tr>
</tbody>
</table>

5. Discussion

The relationships that the children develop with children of the same age, the acceptance by the group of their classmates and the positive comparison with them plays an important role in their smooth psychosocial and emotional development. (Manos, 2000). The majority of students choose "mixed" groups. 2/3 of the natives have mixed groups, while 1/3 of the natives associate only with natives. The positive fact is that most native students "include" in their groups and immigrant students despite the prejudices that are sometimes heard for immigrants. The intercultural contact in the classroom, eliminates prejudices, reverses the negative "image" for immigrants and allows the integration of these in groups of natives. The native classmates are the "significant others" to whom the immigrant student counts on in order to be "recognized" by the classroom group and in order to gain self-confidence and positive self-image. To a large extent, immigrants (82%) have "mixed" groups, as the company with natives is for these the "Passport" for recognition and acceptance by the host society, while it increases their self-esteem as well. The 2-group relationships are very important in creating feelings of acceptance or rejection of the immigrant student's identity. The groups offer their members a social identity, which can contribute positively or negatively to their self-perception (Papastamou, 1999: 160-161). Maintaining relationships with their own people, on the one hand, and maintaining relationships with members of...
the broader society (native), on the other hand, are primary elements in the selection of the immigrants’ strategy of acculturation.

However, there is also an important part of native students that choose only natives in their groups, a fact that needs to be more investigated. The immigrant student can find points of convergence with native students. There are common values that unite the different “we” with “others”, there are common challenges, common problems and common goals (Androutsou & Askouni, 2011: 26). The fact that the overwhelming majority of native students replied that they would trust more people with the same origin with them, shows that there is still a strong element of nationality to native students, having some reservations for their immigrant classmates. On the other hand, immigrants are less cautious and more open to issues of trust towards natives.

Most immigrants (2/3) believe that their classmates and their teachers respect their language, religion and culture. However, there was a number of immigrant students (about 1/3 of the sample of immigrants) who replied that natives do not respect their language, their religion, or were cautious to give a specific answer. According to Nickolaou (2000: 48) on the one hand, the immigrant students seek to be similar to native students, but on the other hand they have to confront with his family control or the community he belongs to. Therefore, children experience a dilemma at school. Their language stigmatizes them and it often creates negative emotions. So, immigrant students often adopt a defensive attitude in the new environment (Nickolaou, 2000: 52).

A part of immigrant students (about 1/4) believes that their teachers and professors show more interest in native versus immigrant students, while there are many (1/3 of the sample of immigrants) that do not take a clear position or cannot answer. Most of the immigrants however (about half of the sample) believe that their teachers do not “discriminate” them from their classmates. This is reinforced by the fact that immigrant pupils have mixed groups (with natives) and as it is known interpersonal contact blunts stereotypes and prejudices that are heard for social groups (i.e. Albanians). With regard to 1/3 of the sample of immigrant students who seem to have a negative to neutral position, they agree with Cummins’ position (2011: 147) that teachers sometimes appear cautious in bilingual education and in order to fulfill their role, indirectly force the different students to downgrade their identity and to accept/adopt the dominant identity and culture. The integration of immigrants in society, of course, is a process that creates inequality, social discrimination and xenophobic-racist reactions, especially in times of economic crisis, (Androutsou & Askouni, 2011: 10). The interactions between teacher and student (immigrant), and student (immigrant ) with classmate (native) are a decisive factor in success or failure at school.

The collaboration of teachers with family, as it has been reported, enhances the chances of students’ success and could provide solutions to many problems (Gkiouzelis, 2007: 279). The survey shows that parents of native students communicate more frequently with their children’s teachers in comparison to parents of immigrants. This may be due to difficulties in using the Greek language, with resulting feelings of shame or fear in any “shortages” and misunderstandings during communication with the teacher or in view of the expectations they have for their children. The family of the second generation immigrants has the ability to move in both social-cultural systems (country of origin-host country), because of their greater flexibility, while the family of the first generation immigrants generally turns towards the systems of the country of origin (Damanakis, 1993: 56). Several researchers conclude that second-generation immigrants tend to be more oriented towards the host country in comparison to first generation immigrants (Pavlopoulos et al., 2009: 405).

In conclusion, it is revealed that through the interaction of native and immigrant students stereotypes, xenophobic perceptions and attitudes that stigmatize and isolate them are weakened or demolished. Even though teachers appear unready to meet the demands of multiculturalism, they seem to be “open” to different cultures and to eliminate discriminatory elements and the strong national element of the past. Immigrant students and their families seem to adapt more and more to Greek society, as 2nd generation immigrants seem to be integrated into the host society to a large extent. In times of crisis like the present, anti-immigrant views appear that implicate and deprecate them. The interaction and the powerful two-group bounds that have developed at school and in the wider social environment can be strong cohesive forces that will reduce and pacify the hostile invasion of such practices.

6. References
The postwar period, and especially the 60s until the late 70s, represents a catalytic period for the modern history of Greece, and especially for the development of a particular educational ideology. The educational policy, which is associated with an authoritarian educational style and subsequent school discipline, is the way for "moralizing" the emotional and physical development of students. School is perceived as the main mechanism to enforce discipline, obedience and uniformity in educational subjects.

Keywords: Educational policy, ideology, discipline

1. Introduction

While in the Structural Functionalist approach education is an institution supporting the perpetuation of society and coverage of its needs, in Marxist theory it is a of the superstructure which is in turn influenced by the economic determinism of the economic structure. Therefore, the expectations of society and its institutions, which are deposited on the role of education are not invariable, as they are affected by the current socio-cultural and economic conditions (Mylonas, 1993). Thus, the industrialization of society and the introduction of the positivist approach on science were some of the causes leading to the transformation of the school form (Rohrs, 1990: 1).

The educational process legitimizes the prevailing ideology by clarifying its goals and establishing mechanisms of social control through which these societies try to ensure their consistency and continuity (Lamm, 1986). According to Bowles & Gintis (1976) the educational institutions play an important role in the construction and perpetuation of certain ideologies, which generally serve the interests of dominant groups in society. Schools can reinforce or modify the learning patterns that children acquire at home (in dramatic and enduring fashion) (Palonsky, 1987:1) legitimizing social inequalities or supporting social mobility.

Education achieves all the above by using value judgments (ratings, exams, etc.) which are presented as socially 'neutral' and through disciplinary and moral educational procedures. School discipline represents an integral part of the educational process (Kiridis, 1999: 27) because it is a part of the moral-spiritual guidance of children. Moreover, education includes expressed demarcations of acceptable or not acceptable behavior, as these are expressed through socio-politically established ideas and attitudes (Holden, 2002). Foucault referred to 'a judicial power within the school', in the sense that (the more or less simple) the transmission of knowledge from one person to another cannot be disentangled from those authoritative processes which seek to instill discipline into (the moral fibres of its) the inmates and thus differentiate them, depending on their nature, potentialities, levels, and values (Deacon, 2006: 182). At this point, we can resurface Vartsalis review (1994: 179-181) on Gramsci’s perception of discipline and its association with knowledge and school. Gramsi parallels the procedure of acquiring new knowledge and complementing prior knowledge from the student’s point of view to the productive process that Marx had already analyzed. He does not recognize the 'instrumental' character of school discipline, as this is signified in the first category, but he believes that school discipline is identified with the educational practice and is responsible for the production and promotion of knowledge. However, Vartsalis (1994) does not accept this viewpoint claiming that there is no correlation between the production of goods (Marxist theory) and the knowledge production. Furthermore, there is a strong argument among theorists concerning the misuse of school discipline and how the latter aims at engraving a respective educational practice rather than introducing a wider educational framework (Holden 2002).
2. The educational policy prior to the dictatorship

The postwar period - and especially during the 60s and until the dictatorship - is not only a catalytic period for the modern history of Greece, but is also characterized from a particular educational ideology. The intensive political debate, frequent power shifts, the control and the violence perpetrated by the state apparatus, the deep economic and social transformations and finally the imposition of the dictatorship as well as the intense social and ideological divisions designated the development of the country. At the same time the application of Ervartos’s Pedagogics which represented the formal educational policy of this period, incarnated a conservative approach of the school. According to this policy the essence of the educational process could be summarized in paying “attention to, complying with and subjugating” to the educator’s authority and knowledge without taking into account the individual characteristics of children whose personality should be formed in a way that was suitable for the political and military authority. This perception contributed to the representation of school as a place of strict discipline and conventional learning, as a safeguard mechanism of the wider power structures and the prevailing ideology.

Skimming through the aims and objectives of Greek education in the last century, we realize that until recent past, Greece continued to set national, ideological, intellectual, emotional, even religious objectives in the curricula of primary and secondary education (Kontogiannopoulos, 1991). The study of the Greek educational system in the 1960s is a good example of a school system in which the central benchmark is national identity. According to this, the past and the present in Greece have been perceived as a continuum from Ancient Greece through Byzantium, while the ethnic homogeneity was evident in terms of language, religion and region. The role of education as a guarantee of this idea has been crucial since the birth of the Modern Greek state. Even though during this period, there was a need for advanced spiritual education along with high specificity, the statistics of 1961 (Barnabas - Dark et al., 2000) indicate that the Greek educational system - and specifically the pedagogical science - had consistently adopted perceptions which were dominant in the early 19th century (Imvriotis, 1980: 95-96). The educational system of the 1960-1970 decade was unable to respond to a series of important and multilayered transformations that took place in Greek society and were the result of rapid and generalized urbanization. Internal migration caused a large difference in the lifestyle of urban and rural areas, whereas the strong tendency for outward migration reached its peak during the period 1960 - 1966, as incomes and the Greek way of life were in lower level than those in other countries (Tsaoasis, 1971: 71 & 147).

These intensive social changes were expressed through the growing public demands for reform, democratization, social justice and the modernization of education and created an irresistible movement for educational reform, which found partial expression in the reforms which were introduced in 1964. The objects of General Education were defined according to Law 4379/1964 on "The organization and Administration of General Education (Elementary and Secondary)" as: 1) "the harmonic physical, mental and spiritual growth of students", 2) "the moral, national, religious education, the "formation of ethos and personality" aiming at "a national and social discipline", the obtaining of "knowledge and skills" and d) the preparation for higher education. However, the opposition between traditional conservative fields concerning the insertion or not of the demotic and its correlation with values that contradicted the idea of homeland and religion, and the disintegration of the idea of "free education", led to the postponement of this reform effort (Dimaras, 1986).

The authoritarian perception and the lack of liberal values as well as the reactive messages and lessons of the school books of primary education from 1955-1976, have been recorded in Fragoudakis’ study (1979:10). "From the analysis of the preceding empirical material, the most substantial ones may be the inherent fear of knowledge in the texts; fear that defines the transfer of knowledge through arbitrary choices, based on its ideological usefulness only". The findings of this study outlined the "ideal" student, who is characterized by a "feeling of inferiority, modesty, shyness, decency, severity, taciturnity, obedience, that is a student who is unable of taking initiatives, is docile and "subordinate" (Fragoudaki, 1979:121-136). During the Greek revolution and according to the values of the Greek-Christian civilization, school acquires the character and the function of a suppressive mechanism which controls the behavior of children pretending to always work “for their own good”. The students had to work based on a code of behavior which strictly defined the way students should behave, dress, cut their hair, speak and be allowed to pass around (9th evening) (Zafiropoulos, Sousamidou-Karapeti, 2004:85). School rules, the conceptual disciplinary framework, and the feasibility of the educational system and, as a consequence, of the entire society had an immediate impact, both on type of punishment and education children received at school. The prevailing despotic educational framework reveals the important role school punishment and pedagogical control played to ensure the proper functioning of the class (Aravanis, 2004: 19). According to Durkheim’s perception of the relationship characterizing education and society, discipline is a fundamental principle of the educational system ensuring the social structure (Nova - Kaltsoni, 2010). The direct convergence between real school life and the cultural environment along with the economical, social and political ideology of the society reveals the expectations different social institutions and individuals have from the educational institution (Constantine, 1994: 45-46).

According to the Structural Functionalist approach the teacher is an "organ" / tool of the state, which will transmit the necessary principles and values for the cohesion of society to new generations (Nova - Kaltsoni, 2010). During the period from 1967 to 1974, the teacher was used as a very important bearer of the political socialization of students and had been significantly pressured by the Ministry - through its inspectors - to play a multilevel role inside and outside the school, which was none other than a mouthpiece of the regime (Terlexis, 1999:150). The ideological function of education is reflected in the official control of the
teacher, with ‘ethos’, (which is a fundamental element for teachers and means faith and loyalty to the Greek and Christian ideals) being an important criteria for their introduction to the pedagogical academies (Althusser, 1999: 69–95). Until 1974, the above point of view was recorded in arbitrary assessment reports, which "were associated with a planned ideological and political undertaking that built the dominant ideological system of postwar Greece" (Tsoukalas, 1986: 150). The absolute and strict control of teachers and students - with systematic police interference and intimidation methods - affected school function. Teachers as well as other social representatives (priests, rural police and community presidents) contributed to the controlling character of the school by snitching students as “obedient soldiers” (Zafiriadis et al., 2004: 86-87). Following the theoretical approach of Althusser, the education during this period constitutes one of the most important ideological state apparatuses, because, apart from providing technical knowledge to students, it imbues them with the principles of dominant ideology - either in an indirect or direct manner.

3. The educational policy after the dictatorship

Although a series of important educational law reforms was attempted - such as the Law 309/1976- especially during the 70s setting the nine-year compulsory education and the use of the Demotic, as well as the institutionalization of Technical - Vocational Education and Law 576/1977, it was impossible to resolve the accumulated educational problems, because they were already overdue measures, "resulting in a delayed reform effort" (Iliou, 1990). Particularly, the 1976 law reform concerning compulsory education, ignored the request for democratization and it enhanced the existing despotic and authoritarian structures of the educational system (Terzis, 1981: 276). According to Law 309/1976, Article 10, in elementary school, “the student is adjusted to school life, while being provided with the basis of a religious, ethnic, cultural, humanitarian, moral and physical education”. The increasing number of inspectors from the dictatorial regime aimed at spying teachers” while at the same time there was a variety of characteristics defining the profile of a “good teacher” thoroughly presented in inspector reports during this period: obedient, discreet, honest, willing, loyal, attentive, nationalist, etc” (Mavrogjorgos, 1993: 150; Andreou & Papaconstantinou, 1994: 266).

The educational system did not become more modern, even though a change in the studies content was attempted towards that direction; a change without any kind of coordination with the other pedagogical parameters, considering that the formation of the curriculum was not imbued by any progressive perceptions (Chryssafidis, 1994: 22). These law reforms were never completed and were not fully implemented, as the technical part of education which was their central goal was never materialized. The implementation of the Greek educational law reforms were since then and for a long time largely stalled, because the upper class in an attempt to guard its financial interests used social inertia in order to oppose and prevent those reforms, which could lead to growth and empowerment (Tsoukalas, 1975; Frangoudakis, 1981:10; Tzani, Pamouktisoglou, 1997:22).

The adjustment of the country to international standards is obvious during 80s with various actions promoted, such as the teaching of a foreign language in the elementary school and the upgrading of excluded subjects, such as music and art (Bouzakis, 1993). Following the country's entry to the EEC in 1981, the main changes in education were brought about by the educational reform of 1982 to 1985 (Law 1566/1985). The most important reforms included the use of the monotonic system, the abolition of the Inspectors office, the establishment of the School Counselor, the adoption of new textbooks in the school year 1982-1983, the new curriculum for classes A and B of Primary school, the modification of the curricula in other classes and the abolition of the school uniform. One of the most predominant pedagogic approaches has been the anti-authoritarian educational perception which denies the idea that punishment is an effective and correct educational process and is more concerned about the children themselves and less about the smooth running of the school (Zafiriadis et al., 2004: 37).

In the last decade of the twentieth century and after the full integration of the country in the European Union, there is a great interest for law reforms that have as main objective the achievement of internal changes in the educational system in order to democratize it and not changes concerning its structure. Both the need for monitoring European and international developments and the requirements set by the European Union concerning the use of social funds for the implementation of educational reforms, have contributed to a number of fundamental changes in the philosophy, the content, the purposes and the methods of implementing the objectives of education (Bouzakis, 1993; Mouzelis, 2005; Piasas, & Flouris, 2005).

In the 60s and 70s, the educational policy, which was implemented in Greece, was adjusted to the general socio - political ideology of the time. The authoritarian character of education and the legitimacy of discipline - aiming at the assimilation of common rules, ideas and concepts - were the means for ensuring and securing wider power structures and the prevailing ideology. School discipline is used instrumentally as a way for ensuring the proper functioning and effectiveness of the educational process, while the teacher is a mediator between the central government and the new social subject; as Freire would say a "testimonial" form of education.

4. References

Aravanis, G. Discipline in Education. The role of punishments and rewards in school and kindergarten, Athens, Grigori, 2004.


Frangoudakis, A. The primary school textbooks, Athens, Themelio, 1979.


Pasiaras, G., & Flouris, G. The 'Europe of Knowledge' as a challenge and as a representation of power relations - European knowledge in educational contexts", in D. Gravaris & N, Papadakis eds., Education and educational policy - between state and market, Athens, Savalas, 2005.


Terlexis, P. Political Socialization, Athens, Gutenberg, 1999.


Section 11: Cultural Management, Local Heritage and Local Development
Cultural Tourism and Ottoman Monuments in Chios, Greece

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Abstract  
The cultural tourism has been grown rapidly in Greece in recent years. It is about a kind of tourism which has attracted the attention and the interest of many people. Cultural tourism is based on the search and the participation in spiritual, emotional and psychological experiences. People, who visit cultural attractions, aim at the gathering of new information and experiences in order to satisfy their cultural needs. The Ottoman Monuments play an important role in the cultural heritage of the island. They are great historical monuments which prove the history and the culture of other people of another era. The historical and cultural richness of the island combined with the increased turnout of Turks visitors could contribute decisively to the tourism and economic development of the island.

The objective of this paper is to examine and impress the current situation of the cultural tourism in Chios. Moreover, we aim at the investigation of the contribution of Ottoman monuments in tourism development. In order to satisfy the objectives of this survey we conducted a primary research through questionnaires. Although, the investigation revealed that the cultural tourism hasn’t been developed satisfactorily in Chios, there are many possibilities – prospects to be developed. Prerequisite are the cooperation of all the officers and the implementation of a plan which will target at the promotion and the development of the tourism.

Key words: Cultural Tourism, Ottoman Monuments, development of tourism, Chios

1. Introduction  
Cultural tourism is defined as the movement of people to cultural attractions and cultural heritage resources of a place. When we referred to the cultural heritage, we mean landscapes, historical - archaeological sites, religious sites, museums, traditional villages, cultural events, etc. It is a kind of tourism of special interest and is based on the search and the participation in aesthetic, spiritual, emotional and psychological experiences.

Culture and cultural heritage are concepts with great importance. This is not something static and fixed, but something that evolves over time. The process of evolution and change in which subjects, is perfectly normal, and continuously receives stimuli, pressures, attitudes and values that accepts, rejects or integrates.

Culture is the system that includes the highly spiritual, material, intellectual and emotional features that characterize a society or a group. It doesn’t include only the arts and letters, as many believe, but also the lifestyle, value systems, traditions and the culture of a society. In simple words, culture is intangible and tangible forms, mobile and stationary (Galani Moutafi 2002). Culture includes family patterns, folklore, social customs, museums, monuments, historic structures, artifacts, natural history, and even wilderness areas (MacDonald & Jolliffe 2003).

