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The Gordian Knot of Labor Market in European Union and Greece

Abstract:
The present paper focuses on the labor market and also its relevant inequalities, during the last decade, including years of the Great Recession (2008 – 2010) and the stalled recovery years (2011 - 2012). In a depth analysis of labor market inequalities, labor market is directly linked to the economic, social and political spheres of the European Union. Moreover, one of the objectives of European policy is to ensure the participation and equality in employment, since the policy of equality constitutes an integral part of the common European Social Policy. Consequently, understanding segregation is essential for the attainment of equality between men and women in response to the current financial crisis. The paper presents the situation in the European labor market. Using data from Eurostat, it presents trends in employment rates of each Member State and European Union as a total, giving also special attention to the Greek case. Moreover, some preliminary figures are provided on the evolution of employment rates, by gender and working time, trying to shed light on the patterns of employment change between men and women and part – time employment.

Keywords: labor market, employment, inequality, European Union, Greece

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1. Introduction

The recent global disruption, that started with the U.S.A. subprime mortgage crisis in 2007, it is the deepest and broadest financial crisis since the 1930s. Due to high interconnection of markets, this movement spread beyond the American borders, had affected various countries around the world and has reignited the debate and the structure of global society and economy.

In today's harsh times of financial[2] crisis, several issues of high importance have been brought to the forefront, such as an unprecedented jobs and sales decline and overall disregardment in areas such as work and education (Stiglitz 2009). Around five million people work on shorter time in the advanced economies (IILS 2009). Especially, there has been much discussion also of the European together with the Greek financial crisis that began in May 2010, when it became evident that Greece could no longer service its growing debt. In the summer of 2010, the European Central Bank, the European Commission, and the International Monetary Fund managed to cover the borrowing needs of Greece. In July 2011, a half rescue package was offered to Greece under structural reforms that the Greek government was required to implement. The situation remains unresolved, with a high unemployment rate above 26% in November 2012 (European Restructuring 2013), and especially for youth above 50% in August 2012 (European Restructuring 2012). Greece is the perfect example, where fiscal policy turned to austerity, affected also the labor market (Torres 2010).

The present paper focuses on the labor market and also its relevant inequalities, during the last decade, including years of the Great Recession (2008 – 2010) and the stalled recovery years (2011 - 2012). Labor market constitutes an integral part of the economic and social sphere of the European Union (EU) and that can (re)shape the economic and social development. From a political perspective, the situation on the labor market is used to monitor the European Employment Strategy and responds to the requirements of the economic policy in the European Union. One of the objectives of European policy is to ensure the participation and equality in employment. Consequently, understanding gender segregation is essential for the attainment of equality between men and women in response to the current financial crisis.

However in times of crisis, are the patterns of structural employment change? Does crisis produce different job patterns between men and women, or even polarization? What

[2] Although the term "financial crisis" is applied broadly to situations in which financial indicators decline in value, its definition is conceptualized as "the disturbance to financial markets, associated typically with falling asset prices and insolvency among debtors and intermediaries, which spreads through the financial system, disrupting the market's capacity to allocate capital" (General Secretariat of the Council 2012).

about the change of working time in European Union and Greece? These questions are not only important for understanding the employment impact of financial crisis, but also to understand the potential structural changes general in employment and specifically, between men and women.

The remainder of the paper is organized, following the below structure. Firstly, we discuss the European Labor Policy on gender equality and then we try to give a concise overview of some empirical studies on the topic. We continue by presenting the situation in the European labor market, together with data on trends in employment rates of each Member State and EU as a total, giving also special attention to the Greek case. Moreover, we provide some preliminary figures on the evolution of employment rates, by gender and working time, trying to shed light on the patterns of employment change between men and women and part – time employment. We end by providing some conclusions.

2. The European Policy

The European policy on gender equality has gone through many stages, from the initial goal of equal pay for equal work in the Article 119 of the Treaty that established the European Economic Community (EEC Treaty) in 1957, to the policy of equality for all, in which gender is treated as a criterion of discrimination. Throughout the progress of European policy, European law recognizes the equal treatment in the labor market as a vital component of the social dimension of the EU, since the reduced employment rate of women could be considered as a sign of democratic deficit.

