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Guest Editor Dr. George Sidiropoulos, University of the Aegean

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Aims of the Journal: Journal of Regional Socio-Economic Issues (JRSEI) is an international multidisciplinary refereed journal the purpose of which is to present papers manuscripts linked to all aspects of regional socio-economic and business and related issues. The views expressed in this journal are the personal views of the authors and do not necessarily reflect the views of JRSEI journal. The journal invites contributions from both academic and industry scholars. Electronic submissions are highly encouraged (mail to: **gkorres@geo.aegean.gr**).

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Editorial Note

Within current financial crisis worldwide, a great number of modern economies face especially challenging circumstances, characterized by economic slowdown, along with severe socio-economic deficiencies. Not surprisingly, financial crisis effects remain among the leading political and development concerns for most countries and regions of the world. Although the alleviation of this crisis is a primary policy objective, there is still considerable debate as to the most effective way to achieve this objective, with attention turned to the distributive consequences of different paterns of socio-economic growth. Investments in human capital (education, health, and related social services) also came to be recognized as a key component of sustained socio-economic growth. As a result, new programs were developed specifically for vulnerable social groups, whose purpose is to review experiences with different approaches to development process, drawing from them general lessons, which could be used to improve the design and management of development projects and programs. These strategies sprang from the need for an integrated approach to development process, in which supportive macroeconomic growth policies are combined with systematic efforts to universalize education, health, and other basic services and with social safety nets and targeted programs.

This Volume 6, Issue 1 of the Journal of Regional Socio-Economic Issues considers these above-mentioned issues, providing both an economic and social perspective to increase the information base on these matters. More specifically, this Issue of the Journal of Regional Socio-Economic Issues covers the following sections:

- Can Greek Cities be Smart? (by Despina Dimelli)
- Financial Decision-Making and the Psychology of Albanian Families (by Eduina Guga, Orjola Musa and Lorenc Kociu)
- Incidence, Depth and Severity of Household Poverty in Southern Ethiopia: Understanding the statuesque in the fastest growing City of the Region (Hawassa) (by Tsigereda Getnet Beyene and Nigatu Regassa Geda)
- The multiplier of tourism and its beneficial properties for the national and local economy (by Karagiannis Stephanos and Antoneta Polo)
- Sustainable Cooperative management among fishermen: A challenge for Greece (by Georgios O. Tsobanoglou and Eirini Ioanna Vlachopoulou)

To conclude, the Editor would like to thank all the participants of the Journal of Regional Socio-Economic Issues, who, through this Issue, have contributed with their academic and research works, providing a platform for scientific dialogue, leading to knowledge creation and dissemination.

The Guest Editor,

Associate Professor Dr. George Sidiropoulos: Department of Geography, University of the Aegean, Greece.

Can Greek Cities be Smart?

Abstract:
The Information and Communication Technologies today can contribute to the optimization of the cities function. This is succeeded by the enhancement of their effectiveness, the improvement of their competitiveness and the provision of new ways of addressing the problems of poverty, unemployment, social exclusion and degraded environment. Major cities around the world are already using new technology systems in order to improve the quality of their residents' life, to minimize the environmental impact of intense urbanization and highlight the comparative advantages these cities present. International experience has to demonstrate many good practices of ICT application in ways that make cities more sustainable. Smart mobility systems, smart water management, smart governance and also smart houses development, are some of the applications that are developing in cities today.
The ICT practices that are world widely developed and the possibilities for the adoption of similar practices in Greek cities were the reason for the current paper, which is constituted by three sections. Initially in its first section, the paper investigates the levels and the sectors of ICT development in the urban web. In the second section it examines, as case studies, cities of Asia and Europe that have successfully incorporated ICT applications in their function. Finally in the third section, it focuses on case studies of ICT applications in the Greek cities function. The paper investigates the effectiveness of smart networks, their integration in everyday's city's function and the problems that limit their application, mainly because of their inability to coordinate with spatial policies. Finally the paper proposes good practices in ICT function that can be adopted by the Greek cities for the achievement of their smart development.

Keywords: smart cities, definition, ICT, sustainable development.

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1. Introduction

According to the United Nations more than one half of the world population lives now in urban areas, and virtually all countries of the world are becoming increasingly urbanized. Globalization, with trade liberalization measures and fast technological changes altering the relations of production, distribution and consumption, has very substantial effects on city development. As one important consequence, (network-) economies evolved "[…] with easier physical movement, globalized players making decisions with no regard to national boundaries"(Thornley, 2000). The ongoing reduction of differences and barriers between nations also makes cities more similar in their preconditions.

Cities in Europe face the challenge of combining competitiveness and sustainable urban development simultaneously. This challenge is likely to have an impact on issues as housing, economy, culture, social and environmental conditions changing a city's profile and urban quality in its composition of factors and characteristics. The use of Information and Communication technologies in today's cities function can create more sustainable environment in many ways. But what makes a city smart? Making a city "smart" is emerging as a strategy to mitigate the problems generated by the urban population growth and rapid urbanization. Although there is an increase in frequency of use of the phrase "smart city", there is still not a clear and consistent understanding of the concept among practitioners and academia. Today many cities worldwide are trying to become smart. They develop smart applications that makes their citizens life easier, they use smart ways in order to reduce pollutants emissions and encourage citizens participation in governence. The aim of the paper is to examine the definition and the features of a smart city as many different view have been formulated. It examines what makes a city smart and it focuses on good practices developed by cities pioneers, both at the European and global level, regarding 'going smart' efforts. It examines two examples of two Greek smart cities and it points out the need for a better policy coordination and ICT management in order to achieve more sustainable urban environments.

2. Smart City's Definition

Today it is estimated that 70 cities worldwide have more than 500.000 inhabitants while the investments for new infrastructures in these cities are 40 about trillion dollars. According to the World Heath organization the World's urban population is expected to double by 2050, as the number of urban residents is growing by nearly 60 million people every year. These major

urbanization phenomena require new means for the management of the urban conditions complexity. In this frame the use of ICT applications in cities function and management seem as key elements for urban problems as unemployment, cohesion and environmental exploitation. The actions that are globally taking place show that 40 metropolitan areas around the world will be mutated until 2020 into smart cities. But what are smart cities?

In the framework of a globalized economy, the rapid technological changes in production handling and consumption, cities are today changing with faster rates compared with the past, in order to adjust to this new reality. Because of these new circumstances, cities are applying practices for their optimum function that with the ICT usage will lead to complete, competitive and sustainable environments. Many definitions have been formulated for the description of a smart city. This happens because it is a new concept that includes a wide range of cities with different sizes and characteristics. Since each city has its own history and future potential, the term smart city has to cover a range of cities with completely different features. Moreover, the concept of smart city is formulated by the combination of several technologies, social and economic factors and different policies in each case. Some smart city definitions focus on ICT as a technology driver and enabler, while broader definitions include socio-economic, governance and multi-stakeholder aspects such as the use of social participation to enhance sustain ability, quality of life and urban welfare.

As "smart city" is defined the city that uses new ICT applications, in order to optimize it's function and improve its resident's quality of life, by making all services and applications available to everyone. In Hollands' (2005) opinion, the validity of any city's claim to be smart has to be based on something more than the use of information and communication technologies (ICTs). Holland makes this observation because cities all over the world are beginning to claim that they are "smart" because they employ ICTs in their operations. According to Komninos, (2008) smart cities are systems of innovation that are structured by three levels: the physical space, where knowledge activities take place, the institutional space, where the innovation ecosystem is developed and the digital or intuitive space. Each level corresponds at a kind of intelligence: human, collective and artificial respectively. Giffinger (2009) defines as smart, the city that functions correctly, based on a combination of characteristics and activities conducted by independent citizens.

According to Caragliu, Del Bo and Nijkamp (2009) a city is smart when it's social and human resources combined with the communication infrastructures lead to the sustainable

economic development and the improvement of their citizen's lives through the best management of their natural resources.

As smart city is also defined the city of technological integration that adopts a strategic approach towards its sustainability, its resident's welfare and its economic development. Its technological solutions are related to smart management, smart structures, smart transport and smart utility networks (Pike Research, 2011). According to another definition, smart are the cities that develop public wireless networks, implement e-government initiatives, give access to areas of the city through websites, integrate public transportation with intelligent transportation systems or invent ways to reduce the environmental footprint and reduce the amount of non-renewable energy use (ABI Research, 2011).

Another approach for the definition of the smart city is the one that defines as smart, the city that invests in human resources and capital, combined with new digital infrastructure. Smart cities create sustainable conditions for economic growth, while they improve the quality of their resident's life. In a smart city, networks are interconnected by feeding each other in such way that the technologies can collect, analyze and distribute data in order to improve its efficiency, competitiveness and sustainability.

The above mentioned definitions tend to balance the role of economic and social issues with the cities dynamic development. The basic parameter for the proper smart city's function is the data management with common terminology and method, so they can be used by all sectors and applications in order to solve a variety of problems. This will be succeeded if the city is seen as a total of systems of many elements that are co-functioning. This will not result only with the use of technology. A city becomes smart, through the synergy of all of its citizens, whether they are simple citizens, or they are the creators of innovative products, or members of the academic community.

What makes a city a Smart City is the use of ICTs, which are used to optimise the efficiency and effectiveness of useful and necessary city processes, activities and services. This optimization is typically achieved by joining up diverse elements and actors into a more or less seamlessly interactive intelligent system. In this sense, the concept of a Smart City can be viewed as recognising the growing and indeed critical importance of technologies (especially ICT) for improving a city's competitiveness, as well as ensuring a more sustainable future, across networks of people, businesses, technologies, infrastructures, consumption, energy and spaces. In a Smart City, these networks are linked together, supporting and positively feeding off each other. The technology and data gathering used in Smart Cities, should be able constantly to gather, analyse and distribute data about the city to

optimise efficiency and effectiveness in the pursuit of competitiveness and sustainability, to communicate and share such data and information around the city using common definitions and standards so it can be easily re-used to act multi-functionally, providing solutions to multiple problems from a holistic city perspective.

In any case, a Smart City is quintessentially enabled by the use of technologies (especially ICT) to improve competitiveness and ensure a more sustainable future by symbiotic linkage of networks of people, businesses, technologies, infrastructures, consumption, energy and spaces. So, a smart city is the city that interconnects and makes more effective its basic functions with the use of ICT. These functions are education, transportation, governance etc More concretely, the strategies and initiatives of a Smart City must include at least one of the following characteristics (objectives and/or modes of operation): Smart Governance, Smart People, Smart Living, Smart Mobility, Smart Economy and Smart Environment. These characteristics constitute the ends for which stakeholders participate in a Smart City initiative.As cities are systems composed by subsystems, the creation of digital infrastructures for each subsystem, gives the city the ability to upgrade. Around the world, according to ABI Research (2011), 102 smart city projects are recorded. They are distributed in Europe (38), in North America (35), in South East Asia (21), in the Middle East and Africa (6) and in Latin America (2). The development of large cities with sustainability features is today identified with the creation of digital infrastructures that can contribute to the optimal environmental management and social cohesion.

2. Smart Cities Features

Smart City initiatives are a new approach to tackling a range of emerging problems caused by the rapid urbanisation. Therefore, measuring success at city level is complicated by the relative immaturity of most Smart City initiatives and the difficulty of linking initiatives to particular socio-economic issues or a particular system within a city. Smart cities have a variety of features. As they are composed by an amount of interconnected I.C.T. systems, their common aim is sustainable development, which results from the reduction of energy consumption and the improved use of infrastructure networks by balancing offer and demand. These I.C.T. networks provide their users continuous information, as they give them the opportunity to choose from a range of alternative solutions. The optimum function of smart cities requires democratic and open governance as well as development of voluntary initiatives by citizens. It also requires the reduction of intermediaries in product handling

procedures and the replacement of human presence from machines that will serve with greater speed and lower cost.

The characteristics of smart cities can be grouped into six categories: smart governance, smart environment, smart economy, smart mobility, smart people and smart living. As *smart governance* is defined the governance in the micro and macro city level (national, European, global etc.) which includes services and links between private, public, national and international organizations, so that the city functions effectively as part of a whole but as well as an autonomous organization. Smart governance is about using technology to facilitate and support better planning and decision making. It is about improving democratic processes and transforming the ways that public services are delivered. The basic parameter for the creation of cities with smart governance is their function as worldwide interconnected nodes. Smart governance ensures broad participation of all and access of data from all. It leads to cities with greater efficiency, community leadership, mobile working and continuous improvement through innovation.

As *smart environment,* is defined the combination of all the new technologies that are used in order to reduce the ecological footprint and the intensification of the renewable energy use. In a smart environment, buildings use less energy and urban planning seeks to the urban journeys reduction, energy's consumption reduction and pollutants emissions minimization. We live in an increasingly connected and automated society. Smart environments embody this trend by linking computers and other devices to everyday settings and commonplace tasks. Although the desire to create smart environments has existed for decades, research on this multidisciplinary topic has become increasingly intense in the last ten years or so. Indeed, tremendous advances in such areas as smart (portable) devices and appliances, wireless mobile communications, pervasive computing, wireless sensor networking, machine learning and decision making, robotics, middle ware and agent technologies, and human computer interfaces have made the dream of smart environments become a reality. A smart environment is a small world where sensor-enabled and networked devices work continuously and collaboratively to make lives of inhabitants more comfortable.So, "smart environment" is the one that is able to acquire and apply knowledge about an environment and to adapt to its inhabitants in order to improve their experience in that environment. The *smart economy* can help to the reduction of production cost and distribution of products and the creation of new products and services with the use of new ICT. It requires the natural and virtual flows of goods, services and knowledge in local and international level. Smart economy is the intersection between the economy and Smart Cities. This is a very broad definition defined

by three different components: how Smart Cities technologies are changing urban commerce, the Smart City as an economic driver, and the economics behind Smart Cities.

As *smart mobility*, is defined the management of mobility with ICT for the achievement of a better co-ordination between mass transport means with private vehicles. Smart mobility management measures are "soft" activities that influence the mobility behaviour of the people with the use of new technology systems also organizes and encourages the use of bicycles and pedestrians (Fig.1). More and more cities are turning to this type of measure to provide inhabitants with information on all sustainable modes of transport (e.g. public transport, bicycle, car-sharing, etc.) and to remove physical and psychological barriers limiting their mobility choices. It has been found that the reasons for not using public transport are often a lack of awareness of real options and the bad reputation of this transport mode. The mobility management is implemented by measures in the field of development of integrated mobility plans for private companies, public institutions, specific areas with a number of enterprises, areas with temporary working sites, which cause changes in routing and time schedules of public transport lines, areas which are frequently used for big events, etc.