Cultural heritage is the power of tradition, fuelled by the presence of the monuments in the everyday human environment. Undoubtedly, this presence is assured only through the appropriate institutions and appropriate projects and the creation of museums. In order to experience the natural heritage requires the appropriate education system. Only then, under the appropriate circumstances, the person feels strongly and loudly the desire to protect his legacy as a truly conscious, sensitive and passionate guardian of it.
As far as the tourists who have special interests are concerned, they come into contact with a learning process associated with the fun. More specifically, they know better the object; they discover the deeper meanings which are inherent therein and they enrich their knowledge. At the same time, they have the opportunity to come into contact with others who have common interests, which makes the visit more enjoyable and creative. By doing so it is fully realized the value of this site (Moscardo, 1996).

The protection of culture’s and religion’s artefacts is not only a moral duty, but it is an interest because the cultural heritage is a great treasure. Undoubtedly, the monuments, which are the first elements of the civilization, are the source of prestige for the country and the key basis for handling various national affairs. The purpose of the cultural tourist is the experience of “culture” i.e. they are interested in the different lifestyles (Hughes, 1996). Visits to historical sites and museums, are related to historical tourism or heritage tourism (Smith, 1989).

It is generally accepted that the culture and the tourism are strongly linked and support each other, as those who travel to a destination often seek to know the culture. An important dimension of cultural tourism is that the tourists are interested in cultural monuments and cultural events mainly of religious content.

2. The framework for the development of cultural tourism in Greece and internationally

Recent years, it has been observed internationally a new trend which concerns a growing interest in the history, the culture and the religion. It happens due to the globalization, as the world is becoming smaller and the culture is in a sense homogenized (Smith 2003). The tourism of the cultural heritage is the major attraction for international tourists and an important source of revenue. The management of cultural heritage is now a global phenomenon which is responsible for providing and maintaining cultural heritage and is important for the tourism’s development and promotion. In this way the cultural heritage has become an important pillar of tourism’s sustainable development.

Of course, the majority of cultural elements - symbols are used by various countries as tourist attractions. The recording of a region in the list of World Cultural Heritage converts it in an important tourist attraction. There have been several discussions about the exact size and growth of tourism in relation always to the cultural heritage.

According to UNESCO: “Cultural tourism encourages the revival and survival of traditions and restore sites and monuments. In contrast, the hasty and imprudent development of tourism can bring opposite results”.

Cultural tourism is considered as the oldest form of tourism. In ancient Greece the first movements were recorded as tours during which people knew other cultures. The visiting of historical sites and of cultural landscapes, the monitoring of specific facts and events and the visiting of museums were always part of the overall tourist experience.

Table 1. UNESCO World Heritage Sites

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<th>Country</th>
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Source: UNESCO World Heritage Sites, 2013

Greece is a country with significant cultural heritage which is called upon to harness the opportunity offered to elevate the cultural development in a top priority within the European Union. The remarkable cultural wealth can clearly be an important pole of attraction, both specialists and ordinary citizens, who can combine the enjoyment of these tourist destinations by visiting places of historical interest. The elements of culture can be regarded the same time as tourist resources such as art forms, customs and traditions of the region related to local tradition, history, religion, structured environment, natural environment or mixed natural and structured environment and cultural events (Tsartas 1996). It is generally accepted that the cultural heritage of Greece is a very powerful incentive tourist attraction for tourist destinations. The cultural heritage is an essential resource that should be strictly protected in order to safeguard the quality of life, the quality of the tourism experience and of course the future of historic cities.

It is important for each country to include in the list of UNESCO monuments and sites of the natural and cultural heritage. This commitment concerns the country that will protect itself and will operate
management and protection plans and at the same time ensures the assistance of the international community in these efforts. Greece has included 18 seats in the list, of which six are religious - cultural monuments, such as Meteora, Mount Athos, early Christian and Byzantine monuments of Thessaloniki, the archaeological site of Mystras, the Monasteries of Daphni, Saint Loukas, Nea Moni and the historic center (Chora) with the Monastery of Saint John the Theologian and the Cave of the Apocalypse (Moiras 2019: 159-163).

To conclude, it has been observed that the protection of cultural heritage is the duty of both individuals and government agencies worldwide. There should be particular emphasis on the preservation of cultural heritage and they should aim to ensure the combination of tourism development with the policy for culture and diversity, resulting from the history of each place. The development of cultural tourism can give impetus to tourism development. Cultural - historical resources of the host sites ensure the attractiveness of tourist destinations and the special contribution to development. Moreover, the natural beauty and the proper management of tourism resources of Greece can contribute to the development of cultural tourism, which is popular in the past. Cultural tourism can affect the local economy by creating new job opportunities and increase the national income. Also, it can enhance the learning of residents, the appreciation, the awareness and the national identity.

3. Ottoman Monuments in the Prefecture of Chios

Chios is the fifth largest island in Greece and is considered by many to be the island of Homer. It is known for its unique product, mastic, which is produced only in this part of the world. It keeps alive the culture through customs and traditions that are still part of everyday life. Byzantium, and the Genoese domination that followed, have bequeathed the island with very unique architectural monuments and settlements.

<table>
<thead>
<tr>
<th>Historical - Religious Monuments and Museums of Chios</th>
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<tr>
<td><strong>Orthodox Christian Monuments</strong></td>
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<tr>
<td>Early Christian Basilica (Emporeios)</td>
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<td>Early Christian Basilica St. Isidore (4th c.)</td>
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<tr>
<td>Nea Moni (1042) (World Heritage UNESCO)</td>
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<tr>
<td>Saint Georgios Sikousis (12th or 13th century)</td>
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<td>Krina Lady (1287)</td>
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<td>Holy Apostles Pyrgi (13th c.)</td>
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<td>Holy Lady (13th c.)</td>
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<td>Agia Markella (Volissos) (1500)</td>
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<td>Monastery Moundon (Diefcha) (1382)</td>
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<td>Taksiarchis Anavatos (1882)</td>
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<td>Holy Monastery of Panagia Myrtiliotissa (1887)</td>
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<td>Metropolis of Chios (1888)</td>
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<td>Lady Evangelistria</td>
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<td>Monastery of Our Lady Voiheias</td>
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<td><strong>Jewish Monuments</strong></td>
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<td>Jewish Cemetery</td>
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<td>Jewish Quarter (Castle of Chios)</td>
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<td>Jewish Inscriptions, et al.</td>
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<tr>
<td><strong>Museums</strong></td>
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<tr>
<td>Archaeological Museum of Chios</td>
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<tr>
<td>Byzantine Museum of Nea Moni</td>
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<td>Byzantine Museum &quot;Palatati&quot; Castle of Chios</td>
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<tr>
<td>Folklore Museum of Kallimasia</td>
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<td>Folklore Museum Public Library Chios' Adamantios Korais &quot;</td>
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<td>Museum Citrus (Kampos)</td>
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<td>Maritime Museum, et al.</td>
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<td>S. Nicola Bari</td>
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<td>Catholic Cemetery (Kofinas), et al.</td>
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<td>Catholic Monuments</td>
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<td>Metzitie Mosque or Sultan Metzit Mosque</td>
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<td>Bairakli Mosque</td>
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<td>Baths (Castle of Chios)</td>
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<td>Seminary (Castle of Chios)</td>
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<td>Baths (Square of Chios)</td>
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<td>Fountains, et al.</td>
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Source: Poulaki, P. 2013

It is an island that has a particularly important and interesting cultural heritage. It disposes many Byzantine Monuments and many remarkable archaeological findings, rich exhibits at museums, castles, monasteries, churches, et al. The remarkable religious - cultural attractions, monasteries and churches are an integral part of the national heritage and attract tourists who may be part of the propellant development of the cultural tourism. Nea Moni of Chios, because of exceptional importance in terms of the History of Art and Architecture, belongs to the monuments that have been declared as UNESCO World Heritage protected by UNESCO.

There are many elements that make up the cultural tourism, such as; Churches, Monasteries, Museums, archaeological - historical sites, traditional villages, customs, traditions, traditional music, the art of pebble, the mosaic art et al.

The Ottoman Monuments of Chios are quite and impressive. These are monuments that remind us the history, the culture, the art and architecture of another people and another era. Worth to mention some of the most important monuments, such as:

- Metzitie Mosque or Sultan Metzit Mosque

Various monuments vouch the long possession of Chios by the Turks. At the eastern part of the square Vounakiou rises a Mosque which was built the last century and retains its minaret and the courtyard fountain. After the liberation was used as the Archaeological Museum and now houses the Byzantine and post-Byzantine findings. In the town of Chios are saved two more mosques which are not maintained in good condition (Fig. 1).
Fig. 1: Metzitie Mosque

- **Cemetery Ottoman (Turkish Cemetery)**
  In the Castle there is the old cemetery of prominent Ottomans. There, many important Turks are buried from 1822 until 1890, including Kara - Ali, Captain Pasha of Turkish fleet whose flagship blew Constantine Kanaris in 1822's. His tomb stands having sarcophagus form with two columns. The grave of the cemetery have artistic value. They belong to the Turkish baroque, but they are influenced by the modern Greek folk decorative (Monioudi Gavala 2001: 55), (Fig. 2).

Fig. 2: Cemetery Ottoman (Castle of Chios)

- **Bairakli Mosque or Mosque Bairakli**
  It is located in the Byzantine Castle of Chios and was built in the early 20th century, at the ruins of an older mosque. The same position was a Genoese church. At the entrance, in front there is Ottoman inscription (Monioudi Gavala 2001: 57).

- **Chamidie Mosque (built in 1892)**
  Also, at the Byzantine Castle of Chios rescued the Turkish bath complex with the characteristic domed roofs. A second Turkish bath was found near the perimeter of the castle, southwest of the first (Monioudi Gavala 2001: 59).

- **Osmanie Mosque**
- **Ottoman Baths, Castle of Chios (Fig. 3)**

Figure 3: Ottoman Baths, Castle of Chios
European and International Dimensions & Perspectives

- **Ottoman Baths, Square of Chios (now Municipal Gallery)**
- **Ottoman Seminary or Medrese (The Turkish School)**
  The Ottoman School is located in the churchyard of St. George's Castle. Historical sources indicate that it functioned as Ottoman Seminary. However, an Arabic inscription above the entrance door indicates that the building functioned as a grammar school.
- **Land of Mufti**
- **Melek Pasha Fountain (1768)**
  The existence of many fountains expresses the love of Ottomans for the water and its benefactions. The epigrams of this Fountain are the most basic characteristic of it. At the west side of the Melek Pasha declares the Chian origin. On the north side stresses that he is knowledgeable and admirer of Greek history and believes that Alexander the Great would resurrect when you drink a glass of tap water. Finally, at the eastern side it shows the sympathy to the people of Chios, because he found the water and gave it to the people (Fig. 4).

![Melek Pasha Fountain (1768)](image)

Figure 4: Melek Pasha Fountain (1768)

- **Fountain Abdul Hamid (Square of Chios, 19th c.) (Fig. 5)**

![Fountain Abdul Hamid](image)

Figure 5: Fountain Abdul Hamid

- **Kampos’ Fountains**
  Additionally, important elements of Chios’s cultural heritage are cultural events, customs, cultural centers, historical - archaeological sites and traditional villages that are presented in Table 3.
To conclude it is recorded that the elements that make up the cultural tourism in Chios are numerous and interesting. Its development can bring many economic benefits to the island while enhances both the sense of local identity and intercultural approach of people.

4. The identity and characteristics of the empirical research

A research was conducted in order to be reflected quantitatively the current situation of cultural tourism in Chios, to highlight the role of the Ottoman Monuments therein, and development measures that can lead to the development of cultural tourism through the contribution of Ottoman Monuments of Chios.

To carry out the research we used a closed questionnaire in order to collect the necessary primary data so as to investigate the objectives. This research consists of three stages:

- The first stage involves the design of the questionnaire, emphasizing the creation of questions, to allow the use of quantitative analysis. We used, mainly closed questions with strictly specified range of answers and questions scoring according to the five-point scale Likert. In some questions it is shown the option “other”, enabling respondents to supplement other information as they deem necessary and believe that they can help in the investigation.

- The second stage involves the distribution of the questionnaire. The sampling method, that was used, was the stratified random sampling in order to ensure the highest possible rate of representativeness of the sample, by separating the population to basic categories of workers to independent homogeneous sub-populations and the random selection of people from them. The time frame during which implemented the empirical investigation was during the period March - May 2014. Respondents were men and women aged from 18 years to 65+ employees in organizations involved with tourism in Chios. The basic aim was to gather a sufficient number of questionnaires that would allow the verification of affairs investigation.

- The third stage involves the processing of data using the software SPSS 21.00 and Excel and of course the demanding statistical analysis of the results.

The respondents that were selected to participate in this survey are workers: at Chios Municipality and the Region of Northern Aegean (involved in tourism), at companies that rent cars, at companies that rent rooms, travel agencies and hotels on the island. 150 questionnaires were distributed, 93 of them were correctly and fully completed. The number of responses considered satisfactory, to ensure both the effectiveness of statistical processing, and export reliable scientific conclusions.

The sample has the following features by category:

- As far as the institution to which the respondent is employed is concerned: 22.3% work at rented rooms, 21.4% at tourist offices, 20% at hotels, 18.8% at the municipality Chios, 10.5% at the North Aegean Region and 7% at car rental business.

- Regarding the gender: 37.6% of the respondents are men and 62.4% are women. The majority of women employed in tourist offices and rooms.

- As far as the age is concerned there are six age groups. The first age group includes people with age below 25 years and amounts to 4.7% of the sample. In the second age group includes people aged 25-35 years and concentrates 30.6%. The third age group includes people aged 35-45 years and shows a percentage of 44.7% which is the highest. Below the age of 45-55 years we have a percentage of 8.2%. Then, we have the group of 55-65 years with a rate of 7.1% and finally respondents aged over 65 years who collect 4.7%.

- Regarding the educational level: both the secondary school graduates (42.4%) and university graduates (48.2%) have high rates and cover the 90% of the entire sample. In the sample there are primary school graduates with 4.7% and hold postgraduate qualifications with the same rate.

5. Presentation of the results of empirical research

From the questions that are included in the questionnaire we obtained data concerning the present state of cultural tourism in Chios and the role of the Ottoman Monuments. Moreover, policy measures are suggested as far as the development of cultural tourism in the contribution of these Monuments is concerned. The present

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<td>Agas in many villages (Halloween)</td>
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<td>Rouketopolemos in Vrontados (Easter)</td>
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<td>Mostra Thymianon (Halloween)</td>
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<td>Pairs in villages (Summer)</td>
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<td>Santa Clause pushers (Eve), et al.</td>
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<tr>
<td><strong>Cultural Centers</strong></td>
</tr>
<tr>
<td>Central Public Library “Adamantios Korais”</td>
</tr>
<tr>
<td>Homeric Cultural Center of Chios</td>
</tr>
<tr>
<td>Center of Culture and Special Tourism “George Kaloutas” et al.</td>
</tr>
<tr>
<td><strong>Historical - Archaeological Sites</strong></td>
</tr>
<tr>
<td>Castles, watchtowers, medieval villages, traditional village Kamos</td>
</tr>
<tr>
<td>Daskalopetra (Homer’s Stone)</td>
</tr>
<tr>
<td>Caves (St Galaktos, Olympos, Lithium)</td>
</tr>
<tr>
<td>Leper or Lovokomeio, et al.</td>
</tr>
</tbody>
</table>

Source: Poulaki, P. 2013
state of cultural tourism in Chios is reflected through four questions. Respondents believe that cultural tourism is thriving on the island (Figure 5.1).

More specifically, the majority (74.1%) of the total sample considers that cultural tourism is thriving in Chios and only 25.9% that is developed (Figure 5.1). Moreover, respondents estimate that can develop this alternative form of tourism in their area (Figure 5.2).

The vast majority of the sample (92.5%) expressed the view that cultural tourism can be developed in Chios as opposed to a low percentage of 7.5% which supports the opposite view (Figure 5.2). Also, regarding the question whether local authorities should invest in cultural tourism in order to increase overall tourism on the island or not, the highest percentage concerns the positive view (Figure 5.3).

The largest percentage (88.2%) of the total sample agreed that local authorities should occupy with cultural tourism and only the 11.8% held the opposite view (Figure 5.3).
The responsibility for the development of cultural tourism is allocated. Respondents are asked to answer about the degree of responsibility for the development of cultural tourism between the State, local authorities, local and tourist agents (Figure 5.4).

According to the respondents the main responsibility (69.4%) belongs to local authorities. The State and the locals exhibit the same percentage (40%) concerning the liability and travel agents occupy 24.7% (Figure 5.4).

The role of Ottoman Monuments in the cultural tourism of the island is reflected through four questions. Respondents believe that the Ottoman Monuments can contribute to the development of cultural tourism on the island (Figure 5.5).

The majority (78.8%) of the entire sample is positive in terms regarding the contribution of the Ottoman Monuments and only the 21.2% of them have a negative view (Figure 5.5).

As far as the importance of Ottoman Monuments of Chios is concerned, the paradox that arises is that respondents were unaware largely of the existence of all these Monuments (Figure 5.6).

According to respondents the most important Ottoman Monument is Metzitie Mosque (74.1%). Then, we have the Bairakli Mosque (62.4%), the Ottoman Cemetery (51.8), the Ottoman Baths of Castle (49.4%) and the Ottoman Seminary (27.1%). The lowest positions occupied by Fountains of the island and the Land of Mufti (Figure 5.6). It is worth noting that the first in importance are considered the Ottoman Monuments located in the town of Chios and are more prominent.
Respondents argue that there should be an active state and local intervention in order to highlight the Ottoman Monuments (Figure 5.7).

The largest percentage of 60.7% of the total sample considers that the active intervention concerns mainly the Metzite Mosque. Below we have the Bairakli Mosque (53.6%), the Ottoman Baths of Castle, the Ottoman Cemetery (47.6%) and the Ottoman Seminary (45.2%). Lower rates are occupied by the fountains of the area (Figure 5.7).

Measures regarding the development of cultural tourism in Chios with the contribution of Ottoman Monuments are presented through three questions in the questionnaire.

As far as the measures which should be taken for the development of cultural tourism in Chios are concerned, it was noted that 71.8% of all respondents believe that the way of exploiting the monuments should be changed. The 65.9% of them support that the visibility of Monuments should be enhanced, while 32.9% believe that it is necessary to be improved the existing infrastructure. Also, it must be changed both the culture and education regarding cultural tourism (36.5%) and the disposition of the locals (24.7%). Finally, 15.3% of the respondents believe that it is necessary to adjust the values (Figure 5.8).
As it was noted in the previous paragraph, the use of Monuments is one of the key policy measures that can support the development of cultural tourism. Regarding the Ottoman Monuments, which are the subject of this research, the ways in which these Monuments can contribute substantially to the development of cultural tourism in Chios were investigated.

Concerning the ways in which Ottoman Monuments contribute to the development of cultural tourism in Chios estimates of respondents vary. More specifically, the majority of the sample (36.4%) estimates that the visibility of monuments will contribute substantially. In addition to this view, we have to add that important role plays the advertising (23.5%), the use of monuments (15.8%), the preservation (13.5%), events related to cultural tourism (10.1%) and the change of culture (0.7%) (Figure 5.9). An essential element for the completion of the survey was considered the evaluation of existing measures of the conservation, the recovery of Ottoman Monuments and the organization of relevant cultural events and opening hours.

Figure 5.9: The contribution of the Ottoman Monuments in Cultural Tourism

Of the respondents, the majority (67.1%) considers the change of the current data on the Ottoman Monuments to help develop cultural tourism in Chios. A greater proportion (67.1%) gathers both the use of monuments and the promotion - advertising. Much smaller percentages, mostly single digits, indicate the options "not at all" to "moderate."