Mainly, the EU has as main objective the elimination of inequalities and promotion of gender equality, through the equal treatment of men and women in the labor market, with particular reference to wages. However, although the policy of equality constitutes an integral part of the common European Social Policy, it is characterized by an intense bibliographic gap.

All in all, the EU policy on gender equality has evolved significantly in the mechanisms, and objectives, but always in accordance with the European priorities (Stratigaki 2008; 2011). The historical trajectory of the gender equality policy in EU can be divided in the following six (6) time – periods:

A) Legal recognition of equal treatment of men and women in the labor market (1957 - 1982).

B) Positive actions for women along with programs on equal opportunities between men and women (1982 - 1990).

C) Inclusion of women in decision - making centers and the inclusion of the notion of gender in all policies (1991 - 2000).

D) Establishment of the European Strategy and the relevant framework for gender equality (2001 - 2005).

E) Establishment of "The European Roadmap for Gender Equality" (2006 - 2010).

F) The European Pact for Gender Equality (2011 - 2020). The main objective of this particular period is to increase the employment rate to 75% for both men and women.

The above mentioned periods are distinguished also by the following characteristics of equal treatment, positive actions for women, inclusion of gender mainstreaming in all policies, inclusion of gender equality in the action "Equality for All" and development of legislative framework on equal pay.

3. Literature Review

The questions of job shifts during and after recession period are extremely common and crucial in the bibliography, since researchers have dealt with such issues and confirmed such changes in terms of employment (Leschke & Jepsen 2012; de Beer 2012). But the existence of a possible job polarization is unclear in other European countries and in the European Union as a whole.

Wright and Dwyer (2003) examined in their paper the quality of jobs generated during periods of job expansion from the 1960s through to the 1990s in the USA. Firstly, they showed that the patterns of change in periods of employment expansion had a bigger impact on structural change in job quality during the late 1990s, that led to a significant asymmetrically polarization. Moreover, there has been a change in gender pattern, namely gender differences in job expansion were very sharp in the 1960s and quite modest in the 1990s.

Also in the United Kingdom, Goos and Manning (2007) showed that since 1975 there is a pattern of job polarization with increase in employment shares in the highest and lowest wage occupations. This polarization of employment could explained also the increased wage inequality over the period of 1976 – 1995, namely by one - third of the rise in the log(50/10) wage differential and one - half of the rise in the log(90/50) wage differential.

Goos et al. (2009; 2010) found that in 15 countries, high paying occupations expanded relative to middle wage occupations in the 1990s and 2000s, and in the total of 16 countries, low paying occupations expanded relative to middle wage occupations.

Oesch and Rodriguez Menes (2011) analyzed occupational change over the last two decades in Britain, Germany, Spain and Switzerland, questioning which type of jobs (high-paid or low-paid) has been expanding. The findings highlighted that the employment expanded most at the top of the occupational hierarchy, among managers and professionals. On the other hand, intermediary occupations (clerks and production workers) declined relative to those at the bottom (service workers).

According to Dwyer (2013) the job structure in U.S.A. is increasingly polarized as high and low-wage jobs grew strongly and many middle-wage jobs declined. The author argues that "care work" theories can explain the robust growth at the bottom of the labor market, since this type jobs contributed significantly and increasingly to job polarization from 1983 to 2007, growing at the top and bottom of the job structure but not at all in the middle.

On the other hand, one of the first study contacted by Eurofound (2008) revealed that during the period from 1995 to 2006, the total employment grew by more than 22 million jobs, assumed that expansions are more important periods for structural change. However, there was a considerable diversity in the economies around Europe, since not all of them were positive. Another study of Eurofound (2011) underlined the consequences of the Great Recession period from 2008 to 2009. More specifically, there were five million fewer people in paid employment in the EU27 Member States in the second quarter of 2010 than in the second quarter of 2008. The main conclusion of the analysis was that employment growth was skewed towards relatively higher - paid jobs and it had been weakest in the middle of the wage distribution. Growth in the lowest - paid jobs was greater (Eurofound 2011).

Finally, Fernández-Macías (2012) presented some alternative evidence on the nature of change in European employment structures between 1995 and 2007, arguing that there was a plurality of patterns of structural employment change across Europe.