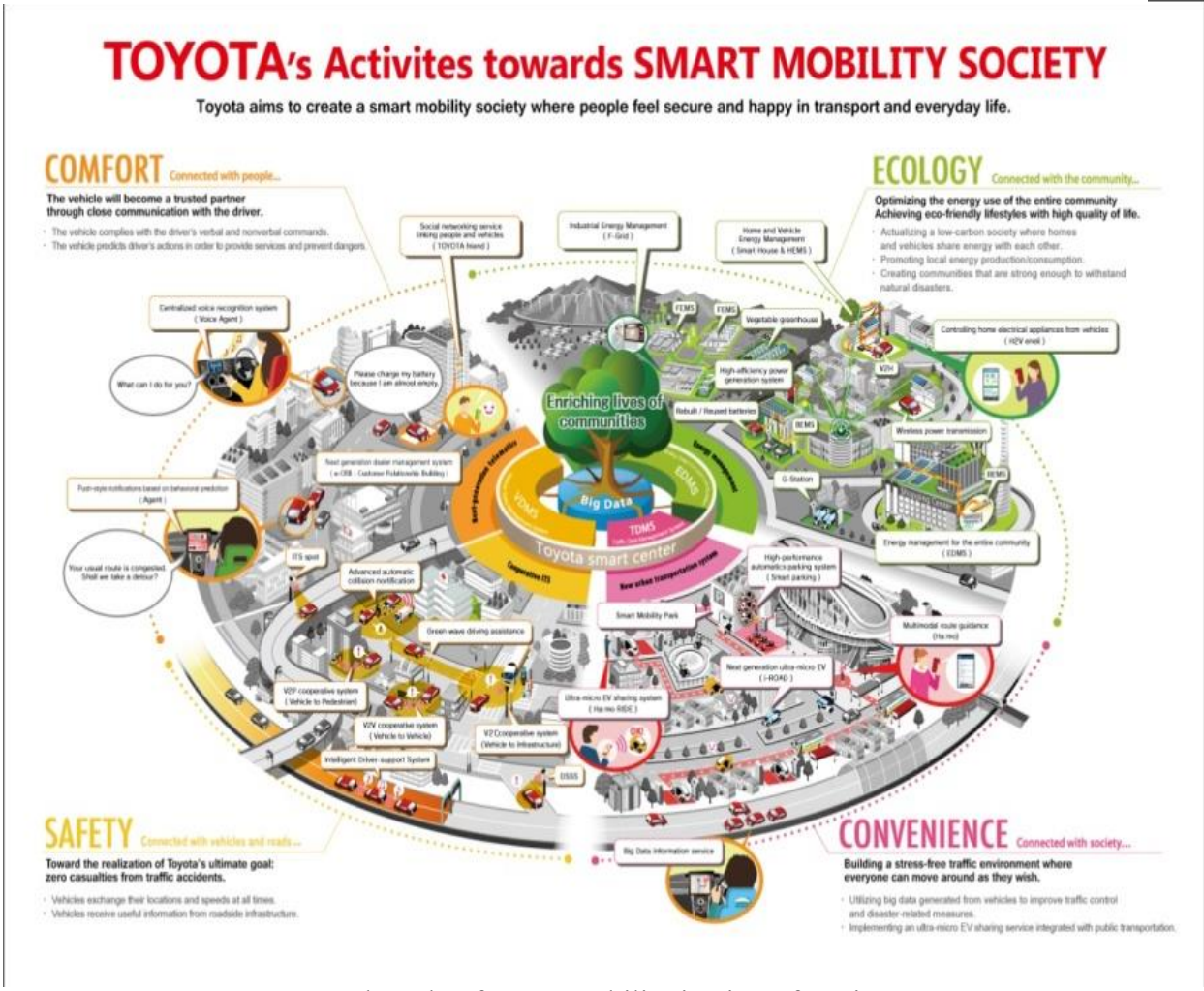

Figure 1: The role of smart mobility in city's function.

People are a key component of the smart city concept. *Smart people* are characterized by their ability to manage ICT. Residents of smart cities have access to education, human resource management and utilization of their capacity, through a society that encourages productivity and innovation development. Understanding citizens allows creating sophisticated services and outcomes that are tailored to their needs. Smart People are the people that develop e-skills, work in ICT-enabled working, have access to education and training, human resources and capacity management, within an inclusive society that improves creativity and fosters innovation. As a characteristic, smart cities also enable people and communities to themselves input, use, manipulate and personalize data, for example through appropriate data analytic tools and dashboards, to make decisions and create products and services.

As *smart living* is defined the way of living that uses ICT in all its aspects such as consumer habits. The use of new technologies fosters the development of multiculturalism and social cohesion. Smart cities are created by the combination of local innovation systems operating in cities (technology districts, technology parks, innovation poles, clusters) with digital networks and information society applications.

According to the Rockefeller Foundation Research in 2010, five are the future technologies that will characterize the development of smart cities: broadband connectivity, smart personal devices, open data infrastructures, cloud computing and public interfaces development.

3. Case Studies

The aim of the paper is to examine example of smart cities tht have developed good practices and have incorporated smart characteristics in their functions, in order to create more sustainable urban environments. Below the paper analyzes cities that have developed smart applications and are considered pioneers in the ICT use.

3.1 Smart Barcelona

The “Smart Barcelona” programme is about the ICT use for the creation of a more efficient and sustainable mobility model, the empowerment of social cohesion, the encouragement of democratic culture, as well as the optimization of access in education, culture and welfare infrastructures. The vision of the programme is to create interconnected residential areas, which are energy self-sufficient and pedestrian-friendly, connected with high speed mass transport means. A prerequisite for the programme’s success was to make changes in the

structure and mode of functions as well as in the city's connection with other cities in the frame of a global network.

The seven strategic initiatives of the Barcelona Smart City are:

- Smart Lighting: Barcelona developed a master plan in 2012 that includes projects to remotely control street level lighting in addition to transitioning 50 streets and a total of 1,155 lampposts to LED technology.
- Smart Energy: From smart grid projects to self-sufficient blocks, the City has developed a programme to achieve greater energy efficiency and has currently deployed more than 19,500 smart metres in the Olympic Villa.
- Smart Water: Barcelona is well on its way to implementing a programme that includes remote irrigation control for the City's green spaces. Thus far, 77 fountains are controlled remotely.
- District Heating and Cooling: Two networks provide hot water in 64 buildings spanning an area of 21km.
- Smart Transportation: The City developed a master plan in 2012 to improve public transport efficiency by deploying orthogonal bus lines, five of which began running in October 2012.
- Zero Emissions Mobility: As part of an extensive plan to foster the use of electric vehicles, Barcelona is deploying electric charging stations, as well as electric vehicle fleets and car rentals. To date, the city has more than 500 hybrid taxis, 294 public electric vehicles, 262 recharging points, 130 electric motorbikes and an estimated 400 private electric vehicles on its streets.
- Open Government: The City has developed a programme to make municipal government activities more transparent to its citizens, starting with the deployment of 44 "citizen's attention" kiosks and the launch of an Open Data portal in 2010. Recently the "Barcelona in your pocket" program was created for the development for mobile phones applications and smart garbage collection system. Another interesting application is the "Citizens as sensors" application that gives the Barcelona citizens the chance to collect data by using their mobile phones and forward them to data platforms. Emphasis is also given to the links between research and innovation in the industry as well as in the cooperation of all sizes companies.

3.2 Smart Yokohama

Yokohama, one of the largest cities in Japan, aims to create infrastructures and social structures for the next generation, by reducing pollutants emissions and promoting innovation.

The smart Yokohama program is investing in renewable energy sources, which ensure the city's energy autonomy and also in green innovation in order to reduce carbon dioxide emissions by 30% until 2025. The Yokohama Smart City Project (YSCP) is one of the largest smart city demonstration projects in Japan. The project targets in a combined area of around 60 square-kilometers and a population of more than 420,000 people in 170,000 households.

The city is characterized by three different types of areas. The central region which is supra-commercial business district with high densities, the region of residence, which was developed in the 1960s for the increased housing needs of the time, which has local commercial uses, and finally the industrial zone, that is created on a formerly derelict area and concentrates small-scale industries, housing and recreation areas.

The idea of applying ICT in the city's function began in 2009. It took three years for the program's design and its implementation has been completed in 2014. The program is structured in three main pillars. The first pillar focuses on energy management, with emphasis on the optimum use of renewable energy sources. The second pillar focuses on the new technologies use for the minimization of energy consumption at houses (Fig.2). Its aim is to use ICT for the monitoring and the upgrade of buildings in a way that reduces their energy consumption.

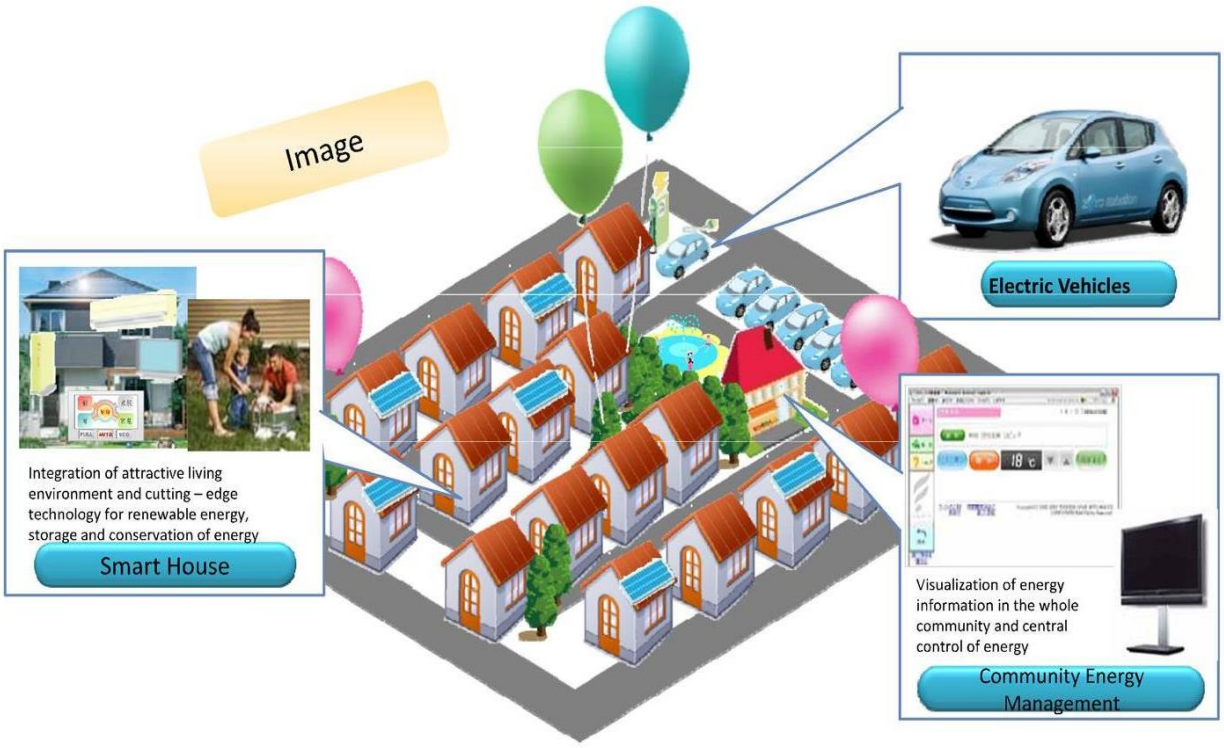

Figure 2: Smart Community of Yokohama

Also, the heating of urban areas is achieved with the use of industrial waste. Finally, the third pillar focuses on the development of smart mobility which motivates the use electric vehicles. All the actions are supported by efforts for the adaptation of public services in the new "smart" conditions.

3.3 Smart Dublin.

Ireland's capital has become IBM's smarter city testbed. The program for the city's sustainable development is based on six pillars. It uses ICT in the economic, social, cultural and environmental sectors as well as in the sectors of urban form and mobility. The Smart Dublin program is taking place with the co-operation of the authorities, researchers and entrepreneurs of the city and it aims to the creation of new jobs through the promotion of innovation.

The program involves the adjustment, creation and adoption of digital technologies and procedures and leads to a more efficient resource management and to the facilitation of daily activities that take place in the city. The objective of the project is the extensive use of innovation not only in the urban areas but also in its wider region. It focuses on long-term sustainability, on citizen based governance and new jobs creation. The program is supported by qualified scientists of all scientific areas, who seek the interconnection of all fields and evaluate the I.C.T. function.

Research is also being conducted in Ireland on how problems like congestion can be tackled through joining up existing databases. The work involves applying analytics to huge amounts of data to solve pressing problems.In Dublin, information comes from an array of sources including road sensors and GPS updates from the city's 1,000 buses. A digital map of the city is being built, overlaid with the real-time positions of the city's buses.The vision of a smart city is perhaps held back by fears that we could end up living in a "Big Brother" state, but scientists believe that this won't happen because the local authorities are not interested in personal data.

4. Smart Cities in Greece

Today in Greece that faces an intense economic crisis and has limited resources for infrastructures, cities are forced to find new income sources for the utilization of their characteristics. The up to today applied policies for the I.C.T. use, followed the social and economic opportunities of each period.

The services computerization began with the economic assistance of the 3rd Community Support Framework, which gave the chance for the creation of services with greater openness. Thus, municipalities began slowly to develop websites, agencies and

services that facilitated both their citizens, customers and stakeholders. Simultaneously social networks for communicating local authorities and citizens were created.

Today there is not a typical example of a Greek city that has developed infrastructure that can characterize it as a smart city, in the level of the ones that were already examined. Only two cases, Heraklion and Trikala have developed strategic planning in services and infrastructures which lead to their characterization as smart from the Intelligent Community Forum.

4.1 Smart Heraklion

For the development of Heraklion as a "smart city" the local authorities are cooperating with the Chamber of Commerce, the research institutions and city's transport authorities. The HeraklionSmart city program includes the creation of a road map and evaluation indicators and focuses on free internet access creation, digital services promotion and the adoption of open standards with the use of green I.C.T. The city has developed 82 internet access hubs which can be used by 7.500 users per month, while in the portal of the municipality 163 different electronic services are functioning. The I.C.T. applications cover the fields of civil protection, cultural heritage, and traffic management.

The city's authorities have achieved free internet access with the use of public broadband infrastructures. One characteristic action is the access of all social and economic groups in the developed digital services.