Question 15: At what degree do you believe that we should change the current data on the Ottoman Monuments to help develop cultural tourism in Chios?
Noteworthy is the fact that respondents have identified the need for immediate intervention at all levels regarding the Ottoman Monuments in order to be a key growth engine for cultural tourism in Chios (Figure 5.10).

6. Conclusions and policy measures
The systematic processing of the results which went before as far as the research’s objectives led to the following conclusions: Regarding the current situation of cultural tourism in Chios, it was estimated according to the respondents that cultural tourism is thriving. Responsible for this very little development of this alternative form of tourism are the State, local authorities, locals and tour operators. However, it was ascertained that there is an urgent need for the development of cultural tourism on the island given that it has a unique cultural heritage and numerous great Ottoman Monuments that can contribute towards it. Undoubtedly, local authorities must be activated targeted as they have the greatest part of responsibility. The measures that must be taken must include both the development of Monuments of the region, and their visibility. In addition to these, the creation of appropriate infrastructure, the reduction of services’ price, the susceptibility and the culture of the locals can contribute decisively. The Ottoman Monuments of the island possess a significant position among others and, of course, they can play a key role at the development of cultural tourism. However, in order to gain a dynamic role they should be displayed more – to be visible - be maintained, be developed at the best possible way and to be included in cultural events which held during the year on the island.

In conclusion, we have to highlight that in order to achieve a successful outcome of all the above, it is crucial on the part of the stakeholders to inform themselves about the existence of these monuments and the situation in which they come. Undoubtedly, knowledge of the strengths of Monuments of Chios will lead to the development of cultural tourism.

7. References
Angelis, V. Special Topics in Quantitative Analysis I, Academic Tradition, Chios, Department of Business Administration, 2004. (in Greek).
Angelis, V. Special Topics in Quantitative Analysis II, Academic Tradition, Chios, Department of Business Administration, 2004. (in Greek).
Angelis, V. Non Parametric Statistics, Academic Tradition, Chios, Department of Business Administration, 2009. (in Greek).
Galani - Moutafi, B. Research on Tourism in Greece and Cyprus, Athens, Propompos, 2002.
Greek National Tourism Organization. In the footsteps of Paul the Apostle in Greece, Athens, 2003.

Halkias - Stephanou P. The Monasteries of Chios, Athens, Eptalophos, 2003. (in Greek)


Igoumenakis, N. Tourism policy, Athens, Interbooks. 1991. (in Greek)

Igoumenakis, N. Tourism and development, Athens, Interbooks. 2000. (in Greek)


Monioudi – Gavala, D. The Castle of Chios, the fortifications and the walled city from the Middle Ages to the present day, Papiros, Chios, 2001.


Rodosthenous , P. Religious and Pilgrimage Tourism in Cyprus . Pastoral Approach, PhD Thesis, Thessaloniki, Aristotle University of Thessaloniki, School of Theology - Faculty of Theology, 2012. (in Greek).


Tourism Industry and Economic Growth: Time-Series Evidence from France

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Abstract:
This study empirically examines the existence and nature of long-run relationships between, on the one hand, income derived from the tourism industry in France and Economic growth and tourist arrivals, and, on the other hand the supply side expenditure, Capital Investments in the tourism industry. The time series data for the study covers the period 1995 – 2012. The results suggest the existence of positive long-run relationship between the tourism income and Economic Growth in France with unidirectional causality pattern. We may conclude that both the government and the private sector in France must aim at attaining sustainable tourism and economic growth.

Keywords: Tourism; economic growth, causality; France.

1. INTRODUCTION
1.1. Tourism and the economy
The contribution of tourism to employment, to economic growth, to the development of infrastructure, to the liberalization of air transport, to the establishment of intraregional cooperation, and to the growing number of Public-Private-Partnerships is substantial. France had the most international tourists’ arrivals, 83.0 million in 2012. Knowledge of the causal relationship between tourism income and economic growth is of importance to policy makers. Studies have shown that the development of the tourism sector also promotes the growth of agricultural, industrial and service sectors. It has been recognized as effective, when the tourism expenditure policy is causal to tourism income and tourist arrivals (Louca, 2006).

1.2. Objectives of the study
This study aims to identify the existence of any causal relationships between International Tourists Arrivals, Tourism Expenditure and Income derived from the tourism industry in France. The objective of the study is to identify:
- if the tourism industry contributes to the economic growth in France;
- if there is causality between economic growth and tourist arrivals;
- if there is causality between tourism expenditure and tourist arrivals;
- if there is causality between tourist arrivals and income derived from tourism industry;
- If there is causality between tourism expenditure and the tourism industry’s income; and
- If there is causality between economic growth and income derived from the tourism industry.

The rest of the paper is organized as follows. In the next paragraph the literature review is outlined, followed by the methodology. Then the findings are presented. Finally it concludes, giving suggestions for further research.

2. LITERATURE REVIEW
Lee and Chang (2008) support the thesis that different countries experience different causality directions between tourism spending and economic growth. Empirical studies on the relationship between tourism and economic growth so far have been inconclusive, requiring more studies to contribute to unraveling the link between tourism and economic growth. For this reason, this study aims to define the relationship between tourism and the broader economy by examining the tourism industry in France.

Empirical findings show the existence of four main hypotheses (Nikolaos Antonakakis, George Filis and Mina Dragouni, 2013). The first two hypotheses support the unidirectional causality between the two variables, either from tourism to economic development (tourism-led economic growth hypothesis), or from economic development to tourism growth (economic-driven tourism growth hypothesis). The third hypothesis supports the existence of bi-directional causality between two variables, tourism and economic growth (bi-directional causality hypothesis). Finally, as the fourth hypothesis (no causality hypothesis) supports that there is no relationship neither from tourism to economy or vice versa.

and Xun-gang Zheng (2011), discovered an Economy Driven Tourism Growth (EDTG) for Korea, the U.S.A and Sichuan in China respectively.

Bichaka Fayissa, Christian Nsiah and Bedassa Tadesse (2009), show that revenues from the tourism industry positively contribute to GDP and to the economic growth in 17 Latin American countries. In 2010, Gharat by the Johansen Tests, showed that tourist arrivals, real exchange rate and economic growth are co-integrated. His study reveals that both short-run and long-run increases in tourist arrivals cause expansion in economic growth.

Freytag and Vietze (2013), support the thesis that specializing in sustainable tourism promotes the economic growth in developing countries.

Srinivasan, Kumar, and Ganesh, (2012) examine the impact of tourism on economic growth in Sri Lanka through the Autoregressive distributed lag bounds testing for the period of 1969 to 2009. Findings reveal that tourism has a positive impact on economic growth in Sri Lanka. Oh (2005), analyzes the dynamics between tourism growth and economic expansion in the Korean economy. There were two major results from the Engle and Granger two-stage approach and the bivariate VAR approach. Firstly, the results of a cointegration test indicate that there is no long-run equilibrium relation between two series. Secondly, the outcomes of Granger causality test proved the unidirectional relationship of Economic Driven Tourism Growth (EDTG). Cortes-Jimenez, Nowak and Sahli (2011) also find a unidirectional causality from economic growth to tourism development in Tunisia by applying Vector error correction model using the Johansen technique and the multivariate Granger causality test. Though, tourism exports have contributed significantly towards financing the country’s imports of capital goods, they have not been the principle engine of long-term growth.

Liangju, Huihui, and Wanliian (2012), proved that there are long-term and stable equilibrium relationships between the development of China’s domestic tourism and economic growth. Georganopoulou (2012), confirm results in favour of the bidirectional causal links between economic growth and business travel and tourism spending in the long-run, which is in line with Dritsakis (2004), for the case of Greece.

Finally, another possible comparability issue is the multiple country study. Caclayan et al. (2012) investigate the causal relationship between tourism income and GDP using a three stage Panel Granger analysis for 135 countries for the time period 1995-2008. Their findings showed a unidirectional causality from tourism revenue to GDP in East Asia, South Asia and Oceania, supporting the TLEG hypothesis. In the case of America, the Latin America & the Caribbean the reverse direction of causality was found; from GDP to tourism income. No causal relationship was found in Asia, Middle East, North Africa, Central Asia and Sub Saharan Africa. Furthermore, Chou (2013) finds that different countries show different causality directions between tourism spending and economic growth by examining causal relationships between tourism spending and economic growth in 10 transition countries for the period 1988 –2011 using panel causality analysis.

TLEG hypothesis is valid for 3 of these 10 transition countries, Cyprus, Latvia and Slovakia; while Poland, Czech Republic supports the reverse relationship of EDTG. In the case of Estonia and Hungary the tourism industry and the overall economy affect each other. No causality relationships for Bulgaria, Romania and Slovenia were found. Using VAR-based spillover index, Antonakakis et al. (2013), investigate the time varying relationship between tourism and economic growth in selected European countries. TLEG hypothesis is evident only for Italy and the Netherlands, while EDTG is observed in Cyprus, Germany and Greece; whereas for Cyprus the results are contradictory to the results of Chou (2013). Dritsakis (2004), identified TLEG for Cyprus, and bidirectional causality for Greece. Additionally, there is evidence of bidirectional causality in the cases of Austria, Portugal and Spain. No, causality is found for Sweden and the United Kingdom.

These studies confirm that the relationships between tourism and economic growth differ from country to country. When researches use different time periods and different methodologies, it is more likely to show different results. Another issue is the tourism policy that the policy makers in different countries adopt; which can be an issue for research. That is the impact of different tourism policies in different countries on the economies and the economic growth of these countries.

3. METHODOLOGY

The objectives of this study are: (a) to examine the existence and nature of a long-run relationship between tourism and economic growth in France; (b) to investigate the long run relationship between economic growth, tourists’ arrivals, tourism expenditures and income derived from tourism industry. For the study quarterly data is used covering the period 1995-2013. All data series are transformed into logarithmic functional form in order to reduce heteroskedasticity.

In this study, the econometric modeling strategy is based on Engle-Granger methodology (Engle and Granger, 1987). Firstly, it investigates the existence of a long-run relationship between the logarithms of the variables. If an ordinary least squares (OLS) regression is estimated with non-stationary data and residuals, then the regression is spurious. To overcome this problem the data has to be tested for a unit root. Thus, the Augmented Dickey-Fuller (1979) unit roots test is employed.

Secondly, cointegration tests are performed to identify the long-run equilibrium relationship. To test whether the variables are cointegrated or not, the Johansen (1988) test is applied.

Where, the estimated value for the i^{th} ordered eigenvalue from the Π matrix. \( \hat{\lambda}_{\text{Trace}} \) tests the null hypothesis that the number of cointegrating vectors is less than r against an unspecified alternative. \( \hat{\lambda}_{\text{Trace}} = 0 \)
when all $\lambda = 0$, so it is a joint test. $\hat{\lambda}_{\text{Max}}$ tests the null hypothesis that the number of cointegrating vectors is $r$ against an alternative of $r+1$. The main difference between the two test statistics is that the Trace test is a joint test where the null hypothesis is that, the number of cointegrating vectors is less than or equal to $r$, against a general alternative that there are more than $r$. Whereas the maximum Eigenvalue test conducts separate tests on the individual eigenvalues, where the null hypothesis is that the number of cointegrating vectors is $r$, against an alternative of $(r+1)$.

Finally, VCEM is used for the Granger causality testing, where the lags in the error correction model can be jointly tested for significance, thereby determining any short-run causality from the explanatory variables to the dependent variable. Also, Granger causality tests are performed to find the direction of causality.

The paper investigates also the causal links between economic growth, tourism expenditure, tourist arrivals and income derived from tourism industry for France, using annual data. Real GDP is used for assessing economic growth, Capital Investment (CI) for tourism expenditure, Visitor Exports (VE) for tourism income. The tourist arrivals (TA), is the number of total tourist arrivals in France. The model with the capital investment and tourism income covers the period 1988 to 2013. The tests are performed in pairs similar to Louca (2006) for the case of Cyprus.

4. FINDINGS
4.1. Results of unit root tests
Table 1, presents the results from the unit root tests. Regarding the variables (lnGDP) and (lnTA), the null hypothesis of non-stationarity is not rejected at the 5% level. However, when first differences are taken statistics are higher than their respective critical values in absolute terms. Thus, the null hypothesis of non-stationarity is rejected for all the variables. Therefore, it is concluded that all the variables (lnGDP) and (lnTA) are integrated of order one I(1).

Table 1: Augmented Dickey-Fuller test results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Statistics test</th>
<th>1% CV</th>
<th>5% CV</th>
<th>10% CV</th>
<th>P-value</th>
<th>Order of integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>lnGDP</td>
<td>-1.104704</td>
<td>-4.088713</td>
<td>-3.472558</td>
<td>-3.163450</td>
<td>0.9209</td>
<td>-</td>
</tr>
<tr>
<td>lnTA</td>
<td>-2.649037</td>
<td>-4.094550</td>
<td>-3.475305</td>
<td>-3.165046</td>
<td>0.2607</td>
<td>-</td>
</tr>
<tr>
<td>First Difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lnGDP</td>
<td>-4.636906</td>
<td>-4.088713</td>
<td>-3.472558</td>
<td>-3.163450</td>
<td>0.0019*</td>
<td>I(1)</td>
</tr>
<tr>
<td>lnTA</td>
<td>-4.427980</td>
<td>-4.094550</td>
<td>-3.475305</td>
<td>-3.165046</td>
<td>0.0038*</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Author’s own computation

Note: * indicates significance at 5%. CV represent for the Critical Value. The optimal lags are selected based on optimizing Schwarz Criterion using a range of lags.

4.2. Cointegration test results
The Johansen-Juselius (1990), maximum likelihood approach is employed to test for cointegration. Table 2, presents the results of the Johansen cointegration analysis between lnGDP and lnTA.

Table 2: Johansen Cointegration test results

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Alternative Hypothesis</th>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>5% CV</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$r=0$</td>
<td>$r\geq 0$</td>
<td>0.918459</td>
<td>193.0383</td>
<td>29.79707</td>
<td>0.0001*</td>
</tr>
<tr>
<td>$r\leq 1$</td>
<td>$r\geq 1$</td>
<td>0.076456</td>
<td>10.05317</td>
<td>15.49471</td>
<td>0.2766</td>
</tr>
<tr>
<td>$r\leq 2$</td>
<td>$r\geq 2$</td>
<td>0.056518</td>
<td>4.246991</td>
<td>3.841466</td>
<td>0.0393*</td>
</tr>
</tbody>
</table>
The results indicate that Johansen’s trace test and eigenvalue test for cointegration are statistically significant at the 0.05 percent level. The Johansen cointegration test suggests that there is a long run relationship between gross domestic product and tourist arrivals in France.

4.3. Granger Causality Results under VECM approach

Table 3: Granger Causality results based on VECM

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Exclude</th>
<th>Chi-square</th>
<th>Df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>D (lnGDP)</td>
<td>D (lnTA)</td>
<td>1.734822</td>
<td>4</td>
<td>0.7844</td>
</tr>
<tr>
<td>D (lnTA)</td>
<td>D (lnGDP)</td>
<td>10.93271</td>
<td>4</td>
<td>0.0273</td>
</tr>
</tbody>
</table>

Source: Author’s own computation

The VEC Pairwise Granger causality shows one-way causality pattern running from tourist arrivals to economic growth. There is no causality pattern running from economic growth to tourist arrivals.

4.4. Results of unit Root Tests (phase 2)

To identify if there is causality between economic growth, tourism expenditure, tourist arrivals and income derived from tourism industry the real gross domestic product (GDP), capital investment (CI), tourist arrivals (TA) and visitor export (VE) are used. Table 4 presents the results of the Augmented Dickey-Fuller unit root tests for France. The results indicate that lnGDP, lnCE, lnTA and lnVE, are non-stationary in their levels because the absolute statistic test value does not exceed the critical value at the significant level of 0.05 percent. However, when first differences are taken, the null hypothesis of non-stationarity is rejected for all the variables. This shows that their first-order differences are stationary; thus, lnGDP, lnCE, lnTA and lnVE are integrated of order one.

Table 4: Augmented Dickey-Fuller test results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Statistics test</th>
<th>1% CV</th>
<th>5% CV</th>
<th>10% CV</th>
<th>P-value</th>
<th>Order of integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>lnGDP</td>
<td>-0.880841</td>
<td>-4.394309</td>
<td>-3.612199</td>
<td>-3.243079</td>
<td>0.9421</td>
<td>-</td>
</tr>
<tr>
<td>lnCI</td>
<td>-3.343582</td>
<td>-4.416345</td>
<td>-3.622033</td>
<td>-3.248592</td>
<td>0.0843</td>
<td>-</td>
</tr>
<tr>
<td>lnTA</td>
<td>-2.835064</td>
<td>-3.886751</td>
<td>-3.052169</td>
<td>-2.666593</td>
<td>0.0743</td>
<td>-</td>
</tr>
<tr>
<td>lnVE</td>
<td>-1.654329</td>
<td>-4.374307</td>
<td>-3.603202</td>
<td>-3.238054</td>
<td>0.7411</td>
<td>-</td>
</tr>
</tbody>
</table>
First Difference

\[
\begin{align*}
\text{lnGDP} & \quad -3.629837 & -4.416345 & -3.622033 & -3.248592 & 0.0492^* & \text{I(1)} \\
\text{lnCI} & \quad -4.633067 & -4.440739 & -3.632896 & -3.254671 & 0.0067^* & \text{I(1)} \\
\text{lnTA} & \quad -18.59538 & -4.429073 & -3.212696 & -2.747676 & 0.0001^* & \text{I(1)} \\
\text{lnVE} & \quad -3.613337 & -4.394309 & -3.612199 & -3.243079 & 0.0499^* & \text{I(1)}
\end{align*}
\]

Source: Author’s own computation

Note: * indicates significance at 5%. CV represent for the Critical Value. The optimal lags are selected based on optimizing Schwarz Criterion and Akaike info criterion using a range of lags.

### 4.5. Cointegration test results

#### Table 5: Cointegration analysis: CI and TA

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>5% CV (P-value)</th>
<th>Max-Eigen Statistic</th>
<th>5% CV (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.545347</td>
<td>17.16365</td>
<td>15.49471</td>
<td>12.61155</td>
<td>14.26460</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0278)*</td>
<td></td>
<td>(0.0897)**</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.247614</td>
<td>4.552097</td>
<td>3.841466</td>
<td>0.247614</td>
<td>3.841466</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0329)*</td>
<td></td>
<td>(0.0329)*</td>
</tr>
</tbody>
</table>

Source: Author’s own computation

Note: * Rejects the null hypothesis at the 5% level. ** Rejects the null hypothesis at 10% level.

The figures within parenthesis are P-values.

#### Table 6: Cointegration analysis: TA and VE

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>5% CV (P-value)</th>
<th>Max-Eigen Statistic</th>
<th>5% CV (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.954874</td>
<td>43.47128</td>
<td>15.49471</td>
<td>43.37620</td>
<td>14.26460</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0000)*</td>
<td></td>
<td>(0.0000)*</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.006768</td>
<td>0.095078</td>
<td>3.841466</td>
<td>0.095078</td>
<td>3.841466</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.7578)</td>
<td></td>
<td>(0.7578)</td>
</tr>
</tbody>
</table>

Source: Author’s own computation

Note: * Rejects the null hypothesis at the 5% level. ** Rejects the null hypothesis at 10% level.

The figures within parenthesis are P-values.
Table 7: Cointegration analysis: CI and VE

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>5% CV (P-value)</th>
<th>Max-Eigen Statistic</th>
<th>5% CV (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.438299</td>
<td>15.82388</td>
<td>15.49471</td>
<td>13.84285</td>
<td>14.26460</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0446)*</td>
<td></td>
<td>(0.0582)**</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.079228</td>
<td>1.981032</td>
<td>3.841471</td>
<td>1.981032</td>
<td>3.841466</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.1593)</td>
<td></td>
<td>(0.1593)</td>
</tr>
</tbody>
</table>

Source: Author’s own computation

Note: * Rejects the null hypothesis at the 5% level. ** Rejects the null hypothesis at 10% level.
The figures within parenthesis are P-values.