4. The Situation in the European Labor Market

But what is the situation on the European labor market, despite the undoubtful progress made over time in the relevant European policies? The question is extremely crucial especially in the European Union with the intense financial and social crisis, which is radically changing the daily life of citizens. Not omitting to mention the EU's "*Europe 2020"* strategy for sustainable and inclusive growth that commits to fostering high levels of employment and productivity, in order to achieve the target of a 75% employment rate among individuals aged 20 – 64 years.

On the other hand, the implications concerning men and women have been differentiated, since the efforts for gender equality can be varied or even canceled, under the high pressure on combating the economic downturn and financial saving. Despite the hardships, women play a significant role in the labor market landscape. Of course, often the distinctive element between men and women is not only the different working paths and experiences in a specific job sector in the labor market, but also the classification in the above specific sector, which largely determines the quality of working life.

Below we present the current situation on the labor market of EU along with the situation in Greece, with the most recent statistics from Eurostat that provide an overview of the situation in the European labor market, including also the Greek case.

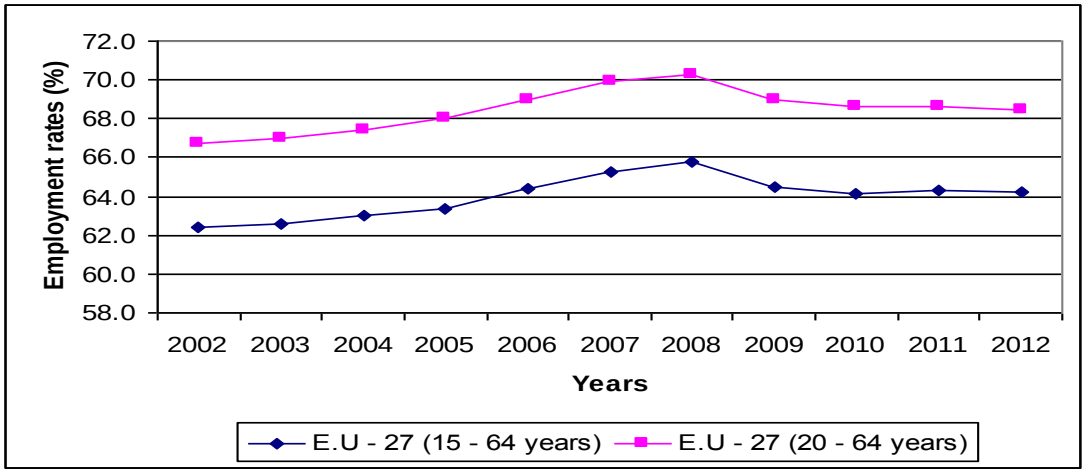
4.1 General Patterns of Employment Change in the Labor Market

According to Eurofound (2013), the common European labor market added nearly 30 million new jobs in the Golden Age of employment before the Great Recession in 2008. However, during the last years from 2002 to 2012, several changes occurred in employment rates, namely the ratio of people that are employed and are in a working age. For example the total employment rate for the EU27 Member States and for the individuals that belong to the age group of 20 - 64 years, in 2002 was estimated at 66.7% and thereafter gradually increased. Specifically, in 2005 was estimated at 68.0% and in 2008 to 70.3%. However, since 2009 the overall employment rate for the age group 20 -64 years was declined. Specifically, for 2009 was estimated at 69.0%, in 2010 and 2011 in 68.6% and in 2012 at 68.5% (Figure 1) (Eurostat 2013).

In other words, there were five million fewer people in paid employment in the EU27 in 2010 compared with 2008 as a result of the crisis, which was the most severe employment decline in over a generation (Eurofound 2013). Consequently there is no achievement of the objective of the strategy “Europe 2020”, namely achieving 75% employment for men and women aged 20 - 64 years.

The same occurs for individuals belonging to the age group of 15 - 64 years. Specifically in 2008, the overall employment rate was estimated at 65.8%, while for 2010 decreased to 64.1%. The following year 2011, there was a tentative increase in the employment rate, which was estimated at 64.3%, because one million jobs being added as labor markets began to revive, partly as a consequence of stimulus measures introduced in the aftermath of the financial crisis (Torres 2010). Finally the year of 2012, the employment rate was estimated at 64.2% (Figure 1) (Eurostat 2013).