The city produces digital content, that highlights cultural reservation and promotes areas of touristic interest as it describes its history.The program aims so that policies, standards and technologies that are used in information systems for electronic services, electronic payments and the Through the program, the policies, standards and technologies used in information systems for electronic services and electronic payments are according to the principles of the Interoperability and electronic transactions Framework. The city of Heraklion municipality is seeking to adopt open standards for documents and information storage and handling in public services in order to achieve independence from specific software manufacturers, to ensure their long term preservation, and to facilitate citizens access in them. It also encourages participatory processes, as the use of ICT gives to the city's citizens the right to express their opinion and participate in decision-making processes.Also the aim of the programme is to provide individualized assistance to citizens when they use new technology public facilities and equipment. It also supports e-learning platforms, so that the they are familiarized with the use of public digital services and equipment. The

municipality's authorities try to balance the suspicion arising from the management of personal data.

The Heraklion municipality defined the "Heraklion: Smart City" Committee where organizations as the University of Crete, the Heraklion Chamber, the Cretan Technological Institute , the for Research and Technology Foundation and the Mass transport organization are participating in order to facilitate the management of the city's strategic objectives. The municipality participates in the RERUM program that measures the safety in data transactions from sensors of scattered city's areas. Finally the city has developed the "Heraklion guide" mobile app funded by the Heraklion port agency that shows a virtual city's tour in 40 selected sites through three selected routes.

4.2 Smart Trikala

The Municipality of Trikala in 2011 ranked 21 smart cities of the world. The basic idea was to provide free of charge Internet access and services to all citizens. So the city has developed Metropolitan Fiber Optic Network, Free Wireless Network Management Information System and Intelligent Transportation systems.

The municipality has developed the Urban Geographic Information System (GIS) and the Municipal Parking System mobiPARK. Through the development of a smart system, the elderly people with cognitive problems can communicate with doctors or relatives with the use of sensors that warn if they record certain signs.

Another project with a direct impact on the everyday life of the city of Trikala citizens is the Intelligent Transport System. With the use of inductive hubs, a smart system performsthe management of traffic data. Simultaneously it monitors the city buses network of and it informs citizens about the traffic.

5 Conclusions

According to the European Commission, in order to bridge the gap between European countries in terms of innovation and new technologies, greater investments in education and research, close cooperation between industry and academia, more effective participation in the innovation strategies and favorable public policies for technology are required. For the creation of a smart city, it needs to have the appropriate social, economic environment that creates the need for innovative actions.

So smart cities must develop synergies between research centers, investors in innovation and citizens in order to create collaborative clusters and regional systems of innovation. The Internet of the future will be based on the interface and interconnection, with

the use of sensors, objects, people, places and devices that transfer information. The smart city is a place where the data of the activities carried out in real mode are imported and after appropriate interfaces they are exported to their citizens in order to improve their living conditions.

Already global ICT companies have proceeded to investments in many cities for the creation and promotion of smart applications regarding all cities functions. In most cities ICT applications constitute a new reality at different rates as they have already entered in the daily lives of their inhabitants.

The Greek cities have developed high quality management networks and information dissemination in several urban centers of large and medium size. These efforts have improved the living conditions of their citizens. But compared with other foreign cities they are lagging in several areas. The examination of the two Greek smart cities showed that their smart applications have developed fragmentary.There have been important steps in the citizen's participation in services, in the creation of applications for better use of public transport and emphasis has been given to applications that appeal tourists in order to gain in a better way the cities attractions.

The problem that reveals from the current examination of the Greek smart cities is that the sectors that are served by ICT use are not interconnected. Thus, while urban, building, traffic data could feed a node that will contain records and will monitor the city's functions in order to improve city in a long-term planning, this information is collected but still has not yet managed to be interconnected. Also, the energy consumption control and the encouragement of renewable energy use sectors are not developed.

It results that the Greek cities have not yet created the clusters-hubs which will interconnect the appropriate stakeholders and synthesize the data provided. Certain applications are functioning but there are still significant sectors that have not yet been developed, while it is evident the absence of the interface parameters that can contribute to the city total operation, in order to be characterized as smart.

It is important for the Greek cities to develop better policy coordination and ICT management as smart cities create an environment in which technology, infrastructure, policies and culture make people safe, and provide the resources and opportunities they need for more satisfying living condtions.

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Financial Decision-Making and the Psychology of Albanian Families

Abstract:
In this paper, we tried to present a clear picture of the psychology of Albanian families in the context of financial decision-making, and management of financial risk of the family. In the study we have referred mainly to 2013 and the previous years, due to the inability to collect data corresponding the current period. Initially we bring a presentation of income monthly and yearly by type of family, single person, couple without children, with one child, two and three children and single-parent families, to see the level of total income of the families in our country, and to compare further with the consumption expenditures by the type of the family, age and job of the family head. In the end we observed the savings (deposits), as an indicator of financial risk management for the family income, and we mentioned some of the main economic problems of today's family.

Keyword: Psychology, Albanian families, financial risk, risk management

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1. Financial decision

An important process in the Albanian families is financial decision making. The heads of the family are responsive to provide income, until the children reach adulthood. Families take decisions how to spend the money they dispose. An economically reasonable individual, intends to spend his income by maximizing the benefits and avoiding the risk of losing money, making investments safe and profitable.

In the ideal way of participation in decision-making, each individual of the family must have his voice in the decisions made and the impact on his life. "Participation" means active engagement of families in making decisions.

Generally, most of the financial decisions in Albanian families are taken by the head of the family (man), while the woman is more involved in the education of children and housework. However, the role of women in Albanian families and social life is getting increased, mainly in urban areas and less in rural areas.

2. Revenue

To get a financial decision, a family must provide income from various sources like salaries, private business, economic aid, transfers, pensions etc. Below we present the distribution of monthly and annual income by family type and characteristic of the head of the family.

Table 1: Monthly and annual income by family type

Household type	Households	Persons	Total annual income		Annual income in leks		Monthly income in leks	
			In thousand leks	In %	Household	Per capita	Household	Per capita
Single person	44,294	44,294	7,898,049	2.3	178,310	178,310	14,859	14,859
Couple without childre	111,401	222,802	37,630,085	10.9	337,789	168,895	28,149	14,075
Couple with one child	68,930	206,791	34,949,871	10.1	507,033	169,011	42,253	14,084
Couple with two child	139,468	557,874	72,540,777	21.1	520,123	130,031	43,344	10,836
Couple with 3+ childre	105,751	569,982	43,139,219	12.5	407,931	77,559	33,994	6,463
One parent family	89,565	291,996	38,873,421	11.3	434,024	138,421	36,169	11,535
Other family	193,007	1,061,114	109,342,590	31.8	566,523	109,705	47,210	9,142
Total	**752,416**	**2,954,852**	**344,374,012**	**100.0**	**457,691**	**130,608**	**38,141**	**10,884**

Source: Household Budget Survey, 2013

We start by analyzing the family incomes in Albania based on the type of families. We can see that the greatest number of families in the table represent those that are designated as other types of families. These families represent the kind of families in which children live with their parents and the parents of one parent. We can see that this type occupies a large share of all the types of families . This may come as a result of the difficulties and risks that young couples face when they want to create a new family . The difficulty to afford an apartment of their own forces young couples in many cases to live together with their parents. Furthermore in some cases this may be and as a result of economic difficulties thet parents

may have and they force their children to live with them and to help them. We cannot exclude in our argument the numerous cases where this choice is dictated by the psychology of Albanian families, which have been traditionally united and large. This kind of culture is inherited even to the children which may feel compulsed or they want to create the type of family in which they are grown.

Another fact that stands out is the relatively high number of families without children. This may come as a result of the perceived risk that young couples connect with having and caring for a child. The birth of a child will require new spending's to be enabled by additional income, but as we can see from the table, with the increasing number of children, the level of income per capita in the family will diminish and not always the additional cost meets the possibilities for additional income. We can also see that single-parent families have begun to occupy a relatively important share. These families represent a relatively average level of income per capital. So we can confirm that the perceived risk associated with divorce decreased somewhat, because these kind of families represent a moderate income level without any drastic alteration from the levels of non-divorced families. We can also see that couples with 2 children occupy a significant number of the families. This in general is due perhaps to the perception of couples that two children are to an acceptable level of risk and to an acceptable level the fulfillment of social needs.

Table 2: Monthly income by status of education of the household head

Level of Education	Total monthly income	Income from paid employment	Income from own agricultural and non-agricultural compan	Pensions	Property income	Other fees and additional receipts	Poverty benefit	Remittances	Receipts in cash from relatives / friends in the country	Other Income
Up to four years	28,201	4,698	9,249	8,436	79	789	190	4,266	469	24
8/9 years school	32,390	8,645	12,477	3,887	421	757	247	4,987	412	556
Secondary school	43,437	17,401	16,378	3,365	1,241	487	135	3,971	284	175
Vocational	42,856	16,636	12,811	4,594	1,384	682	82	5,842	432	393
University	65,265	39,188	14,655	6,594	1,619	632	9	2,062	196	310
Post-graduate	52,259	32,708	3,785	6,881	-	-	-	5,763	-	3,123
Total	**38,141**	**13,465**	**12,723**	**5,121**	**748**	**693**	**168**	**4,507**	**384**	**333**

Source: Household Budget Survey, 2013

Scanning the following table which presents monthly income by educational status of household head, we can draw some implications. The first fact tha catches the eye is the increase of total revenues with the increasing level of education, at least until at university education level. When we pass to the post-graduate level we can notice a reduction of the

income, which should be considered more thoroughly why it happens. The income from employment follow the same trend. But the income from private business does not follow the same trend. . In this case we have an increased level of income until the level of education at high school, and then a drop. This fact shows that with the increasing level of education, the decisions are not better and do not lower the investment risk. Comparing the income from business with the income from ownership we can see a strange difference. The level of these revenues is always increasing with the increasing level of education. This may indicate that individuals with higher education level even though they may possess property more than individuals in previous classes, they do not use them properly for business, but probably allow others to use it. The level of economic assistance is declining until it disappears with the increasing level of education, so the higher the education level, the more reduced the risk of unemployment until this disappears in the post-graduate level.

Remittances from abroad have a more irregular behavior and they do not follow a well-defined trend, decreasing or increasing according to the education. We can argue that individuals with university education level, who have the highest level of income have the lowest level of transfers from abroad, because they are the individuals with the less need. The same can be said for the cash income from relatives inside the country.

Table 3: Monthly income by type of household

Household Family	Total monthly income	Income from paid employment	Income from own agricultural and non-agricultural	Pensions	Property income	Other fees and additional receipts	Poverty benefit	Remittances	Receipts in cash from relatives / friends in the country	Other Income
Single person	14,859	2,695	1,112	5,797	194	600	145	3,628	666	21
Couple without children	28,149	6,113	4,764	10,615	512	382	77	5,084	500	102
Couple with one child	42,253	17,319	15,705	4,488	610	693	142	2,432	660	205
Couple with two children	43,344	20,185	16,832	999	1,059	662	181	2,100	209	1,116
Couple with 3+ children	33,994	13,418	16,255	874	268	549	255	2,007	211	156
One parent family	36,169	10,864	8,854	2,368	652	1,057	188	11,243	582	361
Other	47,210	15,181	15,805	8,603	1,142	826	170	5,099	282	102
Total	**38,141**	**13,465**	**12,723**	**5,121**	**748**	**693**	**168**	**4,507**	**384**	**333**

Source: Household Budget Survey, 2013

Let's continue the analysis of the table, where there are presented the monthly income by type of family. We can see that couples with two children have the highest income. They have the highest income from work and business too. This can be explained with the fact that individuals who have a larger family commit to employment or business activities with higher incomes to anticipate the risk of raising a child and to and cope with it.

Theoretically should be expected that couples with 3 children or more must have higher incomes than others, but it is not true. This may come as a result of the inclusion in this category of many families living in rural areas which do not have the information or the

proper education level to have the knowledge of family planning and the risk of raising a child. Combined this with a low income level brings this landscape presented in the table.

3. Consumer spending

According to the revenue-generating individuals make various expenses. These expenses depend on their position in the family, the type of family, age, education, work, etc. Below we represent the structure of expenditures by 12 main expenditure groups and main characteristics of head of household or family type.

Table 4: Structure of expenditure by household type

Expenditure Groups	Single person	Couple without children	Couple with one child	Couple with two children	Couple with 3+ children	One parent family	Other	Total
Food and beverages	54.25	51.72	46.39	45.42	49.22	49.91	47.08	47.57
Alchoolic beverages, tobacco	4.27	5.08	4.61	4.01	4.36	3.47	4.41	4.34
Clothing and fotwear	3.89	3.42	5.94	6.68	7.08	6.17	6.21	6.19
Housing	9.62	8.69	8.07	7.37	7.34	7.28	6.7	7.36
Furnishing and maintenance of the appartment	5.67	6.22	5.55	6	5.79	6.42	5.82	5.88
Health care	6.75	6.22	3.63	3.29	3.28	4.15	4.66	4.1
Transport	2.37	4.43	5.68	6.22	6.89	3.6	7.05	6.24
Comunication	1.97	3.02	3.27	3.27	2.53	2.9	2.86	2.95
Entertainment and culture	1.92	2.38	2.94	3.4	3.28	2.87	3.14	3.12
Education	0.01	0.07	2.32	2.68	1.59	2.31	1.27	1.72
Restorante dhe hotele	5.54	3.7	6.07	5.89	3.63	4.5	5.09	5.02
Other goods and services	3.73	5.05	5.52	5.77	5.01	6.42	5.71	5.51
Total consumption	100	100	100	100	100	100	100	100

Source: Household Budget Survey, 2013

The level and structure of consumption expenditure vary depending on family size and composition. It is noted that households composed of a single person and couples without children, spend more on food and non-alcoholic drinks compared to other types of households, respectively 54.25% and 51.72% of their budget. Also, families with a single person and childless couples spend more than other types of households for health care and housing. Food and non-alcoholic drinks are the most important element of the household budget, occupaying 47.57% of it.

For the 'single person' families and couples with from 0 to 2 children, it is noted that some types of expenses have a growing trend. These may include groups of expenses such as

communications, entertainment and culture, education, restaurants and other goods. This may be related to the fact that these families are characterized by young members, who tend more toward things of luxury, technology and entertainment. For expenditure groups like clothing and footwear, furnishing and maintenance of the apartment, transport and health, it is noted that the expenditures increase with the number of members in the family. Families with three or more children and families with a single-parent, or other families, spend more of their family budget for these group of expenses.