Table 8: Cointegration analysis: GDP and VE

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>5% CV (P-value)</th>
<th>Max-Eigen Statistic</th>
<th>5% CV (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.492620</td>
<td>18.70702</td>
<td>15.49471</td>
<td>14.92689</td>
<td>14.26460</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0158)*</td>
<td></td>
<td>(0.0392)*</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.157873</td>
<td>3.780129</td>
<td>3.841466</td>
<td>3.780129</td>
<td>3.841466</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0519)**</td>
<td></td>
<td>(0.0519)**</td>
</tr>
</tbody>
</table>

Source: Author’s own computation

Note: * Rejects the null hypothesis at the 5% level. ** Rejects the null hypothesis at 10% level.
The figures within parenthesis are P-values.

Table 5-8 present the results of the Johansen cointegration test. Two of Johansen’s Eigen value results and Trace test for cointegration are statistically significant at the 0.05 percent level between TA and VE, as shown in Table 6. In tables 5 and 7 trace statistic indicates the existence of at least one cointegrating relationship at the 0.05 percent significance level while the maximum Eigen value fails to reject the null hypothesis of no cointegration relationships at the 0.05 percent level. It rejects the null hypothesis at 0.10 percent level. In the case of economic growth and tourism income in France (Table 8), both the trace and max-Eigen statistics show that the null hypothesis of no cointegration is rejected at 0.05 percent level.

4.6. Granger Causality Results under VECM Approach

Table 9: Granger Causality results based on VECM

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Exclude</th>
<th>Chi-square</th>
<th>Df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>D (lnGDP)</td>
<td>D (lnVE)</td>
<td>0.125778</td>
<td>1</td>
<td>0.7229</td>
</tr>
<tr>
<td>D (lnVE)</td>
<td>D (lnGDP)</td>
<td>2.452444</td>
<td>1</td>
<td>0.1173</td>
</tr>
<tr>
<td>D (lnCI)</td>
<td>D (lnTA)</td>
<td>0.000806</td>
<td>1</td>
<td>0.9773</td>
</tr>
<tr>
<td>D (lnCI)</td>
<td>D (lnVE)</td>
<td>2.505063</td>
<td>1</td>
<td>0.1135</td>
</tr>
</tbody>
</table>
5. CONCLUSIONS

The findings from the study suggest that there is a unidirectional causality pattern running from tourism arrivals to GDP, from tourism income to GDP, from capital investments in the tourism industry to tourism income, from tourist arrivals to capital investments and from tourist arrivals to tourism income. There is no causality pattern running from capital investments to tourist arrivals and this is an issue that the policy makers must look at in order to find ways to attract even more tourists in numbers. Based on the income received from the tourism income the capital investments in the tourism industry should be enhanced.

The above results make a case for examining the conventional determinants of tourism demand, such as world incomes and relative prices, which are not within the scope of this study.

This study contributes to the literature by suggesting a specific method by which the contribution of capital expenditures in the tourism industry’s income and tourist arrivals can be evaluated so as to better understand the investment growth relationship in the tourism sector. In this way we can monitor a country’s tourism industry. From this point of view, the method used in this study, could be extended to examine other tourism destinations with a view to enhance their competitiveness.

6. REFERENCES


Source: Author’s own computation

The empirical results of VEC Pairwise Granger causality (Table 9) show one-way causality pattern running from tourist arrivals to (CI) in France. Also the analysis shows one-way causality pattern running between (CI) to income from the tourism industry and (TA) to tourism income. Also, a one-way causality pattern running from tourism income to economic growth is also observed.


Chapter 3:

Evolving Individual Bilingualism vis-à-vis Individual Mobility

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Abstract:
In an increasingly globalizing and moving world and in geopolitical areas like the European Union (EU), the individual is called to develop an evolving individual bilingualism (as we will call it), since s/he must communicate with other, unfamiliar, foreign people in another, unfamiliar, foreign lingua franca: the English language.

In this paper, we will first define the observed evolving individual bilingualism, and then clarify questions directly to with this new kind of bilingualism. Finally, we will venture to illustrate the complex, multi-leveled and multi-sided interrelatedness between evolving individual bilingualism and globalization through certain variables such as the individual’s mobility, the individual’s sojourn and the lingua franca.

Should this evolving individual bilingualism be identified and be studied in depth by educationalists, policy makers, with the aid of Linguistics and Translation Studies, it will open the floor for a better and more flexible foreign language learning and teaching at the European Universities, and will promote a bilingual education across the EU, without belittling the respective national languages.

Key words: evolving individual bilingualism, mobility, unfamiliar (or unheimlich, in German), lingua franca (English), globalization, EU, individual’s sojourn, directionality.

1. Evolving Individual Bilingualism: A Definition and its Emergence

Although there is remarkable international literature on bilingualism (Baker, 1996; Baker & Jones, 1998), in this paper we will support the emergence of an individual evolving bilingualism (or multilingualism), which grows out of the contemporary internationalization and globalization, uses an international language for communication (lingua franca), and is multifaceted and multileveled once it affects the identity of the bilingual individual and touches upon interpersonal and social relations.

We call it evolving individual bilingualism because - within the wider context of internationalization and globalization - the individual either because of personal or social reasons shows an acquired bilingualism which should maintain and evolve if s/he wants to participate in local / national and international affairs.

This bilingualism is a phenomenon that challenges all those people who want to escape the confines of the local and participate in the global for their own purposes.

These people do not necessarily live in bilingual environments but have to use a lingua franca when being in contact with other people either electronically or in person.

Even if this evolving individual bilingualism is observable in the UN or in the EU, it has yet to receive adequate attention from psychologists or sociologists. There is no reference to how locality and globality come in contact with each other and in what language(s) they communicate!

2. Clarification of some Questions

Before we move on to studying the expression and the development of involving individual bilingualism and its variables, we should clarify some questions whose answers determine whether the individual is or is not potentially bilingual (or multilingual).

1. When does s/he learn a foreign (“unfamiliar” or “unheimlich”) language?
2. What language does s/he learn?
3. Why does s/he learn it?
4. What does s/he learn it for, as an FL (: Foreign Language) or as an SL (: Second Language) language?
5. Where does s/he learn it and where does s/he use it?
6. For how long and how often does s/he use this language?

Questions 1, 2 and 3 indicate the age when the individual comes into contact with the language, prestige and political power the foreign language exerts and the linguistic group(s) that use that language, and the purpose for which the individual learns this language.

Of course, if the individual learns a foreign language at a very young age, there are two main reasons: either the narrower (family) and / or the wider (social) environment require it - that is, the individual is in the

1 Later, we are to use the term unfamiliar, (Freud’s unheimlich), highlighting the importance of the individual’s internal and psychological relation to the language s/he learns.
midst of social bilingualism - or the narrower (family) environment imposes on the individual the acquisition of a foreign language.

The individual, however, can begin to learn a foreign language either as a teenager or as an adult or for two main reasons: (a) Either because s/he is in a broader social and/or professional environment that requires the knowledge of a particular language (social bilingualism), e.g. the individual should move to a foreign country (individual mobility), (b) or because for purely personal reasons, which may be: (1) change in family status, e.g. living with another individual from a different linguistic group and/or ethnicity, and (2) personal ambitions for professional and/or scientific development.

The Questions 4 and 5 are more complex and in order to be answered they depend directly upon the answers the individual gives to Questions 1, 2 and 3 – answers which, of course, depend on (a) the situation(s), (b) the time and (c) the space the individual experiences them.

In response to Question 4, the individual learns a language as foreign when the wider social environment uses another language from that the individual acquires; e.g. Greek students learn English at the Greek University they are enrolled in. Nevertheless, the individual learns a language as second when the narrower family, professional and/or the wider social environment requires it.

Now, if we try to answer Question 5, then we may discover that we should give three different answers. (1) If this individual learns a language which his/her wider social does not use, then the individual learns that language as a foreign language (FL); for example, when a Greek learns English in Greece, then s/he learns it as a foreign language. (2) If the individual learns a language in the place where it is spoken. In this case, the individual learns that language as a second language (SL); for example, when a Greek learns English in the UK, then s/he learns it as a second language.

Answers (1) and (2) are the modern conventional distinction in language learning. There is, however, another case that has started to become more noticeable only in recent years and only because of globalization: an individual may learn and uses a particular foreign language (e.g. English) in countries whose national language is different from the language that the individual learns.

The next (sub-) question that arises is where this individual uses this foreign language. Initially, we should mention that we are referring to the probable location and geographical distribution of bilinguals and bilingualism within the boundaries of a state-nation. This is only one answer to this question. Unfortunately or fortunately, within globalization, the location in narrow sense ceases to be and acquires a new form if and when the individual moves to different countries for professional and/or scientific purposes and has to use a lingua franca (primarily the English language) as a language of international communication. In this case, the individual communicates in another, "unfamiliar" language from that of the other individuals whose mother tongue either may be the lingua franca (i.e. native) or may be another, "unfamiliar" language from the lingua franca (i.e. non-native users). The most well-known geopolitical formation of this exchange and communication is the EU, where different European citizens (from different EU member-states) discuss so to made decisions on an integrated European Educational Policy. The question is: in which language(s) do they communicate? In this specific form of exchange and communication that evolving individual bilingualism emerges.

Question 6 touches upon individual’s aspects and situations that are interwoven with his/her idiosyncrasy (individuality), with his/her interpersonal relations, with how s/he perceives and projects his/her position on the specific society(ies) and how other people perceive this particular individual’s position in the specific society (-ies).

Drawn upon experience, we should admit that people who are not forced to use frequently or they stop completely to use a language either as foreign or as second cease to be bilinguals with time. Here, we can understand that frequency and duration (i.e. the use of a foreign or second language in space and time) play a key role in sustaining and evolving individual bilingualism.

3. Evolving individual bilingualism and Globalization: Interrelation and Variables
Having clarified briefly some of the questions relevant to the evolving individual bilingualism, in order to delineate the evolving bilinguals and locate evolving individual bilingualism in an ever increasing globalized world we should consider three variables:

1. the individual’s mobility;
2. the duration of the individual’s staying in a foreign / “unfamiliar” / host country (-ies); and
3. the language the individual uses to communicate with people of different linguistic, professional and scientific environments and cultural origins, i.e., the lingua franca.

3.1. The individual’s mobility
When referring to the individual’s mobility, we do not reduce the individual and the necessity of his/her mobility on abstract concepts but on specific situations that require the individual make decisions, and take action.

An individual usually moves to an unfamiliar place where s/he can communicate in an unfamiliar language (mainly a lingua franca) with unfamiliar people because:

(1) s/he knows one or more languages and primarily because s/he has a sufficient linguistic and communicative competence in the lingua franca;
(2) s/he has a personal, professional / scientific curiosity and thirst for learning;
(3) s/he has learned to control his/her personal fear of unfamiliar things, unfamiliar people and unfamiliar situations;
(4) she has lots of tolerance for mistakes (language, professional, cultural) that can (and will) commit while communicating in a unfamiliar language (i.e. the lingua franca).

The individual’s mobility in a continuous and ever increasing globalized world depends on how the individual perceives himself/herself in his/her working and/or scientific environment (perception) and what potential pressures ( overt or hidden) his/her working and/or scientific environment exerts on him/her. Through this personal and social identification, the individual usually takes risks to gain professional, scientific and economic benefits.

3.1 Professional, academic and economic benefits

3.1.1 Professional and economic recognition

When the individual wants to develop professionally, the company may ask the individual to move out of the country where the company’s headquarters are situated for professional reasons. Of course, the company expects the individual to network for the company’s own benefit and profit, and in return the company will reward the individual professionally and financially.

Although this process has been described and studied much, what has yet to be studied are the various mechanisms of evolving individual bilingualism, which start before and upon the individual’s arrival in the country s/he should network to benefit himself/herself and the company. In order for the individual to achieve the main objectives of the company, there must be the following basic conditions at linguistic and intercultural level: The individual must either know the language of the country where s/he is going to make transactions at a nearly excellent level or the company should provide him/her with professional translators and/or interpreters. Unfortunately, these conditions are almost ideal situations, either because most times it is difficult (but not impossible) for the individual to know the language of the country s/he visits for business reasons / professional reasons or because the company considers the continuous presence of translators and/or interpreters’ anti-economic.

If it is so, then how can this individual bring out the mission successfully, since the first and foremost problem is the issue of communication at a linguistic level? This is achieved because the individual activates (consciously or unconsciously) different mechanisms of individual bilingualism and, with various strategies, tries to overcome the problem of communication. S/He uses a lingua franca to communicate with his/her future colleagues, who may (or may not) come from the country where this individual is. If the individual’s colleagues come from the country where all negotiations take place and speak the local language and communicate with the individual in a lingua franca, then we have almost the same levels of evolving individual bilingualism but different levels of professional and intercultural communication between the individual and his/her colleagues.

With almost the same levels of evolving individual bilingualism we mean that both the individual himself/herself and his/ her colleagues move between their own mother tongue and the lingua franca, whereas the lingua franca is / becomes the topos or locus (: meeting place) of linguistic communication.

Nevertheless, when we state that the levels of professional and intercultural communication are different, we mean that the individual who is “hosted” in an unfamiliar country is doubled removed from what is going on around him/her because s/he understands and perceives it through his/her colleagues who interpret the events of their own (i.e. familiar) country in a lingua franca that may be an unfamiliar language to them. As understood, this kind of communication is complex, multi-layered and interwoven with ontological and epistemological issues of “hermeneutics”.

3.1.2 Academic and economic recognition

When an individual wants to develop scientifically and academically, s/he should participate in conferences, programmes that are either local or national or international. In the first two types of conferences and programmes, the individual communicates in the national language, whereas s/he participates in international conferences and programmes should communicate in the lingua franca used by various international organizations. Although in some cases the national language may coincide with the lingua franca, in most cases the national language is different from the lingua franca.

In this case, the individual should know how to communicate in the lingua franca. If the individual does not have such knowledge and communicative skills, then either his/her colleagues should know the specific lingua franca or s/he should use translators and/or interpreters or s/he has such a secretarial support that will have the necessary qualifications and linguistic skills.

3.2 The duration of the individual’s staying in a foreign / “unfamiliar” / host country (ies)

In the present context, we primarily mean the short stay of the individual or “sojourner”5 in the (unfamiliar) host country or (unfamiliar) host countries where s/he moves to and stays from one hour to three months.

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2 The presence of professional translators and/or interpreters is considered necessary primarily in the diplomatic corps and in bilateral agreements being concluded.

3 If the lingua franca coincides with the mother tongue or national language of this individual, then it is obvious that there is no such a kind of individual bilingualism; for example, when an English-speaking or French-speaking person communicates in English or French respectively.

4 Then, the individual is not considered bilingual; for example, when the individual is French-speaking and participate in an international conference which is conducted in French.

5 We have borrowed the word “sojourner” from Kim (2001, pp. 16-17).
During his/her short stay in the country, the sojourner is able to and communicate in a *lingua franca*. If, for various reasons, this individual decides to remain in the country *longer*, then s/he ceases to be bilingual and becomes a *trilingual* or an *active multilingual* individual, since s/he should (and will) develop language and intercultural skills that are oriented towards and make the individual (the previous “sojourner”) acceptable to the local community and/or local communities.

### 3.3. The international language that the individual communicates in/with or the *lingua franca*

As we have been developing the issue of evolving individual bilingualism in relation to globalization, we have just referred to the concept of *lingua franca*. Now, we think it is time to discuss what this *lingua franca* is and what impact it has on bilingual individuals and the society or the societies that it is used.

#### 3.3.1. English: the *lingua franca* of our age

And now, let us approach the issue that seems to be a taboo, as in the Greek and international literature on globalization there is no reference as to which language is used for international communication. The only international literature addressing the issue is either that related to English Studies or that is relevant to learning and teaching English as a foreign language (EFL) or as a second language (ESL), and this is why these two subjects are inextricably interrelated to the use of the language of modern international communication that is *English*.

*English* has dominated as the language of international communication, and thus it has become the contemporary *lingua franca* since the second half of the twentieth century. The number of people who use *English* is constantly increasing, as the use of *English* increases in science, new technologies, trade and medicine, while it has been exerting tremendous pressure on the economic and political level.

There is plenty of international literature on the *three phases* of spread and *three cycles* of the use of the English language because of internationalization (Lee McKay, 1992; Philipson, 1992; Pennycook, 1994; Wilkinson, 1995; Holborow, 1999). In the present discussion what interests us most is: (1) how *English* became *lingua franca*, and (2) its position in the EU.

#### 3.3.1.1. How English has become *lingua franca*

The basic factors that have attributed to *English* its current status are the following:

- **Its numerical strength.** that is the number of people who speak the language as mother tongues (native users of *English*). Nevertheless, we should note here that native users of Chinese and Spanish languages outnumber *English* (Holborow, 1999).

- **Its strength as an official language of several countries;** that is the number of countries that have *English* as official or as one of the official languages at national level. These countries are mostly former British colonies or colonies of the United States (Lee McKay, 1992; Philipson, 1992; Pennycook, 1994; Wilkinson, 1995; Holborow, 1999).

- **The economic power of the language** which is directly related to the financial robustness and strength of the country or countries speaking and having adopted *English* as their (official) language. Here, the dominance of the *English* language is intertwined with the (former) British colonies and the emergence and invasion of American capitalism (Philipson, 1992; Pennycook, 1994; Holborow, 1999).

- **The use of English as the language of science and technology.** It has been estimated that at least 85% of scientific papers are written and published in English and 80-85% of all stored information is in *English* (Holborow, 1999; Papakonstantinou 2003).

#### 3.3.1.2. The position of the *English language* in the EU

According to Eurobarometer 1998, the third of European citizens of 13 “*non English-speaking*” EU countries “cannot speak *English* so well that they can participate in a discussion” (Papakonstantinou, 2003, pp 15), and it is conspicuous that they learn *English* to communicate with other Europeans citizens rather than with native users of *English*. Furthermore, the only working language of the European Science Foundation is *English*, and the programmes that facilitate *mobility* between the EU university students (i.e. ERASMUS) strengthen the position of *English* and enhance its prestige within the EU.

Since the phenomenon of this unprecedented outbreak of (evolving) individual bilingualism in the EU is still ongoing, the EU - through the European Council – has developed a single language education policy with a Common European Framework of Reference (CEF) whose one of the principal objectives is to develop and promote a wide range of *bilingualism* and *multilingualism* in which all European citizens will be able to achieve a satisfactory degree of communication skills in two languages in addition to their mother tongue or national language (Common European Framework, 2002).

What is innovative in the CEF is that it is recognized the importance of the mediating character of people who learn foreign languages and who are potentially bilingual or multilingual individuals. However, the mediating character of individuals who learn foreign languages and the use of a *lingua franca*, such as *English*, activate the mechanism called *directionality*, which together with the *lingua franca*, become *topoi / locoi* (meeting places) where individuals and “unfamiliar” linguistic and cultural systems meet with other individuals and systems and try to establish a code of (inter)communication.

(a) The sojourner’s directionality
In the present context, we will use (although slightly modified) the translational concept of directionality. Nowadays, in Translation Studies there is the widespread opinion that requires professional translators (bilingual individuals) to move only from their mother tongue to the foreign or second language and not vice versa, because, according to theories of bilingual education, language ability of bilingual individuals is asymmetrical and thus a bilingual moves much more easily from the mother tongue to the foreign language. Nevertheless, employers’ requirements debunk this view, as they consider the linguistic ability of professional translators that staff their firms as symmetrical bilingual (Hatim, 2001, p. 164).