Figure 1. Total employment rate of the European Union, by age group and for the period 2002 – 2012.



Source: Eurostat (2013) (online data code:lfsi_emp_a).

However we have to highlight the fact that it remains a large variation in national labor market performances within the common European labor market of EU27 Member States. For the year 2011, the overall employment rate of 75% and above (achieving the "Europe 2020" for 75% of employment) were found in Sweden (80.0%), the Netherlands (77.0%), Germany (76.3%), Denmark (75.7%) and Austria (75.2%). It should be noted that very high employment rates were found in countries outside the EU, such as in Iceland (80.6%), Norway (79.6%) and Switzerland (81.8%) (Table 1) (Eurostat, 2013). So for 2011, only five EU countries achieved the target for 75% employment. At the other end of the scale the lowest employment rates for 2011, observed mainly in southern Europe, i.e. Greece (59.9%), Italy (61.2%), Malta (61.5%) and Spain (61.6%), along with Hungary (60.7%) (Table 1) (Eurostat 2013).

For the year of 2012, the overall employment rate of 75% and above were found in Sweden (79.4%), the Netherlands (77.2%), Germany (76.7%), Austria (75.6%) and Denmark (75.4%). In comparison with 2011, Sweden and Denmark have a decrease in their employment rates, respectively of 0.6% and 0.3%. High employment rates were remained outside the EU, in Iceland (81.8%), Norway (79.9%) and Switzerland (82%). On the other hand, the lowest employment rates for 2012, observed again in southern Europe, i.e. Greece (55.3%), Spain (59.3%), Italy (61%) and Malta (63.1%) (Table 1).

It is apparent that there is an extended dispersion of current employment rates in the EU from 79.4% in Sweden to 55.3% in Greece (Figure 2). Specifically, Greece follows the overall trend on employment of EU27 Member States. For example the total employment rate

for Greece and for the individuals that belong to the age group of 20 - 64 years, in 2002 was estimated at 62.5% and thereafter gradually increased. Specifically, in 2005 was estimated at 64.6% and in 2008 to 66.5%. As the overall trend in EU27 from the year of 2009, the overall employment rate in Greece was also declined. Specifically, for 2009 was estimated at 65.8%, in 2010 in 64.0%, in 2011 in 59.9% and finally in 2012 in 55.3%. The smallest difference between the overall employment rate in EU27 and Greece was indentified in the year of 2009 (+3.2%), 69% in EU27 and 65.8% in Greece. On the other hand, the highest (+13.2%) was indentified in the year of 2012, 68.5% in EU27 and 55.3% in Greece (Figure 2).

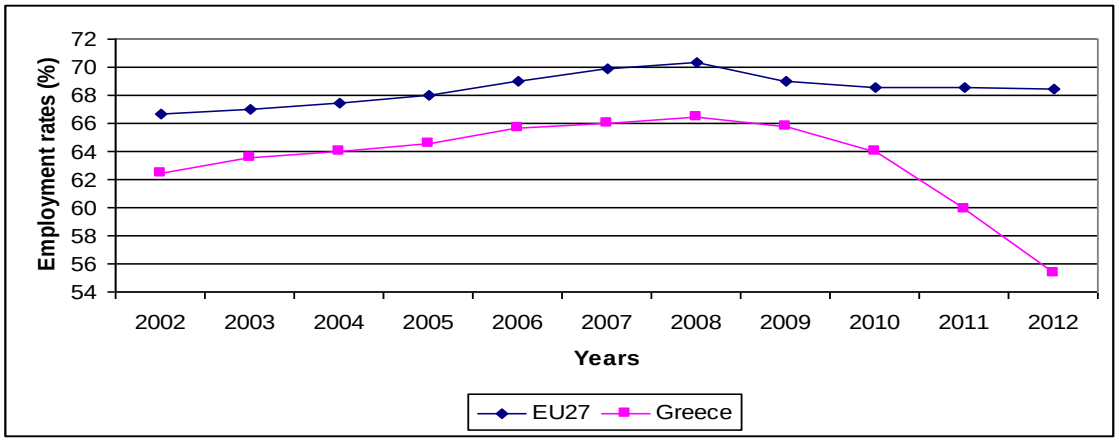
Table 1. Employment rates for age group 20 - 64 years, by country and for the period 2002 – 2012.