Table 5: Structure of expenditure by age of the household head

Expenditure Groups	deri 24 vjeç	25 - 34 vjeç	35 - 44 vjeç	45 - 54 vjeç	55 - 64 vjeç	65 - 74 vjeç	mbi 70 vjeç
Food and beverages	47.5	47.1	48.4	44.9	46.8	50	50.1
Alchoolic beverages, tobacco	4.3	4.7	4.2	4.3	4.7	4.6	4.3
Clothing and fotwear	6.7	6.4	6.7	6.7	5.7	5.2	5.3
Housing	6.9	7	7.1	7	6.9	7.9	7.4
Furnishing and maintenance of the appartment	5.9	6.1	5.9	5.7	6.2	6	5.8
Health care	3.6	4.4	3.5	3.4	4.8	5.8	5.4
Transport	6.8	7	6.3	6.8	6.5	5.5	5.8
Comunication	2.8	3	2.8	3.2	3.2	2.9	2.6
Entertainment and culture	3.4	2.8	3.5	3.4	2.9	2.9	2.6
Education	1.9	1.1	1.7	2.5	1.8	0.6	1.5
restaurants	4.6	4.4	4.2	6.1	4.8	3.5	4.1
Other goods and services	5.6	5.9	5.6	5.8	5.7	5.1	5
Total consumption	100	100	100	100	100	100	100

Source: Household Budget Survey, 2013

This chart shows the distribution of the family budget for major expenses given the age of the household head. In a typical Albanian family, usually the woman are younger than man, but with a difference no greater than 10 years. Therefore we assume that both spouses are receiving financial decisions, as both can provide income.

It is noted that spouses over 70 years old spend more than other families for food and beverages. As for other expenditures, their budget is limited, considering the fact that their income is based only from the pension or remittances from children. With regard to alcoholic beverages and tobacco, the largest consume is distributed to the ages 25-34 and ages 55-64. Young people consume in order to be more contemporary. This relates to their psychology them to rejoice the same things as their society. While ages 55-64 consume alcohol and tobacco because of the problems they face and the stress they face due to unemployment or health problems that begin at this age. A household head of 65-74 years old, could spend for housing more than others, because at this age he has the capital necessary to buy a house can take the risk of investing money in real estate. Young people spend more on clothing and footwear, household maintenance and transport. For household heads aged 45-54, it is noticed

their tendency to spend more on education, communication, entertainment, and restaurants. They tend to spend for themselves and their children which can still be minors.

Table 6: Structure of expenditures by job of household head

Expenditure Groups	Employer	Self-employed	Employed	Unpaid job
Food and beverages	37.7	45.8	44.9	49.5
Alchoolic beverages, tobacco	4.2	4.7	4.1	5.3
Clothing and fotwear	7.3	6.7	7	6.4
Housing	6.9	6.7	7.4	6
Furnishing and maintenance of the appartment	5	6	5.8	6.5
Health care	3.2	3.6	3.5	4.3
Transport	8.6	8.2	6.5	5.8
Comunication	3.7	2.8	3.3	2.5
Entertainment and culture	4.1	3.1	3.5	2.7
Education	7.5	1.6	2.4	0.7
Hotels and restaurants	5.6	5	5.6	4.3
Other goods and services	6.2	5.8	5.9	6
Total consumption	**100**	**100**	**100**	**100**

Source: Household Budget Survey, 2013

A household head that owns a business and has employees, normally provides more income than others, and tends to spend these revenues for the best luxury as clothing and shoes, but also on technological innovation in the communications, transportation, entertainment . He has the opportunity to be educated in private schools, along with other family members, and attend restaurants and luxury hotels. A household head that is self-employed, spends more on basic food and health, and less on luxury and good fun. Compared with other groups, he spends more for alcoholic beverages and, tobacco, and this maybe because of the stress that he can face to provide the continuity of his small business. A employed household head has lower income than the first two categories, and the largest part of his revenue he spends on basic needs like food, clothing, home expenses. But often he allows himself to spend for entertainment and restaurants. While a household head that is not paid, tries to meet the basic needs of the family borrowing money. With this money he buys food and other necessary things, whereas for education and entertainment he spends much less because of the limited budet.

4. Savings

Another important variable that indicates the family's financial decision-making and risk management, is the level of deposits in the country. Individuals and families increase their savings during reccesion periods by reducing consumption. This connection is also indicated by the equation:

$$S = Y - C$$

Where: **Y** - national income; **S** -Savings; **C** - Consumption

Increased savings (deposits) are not only influenced by negative forecastof the families for the future , but also by the growth of national income, population growth, population age etc. For this reason, the deposits in the country must be interpreted as related with other factors.

Table 7: Key indicators of loan and deposit:

	2008	2009	2010	2011	2012	2013
Loans/Deposits	13,5	15,7	19	28,5	37,4	44,1
Annual growth of broad money	5,9	7,6	13,1	14	16,7	14,8
Depozita Gjithsej	68,6	72,1	72,8	74,1	75,8	78
Total Loans	9,3	11,3	13,8	21,1	28,4	34,4
In Percentage to GDP	58,8	56,2	51,8	46,7	41,8	40,9

Source: Bank of Albania, 2013

Annual growth of total system deposits results 17.4 percent compared with a year ago, versus 11.7 percent a year earlier and 19.3 percent at the end of 2011.

1. During the first half of 2013, the level of total deposits marked 532 billion Lek (ALL), or 21.4 billion lek more than at the end of 2012. The average annual growth of total deposits during this semester period (6 mounths) is 19.4 percent versus 14.4 percent in the second half of 2012.

2. Time and foreign currency structure of deposits has maintained the tendency of the last semester towards term deposits and foreign currency deposits. The average annual growth of foreign currency this semester marked 31.1 percent versus 12.8 percent wich is the average annual growth of deposits in Lek (ALL). Meanwhile the term deposits marked an annual growth of 24 percent versus the average annual growth of 8.4 percent of demand deposits.

Table 8: Average monthly wage. *(Private and public sector)*

Economic Activity	2006	2007	2008	2009	2010	2011	2012	2013
Total	13.355	14.82	16.541	18.522	19.039	19.993	21.842	27.35
In percentage		10,97%	11,61%	11,98%	2,79%	5,01%	9,25%	25,22%

Source: Structural Enterprise Survey 2013

Table 9: Births, Deaths and natural additions

Years	2006	2007	2008	2009	2010	2011	2012	2013
Births	51.242	53.205	42.527	45.313	40.989	38.898	35.891	34.448
Deaths	16.421	19.013	19.187	21.294	20.269	20.43	20.852	20.886
Natural additions	34.821	34.192	23.34	24.019	20.72	18.468	15.039	13.562
Natural add in %		-1,81%	-31,74%	2,91%	-13,73%	-10,87%	-18,56%	-9,82%

Source: INSTAT, 2013

As we see from the data table, the average monthly wage has had an upward trend during the years 2006-2013, and this growth has been more sensitive during 2010-2013, reaching the maximum percentage increase in 2013 to 25.22% compared to 2012.

Natural additions of the population has changed irregularly during these years, and in 2013 decreased with 9.82% versus a year ago. The increase of average monthly salary of individuals employed in the private and public sector would normally be followed by the growth of deposits in commercial banks.

With the growth of income (Y), individuals and families also increase consumption (C) and saving (S), and the main form of saving the income is deposition.

On the other hand, the reduction of natural additions of the population (-9.28%) it is expected to decline consumption as well, and accordingly savings will rise. This happens in the short term because an increase in natural population addition will bring increased consumption in the current period, and increased savings in the long run because of the growth rate of the workforce, therefor even of the national income of the country. Finally, with regard to financial decisions of households, base on the above implications, we can conclude that in periods of economic growth, households tend to increase their savings, but the savings growth is lower than consumption. In recession periods families tent to increase savings and reduce consumption, and therefore postpone consumption in the future.

5. Family Economic Problems

The increase of divorce rates, reduced births, cohabitation without marriage, families and their functioning model in terms of immigration, are some of the main features of the crisis observed in today's Albanian family. **What are the basic phenomena that express the most complete form of crisis in the today's family:**

- Increase of the number of divorces and the breakdown of families
- Addition of families that have one household head
- The increased of cohabitation without marriage
- The reduce of the number of children per family
- Lack of welfare, unemployment and the inability to maintain a family.

The transformation of the society from a traditional society and enclosed in an open capitalist society, as well as radical changes of social and economic areas, created a new family model, which does not resemble the typically conservative family of earlier.

One of the causes of the crisis that exceeds today's family is also reducing the number of the children, which is a very strong link connecting the family, creating obligations and responsibilities for parents. At today's new families it is noticed a phenomenon. They do not want to have children very soon and generally they want no more than a child because they don't have the financial opportunities to raise and give the proper education to their children. This mainy happens because they don't have a guaranteed job and residence.

6. Recommendations and Conclusions

In this paper we presented the incomes, expenditures and savings of Albanian families. We think that Albanian families need higher incomes to have a better standard of living. Also they need to do a better redistribution of income between spending and saving. Even young individuals need to save more money and not to spend all income on luxury items and entertainment. In connection with financial decisions of households, on the implications of the above, we can say that in periods of economic growth, households tend to increase their savings, but the savings growth is lower than consumption. In recession periods families tent to increase savings and reduce consumption, and therefore postpone consumption in the future.

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Incidence, Depth and Severity of Household Poverty in Southern Ethiopia: Understanding the statuesque in the fastest growing City of the Region (Hawassa)

Abstract:
The main objective of this study is to examine the status of household poverty in terms of incidence, gaps and severity (P_0, P_1, and P_2) in the capital of Southern Regional State of Ethiopia (Hawassa) and identify the key predictors of poverty severity. It is a cross sectional survey design which used primary data collected from 311 randomly selected households. Poverty was measured by three commonly known indices (incidence, depth and severity). The Cost of Basic Needs approach (CBN) was employed to estimate the poverty line of the sampled households. The analysis entails estimation of both the cost of purchasing basic food necessities and essential non-food expenditures based on consumption patterns reflected in the available consumption data at national level. The main predictors of poverty severity were examined using the Tobit regression model. The study estimated the three poverty parameters, and the values of the three indices were high (43%, 24 % and 15% respectively) compared to some previous studies conducted in Ethiopia, but somewhat lower than the figures reported for some African cities. Using the Tobit regression model, five variables were found to predict the poverty severity level at different p values ($p< 0.05$): age of household head, number of dependent household members, household size, education of household head and quality of house owned/lived. Given the high poverty rates reported in this study, it is needless to mention that both the regional and local governments should make concerted effort to strengthen the interventions to curb the growing problem. It is also indicated that the concerned authorities should make periodic review of the problem and strengthen the poverty alleviation strategies to better address the heterogeneous population

Keywords: Households, poverty, incidence, gap, severity, Hawassa, Southern Ethiopia

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1. Background

Poverty encompasses inadequate income and lack of the basic necessities such as education, health services, clean water and sanitation. Todaro and Smith (2009) described poverty as the deprivation of wellbeing, either material or social. It is usually measured by commonly known indices: incidence (headcount index or proportion of the population below poverty line), depth or gap (consumption shortfall relative to the poverty line across the whole population) and severity (representing the level of inequality among the poor (Bourguignon, et' al, 2003).

Evidences show that the share of urban poverty in the developing world has jumped from 17 to 28 percent in the past 10 years. In Eastern Asia, nearly half of all poor is found in urban locations, while in sub-Saharan Africa the share of urban poverty was 25 percent (Poverty Matters, 2012). Ethiopia is the second most populous country of Africa next to Nigeria. The Ethiopian economy is based on agriculture, which accounts for half of the GDP and about 60 percent of export earnings. Human development indicators of the United Nations Development Program (UNDP) also confirmed the seriousness and extent of poverty in the country, reporting that the poverty index of Ethiopia is the second lowest out of 104 countries in the world (UNDP, 2010). The country's per capita income of $470 is substantially lower than the regional average (World Bank, 2015). Liberalization and marketization coupled with the international food price rises, high fuel prices, and the recent worldwide recession have exposed the country to increased sensitivity to household poverty (Poverties org., 2012).

In Ethiopia, urban poverty has increased during the course of time (Poverty Report, 2011;Tegene, 2010). For instance, the level of urban poverty has jumped from 33 percent in 1995/96 to 37 percent in 1999/2000 and attained a modest decline and reached 35 percent in 2004/05 (MoFED, 2008). Between 2004/05 and 2010/11, income (consumption) inequality measured by Gini Coefficient has shown a slight decline from 0.3 in 2004/05 to 0.298 in 2010/11 (MoFED, 2011). In 2010/11, the proportion of the population below the poverty line for rural and urban areas has stood at 30.4 and 25.7 percent respectively. The same report shows that the poverty gap index in urban areas was 6.9 percent and poverty severity index of 0.027.

Some city specific studies on household poverty have also indicted nearly compatible results with the nationwide estimates. For example, Tegodie (2011), based on the cost of basic needs approach, reported that out of the 3462 surveyed households in Addis Ababa, 1415 of them were found to be poor, that is, the head count was 40.9 percent. The poverty gap and

severity indices were reported as 0.15 and 0.07, respectively. Another study conducted in a district of Somali Regional State has reported that 67 percent of the population is unable to get the minimum calorie required i.e. 2200 kcal per day per adult (Mengistu, 2013).

The level of poverty in major towns of Southern Ethiopia is explored little while there are indications that the problem is pervasive. According to the last available estimate, the headcount poverty level was 29.6 percent in 2011 which is equal to the country's average. Hawassa, the capital of Southern regional state, is one of the fastest growing cities in the country and is ethno-cultural melting pot of the region. According to the study conducted by Yonas (2011) on the evolution of poverty and inequality in urban Ethiopia, the poverty incidence for Hawassa (measured by the head count index) was 29 percent, a decline from 48 percent in 1994 (Yonas, 2011).

Though efforts have been made both at federal and regional levels to reduce urban poverty, particularly through the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), there are still several challenges in implementations and measuring outcomes. One of these challenges lies in the fact that the scantly available statistics on poverty are reported at an aggregate/region level while understanding the factors of poverty at household setting have more practical values. Second, in most instances, poverty is context (time and space) dependent whose dimension varies from place to place across time, making it difficult to use similar intervention strategies and measure outcomes. For instance, a person who is classified as poor now may change his/her status if surveyed another period. It is also noted that the very few studies conducted in the region are either based on secondary data collected and made available for different purposes in governmental and nongovernmental organizations or they focus on description of a single poverty parameter. This study, therefore, attempts to address some of the aforementioned limitations and aims at measuring the three dimensions of household poverty in Hawassa City and tries to identify the main micro level predictors of poverty severity.