Now, if we try to apply the concept of directionality to the individuals who are sojourners and who move among different linguistic, professional and cultural environments in an ever increasing globalizing world, then we should make an effort to answer the question: Towards what direction is the bilingual individual or sojourner moving and from which direction is s/he coming from? In other words, what is the direction in which the bilingual individual or sojourner move from and/or to its mother tongue/ national language or the language of habitual use and the lingua franca?

Of course, this set of questions is not easy to answer and becomes even more complex if we try to analyze the relationship of the mother tongue / national language, the language of habitual use and the lingua franca to evolving of individual bilingualism (or multilingualism). The most observable relations are the following:

1. If the mother tongue / national language, the language of habitual use and the lingua franca coincide, then the individual or sojourner is not bilingual.
2. If the language of habitual use and the lingua franca (e.g. English) coincide but are different from the individual’s mother tongue / national language, then the individual is bilingual.
3. If all languages (i.e. mother tongue / national language, language of habitual use and lingua franca) that the individual uses are different, then the individual is trilingual or multilingual. For example, a Greek woman lives and works in a multinational company in Paris; her mother tongue is Greek, the language of habitual use is French and the lingua franca is English.

Now, if we take into account the aforementioned clarifications, we understand that the myth of directionality from the foreign language (lingua franca) into the mother tongue or the language of habitual use is rebutted since in real situations the (evolving) bilingual individual, when necessary, s/he moves:

a. from the mother tongue / national language (e.g. Greek) to the lingua franca (e.g. English); this unidirectional move and transfer;
b. from the lingua franca (e.g. English) to the mother tongue / national language (e.g. Greek); this is reverse unidirectional move and transfer; and

C. simultaneously from the lingua franca (e.g. English) to mother tongue / national language (e.g. Greek) and vice versa; this bi-directional move and transfer (Nikolarea, 2005, 2004a-c, 2003).

However, the directionality of communicating an evolving bilingual individual in specific communicative situations goes beyond the individual (psycholinguistic, epistemic) level; it touches upon interpersonal, intergroup relations and cultivate the ground for the encounter of and intercommunication among “unfamiliar” countries and cultures. And as in every encounter confrontation and controversy lurk, so problems, challenges and even wars lurk in every linguistic and cultural encounter of “unfamiliar” countries and cultures.

It is in these dangerous paths, within these ‘gray’ areas of the avenues of internationalization and globalization where evolving individual bilingualism humbly and quietly carries its destination, and evolving bilingual individuals become jugglers of their personal and social identity in the game of personal ambitions, social requirements and international and global developments / advancements.

4. Conclusions

If the delineation of evolving individual bilingualism in the gray areas of an ever increasing globalizing world and in the use of English as lingua franca is correct, then learning and teaching of foreign languages (especially English) must be redefined at all levels of public education. If we do not want less spoken national languages, such as Greek, to be absorbed or disappear from English, then educational institutions and agencies as well as states should always teach English vis-à-vis a given national language (e.g. Greek) and use such methodologies and techniques (e.g. creation of a bilingual terminology, writing bilingual summaries and abstracts) so that individuals who learn English will be able to move between their own mother tongue / national language and the lingua franca with fluency and ease (Nikolarea 2005, 2004a-c, 2003).

Here, as we have emphasized elsewhere (Nikolarea, 2004a-c, 2003), Translation Studies have much to offer in understanding both evolving individual bilingualism and learning foreign languages within the context of intercultural and multicultural communication, so that there will be a balance between the use of national languages and English (Berns, 1995; Papakonstantinou, 2003).

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Language of habitual use: is a term in Translation Studies that denotes the degree of familiarity and frequency of use of a foreign language. When a foreign language is used on a daily basis for communication purposes, then the foreign language (FL) changes into a second language (SL) and in a language of habitual use. Many times the language of habitual use may coincide with the lingua franca; for example, a Greek living and working in Toronto, Canada. Despite the fact that his/her mother tongue is Greek, his/her language of habitual use and lingua franca is English.
5. References
Chapter 1:

Currency Areas as Games

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(University of Piraeus)

Abstract:
A currency area is defined as a group of countries sharing a common currency without fiscal integration. The currency area is sustainable if the utility vector \( u \) resulting from the use of a single currency, is Pareto efficient. In this paper we show that the optimal outcome \( u \) cannot be reached if the members of the currency area play a non-cooperative game, i.e., a game in which an agreement to coordinate macroeconomic policies is not binding. If the member countries play a cooperative game, in which commitments are binding and enforceable, the optimal outcome is reached if and only if the core is the only stable set.

1. Introduction
A currency area is sustainable if the utility vector \( u \) resulting from the use of a single currency is Pareto efficient. A utility vector \( u \) is Pareto efficient if the concerned countries cannot find another utility vector \( x \) (one that they could achieve by mutual consent) such that every country is better off in \( x \) rather than in \( u \), or at least, in \( x \) no one is better off and someone worse off. Since the utility vector \( u \) is Pareto superior to \( x \), no one has the intention to leave the currency area. From this point of view the currency area is stable.

The question is whether this utility vector can emerge as rational behaviour in the absence of an ability to make a binding agreement or it presupposes a binding agreement among the countries concerned. In this paper we investigate this issue using analytical techniques borrowed from the theory of games, and under two different behavioural assumptions. According to the first each member of the currency area tries to maximize its own utility and do not seek to agree on some coordinated choice of actions. This is the framework within which the classical theory of automatic adjustment mechanism was developed. The games that are more suited to model this case are non-cooperative games. We find, contrary to the prediction of the classical theory, that the resulting outcome (Nash equilibrium) is not Pareto efficient, and therefore the stability of the currency area is not guaranteed. The second behavioural assumption is that the members of the currency area agree to coordinate their macroeconomic policies and play a cooperative game. We find that the outcome of this game will be consistent with the desired outcome (the vector \( u \)) if and only if the core of the game (if it exists) is the only stable set.

The paper is organized as follows. In the next section we define the currency area and describe its conditions of equilibrium. In the third and fourth sections we model the currency area as a non-cooperative and cooperative game respectively and in the final section we conclude.

2. Currency area; the underlying economy
A currency area is defined as a set of countries sharing a common currency but without fiscal integration. It is postulated that in the currency area full employment prevails, the quantity theory of money holds and prices are quickly adjusted to clear the markets. The last assumption implies that relative prices are constant, so that the good markets are aggregated in one composite commodity. In a one commodity world, spatial arbitrage assures that prices will be the same in all members of the currency area \( [1] \). It is further assumed that the currency area is a closed system and that its total nominal spending in the currency area is equal to its total nominal income. In a two country world this implies (the asterisk (*) denotes country 2):

\[
p(y+y^*) = mv + m*v^* = 0 \tag{1}
\]

where \( p \) is the price level, \( y \) the full employment output, \( m \) the amount of the currency available to the members of the currency area and \( v \) a constant that may be interpreted as the velocity of circulation. Obviously \( m + m^* = M \), where \( M \) is the stock of the common currency. When the currency area is in equilibrium the distribution of the common currency between its members satisfies the condition:

\[
(py - mv) = (m^*v^* - py^*) = 0 \tag{2}
\]

This means that in equilibrium the nominal spending in each country is equal to its nominal income. Condition (2) is Pareto efficient because the countries cannot find another outcome \( z \) (one that they could achieve by mutual consent) such that every country is better off in \( z \) than in (2).

Imbalances are caused by a misallocation of the common currency. Given (1), the condition for imbalances can be written as:

\[
(py - v m) \neq (v^*m^* - py^*) \tag{3}
\]

This condition says that the excess of nominal income over nominal spending (the rate of hoarding or the trade balance surplus) in country 1 is matched by an excess of nominal spending over nominal income (the rate of dishoarding or the trade balance deficit) in country 2. According to the classical view these imbalances are transitory. They are corrected automatically via the redistribution of the common currency through the balance of payments. The inflow of the common currency in the surplus country increases its...
nominal spending and reduces its rate of hoarding. The opposite is true for the deficit country. Eventually equilibrium, as defined by (2) is restored.

3. Currency areas as a non-cooperative game; commitments are not binding

The characteristic of the automatic mechanism of adjustment (described in the section 2) is the symmetric behaviour of the two countries: the restriction in nominal spending in the deficit country is matched by an increase in the nominal spending in the surplus one. However the facts of experience show that the behaviour of the countries in a fixed exchange rate regime (and a fortiori in a currency area) is asymmetric rather than symmetric: the surplus countries (the creditors) feel less pressure to adjust than their deficit counterparts (the debtors)[2][3]. This asymmetric behaviour can be explained. In a currency area the domestic money supply and the domestic rate of interest are endogenous, i.e. they are primarily determined by the balance of payments. Therefore there is no orthodox means open to authorities for stimulating domestic economic activity and employment except by running an export surplus. And since, in a closed system, all countries cannot run, simultaneously, a balance of payments surplus, the balance of payments surplus in a country is matched by a deficit in the rest of the world. This explains (in part) the preferences for a balance of payments surplus and shows, at the same time, that the employment policy pursued by a country in a currency area is a beggar thy neighbour policy. Thus the welfare of a country depends not only on its own actions but also on the actions of the other members of the currency area. This is a situation of strategic interdependence, and the appropriate tools for its analysis are provided by the non-cooperative game theory [4]. In a non-cooperative game the primitives are the sets of actions of individual countries; commitments are not binding. The key equilibrium concept of the non-cooperative game is the Nash equilibrium: a profile of actions is Nash equilibrium if a unilateral deviation from it is not profitable.

The model we are considering consists of a finite set of countries N, a set of actions (the set of policy tools) A, available to each country i ∈ N, and a preference relation on the set of action profiles (outcomes). The preference relation of the player i can be represented by a payoff function Ui → R, in the sense that Ui(a) ≥ Ui(b) whenever player i prefers a to b. The values of this function are known as utilities or payoffs. In the two country currency area, which we are considering (or better in the case in which the representative agent of creditors plays a game with the representative agent of debtors), reluctance to adjust means that each country prefers to retain its position as a creditor if the other country is a debtor, and is forced to be a debtor if the other is a creditor. A strategic game that captures this situation (known as Hawk-Dove game) is shown in Figure 1.

<table>
<thead>
<tr>
<th>Country A</th>
<th>s</th>
<th>s*</th>
</tr>
</thead>
<tbody>
<tr>
<td>σ</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>σ*</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country B</th>
<th>s</th>
<th>s*</th>
</tr>
</thead>
<tbody>
<tr>
<td>σ</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>σ*</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 1

The set of actions of the country 1 is {σ, σ*} and that of the country 2 is {s, s*}. The first element in every strategy set means "adjust" and the second element "not adjust". "Adjust" means that the countries select policies that remove imbalances: the surplus country increases its spending while the deficit country restricts it. "Not adjust" means that the surplus country retains its surplus in its balance of payments by restricting its domestic spending. If both countries choose (σ, s) then the two countries coordinate their policies (the reduction of spending in the deficit country is matched by an increase in spending in the surplus one) and the equilibrium is restored as the classical economic theory suggests. The resulting situation is a "cooperative" outcome, i.e. an outcome that could be achieved by mutual consent. In this example the Neumann-Morgenstern utilities accruing to the countries are (2, 2), the first number being the utility accruing to the first country and the second the utility accruing to the second. If the countries choose the actions (σ, s*), then the second country retains its balance of payments surplus and throws the burden of the adjustment to the deficit country. The surplus country retains its preferred position as a creditor of the rest of the world, while the deficit country (the debtor) has no other option but to deflate and allow unemployment to rise. The Neumann-Morgenstern utilities corresponding to this case are (1, 3). The opposite is true if the countries choose the actions (σ*, s). The worst outcome is that in which both countries do not adjust. In a closed economy both countries cannot run (simultaneously) a balance of payments surplus, and for this reason we assign to the actions (σ*, σ*) (0,0) utilities. The game has two Nash equilibria, (σ, s*) with value (1, 3) and (σ*, s) with value (3,1), depending on whether the first or the second player is the debtor. If the second player is the debtor then the equilibrium is (σ*, s) and its value is (3, 1). Thus the symmetric solution implied by the automatic adjustment mechanism (the outcome (σ,s)) cannot be reached and the imbalances in the currency area remain.
This Nash equilibrium $(u^\ast, s)$ may be a rational outcome but it is not Pareto efficient. And because it reflects a *symbiosis* of a surplus economy with a deficit one, it is not (economically) sustainable. This is because the deficit country has to finance its deficits by borrowing. Borrowing leads to an accumulation of debt and the accumulation of debt may lead to self-fulfilling liquidity crises [5]. In fact, the members of a currency area (their governments) cannot guarantee to bond holders that cash will be available to pay them out at maturity, because they borrow in a currency the supply of which do not control. If, in addition, the currency area lacks a lender of last resort, then it is left vulnerable to self-fulfilling liquidity crises. Investors may sell the debt of a deficit country fearing default. In so doing, they drive up that country’s borrowing costs and depress its economy so much, that they provoke the very default they fear.

These undesirable effects may be avoided if the members of the currency area agree to coordinate their macroeconomic policies. But an agreement of the members of the currency area to coordinate their activities means an agreement to act as a group. The games in which the primitives are not the expected possible actions of individual counties but the sets of joint actions of groups of countries (coalitions) are known as cooperative games. In the next section we explore the problems of sustainability of the currency area within the context of the theory of cooperative games.

4. Currency areas as cooperative games; commitments are binding

4.1. Assume now that the countries of the set $N$, with cardinality $n$, that share a common currency, agree to coordinate their macroeconomic policies, and play a cooperative game, i.e. a game in which agreements are binding [6][7][8][9]. This game is described by a real valued function $v$, defined on $2^N$, the set of all subsets (coalitions) of $N$. This function (called a characteristic function) assigns a real number $v(S)$ to every subset $S$ of $N$ and $v(\emptyset) = 0$ for the empty set $\emptyset$. The value of $v(S)$ is called the worth of the coalition, and indicates the utility the coalition $S$ can achieve when its members act together. In particular $v(N)$ is the amount of utility obtained by the grand coalition (the currency area as a whole) if all its members coordinate their activities and abide by the “rules of the game”. Utilities are assumed to be transferable, i.e.

$$v(S)+v(T) \leq v(S \cup T) \text{ with } S \cap T = \emptyset$$

This means that the members of the currency area can gain more as a group than by acting alone. Thus there is a motive for them to maximize jointly and then decide how to divide the proceeds among themselves.

We define an imputation $u$ to be the division of joint benefits among the $n$ members of the currency area (or their gains from coordinating their policies). An imputation is a vector $u = (u_1, u_2, \ldots, u_n)$ with real elements and with the following two properties:

1. $u_i \geq v(\{i\})$ for all $i \in N$ (individual rationality)
2. $u_1 + u_2 + \ldots + u_n = v(N)$ (feasibility and Pareto optimality)

The condition of individual rationality (condition (1)) states that it would be irrational for a member of the currency area to agree to a joint outcome under which it receives a lower benefit than it would obtain by its own efforts. Condition (2) incorporates both the requirement that the members of the grand coalition $N$ (the currency area as a whole) can achieve the outcome (imputation) $u$ (feasibility) and cannot achieve more (Pareto optimality).

The core of the $n$-person game consists of those imputations that are feasible for the currency area as a whole and can be blocked by no coalition. Thus if the benefits derived from the coordination of macroeconomic policies are elements of the core then coordination is possible because no country can obtain more by adopting a different economic policy. What is in the self-interest of each country taken individually to do is also good for the currency area as a whole. But if the core is empty, the currency area becomes unstable: potential coalitions are formed (to agree on a certain policy issue) and disbanded once a country (or a coalition of countries) capable of objecting becomes aware of its own power. Therefore, the existence of the core, in a currency area cooperative game, is a necessary condition for its sustainability.

4.2. As the definition of the core reveals, the core is non empty if the worth of the grand coalition is sufficiently large so as to contain a utility vector that cannot be blocked by an intermediate coalition. More formally, according to the Bondareva- Shapley theorem [10][11], a core exists if and only if for any balanced collection of coalitions $\{S_1, S_2, \ldots, S_k\}$ with balancing weights $\delta_1, \delta_2, \ldots, \delta_k$ the inequality

$$\Sigma S \leq v(N)$$

holds. A collection $T=\{S\}$ of coalitions is called balanced if there exist nonnegative weights $\delta_i$ for each coalition in $T$, such that

$$\Sigma \delta_i = 1 \text{ for each } i$$

In other words, the weights $\delta_i$ have the property that if any individual is selected, the sum of the weights corresponding to those coalitions in $T$ which contain the individual must be equal to 1. A coalitional game is called balanced if (5) holds for every balanced collection of weights.

Condition (5) expresses the fact that the existence of core (and by implication the stability of the currency area) depends on the relative weakness of the coalitions of the intermediate size. In a symmetric game, where the worth of a coalition depends only on its size, the core always includes the symmetric imputation that gives each player $v(N)/n$. This imputation must therefore satisfy all coalitions if the core exists, and so we must have:
\[
f(s)/s \leq f(n)/n, \quad s = 1, 2, \ldots, n-1
\]
where \(f(s)\) is the worth of the coalition containing \(s\) players [12]. This result has a simple geometrical interpretation. The characteristic function has to lie below the straight line \(0A\) in Figure 2, which is the locus of symmetric imputations. If the characteristic function lies below the straight line, the core exists and the agreement to follow a symmetric macroeconomic policy is stable and cannot be challenged by any subcoalition. Non-emptiness of the core express a situation in which there is an incentive to be a member of the currency area (the grand coalition) in which each subcoalition of countries can do at least as well as in the framework of the grand coalition.

4.3. A problem with the core as a “solution” concept of the cooperative games is that in some instances a point in the core fails to dominate other points of the imputation space (see the example given by Shapley and Shubik [13, p.71]). This is because the core is defined as the set of undominated imputations, and therefore lacks the property of external stability. The lack of external stability may undermine the stability of the currency area, because creates a motive (probably weak) for a member country to abandon it. Thus we need “solutions” that are both internally and externally stable. A “solution” concept that satisfies the properties of internal and external stability is the stable set introduced by von Neumann and Morgenstern[14]. The problem with this solution is that a characteristic function may support more than one stable sets, and the multiplicity of solutions may be an indication of instability of the currency area. Therefore a currency area will be stable if and only if the core is the only stable set [9]. This is desirable because the equilibrium in the currency area will be both internally and externally stable. Internal stability means that the equilibrium is free of internal contradictions (no element of the solution is preferred by another element also in the solution). External stability means that any element outside the solution will be dominated by at least one element in the solution. Thus, every proposition \(x\) to leave the “solution” (to leave the currency area) is eliminated, because there is another proposition \(y\) in the “solution” that strictly dominates \(x\).

A subclass of games for which the core is the only stable set are convex games [15]. The characteristic function of these games has the property:

\[
v(S) + v(S) \leq v(S \cup T) + v(S T)
\]
for all coalitions \(S\) and \(T\). In this case the incentive for joining a coalition increases as the size of the coalition grows (Shapley’s “snowballing effect” [15]).

4.4. If the characteristic function is above the straight line \(0A\), as in the Figure 3, the core is empty because a subcoalition (for example the subcoalition \(S\)) can gain more by violating the agreement for policy coordination. Therefore it refuses to adjust and blocks the adjustment mechanism with the undesirable effects described in previous sections. The currency area is unstable.