Countries	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU27	66.7	67.0	67.4	68.0	69.0	69.9	70.3	69.0	68.6	68.6	68.5
Belgium	65.0	64.7	65.6	66.5	66.5	67.7	68.0	67.1	67.6	67.3	67.2
Bulgaria	55.8	58.0	60.1	61.9	65.1	68.4	70.7	68.8	65.4	63.9	63.0
Czech Republic	71.6	70.7	70.1	70.7	71.2	72.0	72.4	70.9	70.4	70.9	71.5
Denmark	77.7	77.3	77.6	78.0	79.4	79.0	79.7	77.5	75.8	75.7	75.4
Germany	68.8	68.4	68.8	69.4	71.1	72.9	74.0	74.2	74.9	76.3	76.7
Estonia	69.2	70.0	70.6	72.0	75.8	76.8	77.0	69.9	66.7	70.4	72.1
Ireland	70.7	70.6	71.5	72.6	73.4	73.8	72.3	67.1	65.0	63.8	63.7
Greece	62.5	63.6	64.0	64.6	65.7	66.0	66.5	65.8	64.0	59.9	55.3
Spain	62.7	64.0	65.2	67.2	68.7	69.5	68.3	63.7	62.5	61.6	59.3
France	68.7	69.7	69.5	69.4	69.3	69.8	70.4	69.4	69.2	69.2	69.3
Italy	59.4	60.0	61.5	61.6	62.5	62.8	63.0	61.7	61.1	61.2	61.0
Cyprus	75.1	75.4	74.9	74.4	75.8	76.8	76.5	75.7	75.4	73.4	70.2
Latvia	67.0	68.9	69.3	70.3	73.5	75.2	75.8	67.1	65.0	66.3	68.2
Lithuania	67.2	68.9	69.0	70.6	71.6	72.9	72.0	67.2	64.4	67.0	68.7
Luxembourg	68.2	67.2	67.7	69.0	69.1	69.6	68.8	70.4	70.7	70.1	71.4
Hungary	61.4	62.4	62.1	62.2	62.6	62.6	61.9	60.5	60.4	60.7	62.1
Malta	57.7	57.8	57.9	57.9	57.6	58.5	59.1	58.8	60.1	61.5	63.1
Netherlands	75.8	75.2	74.9	75.1	76.3	77.8	78.9	78.8	76.8	77.0	77.2
Austria	71.8	72.0	70.8	71.7	73.2	74.4	75.1	74.7	74.9	75.2	75.6
Poland	57.4	57.1	57.3	58.3	60.1	62.7	65.0	64.9	64.6	64.8	64.7
Portugal	73.6	72.9	72.6	72.3	72.7	72.6	73.1	71.2	70.5	69.1	66.5
Romania	63.3	63.7	63.5	63.6	64.8	64.4	64.4	63.5	63.3	62.8	63.8
Slovenia	69.0	68.1	70.4	71.1	71.5	72.4	73.0	71.9	70.3	68.4	68.3
Slovakia	63.6	64.8	63.7	64.5	66.0	67.2	68.8	66.4	64.6	65.1	65.1
Finland	72.6	72.2	72.2	73.0	73.9	74.8	75.8	73.5	73.0	73.8	74.0
Sweden	78.5	77.9	77.4	78.1	78.8	80.1	80.4	78.3	78.7	80.0	79.4
United Kingdom	74.5	74.7	75.0	75.2	75.2	75.2	75.2	73.9	73.6	73.6	74.2
Iceland	:	85.1	84.4	85.5	86.3	86.7	85.3	80.6	80.4	80.6	81.8
Norway	79.6	78.4	78.2	78.2	79.5	80.9	81.8	80.6	79.6	79.6	79.9
Switzerland	81.2	80.2	80.0	79.9	80.5	81.3	82.3	81.7	81.1	81.8	82.0
Croatia	58.4	58.3	59.6	60.0	60.6	62.3	62.9	61.7	58.7	57.0	55.3

Note: (:) No available data.
Source: Eurostat (2013) (online data code:lfsi_emp_a).