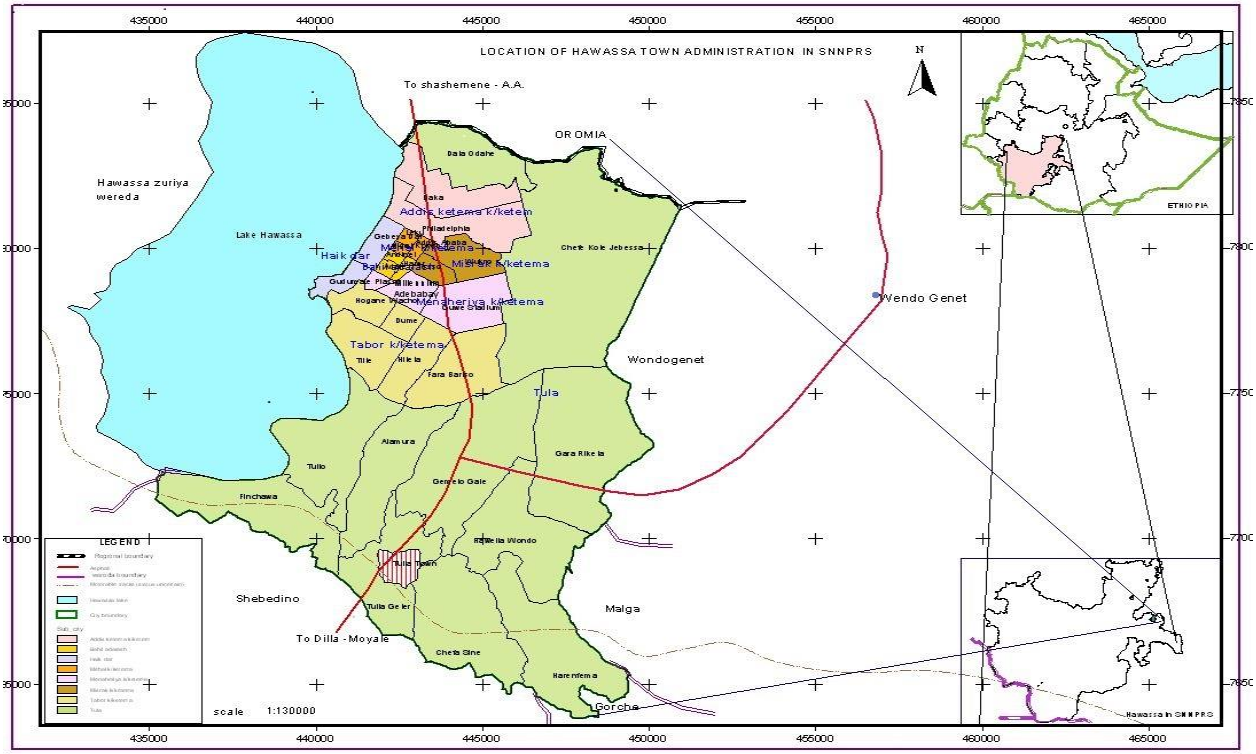
2. Methodology of the Study

2.1 The Study Setting

This cross sectional study was conducted in a fastest growing town of the Southern Nations, Nationalities and Peoples Regional State (SNNPRS), one of the nine states making the federal government of Ethiopia (Fig.1). Being the economic and political capital of SNNPRS, the city has increasingly becoming the melting pot of different nationalities and cultural groups. The city administration has an area of 157.2 km^2 divided into 8 sub-cities; namely, H*ayek Dar,*

Menehariya, Tabor, Misrak, Bahil Adrash, Addis Ketema, Hawela Tulla and Mehal Ketema Sub cities (BoFED, 2013).The last national Housing and Population Census (CSA, 2007) projected the population of 2014/15 as 328,284 (168,887 males and 159,397 females) (CSA, 2007). The main economic activities of the city are service provision, small and medium scale manufacturing and tourism.

Figure 1: Map of Hawassa City Administration



2.2 Data sources, sampling design and collection methods

The study used data generated from both primary and secondary sources. The quantitative data, which made the bulk of the analysis, were collected by household survey structured questionnaire. In addition, some focus group discussions were conducted in order to obtain an in-depth information on some important issues such as perceptions on poverty and copying mechanisms. The secondary sources were mainly used to support computation of the three poverty parameters based on the food basket composition table shown in the annex.

The sample size of the study was determined by using the formula for household based survey (Cochran, 1977). A total of 311 households (296 + 5% contingency) were considered as representative of the study population. Once the sample size was determined, the individual households were selected using multi stage sampling technique. In the first stage, three of the eight sub-cities were selected by simple random sampling technique. Accordingly, *Addis Ketema*, *Misrak and Mehal Ketama* sub cities were drawn. In the second stage, from the list of *kebeles* (smallest administrative units) under the three sub cities, two *kebeles* were

randomly selected, giving a total of 6 kebeles. In the third stage of sampling, the 311 households were selected proportionately from the six *kebeles*. Accordingly, the number of households selected from each village/kebele was: 65 households from *Daka kebele*, 38 households from *Filadelfiya Kebele*, 81 households from *Teso kebele*, 59 households from *Wukro Kebele*, 40 households from *Addis ketema kebele* and 28 households from *Nigat Kokeb Kebele.* Then, the heads of the households were interviewed. The data were collected using 7 well trained data collectors and a supervisor. The questionnaire was initially pre-tested on 15 randomly selected households from the study area.

2.3 Analytical design

The collected data were processed using STATA version 12. The study employed the Cost of Basic Needs Approach (CBN) to estimate the poverty line of the sampled households, which is one of the commonly known parameters used in most poverty studies (Jesko et' al, 1996). This approach usually entails estimation of two dimensions: the cost of purchasing basic food necessities and essential non-food expenditures based on consumption patterns reflected in the available consumption data. The food component typically consists of a bundle of food items reflecting the average taste patterns of low income households in the country as a whole, yielding some pre-determined nutritional cut-off point, usually calories. This bundle is then priced in different parts of the country to provide the study area's specific food poverty lines. The final poverty line is calculated by adding to the food poverty line a certain amount of expenditure necessary for essential non-food goods and services including payments for social services, gas and charcoal and the like.

Accordingly, consumption of 28 different food items reported by the households was taken as the food bundle to calculate poverty line. The food consumption behavior of the reference group was surveyed to determine average quantities of consumption per adult equivalent of basic food items that make up the reference food basket. The total adult equivalent is calculated based on the standard conversion given by WHO (1985):

$$\sum_{i=1}^{28} qi\ Kcal_i = T^* \quad \text{With} \quad T \approx T^* \text{ But } T^* \neq T_I \qquad (1)$$

Where: **T*** = total calorie obtained by individual adult from consuming of the average quantities in this case qi kcal

qi= average quantity per adult of food item *i* consumed by individual adult

Kcl_i=the caloric value of the individual food item *i* consumed by individual adult

T=Recommended Calorie per day per adult (in this case, 2200 kcal)

The average quantity per adult of each food item is scaled up and down by a constant value (T/T*) so as to provide a total of 2200 k calorie per adult per day, and then each food item was multiplied by the median price. The food share can be obtained by dividing the food expenditure per capita by the total expenditure per capita. The .non –food share of total expenditure is estimated through regressing the food share (mi) of each household i on a constant and the log of the ratio of total consumption expenditure to the food poverty line (Z):

$$\mathbf{Mi}=a\times b(x)$$

$$mi = \propto + \beta \log\left(\frac{yi}{zf}\right) + E_i \qquad (2)$$

Where: **mi** = denotes the share of food items from the total household expenditure,

$\mathbf{Y_i}$=refers households total expenditure

$\mathbf{Z^f}$=is the food poverty line

β = regression coefficient

∝=intercept of the food share and after subsequent computation for non-food share

Through this formula, we can obtain the total poverty line, and then, obtain the non-food poverty line by subtracting the food poverty line from the total poverty line

$$\mathbf{T^f} = Z^f(2-\propto) \qquad (3)$$

Where: Z^f=is the food poverty line; ∝= a constant obtained from the liner regression

Then poverty line, food poverty line and non-food poverty line can be obtained accordingly Defining poverty as a function of the household's consumption level can be obtained through Foster-Greer-Thorbecke (FGT) poverty index. The Foster-Greer-Thorbecke (FGT) poverty indices are widely used because they are consistent and additively decomposable (Foster et al., 1984).Thus, the poverty measure for household $_j$ can be written as

$$\mathbf{FGT}=\frac{1}{N}\Sigma\left(\frac{Z-yi}{Z}\right)^{\alpha} \qquad (4)$$

Where: **N** =total number of people

Z =the poverty line

$\boldsymbol{\alpha}$ =The FGT parameter takes the value of 0, 1 and 2 depending on the degree of concern about poverty. When α= 0, it is incidence; α =1, it is deep (depth); α=2, it is severe.

Yi= is the value of poverty indicator/welfare index per capita, in this case per capita expenditure in increasing order for all households.

The poverty severity index computed through the FGT model is used as the dependent variable in the multivariate analysis. Tobit model (Tobin,,1958) was used to estimate the key predictors of severity. The model has been extensively used by economists to measure the effects of changes in the explanatory variables (xi) on the probability of being poor and the depth or intensity of poverty (Mc Donald & Moffit, 1980). The Tobit model has a function,

$$\mathbf{q_i} = P_i = X_i \beta + e_i \text{ if } Pi > Pi^*$$
$$= 0 = X_i \beta + e_i \text{ if } Pi \leq Pi^* \qquad i = 1, 2 \ldots\ldots\ldots n \qquad (5)$$

Where: $\mathbf{q_i}$ is the dependent variable. It is discrete when the households are not poor and continuous when they are poor.

$\mathbf{P_i}$ is the probability of being poor (the severity of poverty) and is defined as $(Z - Y_i)/Z$

$\mathbf{P_i^*}$ is the poverty depth, when the poverty line Z is equals the expenditure per adult equivalent.

$\mathbf{X_i}$ is a vector of explanatory variable.

$\boldsymbol{\beta}$ is a vector of un-known co-efficient and it is an independently distributed error term.

The values of this dependent variable ranged between 0 and 1 where 0 indicates worse poverty situation. The co-linearity effect was tested using variance inflation factor (VIF) for all independent variables; given by VIF $(X_i) = 1/1\text{-}R^2_{i.}$ The result confirmed that the explanatory variables had no trouble of multi collinearly. The heteroscedasticity test computed, using the Breusch-Pagan (a.k.a. Cook's Weisberg's), showed small Chi-square values, indicating heteroscedasticity was not a problem.

3. Results

3.1 Background Characteristics

Table 1 presents the background characteristics of the respondents. The distribution of the respondents by religious status shows 54 percent were Orthodox Christians, Protestant (37%) and the remaining 9 percent were Muslims and followers of other beliefs. More than two third (71%) were married and the remaining (29%) unmarried (including divorced, widowed and never married respondents). About half of the households had a size of 4-6, 28 percent had 1-3, 19 percent had 7-10 and only 3 percent of the respondents reported having a size of more than 10. More than two third of the households (69 %) were headed by male while the remaining 31 percent were female headed. Respondents were also asked if they migrated from other places, and 90 percent of them were found to be migrants. The distribution of the respondents by education ranges from illiterate to graduate/degree and above.

Table 1: Percentage distribution of respondents by selected socio-demographic characteristics, Hawassa town (n=311)

Characteristics	Frequency	Percentage
Religion		
Orthodox Christian	168	54.0
Catholic	8	2.6
Protestant	115	37.0
Muslim	20	6.4
Marital status		
Married	220	70.7
Separated	13	4.2
Divorced	15	4.8
Widowed	46	14.8
Unmarried	17	5.5
Household size		
1-3	88	28.3
4-6	156	50.2
7-10	58	18.6
above 10	9	2.9
Head of the household		
Male	214	68.8
Female	97	31.2
Migration status of the respondent		
Non migrant	31	10.0
Migrant	280	90.0
Education of the household head		
Illiterate	65	21.0
Skill based adult education	15	4.8
Primary first cycle	49	15.8
Primary second cycle	57	18.3
Secondary education	47	15.1
Preparatory	20	6.4
TVET	39	12.5
First degree	18	5.8
Above first degree	1	.3
Education of the spouse		
Illiterate	76	24.0
Skill based adult training	11	3.5
Primary-first cycle	39	12.5
Primary- second cycle	56	18.0
Secondary	35	11.3
Preparatory	23	7.4
TVET	36	11.8
Degree	30	9.7
Above first degree	5	1.7

Source: own survey, 2015.

Table 1: Percentage distribution of households by selected economic characteristics and wealth indicators, Hawassa town, (n=311)

Characteristics	Percentage
Ownership of house	
Private	46.9
Rent	38.6
Kebele (village admin.)	13.9
Relatives	2.3
Others	.3
Wealth status of the household	
Poor	52.5
Medium	46.9
Better	.6
Available household labor (age 15-59)	
0-3 members	60.1
4-6 members	29.9
above 6 members	10.0
Dependent household members (children and aged)	
0-3 members	87.6
4-6 members	8.0
above 6 members	4.4
The household ever taken any credit	
Yes	34.4
No	65.6
The source of the material or financial support	
Safety net	3.2
Government food aid	15.1
from religious institutions	1.3
From CSOs	1.3
Idir (local association)	4.2
relatives and others	2.3
No support received	72.6
Saving status of the household	
Having active saving account	15
No saving account	85

Source: own survey, 2015.

Table 2 presents the distribution of respondents by selected household economic characteristics. With regards to ownership of house, 47 percent reported having their own private house, and the majorities (53%) have reported living in rented houses, government (*kebele*) houses or with their relatives. The wealth status of the sampled households was calculated by simple summation of affirmative responses on ownership of selected household assets such as car, television, sewing machine, land, sofa, bed dining table and the like. Once value of 1 (owned) and 0 (not owned) is given for each entries, a summary index was

produced categorizing the households into poor, rich and medium. As a result, 52 percent were recognized as poor and 47 percent as medium level. Only 1 percent of the households fall in better-off category with reference to the other two groups. The distribution of labor availability indicates that 60 percent of the households had 0-3 adult members in the age group 15-64 (actual and potential labor force combined), 30 percent had 4-6 members and the remaining 10 percent had 6 members. On the other hand, the distribution of the number of the dependent household members reveals that 88 percent of the households had 0-3 dependents, 8 percent had 4-6 dependents and the remaining 4.4 percent reported >6 dependents. In terms of credit access, 34.6 percent of them reported having taken credit from different sources at least once in the past. Only 27.6 percent of the respondents claimed getting financial and material support from different sources such as CSOs, religious institution, *Idir* (the community support group), relatives and government food aid**.**

3.2 Summary of Estimated Poverty Indices

As stated in the methodology section above, the poverty line was derived from the household consumption expenditure of food and non-food items, and was computed using CBN. The absolute poverty line is then estimated per adult equivalent at current price. To come up with the adult equivalent, the study employed the estimated caloric requirements, on the basis of age and sex set by World Health Organization (WHO, 1985). Table 3 shows the food and non-food poverty line of the household which are 213 and 92 respectively. The total poverty line computed was 305.