This analysis shows how the existence of the core (and by implication the stability of the currency area) depends on the relative weakness of intermediate coalitions. If a coalition is stronger per capita, than the grand coalition then the core will be empty and the currency area unstable. This coalition may eventually impose its own economic policy on the rest of the currency area once it becomes aware of its own power. This conclusion is not inconsistent with the recent developments in Europe, where “the creditor nations rule in the eurozone” [16].
5. Concluding remarks
Using a simple game theoretic model we have indicated that if the members of a currency area play a non-cooperative game, the outcome will be an inefficient Nash equilibrium that may undermine the stability of the currency area. An agreement among the members of the currency area to coordinate their macroeconomic policies (and therefore to play a cooperative game) will stabilize the currency area if the characteristic function is convex. In this case the game contains a core which is the only stable set, and therefore the equilibrium condition has the two desirable properties of internal and external stability. This analysis draws attention to the importance of the intermediate coalitions for the existence of the core. If they are strong enough then they may object to any agreement reached by the currency area as a whole, and impose their own economic policy. But what makes sense for each country individually (or a subcoalition of countries) does not always make sense in aggregate. Under this condition the sustainability of the currency area is problematic.

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I want to express my thanks to Professor A. Yannacopoulos for invaluable suggestions and comments. Of course, I alone am responsible for errors and mistakes.

6. References
Chapter 2:

Communicating the Green Path to Sustainable Development: Experiences from India-EU Partnerships

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Abstract:
The MDGs that regard empowering women and environmental sustainability as the key factors for development began to recognize the international role of women in protecting and sustaining the ecology. These goals demand a renewed look at indigenous models of living in which women play an important role in environmental conservation. Ensuring environmental sustainability is regarded as the key to the achievement of all other developmental goals. It is interesting that in India check dams, rain water collection tanks, and mini water projects, with the active involvement of the local people in several states, have evinced greater support and participation rather than large dams involving massive funds with heavy costs of submergence, environmental impact, rehabilitation and resettlement of the affected people. Local communities have begun assuming custodianship of their environment and natural resources which previously was the sole responsibility of the government. Communities have begun to evolve and practice green initiatives for sustainable development. Women have played a key role in environmental conservation and resource management in the developing world. But their activism was viewed as local action and confined to the fringes of mainstream development. This paper will focus on women’s interventions in environmental activism and the experiences of EU-India strategic partnerships for sustainable development.

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1. Introduction
Global concerns on environmental issues are shared by countries across the world, but there is a complex interlinking of the environment with development in different countries. Economic growth and development has adversely impacted the environment in some regions whereas environmental degradation has adversely affected economic growth and development in some regions. The former trend is clear in the developing countries of Asia while the later trend is visible in Africa. The United Nations Human Development Report (2010) has calculated that South Asia is home to half of the world’s multi-dimensionally poor population of 844 million people. Eight States of India are home to 421 million multi-dimensionally poor people which is more than 410 million in 26 poorest African countries.

While it is evident that environmental problems vary depending on the degree of development and the structure of the economy, development and the environment, are global issues. In a global economy the benefits of resources, knowledge and environment policies in developing countries often accrue to developed countries and at the same time technologies needed by developing countries often lie with the developed countries. This complex situation has necessitated diverse strategies by governments and local communities (Prasad, 2009). The India-EU strategic partnership combines international initiatives with local strategies to deal with environmental challenges.

Developing countries including India sought to achieve by 2015 the eight Millennium Development Goals (MDGs) which include reducing poverty and hunger; achieving universal primary education; promoting gender equality (especially in education) and empowering women; reducing child mortality; improving maternal health; combating major diseases; ensuring environmental sustainability; and strengthening partnership between the rich and poor countries. The MDGs regard empowering women and environmental
sustainability as the key factors in which the EU-India Partnerships support policies for sustainable development.

Women have played a significant role in effecting the transformation of eco-religion to a political ecology in which sustainable environment will be the touchstone of development (Prasad, 2009). This chapter focuses on women’s interventions and activism to mainstream sustainable environment and highlights the case of the Narmada Bachao Andolan (NBA) against big dams spearheaded by the veteran environmentalist Medha Patkar as it completes 25 years of its struggle to assert the rights of the people to their land, water and forests in their quest for sustainable development.

2. Women Spearheading Environment Movements

Ancient Indians advocated an integrated approach to progress without undue exploitation of natural resources. One of the outstanding indigenous movements on the importance of eco-religion in environmental conservation is that of the Bishnois of Rajasthan, a north-western State in India which has vast tracts of deserts. This is an unusual community, for whom the protection of trees and animals is a religious obligation (Sharma, 1999). The Bishnois are more prosperous than other communities living in the Thar deserts, probably because of their eco-friendly life. It is estimated that about ten percent of the indigenous tribal population (adivasis) in India continues to practice shifting cultivation. A total area of about 50 lakh hectares over 15 states, are covered by shifting cultivation in India to produce a rich harvest (Vadakumchery, 1993). The popularity of organic farming and organic products are part of traditional ways of agriculture. Transcultural flows have led to an emergence of wider webs and networks of global activism in promoting vegetarianism and organic food in Europe which is predominant among several Asian communities. The eco-religious practices of the Bishnois have inspired many women’s groups and local communities to take on powerful lobbies that support development based on unbridled exploitation of natural resources and neglect of the environment. In this context, the States of Rajasthan and Chhatisgarh received the EU sector-wide approach intervention, moulded into a single partnership package under an overarching agenda of improved governance. While elementary education and basic health are the main core areas, environment is addressed by European Cooperation projects to improve management of natural resources, especially water (see Table 1).

Table 1: EC Cooperation Projects in India

<table>
<thead>
<tr>
<th>Title</th>
<th>Date of Commitment</th>
<th>Date of completion</th>
<th>Amount (Million Euro)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haryana Community Forestry Project</td>
<td>22/12/1995</td>
<td>30/06/2012</td>
<td>23,300,000</td>
<td>Reforestation activities</td>
</tr>
<tr>
<td>Conservation &amp; sustainable utilization of resources in cold deserts of India Himalayas</td>
<td>01/11/2002</td>
<td>01/11/2007</td>
<td>1,042,598</td>
<td>Community bases conservation and sustainable use of resources</td>
</tr>
<tr>
<td>Community Based Natural Resource Management</td>
<td>01/01/2002</td>
<td>31/12/2006</td>
<td>1,000,000</td>
<td>Soil &amp; water conservation; health awareness</td>
</tr>
<tr>
<td>CLEAN</td>
<td>15/10/2002</td>
<td>14/10/2007</td>
<td>905,000</td>
<td>Promoting community led environmental actions</td>
</tr>
<tr>
<td>Policy Research &amp; Awareness Creation in Environmental Health</td>
<td>01/01/2000</td>
<td>30/03/2006</td>
<td>723,765</td>
<td>Promote adoption of policies in environmental health</td>
</tr>
</tbody>
</table>


The growing urbanization and fast expansion of cities in India have led to deforestation and conversion of highly productive lands to meet the demands of industrialization and urbanization. Deforestation has a direct bearing on the daily lives of women; they find it harder to find domestic fuel, water and fodder in rural areas as well as other products used within the household for subsistence needs (Venkateswaran, 1995). Rural women have realized that the key to economic progress should be ecologically sustainable and satisfy the basic needs of the community. Women’s activism to address this development gap has given rise to several grassroots people’s movements, in which women are actively involved, to protect the environment in a bid to conserve local resources.

In the Himalayan hills of Uttar Pradesh, people collectively rose to defend the local interests against timber logging by contractors and private agencies that has jeopardized ecological stability and reduced local people’s opportunity to benefit from sound forest exploitation. The Chipko movement which originated in the hills of Uttar Pradesh was spearheaded by women who protected the trees from felling by hugging them. The Appiko movement similarly originated as a forest protection movement in Karnataka. Both these forest protection movements led by women draw inspiration from the Bishnoi eco-religious philosophy of harmonious living blended with environment conservation. Women are beginning to transform this
environmental philosophy into a political ecology where policy-makers have often headed to women’s intervention in the protection of forests and ordered a stop to the large-scale felling of trees. Against this backdrop, it is interesting to examine the case of the Narmada anti-dam movement spearheaded by Medha Patkar over a period of more than two decades and its entry into the realm of political ecology. The Narmada Bachao Andolan (Struggle to Save Narmada River) catapulted environmental activism into the political domain in India and has now become symbolic of the global movement against big dams.

3. The Case of the Narmada Bachao Andolan

Medha Patkar, founder of the NBA and the National Alliance of People’s Movements, is immersed in the tribal and peasant communities in Maharashtra, Madhya Pradesh and Gujarat. Her uncompromising insistence on the right to life and livelihood has compelled the post-Independence generation in India as well as around the world to revisit the basic questions of natural resources, human rights, environment, and development (Sangvai, 2000). She has served as a Commissioner to the World Commission on Dams, the first independent global commission constituted to enquire on the water, power and alternative issues, related to dams, across the world.

The NBA began as a fight for information about the Narmada Valley Development Projects and continued as a fight from 1990-91 for the just rehabilitation of lakhs of people ousted by the Sardar Sarovar Dam, the world’s largest river projects, and other large dams along the Narmada River. The Sardar Sarovar Dam was a project that would displace upon completion 320,000 villagers, mostly from tribal communities, whose livelihoods depend on these natural resources and submerge over 37,000 hectares of land. When it became clear that the magnitude of the project precluded accurate assessment of damages and losses, and that rehabilitation was impossible, the movement challenged the very basis of the project and questioned its claim to “development” (The Hindu, 2010).

Many of the uprooted families of large development projects such as big dams are tribal people and forest dwellers who are among the most underprivileged and vulnerable people of India. The viability of big dams which submerges adjoining villages was intensely questioned in 2006 with the Tehri dam completely submerging the historic Tehri town in Uttarakhand. Besides, there are rational, cost-effective and environmentally more benign alternatives to the Sardar Sarovar Project (Bidwai, 1998). The NBA has also been working to obtain just compensation for people affected by dams which have already been built on the Narmada as well as opposing other dams in the Narmada Valley.

As an outgrowth of her work to stop dam construction, Patkar has helped establish a network of activists across the country - the National Alliance of People’s Movements. Linking the Narmada Bachao Andolan with hundreds of peasant, tribal, women and labour movements throughout India. Medha Patkar is Convener of the National Alliance of People’s Movements - for alternative development. Check dams, rain water collection tanks, and mini water projects, with the active involvement of the local people in several states, have evinced greater support and participation rather than large dams involving massive funds with heavy costs of submergence, environmental impact, rehabilitation and resettlement of the affected people.

The NBA has been able to drive home the message that ‘There Are Many Alternatives’ as against the global media refrain that ‘There is no Alternative’ (TINA). “The NBA is oxygen for other movements, giving them the strength to fight,” said the general secretary of the National Hawkers Union Shaktiman Ghosh (Gaikwad, 2010). Activists, environmentalists, farmers, adivasis and supporters, young and old, thronged the village square in Dhadgaon of Bhadal in Madhya Pradesh for a public meeting singing “In the Narmada Valley/The fight is still on” where Narmada Bachao Andolan (NBA) leader Medha Patkar led a prayer meeting as part of the activities marking the completion of 25 years of the people’s movement (Rahi, 2010).

Her constructive work has resulted in community participation to develop alternatives in energy, water harvesting, and education for tribal children. Among the notable local initiatives, is the Reva Jeevanshala, using both state and local syllabus taught by local teachers in the local language, is a system of nine residential schools and four day-schools in the tribal villages of Maharashtra, Madhya Pradesh, and Gujarat. She has effectively demonstrated that the participatory approach to development is an alternative way forward that will ensure a satisfactory quality of life to millions struggling for basic needs.

On development and technology, Medha Patkar says: “I am not anti-technology, I am all for it: beautiful, harmonious, equitable, sustainable, egalitarian, non-destructive technology. Not this gigantic technology which is apocalyptic, destroying thousands of homes, hearts, habitats, ecology, geography, history, and finally, benefiting so few, and at such great cost. This is mindless and this is violence” (The Hindu, 2004).

The NBA has inspired many local communities to protest against mining and logging rights given to big commercial business houses. The agitation led by C. K. Jana for asserting the right of the tribal people over forest land in Muthanga, Kerala, has been another long struggle. In Kerala, several protest movements have been launched against the unregulated drawing of ground water by the Coca Cola and Pepsi companies from Plachimada and Kanjikkode in Palakkad championed by the adivasis led by Mayilamma. The Plachimada struggle attracted global attention when reports of the BBC and the New Delhi-based Centre for Science and Environment confirmed that Coca Cola sold by the company contained more than the admissible level of harmful chemicals. Medha Patkar and Vandana Shiva along with several environmental activists and global NGOs arrived in Plachimada and extended their support to the agitation. After long legal battles the Court ruled that the company has the same right as the people to draw water and share natural resources. In India after the Plachimada agitation, as the global media advertising war for Pepsi and Coca-Cola rages on, the local markets stress on natural health drinks.
In India's real-life Avatar – there is a struggle to save the mountains that are sacred to the tribals that is their only habitat and a UK corporate giant, Vedanta. The Dongria and Kutia Kondh, the tribals who live in the 250 km Niyamgiri Hill Ranges of Western Orissa's Kalahandi district, have been officially recognized as primitive tribal groups that need special protection. On YouTube, a series of spots campaigns have been running for their rights against a corporation named Vedanta. The Niyamgiri Hills which the Dongria Kondhs worship is the centre of rich deposits of bauxite that Vedanta wants to mine. The Saxena Committee that enquired into Vedanta’s business suggested that the Vedanta operations endanger nearly 750 square km of forest land. The Environment Ministry has also stepped in to keep Vedanta from developing its plans to mine in the Niyamgiri Hills after the tribals won a court verdict in the favour.

It is estimated that fifteen million people worldwide earn a living through waste picking. Waste pickers are now seen as offering a solution for climate change mitigation and waste management that make economic, ecological and social sense. The UN Framework Convention on Climate Change (UNFCCC) Conference in Tianjin, China saw three women rag pickers from India sharing their experiences on the steps taken by them to reduce greenhouse gases. Baidabai Gaikwad from Pune, Maya Khodave from Nasik and Sushila Sable from Mumbai, were representing waste pickers from around the world at the United Nations and explain the implications of the UNFCCC process on the marginalised in different parts of the world. These environmental movements led by women, tribal, peasants and local communities are mainstreaming their perspectives to create awareness about the rights of people to local resources, prevent their over-exploitation and promote conservation efforts.

4. Experiences from India-EU Partnerships
The right to information campaign led by Aruna Roy, struggle for natural resources led by Medha Patkar, the sustainable agriculture movement led by Vandana Shiva and a host of local agitations led by women like C. K. Janu and Mayilamma have converged and have played a stellar role in grounding political ecology in India. Those who were long neglected and silenced in the development processes, particularly women, have been awakened by people’s movements like the NBA. Owing to the networking with the NBA, women in the local collectives/federations have increased contact with the bureaucracy in the government offices. Prior to the networking with the National Alliance for People’s Movements, many women were unaware of where the government offices were located and played a minimal role in the political life of the country. Now women representatives elected to the local government bodies visit the state offices and interact with officials and are also informed by them about various development programmes. In addition to greater interaction with government officials, networking with national organizations like the NAPM helps women to take up leadership roles in their own neighbourhoods, communities, and villages.

Over the last ten years, the EC has financed numerous Rural Development and Natural Resources Management projects, but their multiplicity and geographical dispersion tended to have limited and localised impact, with little influence over policy. While distinct new project structures with the support of national and international technical assistance were created during project implementation, long term institution building proved much more difficult to achieve, given the predominantly technical focus of the interventions (EC, 2013). Capacity building and behaviour change are also not easily achieved by ‘projects’ that come with specific technological requirements.

Though gender mainstreaming is also an important component of the EU-India Strategic Partnership Plan but building environmental capabilities among local communities necessarily deals with complex gender relations. Women who attempt to reform the process of development by resistance against bureaucratic structures often find that an alliance of politicians and vested interests have an almost impregnable hold on the central institutions of the society. The increasing poverty of these women often do not often allow them to think leisurely and realize that the rise of popular protest which intends to bring in change must build up from the fringes of society to the center until this becomes the dominant socio-political organization in the country (Chakravarty, 2003:638). The EC’s co-operation strategy with India for the period 2007-2013 on environment is likely to emerge as an important sector of co-operation in the future.

Further, women’s extreme poverty and their pseudo enfranchisement in the developing countries sometimes make them realize that their powerlessness will not easily change their circumstances. This situation is complicated by policy makers who often ignore a world in which women are seldom leaders, doers and supporters of families, and where women’s concerns like poverty and lack of health care are absent or trivialized (Prasad, 2008). Women are aware of the changes in themselves as they prepare to raise difficult questions regarding the environmental sustainability of development projects. If satisfactory answers are not forthcoming, women are gradually moving towards a position of seeking alternative models of development, among which are innovative EU initiatives on sustainable development cooperation involving efficient utilization of resources.

5. References


Chapter 3:

Hollowing out of the state and the different forms of voluntary participation in Greek Non-Governmental Organizations

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Abstract:
It is a well-established fact that the socio-economical circumstances of the last few decades have brought forth the concept of the “civil society” with the emergence of new voluntary activities. However, the organizations that constitute the civil society are not homogeneous; the matter is further complicated by the diversity of definitions for these new formations, such as “non-profit” and “non-governmental” organizations. The boundaries of these organizations are also inexplicit and ever changing as historical and cultural factors have an intense effect on the different forms of voluntary action. The debate on Greek Non-Governmental Organizations has developed over recent years.

Following the fall of the military junta in Greece (1974), voluntary activity reaches its peak of the last decades. In spite of this, organizations of civil society appear as subsidiary organizations, dependent on the political parties. During the 1990 and at the dawn of the new century, within the stifling environment of a receding participatory culture, a powerful and multi-faceted micro-level voluntarism has developed. The last period, where in Greece we’re going through with the crisis period, a new and dominant trend is reflected: The State patronize Non-Governmental Organizations assigning them to implement social programs.

Key words: Non-Governmental Organizations, transference of voluntarism, substitute action, social diversity, individualised motivations, hollowing out of the state

Introduction
The following analysis will attempt to describe the dynamics of, and the variations between, NGOs in relation to the specific circumstances and the different environments in which they develop. Non-Governmental Organizations are characterized by different statutory, organizational and cultural – ideological attributes.

The debate regarding the Ngo’s level of development is manifold. Two common analytical parameters, for instance, are a society’s degree of economic decentralization and institutional – ideological pluralism (Gellner 1994). Others support that the dynamics of these organizations are determined by the power concentrated within a society’s institutional fields (political, economic, social and cultural), as well as by the balance in the relationship between those fields (Mouzelis 1998). Another debate attempts to collectively assess all the factors that shape a society with its broader social, political and economic relationships. Specifically, the Social Origins Theory refers to four models of developing a Civil Society: the Liberal model, the Social Democratic model, the Corporatist model and the Statist model (Salamon & Anheir 1998).

The study of voluntary contribution and collective action, which form an integral part of a civil society, should regard the “local” as “central”, without ignoring its specific spatiality. It should focus on the “specific” as the “general” without eliminating its particularity, and approach the “partial” as the “total” without altering its actual dimensions.

The debate regarding the Greek Civil Society and NGOs has developed in recent years, with more specific analyses on the extent of participation in voluntary organizations, which is the lowest among member – states of the EU (Eurostat, 2002 and 2006). The predominant view on voluntarism in Greece, and on Greek civil society in general, is that it is weak and underdeveloped, feeble and insubstantial. The important question – whether Greek civil society is a powerful one – should not be asked in terms that predispose us to give a negative answer: this will not only undermine every effort to interpret and analyse Greek civil society, but it will also hold back its future.

In order to avoid this negative conclusion, we propose that the assessment of certain factors related to the specific time and place of a collective activity is an indispensable prerequisite for analysis. This is because voluntary action varies according to the time at which it takes place, the place and the cultural environment within which it is expressed, and the issues it tackles.