To sum up employment declines attributable in a high degree to developments in some particular euro zone countries that have led to stagnant or declining output and negative labor market dynamics, such as in the case of Greece.

Figure 2. Total employment rates for Greece and European Union, for the age group 20 - 64 years and for the period 2002 – 2012.



Source: Eurostat (2013) (online data code:lfsi_emp_a).

4.2 Pattern of Employment Change by Gender

The impact of the recession and its aftermath has also varied widely in terms of its effects on different background characteristics, such as gender and working time. It is clear now that there are signs of segregation in the European labor market. The division between men and women lies on working hours, specifying the type of employment as full or part - time employment.

According to the employment rates by gender, women work less than men. Specifically for all EU27 Member States in the year of 2010, the employment rate for men aged 20 - 64 years was estimated at 75.1%. For 2011, it was estimated in 75%, reduced by 0.1% compared to 2010 and decreased by 1% compared with 2001 (76%). In 2012 for the first time, the employment rate of men was estimated fewer than 75%, namely 74.6%, decrease of 0.4% (Table 2) (Eurostat 2013).

Also for women, there has been a change in employment rates. In 2010, their employment rate fell for the second consecutive year and stood at 62.1%, while there was an overall decrease of 0.7% for the employment rate of women between 2008 and 2010. Finally, between 2010 and 2011, a slight increase of only 0.2% in the employment rate was occurred, along with an increase of only 0.1% between 2011 and 2012 (Table 2) (Eurostat 2013).

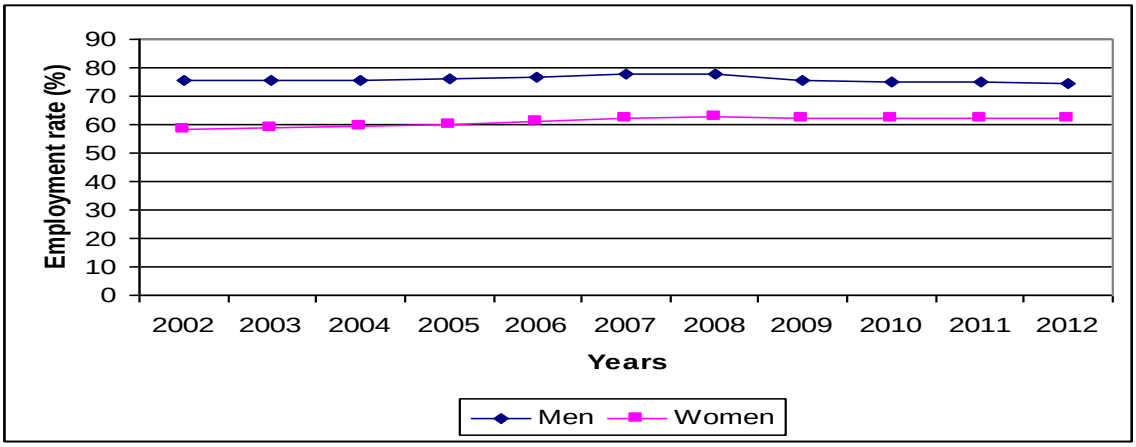
Table 2. *Total employment rates of the European Union, by gender for the period 2002 – 2012.*

Gender	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Men	75.5	75.5	75.6	76.0	76.9	77.8	77.9	75.8	75.1	75.0	74.6
Women	58.1	58.7	59.4	60.0	61.1	62.1	62.8	62.3	62.1	62.3	62.4

Source: Eurostat (2013) (online data code: lfsi_emp_a).

Based on the above data, the EU could fulfill the primary objective of the "Europe 2020" program, i.e. employment for 75% of the population for individuals aged 20 to 64 years by 2020, but only for men. However in the year of 2012, it seemed to move away from this specific target of employment. In the case of employment of women, the achievement of the target for 75% employment is not case. Below there is a graphical representation, which clearly shows the difference by gender (Figure 3).

Figure 3. *Total employment rates for the European Union, by gender, for persons aged 20 to 64 years and for the period 2002 – 2012.*



Source: Eurostat (2013) (online data code: lfsi_emp_a).