Table 3: Poverty line per month of the study area in Ethiopian Birr, Hawassa town (n=311)

Poverty line	**values at current price**
Food poverty line	213
Non food poverty line	92
Total poverty line	305

Source: own survey, 2015. Note: 1 Ethiopian Birr = 21.63 USD

Table 4: Incidence, depth and severity of poverty among the respondents. Hawassa town, (n=311)

	food poverty	**total poverty**
Poverty incidence (P0)	.469	.434
Poverty gap or depth (P1)	.238	.155
Poverty severity (P2)	.145	.066

Source: own survey, 2015

The incidence of poverty was experienced by about 47 percent of the households, and this implies that 47 percent of the total households were living below the food poverty line. Put it differently, 47 percent of the sampled households were unable to meet the minimum intake of 2200 Kcal per adult per day, showing that poverty is rampant in the study area. The

total poverty incidence is slightly lower than the food poverty incidence (47% and 43% respectively). The percentage of poverty gap or depth was about 24 percent which denotes that, in addition to poverty being pervasive, it is considerably deeper. The poverty severity index was 15 percent /15% of the respondents were extremely poor during the survey/.

Table 5: Adult consumption expenditure in each quintile, Hawassa town, (n=311)

Quartile group	mean	Std. Dev	% of mean expenditure	frequency
First quartile	155	14	9.52	62
Second quartile	221	21	14.29	62
Third quartile	292	19	12.93	62
Fourth quartile	371	28	19.05	62
Fifth quartile	487	65	44.22	62
	1526	147	100	63

Source: own survey, 2015

The percentage of the core poor households is about 9.2 percent implying that per capita expenditure being 155.Those categorized as moderately-poor constitute 14.29 percent of the total respondents with per capita expenditure of 221. Also, 44.22 percent of the total households were categorized as non-poor with a mean per capita expenditure of about 487. The remaining households were found in between these extremes.

3.3 Perception of poverty vulnerability

Table 6 presents the reported believes/ perception of the respondents concerning poverty. Of the total respondents, 64.6 percent reported health problems of key household members, 41.2 percent attributed their vulnerability to poverty experience on increasing household population, inflation was reported by 59.8 percent of the respondents, poor or absence of saving culture (65 %), lack of job opportunity and information (46 % each) and quite good proportion (47.9 %) mentioned factor related to lack of interest to participate in productive activities.

Table 6: The percentage distribution of respondents for the reasons of vulnerability to poverty, Hawassa town, (n=311)

Characteristics	Yes (%)
Large household population	41.2
Escalating inflation	59.8
Poor/ absence of saving culture by the household	65.0
Lack of credit access	38.3
Lack of information	46.0
Lack of job opportunity	46.0
Actual/ perceived health problem on key household member	64.6
Poor education	30.5
Disability of key household member	19.3
Lack of interest to participate in productive activities	47.9

Source: own survey, 2015

3.4 Predictors of household poverty severity

The study employed Tobit model to examine the key predictors of poverty severity in the study area. The response variable (poverty severity), which is a dichotomous variable, was regressed against 20 explanatory variables. As presented in table 7, five of the twenty variables appeared significant predictors of household poverty severity at different p values ($p< 0.05$): age, number of dependent household members, household size, educational status of household head and quality of housing. Holding other variables constant, age of the household head affects poverty severity positively at 1% level of significance, indicating that as age increases by one unit, the marginal effect of poverty severity increases by six percent. The negative effect of age square shows the non-linearity of age to poverty severity for all levels of age categories.

Table 7: Determinants of severty of poverty (Tobit Model), Hawassa town (n=311)

Dependent variable :(p2) Poverty Severity							
Explanatory Variables	**dy/dx**	**Std. Err.**	**z**	**P>z**	**95%**	**[C.I.]**	**X**
Age	0.057	0.016	3.640	0.000	0.026	0.087	36.836
Age ^{2}	-0.001	0.000	-3.150	0.002	-0.001	0.000	1786.410
Dependents	0.098	0.036	2.730	0.006	0.028	0.168	1.740
Saving status	-0.030	0.147	-0.210	0.836	-0.318	0.257	0.138
Household size	0.153	0.023	6.610	0.000	0.107	0.198	5.029
Info. access	0.005	0.041	-0.130	0.897	-0.086	0.075	1.994
Income diversity	-0.012	0.056	-0.210	0.835	-0.121	0.098	2.174
Migration Status	-0.013	0.197	-0.070	0.946	-0.399	0.372	0.900
Head's Edu Status	-0.130	0.075	-1.740	0.052	-0.277	0.016	2.293
Spouse Edu stat	-0.006	0.013	-0.510	0.609	-0.031	0.018	5.749
Adult (15-64)	-0.019	0.043	-0.440	0.662	-0.102	0.065	1.563
Headship	0.019	0.153	0.130	0.899	-0.280	0.318	0.309
Quality of house	-0.187	0.103	-1.820	0.049	-0.389	0.014	0.695
Head-married	0.231	0.256	0.910	0.365	-0.270	0.733	0.730
Head-divorced	0.138	0.266	0.520	0.602	-0.382	0.659	0.048
Head-widowed	-0.093	0.249	-0.370	0.709	-0.582	0.396	0.209
House own/ship	-0.084	0.066	-1.280	0.200	-0.212	0.044	1.682
Food ratio	0.024	0.107	0.230	0.821	-0.186	0.234	0.624
Petty trading	-0.249	0.157	-1.590	0.112	-0.557	0.058	1.891
Head-pension	0.051	0.157	0.330	0.744	-0.257	0.360	1.916
Constant	-1.160		0.596	0.052			
Number of observations = 311							
Psedo R^2 = 0.2212							
Log likelihood = -249.01816							

Source: own survey, 2015

The number of dependents in the household is also positively associated with the poverty severity (at $p< 0.05$) where a unit increase in the number of dependents would increase the probability of poverty intensity by 10 percent. Household size is positively correlated with intensity of poverty at 1% significance level. The marginal effect shows that addition of a family member increases the level of poverty severity by 15.3 percent. Educational level of the household head negatively affects poverty severity at 10% significant level, that is, a one unit increase in household head's educational level decreases the household poverty severity by 13 percent. The regression result also shows that there is a negative association between house quality and poverty severity ($p<0.05$). Its marginal effect showed that as the quality of the house increases by one unit, poverty tends to decrease by 19 percent.

4. Discussion and Conclusion

The current study has attempted to measure the level of household poverty using the commonly used parameters: incidence, depth and severity based on a random sample of 311 households selected from a fastest growing city of Southern Ethiopia, Hawassa. The selection of the city was partly justified by the fact that it is the seat of the regional government, serving as both the economic and political capital and melting pot for ethnic and cultural diversity,

The study employed Cost of Basic Needs approach (CBN) to estimate the poverty line of the sampled households, which has been used in many similar studies in Ethiopia (eg. Adugna and Sileshi, 2013; Mengistu, 2013;Tegodie, 2011;Yonas, 2011). The poverty parameters (P_0, P_1, and P_2) were computed as stated in Table 4 above. It is noted that the values of the three indices are somewhat high (43%, 24 % and 15%) compared to some studies conducted under nearly similar settings. For instance, the result is comparable with a recent study conducted in Addis Ababa based on cost of basic needs approach which documented that, out of the 3462 surveyed households, 1415 of them were found to be poor (40.9%) with poverty gap and severity indices of 0.15 and 0.07, respectively(Tegodie,2011). Another study conducted in Eastern Ethiopia (Somali Region) reported absolute head count index of about 0.67 implying that 67 percent of the population was unable to get the minimum calorie required (2200 Kcal per day per adult) (Mengistu, 2013). In another recent study conducted in remote districts of SNNPRS, Adugna and Sileshi (2013) reported that about half of the 197 households were poor. This finding is also consistent and comparable with other studies conducted in some African countries. For example, a study conducted in a Nigerian city (Igbalajob et' al, 2013) documented that incidence of poverty (P_0) was 59.3 percent. The

value of P_1 (poverty depth) and poverty severity were 27.6 and 16.3 percent respectively. However, the proportion of poor computed in this study was much lower than the finding reported in the capital city of Sera Leon (Freetown), which was above 71 percent (Sonja, 2007).

The fact that poverty gap index provides a clearer perspective on the depth of poverty, the computed figure (i.e 24 %) denotes that this fast growing city has more pronounced problems compared to some of the figures reported by other recent studies in Ethiopia and African settings. One of the possible explanations for the relatively higher level of poverty among the study communities is the ever increasing price escalation, drought, erratic rainfall and crop failure affecting food supply leading to sustained household food insecurity, particularly during the last 5-10 years. Previous studies reported that more than 40 percent of households were food insecure in the study zone (Nigatu and Stoecker, 2011; Mengistu et' al, 2008; Asefach and Nigatu, 2006).

The measures of depth and severity of poverty are important complements of the incidence of poverty. It might be the case that some groups have a high poverty incidence but low poverty gap (when numerous members are just below the poverty line), while other groups have a low poverty incidence but a high poverty gap for those who are poor (when relatively few members are below the poverty line, but with extremely low levels of consumption or income) (Ravallion, 1998). In addition to the higher figures reported in this study, it is also important to note how the poor perceive their experience of poverty. As clearly presented in Table 6, respondents have enumerated various reasons for poverty to set in, which ranges from simple micro level attitudinal factors to a more macro level of price escalation/ inflation.

The regression analysis witnessed that five of the twenty variables were significant predictors of household poverty severity at different p values ($p< 0.05$): age, number of dependent household members, household size, educational status of the head of the household and quality of the house. The positive relationship between the age of the household head and the likelihood of facing severe household poverty is well documented (Tegene, 2010), and is consistent with the theoretical ground that older household heads' ability to work and earn income will decrease as age increases. As the result confirms, no doubt that higher level education leads to a reduction in poverty by increasing employment opportunities and higher income (Ferdi, 2009; Teal 2001). Several studies have reported that the severity of poverty is higher among people with little or no educational background (Adepoju et' al, 2012; Akerele et' al, 2011). A very simple linear relationship explaining the positive correlation between

number of dependent household members and poverty severity lies in the fact that the larger the number of less active adults (e.g., the older and younger children) in a household, the heavier the burden on the active members in meeting the cost of minimum household nutrition.(Tegene,2010; Mensabo et'al., 2009; World Bank, 1996).A study by Ingrid & Stephan (2005) titled *"The determinants of income mobility and household poverty dynamism in a South African Community"* identified four types of poverty traps; large initial household size, poor initial education, poor initial asset endowment and poor initial employment access that dominate the otherwise observed regression towards the mean..

In conclusion, the findings of this study should be cautiously taken or interpreted since there are certain limitations inherent in the methodology and set up of the study. For instance, the findings were based on small sample size selected from the study area, and hence, may not be possible to generalize the finding to other growing cities in the zone/region. Second, the parameters used are known to have some weaknesses. For instance, the poverty count (Po) ignores the depth of poverty; the headcount index does not change when the poor become poorer, (Ravallion ,1996.) Poverty gap index ignore the effect of inequality between the poor, and does not capture differences in the severity of poverty amongst the poor (Ravallion,1996).

Despite these limitations, however, the study can create a clear understanding of the depth and width of household poverty in the study area and may influence decision makers to put poverty at a priority. It also imparts some policy implications and directions, particularly for overall assessment of the region's progress in poverty alleviation and the evaluation of specific public policies or private initiatives. Given the very high poverty rates reported in this study, needless to mention that both the regional and local governments should make concerted effort to strengthen the interventions to curb the growing public concern of poverty.

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The Multiplier of Tourism and its Beneficial Properties for the National and Local Economy

Abstract:
Greece is one of the most developed tourist countries of the world, characterised by its rich history, its idyllic locations and the large number of organised hotel complexes for the needs of the modern tourist-consumer. In 2014 Greece welcomed 23 million visitors, achieving a significant increase of tourism revenues, which helped the improvement of its position among the fifteen first countries in the world ranking of the largest tourist countries.

In our country, the influx of millions of tourists every year and tourism expenditure arising from this flow of tourists has not been assessed or evaluated on the right bases in order to form a developmental weapon for the development of local communities.

The purpose of this study is to investigate and demonstrate the beneficial capacity of the tourism multiplier in evaluating its effect on the calculation of tourism income for the national economy, tax revenues and thus for the development of local communities.

The study also demonstrates through an active example the calculation of the actual tourism income generated with the use of the multiplier.

Keywords: tourism multiplier, tourism expenditure - consumption, tourism development.

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1. Introduction

As far as both its offer and demand are concerned, tourism has specific characteristics which distinguish it from other economic activities (Papatheodorou & Sinclair, 2010).

The followers-proponents of tourism often refer to its beneficial effects on a national economy by the positive *effect of the multiplier*. This is about the *effect* of *tourism expenditure* during a year, an effect that is actually... "exhausted" once its amount *cannot be calculated*! In each cycle of *tourism expenditure* an effect on economy is motivated or induced, which *doubles* the positive effects.

Tourism Multiplier

Hypothesis for Tourism Expenditure 1,000 euro	
1,000.00	----------
500.00	(1/2) x 1,000
250.00	$(1/2)^2$ x 1,000
125.00	$(1/2)^3$ x 1,000
62.50	$(1/2)^4$ x 1,000
31.25	$(1/2)^5$ x 1,000
15,63	$(1/2)^6$ x 1.000
7,81	$(1/2)^7$ x 1.000
The effect of the 1,000 € on the economy was like 2,000 €	

Tourism multiplier demonstrates that the initial 1,000 € of tourists' expenditure become an income of 2,000 € in the community where they are spent over the course of a year. The multiplier formula is:

$$M = \frac{1}{1-\frac{1}{2}} \times 1{,}000 = \frac{1/1}{1/2} \times 1{,}000 = \frac{1}{1} \bullet \frac{2}{1} \times 1{,}000 = 2 \times 1{,}000 = 2{,}000$$

2. The Theory of Multiplier

New credits that are introduced in an economy in any form - investments, governmental grants or expenses, missions of workers abroad or tourism expenditure - stimulate the economy, not once but repeatedly in case of a new consumption of the multiplier phenomenon.

John Maynard Keynes (1936),[3] a famous economist and R. K. Kahn (1931)[4] developed the idea that economic growth is the result of investment, which create jobs and income for

[3] Keneys J. M. was a British economist, mathematician, University lecturer and writer, and with his work and followers he developed the so-called Keynesian school of economics.
http://en.wikipedia.org/wiki/

[4] The concept of the multiplier first appeared in economic theory by R.F. Kahn in an article published in the Economic Journal in June 1931 entitled "The Relation of Home Investment to Unemployment". http://en.wikipedia.org/wiki/

the future. Exports bring money besides domestic economy. For the economy, tourism income from foreign tourists is exports for the countries (Latham, 1989).