The following analysis of the Greek NGO’s is based on the three aforementioned prerequisites related to the genre of voluntary activity, as well as to the time and place of a particular activity.

1. NGO’s under the aegis of the political parties
Following the fall of the military junta in Greece (1974), voluntary activity reaches its peak of the last decades. The circumstances and atmosphere of the time created a new culture of involvement. Hence, beyond the expected minimum legitimisation of political parties and trade unions, participation developed in voluntary organisations covering a broad span of activities. These activities brought forth initiatives that were novel to Greece, including the ecology, feminist and cultural movements.
1.1. Cultural Voluntarism: The cultural importance of volunteering

A particular component of the voluntary movement emerges where voluntarism is introduced into the cultural sector. The common ground of these two sectors forms the field of “cultural voluntarism”. This component is exemplified by voluntary organisations active in the fields of inter-cultural understanding and education, cultural creativity and production, artistic expression and cultural heritage. The cultural field is an advantageous one for voluntary organisations to develop and act in. Since the 1980s, it has been noted that civil society’s voluntary organisations should be considered as the focal point of participation in cultural democracy and as an important factor in cultural development. Voluntary organisations have come to be the most appropriate agents for the development of cultural actions, often more so than governments themselves (Grosjean, 1986). Furthermore, the political component in the collective activities of voluntary organisations is an important factor in the empowerment of civil society. Consequently, it is possible for cultural issues to play an integral part in the protection of human rights and liberties, the enhancement of social cohesion and the encouragement of citizen awareness, active participation and voluntary activity. In other words, such issues can reinforce creativity in human participation and collectivity in action, and can forge a feeling of individual responsibility and collective accountability.

The relationship between the cultural sector and the field of voluntary activity is essentially one of vital interest. The paths of mutual empowerment are diverse, and are related to the new dimensions of the field, which has been described as the ‘site of citizenship’ (Audigier, 1999; Council of Europe, 1999). The ways in which culture can foster civil society are many. For example, voluntary cultural organisations can promote understanding of, and respect for, cultural diversity. Moreover, the ‘diplomacy’ of cultural voluntarism can contribute to the reduction of tension and can serve as an important source of reconciliation and revitalisation for ruptured societies (Fisher and Fox, 2001).

Another particularly significant tendency has been the ‘culturisation’ of the entire voluntary sector – the process by which artistic activity ceases to be the preserve of purely cultural voluntary organisations and becomes a field in which most voluntary organisations are active. A study by the Greek Ministry of Health and Welfare records 10,000 voluntary organisations combining cultural activities with social care activities. Furthermore, two-fifths of all Greek voluntary organisations regarded the ‘cultural field’ as the main area of their activity (Panagiotidou, 2000). As a consequence, the adoption of cultural activities from the organisation of civil society should consist a significant choice of any competent authority. Cultural voluntarism organisations become exceptionally important in creating the conditions for participative democracy.

In the field of cultural voluntarism, there was a true explosion of activity. During this period, it became obvious that neither national nor local authorities were able to intervene in the country’s cultural problems or to implement a long-term and coherent cultural policy. This led to the emergence, in every Greek city and in almost every neighbourhood, of cultural organisations, often of excessive proportions. These organisations constituted a massive cultural movement, characterised by a high degree of voluntary participation.

The variety of forms of artistic expression and cultural creativity reveals the diversity of activities practised by cultural voluntarism organisations: for example, cultural clubs and cultural centres, art clubs and art workshops, educational circles, literary clubs, city beautification unions, publications on cultural issues, and informal groups without specific legal status. The cultural voluntarism movement of this period actively contributed to cultural production and artistic creation: it was the focal point of local intellectual and social life, and it came to be the most important factor in local cultural development.

In spite of the high degree of mobility observed in the forms of voluntary action, local cultural development in practice took place under the aegis of the political parties. Participation in one of the political parties of the time usually led to a parallel participation in a local cultural society of similar ideological and political leanings. As a consequence, these cultural voluntarism organisations could be described as colonised forms of collective activity. In other words, they do not appear as independent expressions of a collective will, but rather as subsidiary organisations, dependent on the political parties that either founded them or colonised them (Ioannides, 2002).

Voluntary organisations of this type are characterised by their manipulation by political parties, which renders them incapable of self-administration and self-definition. Despite the wide spread of the voluntary movement, the equally widespread patronage system created a stifling environment for participation in Greek civil society – an environment that did not allow for a pluralistic representation of interests, as is pointed out in macro-analyses of the period (Tsoukalas, 1996). It seems that, despite their active involvement in cultural life, colonised cultural voluntarism organisations do not contribute to an essentially local and self-determining cultural development.

2. Cultural statism: Dependence, colonization and transference of voluntarism participation

Ever since the early ’80s, new sociopolitical circumstances develop in Greece with the ascension of the socialists to the government and with the consequent effort for the establishment of a social state (Spourdalakis, 1998). In the field of cultural voluntarism, an impressively widespread quantitative development of cultural societies took place throughout the country, mainly due to the ad hoc funding policy adopted by the government. In this way, a kind of parallel ‘cultural welfare state’ was created. The state divided the total available funds between the largest possible number of organisations, without applying any criteria and without a strategy for their true development (Konsola, 1990). The relationship between the state and the cultural societies reflected a state policy that created dependence and led to colonization. This model of centralisation in the cultural field was taken up at the local level by local government. Municipalities now
implement coherent cultural policies, but at the same time they foster an idiosyncratic local cultural statism with pronounced colonising tendencies. On the one hand this practice ensures the survival of voluntary organisations, but on the other hand it effectively condemns them to stagnation.

Cultural statism, as implemented by the central as well as by the local authority, is confirmed by the phenomenon of the mobility and participation transferring of voluntary organisations’ members. It is obvious that, as a result of colonisation, any changes at the central or local level will directly affect voluntary organisations. For example, the results of the 1981 national elections led to hopes of overall change. Consequently, many of those who had parallel membership of a political party and a voluntary organisation chose forms of purely political action, carried out through political parties, or even took up state positions. In addition, local government’s quest for competent and experienced professionals drained away a significant proportion of the human resources of local voluntary organisations. Activities in the field of cinema provides a characteristic example. A study by the Greek National Centre of Social Research links the spread of municipal cinemas that took place in the early 1990s with the demise of the local cinema clubs that had been powerful voluntary organisations during the previous period (Ioanides-Tsakiris, 2000).

In order to adapt to the new circumstances, volunteers sought new ways of channelling their participation: in other words, a kind of substitute action to replace the forms of action they had left behind. In conclusion, the voluntary organisations of this period suffered leaks of their human resources to the state, the political parties and local government, and they started to show the first signs of decline and crisis. The transference of participation by their members marginalised voluntary organisations, but did not obliterate them from cultural life; in fact, it provided them with the conditions necessary for their survival.

3. Post-materialist motivations and individuality of NGO’s members

During the 1990s and at the dawn of the 21st century, Greece has entered a new socio-economic phase, characterised by the shrinkage of the welfare state. The economic dimension of the cultural sector is recognised as an important branch of economic activity, while artistic creation has been to a great extent commercialised and industrialised. A review of welfare policies has led to a crisis of political commitment, extending to all forms of social action that characterised traditional political activity (political parties, labour unions, etc).

Within such a stifling environment, social action experiences significant changes related to the emergence of new subjects for voluntary involvement. At the end of the twentieth century the voluntary sector was defined by the wide variety of its organisations and the great diversity of its activities and modes of operation. Organisations now have narrower range and lower penetration, since their activities are targeted at smaller audiences. Precisely because of these small-scale activities, organisations of civil society restore a human scale to participation, and enjoy more direct ways of motivating their members, based on the intimate ties between them.

At the dawn of the twenty-first century, the dominant type of these organisations is the targeted activity organisation. Greek organisations of civil society have developed by building on the personal element in its organisational practices, and is characterised by a strong localism, activating a micro-level voluntarism. This type of voluntarism is a powerful factor in shaping the organisations themselves and in encouraging individual forms of voluntary activity. The individuality of members is considered fundamentally important in the dynamics of voluntary organisations, in the realisation of their aims and in their organisational practices. In view of the fact that the individuality of volunteers is a mixture of their personal needs, attitudes and wishes, as well as of their expectations, ambitions and interests, an inherent contradiction is revealed, one that is registered in the chromosomes of every voluntary action. The incorporation of the individual element into the collective does not mean that the motivations of all voluntary activity are automatically consistent.

The Olympic Games of 2004 in Greece offered a good example of this mixture of motives. The need to involve a huge number of volunteers (80,000 citizens) in order for the Games to succeed offered a first-class opportunity for analysis and study. Most of the interviewees in studies of Olympic voluntarism said that they considered their participation in the Olympic Games as ‘a valuable experience for their future career’ or that they ‘expected some recognition of their contribution’ (Athens Olympic Games Organisation Committee, 2000).

The individual rationales of members of voluntary organisation for their collective activity are, to a great extent, post-materialist and individualised motivations, expressed through the demand for substantial and responsible roles with obvious effectiveness. At the dawn of the twenty-first century, within the stifling environment of a receding participatory culture, a powerful and multi-faceted micro-level voluntarism has developed. Modern Greek volunteers can be described as follows: on one hand they claim and adopt functional roles that can provide them with social recognition, and on the other hand they expect some return for their contribution. That is to say, the volunteers require motivations for participation and rewards that correspond to their individual expectations.

It is possible for organisations of civil society to have a wide range of motivations. It can sometimes be directed towards selflessly targeted action, where voluntary action is considered an end in itself; in other cases, it can have selfishly targeted objectives, whereby voluntary action is exploited as a means to achieve an end – thus depriving voluntarism of its essence.

4. Creation of a cliental relations mechanism: Non-governmental organizations in government programs

Administrative reform of the Interior Ministry applied to the Greek Local Authorities from 1st of January 2011 with the "Kallikrates” program, affects seriously all the events of municipalities, especially the cultural institutions and festivals (Ioanides 2011). The new architecture of Local Authorities confirms a global tend:
the state looks for ways of addressing the dramatic decline in financial resources of the welfare state shifting societal demands and responsibilities to other directions. This move is in line with the transformation from what we understood as a "government" in what is described as "governance" and Names as "hollowing out of the State" (Peters-Priere, 2006). In this way, the Greek state abandons its former role and it is not loaded up its social obligations. So the state promotes social demands both "downwards" (Regions and Municipalities) and "upwards" (supranational organizations) and also "out" (private sector, civil society) so as to obscure more easily the social contradictions.

In this background and in the last period of Greece, where a multifaceted crisis is taking place, some new trends and practices are taking advanced in the fields of social, cultural and economic life of the country. In civil society, developments seem to form a completely different landscape. In the spring of 2011, the Ministry of Labour had designed programs for combating unemployment, by the title of: "Programs of community service". The implementation of these programs assigned to Non-Governmental Organizations. Based on the foregoing, from October 2012 until January 2014, 110,000 unemployed people would have hired by the NGOs. These organizations are essentially constitute the physical employer. Then, the NGOs as "employers" "rent" workers in local government bodies in order to perform various tasks by signing "Memorandum of collaboration". The contract lasts for five months without any possibility of renewal or extension.

In this way "starts" a new form of formal flexible work arrangements that legitimize with their participation the NGOs themselves. Feature is, that the salary is well below under the minimum wage agreed by the Collective Labor Agreement and accepted by all social partners. More specifically, the mixed daily fee will be 25 €, ie the monthly gross salary amounts to 625 €, regardless of knowledge, experience or other qualifications of each employee. At the same time, NGOs are involved in a game of millions as they manage a very large amount of € 344 million, while their fees for managing the programs is 5% of the amount, ie an amount of 17 million €.

It is worth noting that NGOs, in order to participate in the implementation of these programs should have a "managerial competence". That is, a certificate stating that they have the ability to manage projects. However, chronic weakness in the area of Greek NGOs are not allowed to many of them having such a certificate. This led some NGOs to "rent" management competence certificates from private companies in order to participate in implementation of these programs. Moreover, the vast majority of NGOs involved have been established in recent years with big names that are difficult to refer to programs hiring workers. We mention three indicative names: "Alternative searches," "Society of equal opportunities ': Social Support Programs." Also, the recruitment criteria are vague. As a result it is very possible a creation of a cliental relations mechanism in which the NGOs are involved. The former is indicated by the fact that some NGOs in order to participate in these programs were established only a few months ago. NGOs who represent a new version of content, structure and function.

The alteration of a portion of Greek NGOs in character and nature operating at national level, is a fact. The new relationships of partnership between government and NGOs are close with relations of dependence and subordination rather than cooperation for the promotion of volunteerism and civil society. Synergies that should be asking, are replaced with well-paid profit activities.

5. References


Council of Europe (1999), Project on education for democratic citizenship: presentation of the sites of citizenship, Document DECS/EDU/CIT (99) 58, Strasbourg: Council of Europe.

Fisher, R., and Fox, R. (2001), Culture and civil society: new relationships with the third sector, Policy Note No 6, Cultural Policies Research and Development Unit, Strasbourg: Council of Europe.


Infection by Human Papilloma Virus (HPV) in Males and Females and social stigma

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Abstract:
There are about 100 types of human papilloma virus which can affect humans. They can be transmitted through sexual contact, no sexual contact, the vertical transmission from the mother to the infant during the delivery and postnatally. More than half of sexually active people will be infected by one or more HPV viruses during their lifetimes. Many of them will acquire one during adolescence. The majority of HPV infections are subclinical with subsequent clearance by the immune system. HPV is cleared via a cell-mediated immune response. Infection with high-risk HPV is the most significant risk factor for cervical cancer. Estimates of duration of HPV infection are 8 months. Median duration of infection for oncogenic types is estimated to be 13 months and less for nononcogenic HPV types.

Usually the genital warts have no symptoms. Some times when the warts are large internally, can cause painful intercourse, urinary retention, or rectal pain. They may be seen on the vulva, vagina, cervix, penis and scrotum. Both women and men can have involvement of the perineum as well as the anal and oral cavities. One vaccine is against the two types 16 and 18 (Cervarix), while the other vaccine is against the four types (quadrivalent): 16, 18, 6 and 11 (Gardasil). The last one is highly effective not only to prevent cervical cancer but also is effective to prevent genital warts related to HPV types 6, 11.

1. HPV Infection in Females
Human papillomavirus (HPV) are double-stranded DNA viruses include more than 100 types, which are categorized as cutaneous or mucosal. The HPV DNA is contained in a capsid shell composed of two structural proteins; the major (L1) and minor (L2). HPV's cause the proliferation of suprabasal cells in order to facilitate their own replication. Approximately 40 HPV types infect the anogenital region. Although most genital HPV infections are asymptomatic and transient, some infections persist. It infects the cervical epithelium and is responsible for about 500 to 700 new cases of cervical cancers in Greece. The virus does not spread by the touching of inanimate objects since there is need to be skin to skin contact. The risk to get the HPV infection augments as increase the number of the sexual partners.

They can be transmitted by any type of sexual contact as it is the common sexual intercourse, the oral and the anal sex. The types responsible for the cervical cancers include the HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68, 73, and 82. From these, the most aggressive are the types 16 and 18. They cause about 70% of all cervical cancers, and that was the reason to be included in both vaccines against cervical cancer. The HPV types 45 and 31 are responsible for about 10% of cervical cancers and finally the types 6 and 11 are found in at least 95% of genital condylomata specimens. The type 16 is responsible for the most oropharyngeal cancers and is estimated to cause 63% of these cancers.

As far as it concerns the oncogenic types, cause initially moderate or severe dysplasia, which are precancerous lesions, and finally 10 % to 15% of them will develop cancer if remain for more than 7-10 years on the cervix.

The prevalence of the cervical HPV infection is high till the age of 25 years and is reduced dramatically after the age of 30 years. In a study of more than 3800 women aged 18 to 40 years, the overall prevalence of cervical HPV infection was 39.2%. Detection of high- and low-risk HPV genotypes declined with increasing age.

Most HPV infections are usually transient. One example is that of anal HPV infections. Despite the fact that are quite common, they tend to resolve rapidly. One study showed that 50% of sexually active women had at least 1 incident of anal HPV infection. From those the 58% had documented viral clearance during a 15-month follow-up period.

2. HPV Infection in Males
There are more than 100 types of HPV, of which more than 40 are transmitted sexually, affecting men and women. We estimate that in Western countries most sexually active people (probably 85%) will be infected from HPV at some point in their lives. In men the cancers due to HPV viruses can affect the penis, the anus and the oropharynx. The incidence of penile cancer itself is 0.69 in 100,000 men.
The anal cancer is diagnosed in 1.6 per 100,000 males and females per year. The oncogenic types 16 and 18 are responsible for the 36% of penile cancers and 93% of anal cancers. Anal receptive sex has a high risk of HPV transmission, whereas the risk of transmission with digital–genital and oral–genital contact appears to be low. Depending on the sexual preferences some groups can have a high risk to develop anal cancers. Anal cancers are 17 times more frequent such as gay or bisexual men than heterosexual men. Men demonstrated that both vaccines are highly effective. Based on a review of the literature, it seems necessary to vaccinate both males and females to prevent the spread of HPV types 6, 11, 16 and 18. Because HPV can be transmitted from males to females and vice versa, it is beneficial for both sexes to be vaccinated. The vaccine is effective for at least 5 years but we do not know the long-term protection."
information may lead to depression, stress, shame, sexuality distortion, blame, suspicion and loss of partner intimacy.

6. Conclusion
HPV is a highly infectious organism and is transmitted during skin-to-skin contact via micro abrasions and other local trauma. The condoms do not protect 100%. In our days we have many tests for the diagnosis. In the case of high grade lesions we can treat the patient by removing the infected area. In the case of condylomata acuminata the treatment may involve laser, diathermy, cryotherapy, etc. Topical we can use podofilox, imiquimod or other creams with very good results.

Finally there are two vaccines which can protect 70% both from cervical cancer and one of them 98% from condylomata acuminata in males and females.

7. References
Chapter 5:

Entrepreneurs’ beliefs on sustainable tourism practices: evidence from Karditsa and Kalabaka

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Abstract:
This study presents insights into the profile of entrepreneurs’ sustainable actions. The empirical analysis is based on a sample of 287 entrepreneurs running tourism business in the cities of Karditsa and Kalabaka. Results suggest that younger entrepreneurs are probably more informed about the potential for the sustainability of the regions and are more likely to pay to green their tourism businesses. In general, women are more likely than men to have increased awareness of options toward sustainability tourism development. Entrepreneur’s income is also a statistical significant parameter to willingness to adopt sustainable entrepreneurship plans. Finally, entrepreneurs reported as important for the promotion tourism sustainability the creation of knowledge networks and web sites focused on sustainable business and the promotion of environmental labels and certified management systems in tourism businesses.

Keywords: Entrepreneurs; Tourism sector; Sustainability

JEL: Q01; L26; L83

1. Introduction
The promotion of tourism sector has increased within Europe. Especially, for countries under recession tourism is supposed to be a key to create jobs and enhance the economic development. In this context, emphasis is given to the promotion of mass tourism, disregarding the possible negative effects for the environmental quality. Thus, a shift to sustainable tourism patterns is necessary because it can combine environmental and economic benefits. However, the penetration of sustainable development in the tourism sector is strongly related to the acceptance and adoption of relevant practices by tourism stakeholders.

Tourism sector can be sustainable given that protect local culture, contribute to environmental protection and improve social well-being (Swarbrooke, 1999). As Fennell (1999) pointed out, it is possible for tourism sector to promote environmental protection by implementing relevant educational programs. Entrepreneurship is a key factor for the promotion of tourism sector in Greece. Thus, the degree that stakeholders of tourism sector are implemented in sustainable practices affects the effectiveness of a sustainable tourism plan for a region.