At the country level according to the data of 2011, eleven countries (Czech Republic, Denmark, Germany, Cyprus, Luxembourg, Malta, the Netherlands, Austria, Finland, Sweden and the United Kingdom) have achieved the target set for employment on the male population. For 2012, one more country, Estonia, with 75.2% achieved the relevant target of employment (Table 3).

Table 3. Employment rates of men aged 20 - 64 years, by country and for the period 2002 – 2012.

Countries	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU27	75.5	75.5	75.6	76.0	76.9	77.8	77.9	75.8	75.1	75.0	74.6
Belgium	74.0	73.1	73.8	74.3	74.0	75.0	74.7	73.2	73.5	73.0	72.7
Bulgaria	59.4	62.2	64.4	66.8	69.9	73.4	76.1	73.8	69.1	66.0	65.8
Czech Republic	80.9	80.1	79.2	80.1	80.4	81.5	82.0	80.2	79.6	79.9	80.2
Denmark	82.3	82.2	82.1	82.3	83.8	83.2	83.9	80.5	78.6	79.0	78.6
Germany	75.6	74.7	74.9	75.6	77.2	79.1	80.1	79.6	80.1	81.4	81.8
Estonia	74.5	75.0	74.7	75.4	79.5	81.4	81.7	71.0	67.7	73.5	75.2
Ireland	81.8	81.3	82.1	82.8	83.4	83.0	80.4	72.4	69.1	68.2	68.1
Greece	78.7	79.6	79.5	79.8	80.3	80.4	80.4	78.8	76.2	71.1	65.3
Spain	77.7	78.3	78.7	79.9	80.7	80.7	78.1	71.0	69.1	67.6	64.5
France	75.6	76.1	75.7	75.3	74.9	75.0	75.5	74.1	73.8	73.9	73.8
Italy	74.0	74.6	74.9	74.8	75.5	75.8	75.4	73.8	72.8	72.6	71.6
Cyprus	86.2	85.6	86.3	85.5	86.2	86.4	85.2	82.8	81.7	79.6	76.1
Latvia	71.4	73.9	74.1	75.4	78.2	80.1	79.7	67.4	65.1	67.5	70.2
Lithuania	70.8	72.5	73.4	74.9	75.2	76.5	75.5	66.9	63.6	67.5	69.4
Luxembourg	80.8	79.1	78.9	79.4	78.9	78.3	77.2	79.0	79.2	78.1	78.5
Hungary	69.0	69.6	69.2	69.2	69.9	70.2	69.0	67.0	66.0	66.8	68.1
Malta	81.0	80.6	81.2	80.6	79.2	78.7	78.2	77.1	77.9	78.9	79.0
Netherlands	84.6	83.4	82.7	82.4	83.5	84.8	85.5	84.9	82.8	82.6	82.5
Austria	79.6	79.6	78.0	78.5	80.0	81.6	81.7	80.1	80.2	80.8	80.9
Poland	63.6	63.1	63.5	65.1	67.3	70.2	73.0	72.6	71.6	72.2	72.0
Portugal	81.8	80.2	79.3	78.7	79.2	79.1	79.4	76.5	75.4	73.4	69.9
Romania	70.1	70.5	69.7	70.4	71.2	71.0	71.6	70.7	70.8	69.9	71.4
Slovenia	74.1	73.2	75.4	75.8	76.3	77.5	77.4	75.6	74.0	71.8	71.8
Slovakia	70.2	71.4	70.9	72.5	74.6	76.0	77.4	74.6	71.9	72.7	72.8
Finland	74.8	74.4	74.5	75.1	76.3	77.2	78.4	74.7	74.5	75.6	75.5
Sweden	80.3	79.8	79.4	80.7	81.7	83.1	83.5	80.9	81.1	82.1	81.9
United Kingdom	81.6	81.9	82.1	82.0	82.0	82.2	81.8	79.6	79.3	79.4	80.0
Iceland	:	88.6	88.8	89.6	90.6	91.5	89.9	83.2	83.1	83.3	84.4
Norway	83.2	81.8	81.5	81.6	83.2	84.3	84.8	83.1	82.1	82.1	82.4
Switzerland	89.1	87.9	87.5	87.1	87.8	88.7	88.5	87.7	87.6	88.2	87.9
Croatia	66.3	66.0	67.5	67.5	67.6	70.3	70.7	68.2	64.7	63.2	60.6

Note: (:) No available data.