Keynes (1936) calls the exports "rejuvenation injections" in an economy, injections that add to economic growth. Such an injection affects the economy through the nourishing of its internal expenditure.

New money remains in the economy with spending and re-spending. Some lose their motivational value quickly in the form of leakage – savings, taxes and various outflows. The larger the outflow, the lower the multiplier. The savings that are not re-invested immediately decrease the demand for goods and services. Moreover, if taxes are not re-spent they reduce the financial effect of new money.

Imports are an outflow in which money is spent elsewhere and it does not motivate the said economy. Economic growth is created when inflows are larger than outflows.

Professor Wassily Leontief[5] contributed in the theory of the multiplier through his study on the theory of import – export, which demonstrated that the different sectors (or industries) within an economy are related and influence one another. The results of the relationship among industry sectors and measurements are demonstrated in his study "The economic impact of tourism in Hawaii" 1970-1980.

In negotiating the principle of the multiplier Samuelson (1970)[6] developed his economic theory based on the main analysis and the assumptions of Keynes. Simply he chose to focus mainly on the link of the net investment to national income, insisting, as already mentioned, on attaching to the multiplier the characteristics of a numerical coefficient, which demonstrates the size of the resulting income growth after the given increase of investment ("Economics", Chapter 9, par. b, page 219), and then he provides its definition:

"The multiplier is the number by which the change in investment must be multiplied in order to determine the resulting change in total output."

Through a series of extremely simple calculations, Samuelson (1967) concludes to almost the same result for the multiplier as Keynes. With the common logical assumption that the marginal propensity to consume is 2/3, he also concludes that the multiplier is 3 (1 as a product of primary expenditure plus 2 more on secondary recurrent consumption

[5] The great contribution of Wassily Leontief (1905-1999, Nobel Prize in Economics, 1973) in general equilibrium theory is mainly the well-known model of input-output (input-output analysis). http://el.wikipedia.org/wiki

[6] Paul Anthony Samuelson (15 May 1915 – 13 December 2009) was an American economist and the first American to be awarded the Nobel Prize in Economics in 1970. He included mathematical methods in the economy. http://el.wikipedia.org/wiki

expenditure). However, in the case that marginal propensity to consume is around ¾ Samuelson increases the multiplier to 4.

At this point, it should be reminded as already mentioned that Keynes considered that the marginal propensity to consume was unlikely not to reach or exceed ¾ in times of recession.

This is the reason why we are claiming that Samuelson's multiplier at 4 is much closer to our reality. Actually his version for the ¾ of the marginal propensity to consume and ¼ for marginal propensity to save is probably a really optimistic scenario for our data. It is also worth noting – and this is probably the most critical point – that Samuelson's scientific analysis refers also directly to the effect of the of the opposite operation of the multiplier (negative "sign") through the corresponding connection between the reductions in investment and the (multiplicative) reduction of the national income.

Samuelson's theory of the multiplier works also for tourism, according to the following formula:

$$M = \frac{1}{1 - \frac{\Delta C}{\Delta Y}}$$

Where: $\Delta C \rightarrow$ change in the level of consumption
$\Delta Y \rightarrow$ change in the level of income
$\Delta C/\Delta Y \rightarrow$ MPC: Marginal Propensity to Consume.

Tourists spend money in a country depending on the change of their income, and their consuming behaviour is derived from the change that has occurred to their income (Latham and Edwards, 2006). This percentage, also known as MPC, reflects the capability of an economy for consumption, not the willingness or need for consumption.

Example: If ΔY: 3,272 € and ΔC: 2,272 €

$$M = \frac{1}{1 - \frac{2,272}{3,272}} = 3.267$$

Then, the *multiplier* is

and the $\text{MPC} = \frac{\Delta C}{\Delta Y} = \frac{2,272}{3,272} = 69.4\%$

Based on the data in our example, when total expenditure of tourists is multiplied by 3.267, the result is conducting a minimum level of works as a result to tourism expenditure

during the course of a year. This means that the result of this multiplication (Tourism expenditure x Multiplier) gives the level of income created by tourism.

3. The multiplier in relation to Greece

In the last 30 years tourism is a main source of growth, income generation and employment for Greece. Its contribution in the GDP is constantly greater than 15% (see Table 1), while of particular importance is tourism's contribution in covering the commercial balance deficit.

It is estimated that tourism consumption affects 60% of Greek economy's sectors, and the tourism multiplier is estimated at 2,184, which means that for every euro consumed in tourism a more than double level of secondary consumption is generated in the rest of the economy (Tsartas, et al, 2010).

Table 1: The contribution of tourism in the GDP, the employment and the commercial balance

	1990	2000	2010
GDP	15.2%	15.9%	15.1%
Direct & indirect employment (% on total employment)	19.5%	19.8%	18.5%
Direct & indirect employment ('000)	731.8	781	774.2
Coverage of commercial balance deficit	20.8%	45.9%	33.7%

Source: WTTC, BoG

Tourism Multiplier for certain countries (in 2009)

Western Samoa	0.39
Republic of Palau	0.50
Solomon Islands	0.52
British Virgin Islands	0.58
Island	0.64
Cayman Islands	0.65
Fiji Islands	0.72
Bahamas Islands	0.79
Antigua	0.88
Mauritius	0.96
Hong Kong	1.02
Bermudas	1.09
Northern Ireland	1.10
Cyprus	1.14
Dominican Republic	1.20
Jamaica	1.23
Egypt	1.53
Ireland	1.72
United Kingdom	1.73
Turkey	1.96
Greece	2.18

Below we provide the tourism multiplier of income for certain countries and regions of the world, so that to demonstrate whether or by which amount tourism expenditure created by the visiting tourists is multiplied as income in these countries and regions of tourist flow, i.e. the amounts spent by tourists and which constitute in each country the tourism receipts - income, based on data of 2005.

In our country in 2009 the gross tourism receipts in million euro was: 10,061.2, while the amount of tourist spending (expenses of the Greek economy on tourism) amounted to 4,948.9, so the tourist balance was positive and amounted to 5,112.3, which is the amount of net earnings from tourism in that year. For Greek national economy, this means that, based on gross tourism receipts, the income created-imported in the country amounted to:

10,061,200,000 x 2.18 = 21,933,416,000 euro.

However, if the multiplier "acts" on net revenues-profits only, it means that essentially they amount to:

5,112,300,000 x 2.18 = 11,144,814,000 euro.

Assuming that the multiplier of tourism revenue remains the same for the next three years, it is easy to find the resulting benefits of our national economy on tourism when tourist receipts, tourism expenditure and tourism balance for these years is provided, which amount to (in million euro):

for 2010: 10,579.9 / 4,650.8 / 5,929.1
for 2011: 10,284.7 / 2,548.7 / 7,736.0
for 2012: 9,460.1 / 2,109.0 / 7,351.1

As accurately pointed out by Exarchos Georgios (2005), "the size of the multiplier depends on an economy's capability to produce the products - services consumed by tourism industry... the multiplier is greater in powerful economies since the interrelations between the sector of tourism and other sectors of the economy are more robust.

Furthermore, in relation to the impact on employment, Sinclair (1998) writes that the interest has shifted from the level of tourism employment, input-output analysis and multiplier effect (Dwyer & Forsyth, 1998) to the quality and structure of employment.

Once the tourist pays the hotelier, the restaurant owner, the tour operator, etc., this money is added to the income of the recipients, and thus to the national income of the country or destination. It is reported that satisfying customer demand is an important success criterion and it plays a vital role for hotels to stay competitive (Powers, 1995). Of course the hotelier,

the restaurant owner, the tour operator, etc., have to pay wages, catering costs-expenses, taxes, rents, etc with the money they receive, so they further add to national income. This process goes on as money circulates in the economy, but to a lesser extent due to the large leakages involved. The economy does not start immediately consuming or reacting to the incoming money towards the economy.

The structure of the expenditure-costs of foreign tourists in Greece 15 years ago was estimated according to the following percentage (as %) distribution: Hotels 454%, Restaurants, taverns, bars, etc. 16.4%, Jewellery 5.8%, Transport costs (airplanes, boats, taxis etc.) 5.4%, Alcoholic and non-alcoholic drinks 4.7%, Car, yacht rental 3.7%, Food purchases 2.8%, Other goods and services 2.7%, Souvenirs (made of metal, marble, plaster, etc.) 2.6%, Museums, archaeological sites, travel agents 2.4%, Clothing, footwear 2.3%, Fur, leather products, 1.6%, Newspapers, magazines, books, maps, cards, etc. 1.4%, Tobacco, cigarettes 0.9%, Rooms and apartments for rent 0.8%, Fuel, private car maintenance 0.7%, Perfumes, sunscreen 0.3%, Camping 0.1% which total to (100%) of tourists expenditure, i.e. the things on which tourists spend their money in Greece during their travel in our country. Unfortunately, we do not have more recent data or estimates on this issue, because we are sure that since then many things have changed radically in relation to consumption habits of all people around the world and, by extension, to the habits of tourists.

At a second level, it seems that for each 1 € spent-consumed by the tourist during his stay in a country the result for that particular economy to be consumed is at least 2 €! This means that tourism destination countries should make efforts to promote the tourism product, and in particular organised and planned efforts to achieve local support and progress of tourism development as a whole.

The contribution of tourism expenditure in the tax revenue of the destination country is also significant, according to income tax, and it can be calculated using the following formula, if for example the income tax amounts to 10%:

$$\text{Total annual cost x } 3.267 \text{ x } \frac{10}{100}$$

Tourism expenditure contributes in the shaping of a positive economic relationship between costs - profits, which means that the relationship is positive when for every euro invested in tourism development there is a profit of at least five euro. For the relatively developed countries which have successful travel programmes, this relation may be 1 € and 30 € up to 1 € and 50 €, while in the highly industrialised countries that are less economically

dependent on tourism this relation starts from the level of 1 € and 50 € and exceeds 1 € and 100 €.

The *cost-profit relationship* demonstrates the way a particular country spends-invests money for a tourism programme. This relationship may also be *misleading*: a high relationship between cost – profit may be the result of governmental failure to financially support tourism. Furthermore, a low cost – profit relationship may initially be valid for some years, until the actual results of a long-term programme become obvious. In addition to this, a low cost – profit relationship may indicate that tourism expenditure was spent inefficiently.

Based on more recent data, Greek tourism in 2014 contributed 14 billion euro of direct revenues and together with aviation, maritime transport and domestic tourism 17.1 billion euro in the Greek economy. If we accept 2.2 as tourism multiplier as estimated by the Foundation for Economic and Industrial Research (IOBE) in 2012, total direct and indirect contribution of tourism to the real economy is 37.6 billion euro or 20.5% of GDP.

If we adopt the multipliers of the Centre of Planning and Economic Research (KEPE)[7] and the distribution of tourism expenditure, the relevant contribution increases at 45.3 billion euro or 24.7% of GDP. Shortly we will have the final numbers, but it is certain that the truth lies somewhere between these two estimates. Recalling that the contribution of tourism to GDP for 2010 was estimated by IOBE as 15.1%, in four years the contribution of the sector to the Gross national product increased by at least 35%".

4. Tourism Multiplier Coefficient in Greece and Albania for 2013

Using statistics of the World Tourism and Travel Council, we analyzed impact indicators of tourism in the Greece and Albania: direct contribution to GDP (share of total GDP generated both directly and indirectly by the tourism industry), direct contribution to employment (number of jobs generated directly in tourism and travel, plus indirect and induced contributions), total contribution to GDP (the GDP site generated by the tourism industry - hotels, travel agencies, airlines and other transportation, food and leisure units, of the total value of the GDP), total contribution to employment (the percentage of seats direct employment generated by the tourism industry in the total economy). The next step was to calculate the multiplier effect of tourism in Greece and Albania.

The World Tourism Organization defines the multiplier effect as the additional volume of income earned by a unit of tourist expenditure that will be used in the economy.

[7] The Centre of Planning and Economic Research (**ΚΕΠΕ**) was founded in 1959 and it publishes forecasts on short-term developments in the rate of change of real GDP. *www.**kepe**.gr/*

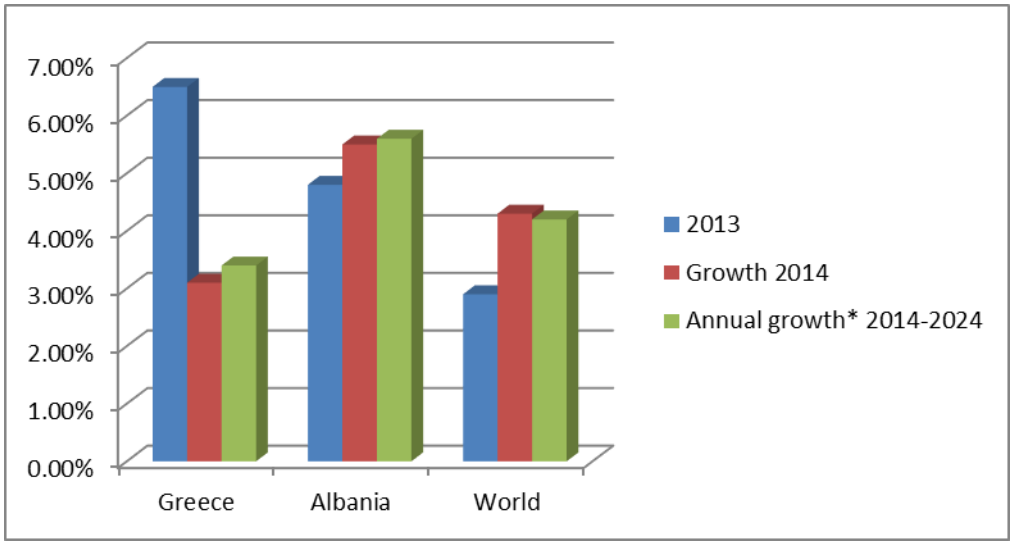
Fig.1 Greece' map

Fig.2 Albania's map

The direct impact of tourism in GDP ranges between 6.5% of GDP in Greece and 4.80% in Albania.