Several studies have been conducted on the issue of entrepreneurship and sustainable development (Lordkipanidze et al. 2005; Tilley and Young, 2006; Hall et al. 2010; Thompson et al. 2011). There are several significant aspects of sustainable entrepreneurship. Most of the studies approach sustainable entrepreneurs as individuals who combine economic, environmental, and social aspects of sustainability into their business (Young and Tilley, 2006; Parrish, 2010). Most of the previously mentioned studies have focused on the theoretical conceptualization of sustainable entrepreneurship. Other researchers have examined the role of employees on the sustainable entrepreneurship (Wolf, 2012) or visitors’ perspectives on sustainable tourism patterns (Nicholas and Tampa, 2010) 2010). In Greece, tourism activity increases putting great pressure to natural environment. The aim of this study is to examine the determinants that affect entrepreneurs’ attitudes regarding sustainable tourism practices. For this purpose, we employ cross-section data from Karditsa and Kalabaka in Greece. Unlike previous studies, we chose to estimate the profile of the eco-entrepreneurs that are prone to sustainable practices because we expect non-eco-friendly entrepreneurs to be a potential market segment for educating towards sustainable entrepreneurship and an important stakeholder for the promotion of sustainable tourism development.

2. Methodology
2.1 Sampling and data collection
The research provides some insights into the determinants that affect entrepreneurs’ perspectives towards sustainable tourism management. Data for the current research were obtained from a data set of 350 entrepreneurs who are involved with tourism. The research took place in the cities of Karditsa and Kalabaka in 2013. We chose the specific areas for investigation because of the following similarities:
- They both belong in the same regional unit, in the regional unit of Thessaloniki
- They are regionally urban centers in rural areas
- They both belong in neighboring prefectures, with the one being the closest city to the other.
– They are both surrounded by an environment of outstanding natural beauty. In particular, Karditsa city is very close to Plastira Lake, whereas Kalabaka city is very close to Meteora.
– Both cities were under the “Leader+ European Program”, for the period of 2007-2013.

The survey was conducted using an anonymous structured questionnaire. Given the purpose of our study, we interviewed entrepreneurs at their businesses. The response rate was almost 82% and the survey resulted in a data set of 287 entrepreneurs. The questionnaire consisted of two sections: The first section included closed type questions on demographic characteristics of the entrepreneurs such as gender, age, educational background and family status. In addition, fourteen questions were included, which aimed to describe the economic performance of the business. In particular, entrepreneurs were asked about their revenues and their monthly private income, the type of employment, the people that are employed in the enterprise and the marketing strategy that they follow. In the second section, entrepreneurs were asked about the environmental performance of their businesses and their attitudes towards sustainable tourism management.

2.2 Model specification
Empirical results are based on the estimation of logistic regression models. First an ordered logistic regression is used for predicting the awareness of entrepreneurs towards the potentials for sustainable tourism development in their area. Next a binary logistic model is estimated to predict the probability that an entrepreneur willingness to greening his tourism business, as identified by the values of the explanatory independent variables. Therefore, in the empirical study, we employed the following expanded specifications were estimated.

First, an ordered logistic regression model is estimated to predict the level of agreement regarding the statement “I am aware of potentials for sustainable tourism in my area” (Answers: totally disagree: 1, disagree: 2: neutral: 3, agree: 4, totally agree: 5). The general specification of the proposed model is:

$$y^*_i = b_i + b_{\text{gender}} + b_{\text{age}} + b_{\text{income}} + b_{\text{owner}} + b_{\text{employees}} + b_{\text{previous}} + b_{\text{envi}} + \epsilon_i$$ (1)

where $y^*_i$ is the latent variable measuring the level of entrepreneur’s awareness toward potentials for sustainable development in their area; gender, is a dummy variable accounting for 1 if the respondent is female and zero if male; Age is the entrepreneur's age; income, is the entrepreneur’s monthly private income in euros; owner, is a dummy variable accounting for 1 if the respondent is the owner of the business and zero otherwise; employees, is a qualitative variable expressing the number of employees per business; envi, is a dummy variable accounting for 1 if the entrepreneur is aware of environmental problems of his area and zero otherwise; previous, is a dummy variable accounting for 1 if the entrepreneur has previously implemented an ecofriendly action to his company such as recycling and zero otherwise; and $\epsilon$ is an error term.

$$\log\left[P(y = 1)\right] = c_0 + c_{\text{gender}} + c_{\text{age}} + c_{\text{income}} + c_{\text{owner}} + c_{\text{employees}} + c_{\text{previous}}$$

+ $c_{\text{envi}} + \epsilon_i$ (2)

where the dependent variable is a binary variable indicating whether the entrepreneur $i$ is willing to pay the cost for greening their tourism business or not; specifically, the variable takes the value 1 when the entrepreneur is willing and zero otherwise. gender, is a dummy variable accounting for 1 if the respondent is female and zero if male; Age is the entrepreneur's age; income, is the entrepreneur’s monthly private income in euros; owner, is a dummy variable accounting for 1 if the respondent is the owner of the business and zero otherwise; employees, is a qualitative variable expressing the number of employees per business; envi, is a dummy variable accounting for 1 if the entrepreneur is aware of environmental problems of his area and zero otherwise; previous, is a dummy variable accounting for 1 if the entrepreneur has previously implemented an ecofriendly action to his company such as recycling and zero otherwise; and $\epsilon$ is an error term. The empirical results from the estimation of Eq. (1) and (2) are presented in the next section of this study.

3. Results
In this section we present the results of the statistical and econometric analyses to estimate the determinants that affect entrepreneurs’ beliefs towards sustainable tourism management.

3.1 The profile of the entrepreneurs and the economic performance of businesses
From the sample of 287 entrepreneurs in question, 42.5% were women and 57.5% men. Most entrepreneurs were university-educated (45.2%) and 36.9% had completed secondary education. As regards their age, most respondents were between the ages of 26 and 40 years (49.5%); 12.2% were between 20 and 25 years, 21.6% between 41 and 50 years and 16.7% above 50 years. 53.0% of entrepreneurs were married. The entrepreneurs’ average monthly private, non property-related, income was €880, with a large percentage (25.1%) of monthly incomes being no higher than €400. The income of 30.3% of entrepreneurs varied between €400 and €800, 15% of entrepreneurs’ declared income varied between €801 and €1,200 and 24% declared having an income above €1,201. The majority (84.3%) reported that they were the owners of the business and the rest were employees. The businesses’ average years in operations were 14.6. From the sample of entrepreneurs in question, 20.2% run hotels or resorts 16.7% restaurants and coffee shops, 39% commercial shops and the rest (24%) souvenir shops. The great majority of the respondents (84.3%) were employed exclusively in this

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particular business. Members of the family of the owner were also employed in the business (51.2%) and those people employed outside the family were local workforce (91.1%). On average each entrepreneur employed four persons and only 13% of the enterprises employed more than ten persons per company. An 89.2% of the enterprises operated all year round and the rest seasonally. However, most of the enterprises made more profits during summer (64.5%) and holidays seasons (41.1%) compared to the other seasons. A 32.4% of the entrepreneurs did not advertise their business and 50.7% thought that small and medium enterprises can not compete with bigger ones. Most of the entrepreneurs considered their business profitable. However, only 19.2% of entrepreneurs had joined a local development program such as Leader. Finally, local competition (59.6), lack of innovation (11.5%) and lack of access to financing (13.2%) were characterized as the most important problems to entrepreneurship.

**Entrepreneurs’ beliefs towards sustainable tourism management**

Entrepreneurs were asked about the environmental performance of their businesses and their perspectives on sustainable tourism management. Almost one out of two (46%) of the entrepreneurs didn’t recognized that the economic activities of their business contribute to the degradation of the natural environment. 36.2% thought that they contribute a little and only 21% answered “very much”. A 36.2% of the respondents were neutral as to if their customers were willing to pay more for services which are environmentally friendly, whereas either disagreed (34.8%) or totally disagreed (20.2%) with that option (figure 2). As shown in figure 3, 51.2% of entrepreneurs believed that consumers visit their area because of its history. However, 36.9% thought that visitors prefer their village to come in contact with the natural environment or because they find it as an opportunity to escape from everyday routine.

- **Figure 1.** Percentage of replies to the question: Do you think that the economic activities of your business contribute to the degradation of the natural environment?

- **Figure 2.** Percentage of replies to the question: In your opinion, are your customers willing to pay more for services which are environmentally friendly?

- **Figure 3.** Percentage of replies to the question: For which of the following reasons, do you believe that visitors choose your area?

Regarding the question “Can you tell us, if your enterprise took any action to contribute to environmental protection?” about half of the entrepreneurs (44%) answered positively. Accordingly, the
majority of respondents (77%) reported that they were willing to participate in the cost of creating an infrastructure to contribute to environmental protection. In regard to the reasons for not adopting businesses actions that do not to harm the environment, 40.1% of entrepreneurs declared financial reasons, 15.4% bureaucracy, 27.2% lack of know how, 14.2% lack of interest and only 3.1% lack of staff.

With respect to the environmental actions that entrepreneurs had implemented in their business, about half of the respondents had done recycling, whereas 64.1% had replaced inefficient lamps. However, the majority of the entrepreneurs (72.8%) were willing to use in their business environmentally friendly cleaners and 65.5% to use organic products. Next entrepreneurs were asked to define the term “sustainable development” of a region. It is interesting that only 9.1% selected “environmental friendly activities” or “solely economic activities” (15.7%) and 74.9% chose “economic activity with respect to environmental protection”. However, as shown in figure 6, 33.8% of the entrepreneurs reported that they were moderately, or a little (25.1%) informed about the potential for sustainable tourism development in their area. Finally, only 6.6% of the entrepreneurs were “very much” informed about the potential for sustainable tourism development in their area (figure 4).

**Figure 4.** Percentage of replies to the question: Are you informed about the potential for sustainable tourism development in your area?

With respect to the question “What, in your opinion, are the essential elements for sustainable tourism?” 70.2% of interviewees thought respect of the local culture and natural environment and 41.8% the education of local population and tourist guides towards sustainability. Only 5% of entrepreneurs answered that limiting the number of tourists in their area is a solution to achieve sustainability. However, 58.9% of entrepreneurs characterized as essential element for sustainable tourism the use of existing infrastructure with continuous improvements, or the effort to enhance the economic benefits from tourism and only11.3% chose the training of tourists on sustainability issues (figure 7).

**Figure 7.** Percentage of replies to the question: What, in your opinion, are the essential elements for sustainable tourism? (multiple answers).

Finally, entrepreneurs were asked about the actions that they consider as important to support tourism sustainability. In particular, 56.7% of entrepreneurs reported as important the creation of knowledge networks and web sites focused on sustainable business and 26.2% the promotion of environmental labels and certified management systems in tourism businesses. According to the entrepreneurs, important factors for tourism sustainability were the promotion of initiatives or innovative ideas among business towards sustainability (36.2%) as well as the idea of informing tourists about the benefits of sustainable tourism (33.3%) (Figure 8).
Logistic Regression Analysis

Several interesting results were obtained from the empirical estimation of Eq. (1). Table 1 summarizes the empirical results of the ordered logit equation’s estimated coefficients with respect to the awareness regarding the potentials for sustainable tourism development in the area. Table 2 presents the estimated coefficients regarding entrepreneurs’ willingness to pay for greening their tourism business.

In particular, the parameters of the ordered probit model were estimated by maximum likelihood estimation. Estimation results are shown in Table 1. First, the main focus of this discussion is the interpretation of the statistical significance of the independent variables, the so called marginal effects. The changes in the probability levels of the dependent variables are also estimated, which provides an interpretation of the substantive effect of the independent variables. This allows one to interpret changes in the probability of the agreements levels for a change in a given parameter, relative to the reference case. As shown, in the second column of Table 1, in the case of entrepreneur’s socioeconomic variables, all the variables are statistically significant in 0.01 or 0.05 levels. In particular, results imply that an increasing negative correlation exists between level of awareness of the potentials for sustainable tourism development in the area and age profile.

Each addition year of age is associated with 9.7% (OR=0.907) decrease in the odds of reporting agreement in relation to awareness, when all other values held constant. Females are more likely to be aware of the potentials for sustainable tourism development in the area compared with men. The odds of reporting awareness are 1.185 times greater for female in comparison to men. Further, an increasing positive correlation exists between level of agreement regarding awareness of the potentials for sustainable tourism development in the area and entrepreneurs’ income. This means that in relation to highly income groups of entrepreneurs the odds of agreement to be aware of the potentials for sustainable tourism development in the area increase by almost 19% (OR=1.188) all other remaining fixed. Similarly, the variables “advertisement” and “price” are not statistically significant. Results indicate that ownership status (owner) and entrepreneur’s past experience regarding ecofriendly practices in their business (previous) are not statistical significant variables. Contrary, the odds of entrepreneur’s awareness of the potentials for sustainable tourism development in the area are lower by 0.951 times in relation to number of employees occupied in their business. Further, an increasing positive correlation exists between level of awareness of the potentials for sustainable tourism development in the area and entrepreneur’s awareness of the environmental problems of the area, at 1% level of significance. The odds of reporting agreement to the awareness of the potentials for sustainable tourism development in the area are 1.126 times greater for persons who are know the environmental problems of their region, in comparison with others, ceteris paribus.

Several interesting results were obtained from the empirical estimation of Eq. (2). Table 2 presents the results of the fitted binary logistic model with respect to entrepreneur’s willingness to pay for greening his business. As follows from Table 2, the variable “previous” is statistically insignificant. Contrary, the variable “age” is statistically significant at a 1% level. In particular, the coefficient of “age” is -0.048 and the relative risk of this particular variable is 0.953 that implies that the corresponding percentage change is -0.047. This means that in relation to age, the odds of entrepreneur’s willingness to pay for greening his business decrease by 4.7 per cent, ceteris paribus. In case of “gender” results imply that men rather than women have increased probability to be willing to pay for greening their businesses by almost 1.3%, ceteris paribus. In the case of ownership, result implies that the corresponding percentage change is 0.485. This means that, as expected, owners are more likely to be willing to green their business compared to employees all other remaining fixed. Similarly, highly income groups of entrepreneurs are more likely to be willing to pay for greening their companies increase by 0.127 in relation to at 5% level of significance. Finally, as the number of employees increases the probability of be willing to pay for greening the company increases too, by almost 3%. This relation was found statistically significant at 10% level of significance. The same holds for entrepreneurs who stated that they were aware of the environmental problems of their region.
Table 1. Estimated ordered logistic regression of entrepreneur's awareness towards the potentials for sustainable tourism development in their area (Totally disagree: 1, disagree: 2; neutral: 3, agree: 4, totally agree: 5). (n=287)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Estimated Coefficients</th>
<th>Odds Ratio</th>
<th>Marginal Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Totally Disagree</td>
</tr>
<tr>
<td>gender</td>
<td>0.169** (2.78)</td>
<td>1.185</td>
<td>-0.019</td>
</tr>
<tr>
<td>age</td>
<td>-0.032*** (-2.97)</td>
<td>0.097</td>
<td>0.004</td>
</tr>
<tr>
<td>income</td>
<td>0.173** (2.04)</td>
<td>1.188</td>
<td>-0.019</td>
</tr>
<tr>
<td>owner</td>
<td>0.289 (0.86)</td>
<td>1.335</td>
<td>-0.036</td>
</tr>
<tr>
<td>employees</td>
<td>-0.051** (-2.02)</td>
<td>0.951</td>
<td>0.006</td>
</tr>
<tr>
<td>envi</td>
<td>0.119*** (2.65)</td>
<td>1.126</td>
<td>-0.014</td>
</tr>
<tr>
<td>previous</td>
<td>-0.229 (-1.38)</td>
<td>0.796</td>
<td>0.026</td>
</tr>
<tr>
<td>_cut1</td>
<td>2.892</td>
<td>SE: 0.553</td>
<td></td>
</tr>
<tr>
<td>_cut2</td>
<td>-1.463</td>
<td>SE: 0.536</td>
<td></td>
</tr>
<tr>
<td>_cut3</td>
<td>0.0587</td>
<td>SE: 0.528</td>
<td></td>
</tr>
<tr>
<td>_cut4</td>
<td>1.767</td>
<td>SE: 0.552</td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-216.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.299</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LR chi²</td>
<td>124.90 (0.0008)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ***, ** represent levels of significance at 1% and 5%, respectively. Z statistics are presented in parentheses.

Table 2. Estimated binary logistic regressions of entrepreneur’s willingness to pay for greening their tourism business (yes: 1 no: 0) (n=287)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Estimated Coefficients</th>
<th>Odds Ratio</th>
<th>e^β - 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.66*** (3.33)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>gender</td>
<td>-0.003* (-2.01)</td>
<td>0.987</td>
<td>-0.013</td>
</tr>
<tr>
<td>age</td>
<td>-0.048** (-3.36)</td>
<td>0.953</td>
<td>-0.047</td>
</tr>
<tr>
<td>income</td>
<td>0.19** (2.70)</td>
<td>1.127</td>
<td>0.127</td>
</tr>
<tr>
<td>owner</td>
<td>0.911** (1.93)</td>
<td>1.485</td>
<td>0.485</td>
</tr>
<tr>
<td>employees</td>
<td>0.027* (1.76)</td>
<td>1.027</td>
<td>0.027</td>
</tr>
<tr>
<td>previous</td>
<td>-0.251 (-0.55)</td>
<td>0.778</td>
<td>-0.222</td>
</tr>
<tr>
<td>envi</td>
<td>0.116* (1.88)</td>
<td>1.017</td>
<td>0.017</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-144.862</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.271</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosmer and Lemeshow</td>
<td>2.19 (0.544)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ***, ** represent levels of significance at 1% and 5%, respectively. Z statistics are presented in parentheses.

4. Conclusions
This paper has focused on providing insights into which factors affect entrepreneurs’ preferences and attitudes regarding sustainable tourism management in the regions of Karditsa and Kalabaka in Greece. The empirical results suggest that entrepreneurs place importance to the greening of tourism either by adopting relevant
actions within their business, such as the promotion of environmental management systems, or by supporting similar action independently such as participating in campaigns to inform tourists about the benefits of sustainable tourism. However, entrepreneur’s awareness about the potentials for the development of sustainable tourism in the area as long as entrepreneur’s willingness to pay for greening their tourism business are supposed to be important parameters to enhance sustainable tourism development of an area. In particular, this study also shows that elders are less informed about the potentials for sustainable development and less willing to pay their businesses compared to younger ones. Men are estimated to be less informed but more willing to act to the direction of greening their tourism business. Another important factor that positively affects tourism entrepreneurs’ choice to act eco-friendly is monthly income.

Taking into account that tourism sector is considered to be important for the economic rural development of a city, it is important for enhancing sustainable development that entrepreneurs consciously adopt sustainable tourism business lifestyles. As entrepreneurs become more eco-friendly, the impact of their business in the environment is limited. In this context, investigating the socioeconomic profile of entrepreneurs who are informed about the potentials for sustainable tourism development in the area and are willing to act in a similar manner would have multiple useful policy implications. In particular, in the business sector, entrepreneurs could expand their market share by focusing their advertising campaigns on the eco-friendly customers. On the social level, motives to encourage sustainable tourism management should address to non-eco-entrepreneurs and thus contribute to environmental protection. However, further research is needed to achieve this goal. Specifically, there must be an emphasis on the various aspects that form an eco-friendly business attitude. Finally, further research is needed on the specific economic and other motives that can encourage a businessman of the tourism sector to adopt the principals of sustainability.

5. References
Lordkipanidze, M., Brezet, H., Backman M. “The entrepreneurship factor in sustainable tourism development”, *Journal of Cleaner Production*, 13, 8, June 2005 pp. 787-798.