Country	2013	Growth 2014*	Annual growth* 2014-2024
Greece	6.50%	3.10%	3.40%
Albania	4.80%	5,50%	5,60%
World	2.90%	4.30%	4.20%

And graphically:



Graph.1 the direct impact of tourism in GDP

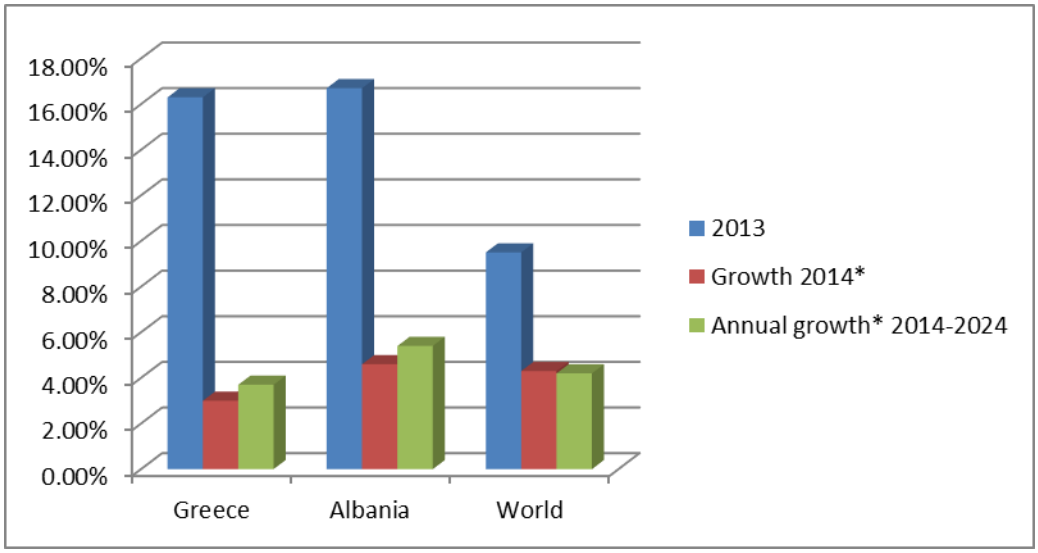
Source: World Travel and Tourism Council Reports - Travel & Tourism Economic Impact 2014

Note: *forecast

The total contribution of tourism to GDP ranges between 16.7% in Albania and Greece 16.3%

Country	2013	Growth 2014*	Annual growth* 2014-2024
Greece	16.30%	3.00%	3.70%
Albania	16.70%	4.60%	5.40%
World	9.50%	4.30%	4.20%

And graphically:



Graph.2 the total contribution of tourism to GDP

Source: World Travel and Tourism Council Reports - Travel & Tourism Economic Impact 2014
Note: *forecast

Direct contribution of tourism in employment of 3.4% globally is reached by Greece (8.90%) and Albania (4.3%)**.** Estimates of the increase in the number of direct jobs in tourism worldwide is 2.2%, Greece 2.60% and Albania 5.20%.

If in the next 10 years expected a 2% annual increase of jobs directly generated in the tourism industry worldwide, the evolutions in Albania will record higher rate, 3.50% than Greece, 1.70%

Country	2013 %	2013 Jobs	Growth 2014*	Annual growth* 2014-2024
Greece	8.90%	319500	2.60%	1.70%
Albania	4.30%	41000	5.20%	3.50%
World	3.40%	2893400	2.20%	2.00%

Source: World Travel and Tourism Council Reports - Travel & Tourism Economic Impact 2014 Note: *forecast

Regarding T&T total contribution in employment**,** nearly 9% of the jobs in the world are related to the tourism industry. In Greece the share is higher, 18,2% and in Albania

15,2%. For the next 10 years is projected to increase globally the total number of jobs, direct, indirect and induced tourism industry by 2.5%, in Greece 2,3% and in Albania 3,2%

Country	2013 %	2013 Jobs	Growth 2014*	Annual growth* 2014-2024
Greece	18.20%	657000	2.70%	2.30%
Albania	15.20%	146500	4.10%	3.20%
World	8.90%	10346700	2.40%	2.50%

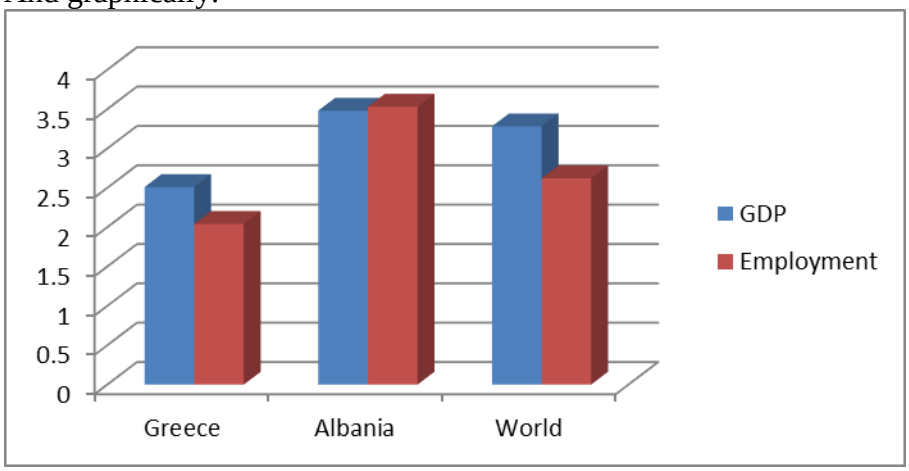
Source: World Travel and Tourism Council Reports - Travel & Tourism Economic Impact 2014 Note: *forecast

Tourism multiplier coefficient for GDP, globally, (3.28) is higher than the one for the employed population (2,62), a phenomenon that is observed in Greece, while in Albania it is approximately equally. The theoretical value of the multiplier (3) is exceeded in Greece and Albania, analyzed for both GDP and employment, only in Greece multiplier values are less than 3 in both cases.

Country	GDP	Employment
Greece	2,51	2,04
Albania	3,48	3,53
World	3,28	2,62

Source: authors' calculations

And graphically:



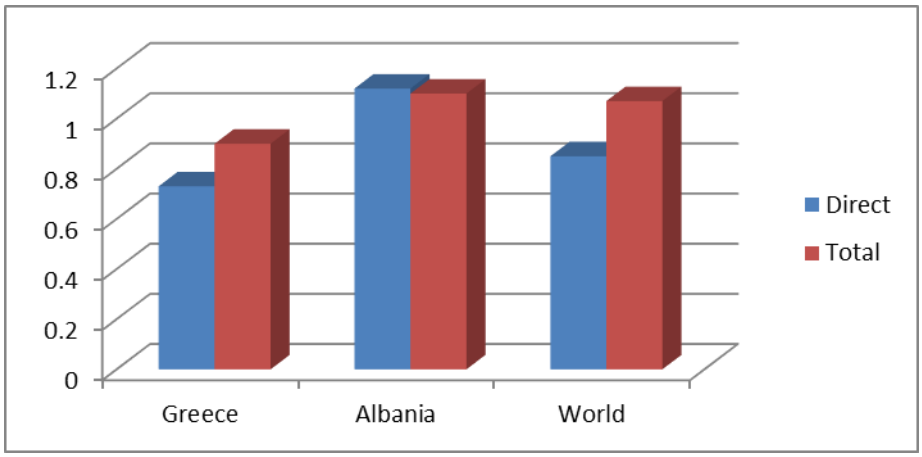
Graph.3 Tourism multiplier coefficient

From the above data, suggested tourism industry is efficient, because the share of T&T industry in GDP is higher than the share in employment. Worldwide tourism activity itself is ineffective (0.85) (Graph.4), but the industry as a whole is effective (1.07), a phenomenon that is not registered in Albania, in the tourism industry is effective both directly and total. In contrast, in Greece, there is an inefficiency of tourism, especially worrying thing for Greece, a major international tourism destination.

Country	Direct	Total
Greece	0,73	0,90
Albania	1,12	1,10
World	0,85	1,07

Source: authors' calculations

And graphically:



Graph.4 T&T Industry efficiency

5. **Conclusion**

The present study demonstrates the benefits from the use of the tourism multiplier in the actual calculation of the revenues from tourism and its impacts on national economy and local communities. Through the theory of the multiplier it is also proven mathematically the structure of the actual relationship of tourism revenue and tourism expenditure.

The use of the multiplier in an example clearly illustrates its effect on the calculation of the actual inflows from tourism and how it should be used for the development of national tourism programmes aimed at the actual development of the country and local communities.

According to Archer (1982) the implementation of the tourism multiplier seems to be partly misinterpreted. However it is commonly accepted that the size of the tourist multiplier depends on the particular circumstances of each specific situation taking into account the size of local economy and, in particular, the degree of interdependence of inter-sectoral links. Consequently, the debate on the performance of the tourism multiplier is set “prima facie” on the basis of the size of the economy of the host society. As tourism expenditures penetrate the economy, the general performance of the region grows, with further proliferation of jobs and a significant increase of the individual income. These results are included in the so-called indirect benefits of tourism activity, and the extent of their performance depends on whether the area’s operating companies are covered in terms of goods and services.

Further studies could be conducted in relation to the history of tourism multiplier and to construct a reliable mathematical model for the forecasting of the country’s multiplier of other

competitively touristic countries too, so that to provide the possibility, apart from the correct distribution of a tourist programme, to react to that tourist programme when the multipliers of other countries increase to a dangerous extent.

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Sustainable Cooperative Management among Fishermen: A Challenge for Greece.

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 decentralized 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.

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1. Introduction

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 environmental policy system results in negative profits for the fishermen and results in declining stocks. Common property resources cause excessive fishing efforts, fisheries overexploitation, decreasing profitability and fishermen's income, as well as a low contribution to the Gross Domestic Product (GDP), and the associated threats to the sustainability of the fish stocks and consequently the food supply (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 fisheries 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 maximize their immediate gains, without allowing for cooperation with other users in order to augment 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 maximizing the well-being of the citizens and they are able to design policies by analyzing 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, organization itself is considered to be attainable only from the top – down (Ostrom, Gardner, and Walker 1994, Ostrom 1999).

2. Fisheries cooperative-management and the environmentally-based approach

Nowadays, in many countries, environmental management is changing its form. It moves from an exclusive state control to a joint management system 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 indigenous 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 the decision-making process (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". *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*. The role of cooperation in augmenting social capital has been documented (Tsobanoglou, 2010). Social capital includes natural capital which through the sustainable use of the common resource, increases the income of the fishing households and allows for more

households to enter the market (Cheong 2004, Isham 2000, Islam and Dickson 2007, WorldFish Center 2007). It represents a sound inclusion mechanism - not simply a labor intensive system for combating desertification and depopulation as well as marginalization of maritime communities- but it works as an integrated cohesive communal process for a working community (Tsobanoglou, 2010).

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 maximization of profits; instead, it is based on local growth and ethical development for the community (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, 2010, Wilkinson and Pickett, 2009). The services that derive from such a system are characterized by high quality and large variety (Roustang 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, 2014). However, developing local partnerships and enhancing social capital through pparticipatory 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 organization 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, Wolfenden, Cram, and Kirkwood, 1994). However, a community cannot achieve the goal of complete self-organization and self-regulation by itself. Even if local fishermen organize 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 cooperative 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.

3. Greece

The situation in Greece seems to be rather dramatic. Despite the fact that extensive legislation on fisheries management, 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 although it behaves as an over-centralized politico-administrative organization (Tsobanoglou, 2001) in the case of maritime affairs and subsequently marine management, seems to be rather detached or distanced. To begin with the General Secretariat for Fisheries has been alternating between various Ministries, and it was only located within the jurisdiction of the Ministry of Rural Development and Food during the past two years. Even though the EU has been promoting the concept and policy of the Blue Growth with special focus on public participation and sustainability within the European Union Area (European Commission 2013), in Greece these European directions have not been followed and the country has been repeatedly facing the threat of penalties. Although various national projects for fisheries data collection and species-specific conservation have been deployed (e.g. for eel), the state has been largely unable to provide the necessary financial support and, inadvertedly, 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. In the Greek case the insular character of the state, its reliance on the tourist sector and the love for the sea it would be rational and sustainable for Greece to try and learn from the cooperative sector in other states such as the Japanese (Vlachopoulou & Tsobanoglou, 2014). The Greek state sees the tourist and agricultural sectors as dynamic areas that may help in the recovery process. Cooperative organization will aid in the sustainability not only of the Greek Island System of communities who host the majority of the tourists in the country but also of the general Greek coastal communities. Local empowerment requires the devolution of political decision to localities in partnership with other concerned actors in a local partnership regime (Tsobanoglou, 2013). The Greek economy, therefore by managing sustainably the marine environment, it would allow for multiple other sectors, and most significantly tourism, to develop significantly. Integrated local development engaging the introduction of territoriality issues (environment) and socio-political processes (participatory) would increase both local employment and social capital while achieving sustainability of fish stocks.

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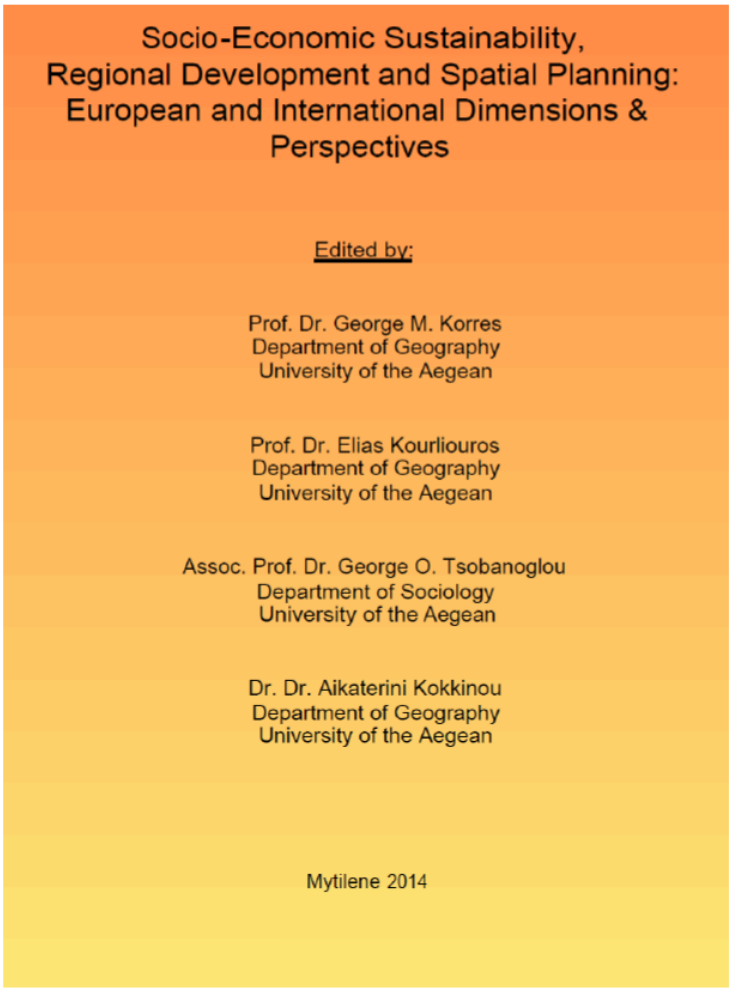

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