Source: Eurostat (2013) (online data code: lfsi_emp_a).

Table 4. *Employment rates of women aged 20 to 64 years, by country and for the period 2002 – 2012.*

Countries	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU27	58.1	58.7	59.4	60.0	61.1	62.1	62.8	62.3	62.1	62.3	62.4
Belgium	55.8	56.2	57.2	58.6	58.8	60.3	61.3	61.0	61.6	61.5	61.7
Bulgaria	52.3	54.0	56.0	57.1	60.4	63.5	65.4	64.0	61.7	59.8	60.2
Czech Republic	62.3	61.4	61.1	61.3	61.8	62.4	62.5	61.4	60.9	61.7	62.5
Denmark	73.1	72.4	73.0	73.7	74.8	74.7	75.5	74.5	73.0	72.4	72.2
Germany	61.9	61.9	62.6	63.1	65.0	66.7	67.8	68.7	69.6	71.1	71.5
Estonia	64.5	65.5	66.8	69.0	72.5	72.5	72.8	68.8	65.7	67.6	69.3
Ireland	59.6	59.8	60.8	62.4	63.3	64.4	64.1	61.9	60.2	59.4	59.4
Greece	46.6	47.9	48.8	49.6	51.2	51.6	52.5	52.7	51.7	48.6	45.2
Spain	47.6	49.5	51.5	54.4	56.4	58.0	58.3	56.3	55.8	55.5	54.0
France	61.9	63.5	63.5	63.7	63.8	64.8	65.5	64.9	64.8	64.7	65.0
Italy	44.9	45.6	48.3	48.4	49.6	49.9	50.6	49.7	49.5	49.9	50.5
Cyprus	64.7	65.9	64.1	63.8	65.9	67.7	68.2	68.3	68.8	67.7	64.8
Latvia	63.0	64.3	65.0	65.7	69.1	70.7	72.1	66.8	64.9	65.3	66.4
Lithuania	63.9	65.6	65.0	66.6	68.3	69.5	68.8	67.5	65.1	66.6	67.9
Luxembourg	55.4	55.1	56.2	58.4	59.4	61.0	60.1	61.5	62.0	61.9	64.1
Hungary	54.3	55.5	55.3	55.6	55.7	55.5	55.1	54.4	55.0	54.9	56.4
Malta	34.4	34.9	34.3	35.1	35.4	37.4	39.3	39.8	41.5	43.4	46.8
Netherlands	66.8	66.9	66.9	67.6	69.0	70.7	72.2	72.7	70.8	71.4	71.9
Austria	64.1	64.5	63.7	64.9	66.4	67.2	68.6	69.4	69.6	69.6	70.3
Poland	51.4	51.2	51.2	51.7	53.1	55.5	57.3	57.6	57.7	57.6	57.5
Portugal	65.7	65.9	66.1	66.0	66.3	66.3	67.0	66.1	65.6	64.8	63.1
Romania	56.8	57.0	57.4	56.9	58.5	57.9	57.3	56.3	55.9	55.7	56.3
Slovenia	63.8	62.8	65.4	66.2	66.5	67.1	68.5	67.9	66.5	64.8	64.6
Slovakia	57.2	58.4	56.7	56.7	57.5	58.7	60.3	58.2	57.4	57.6	57.3
Finland	70.4	70.0	69.7	70.8	71.5	72.5	73.1	72.4	71.5	71.9	72.5
Sweden	76.6	76.0	75.3	75.5	75.8	77.1	77.2	75.7	75.0	76.5	76.8
United Kingdom	67.5	67.7	68.0	68.5	68.6	68.4	68.8	68.2	67.9	67.9	68.4
Iceland	:	81.5	79.9	81.2	81.8	81.4	80.4	77.8	77.6	77.9	79.1
Norway	75.9	75.0	74.8	74.6	75.7	77.5	78.6	77.9	76.9	77.1	77.3
Switzerland	73.3	72.5	72.4	72.7	73.2	73.9	76.0	75.6	74.6	75.4	76.0
Croatia	50.9	50.9	51.9	52.8	53.7	54.5	55.2	55.4	53.0	50.9	50.2

Note: (:) No available data.

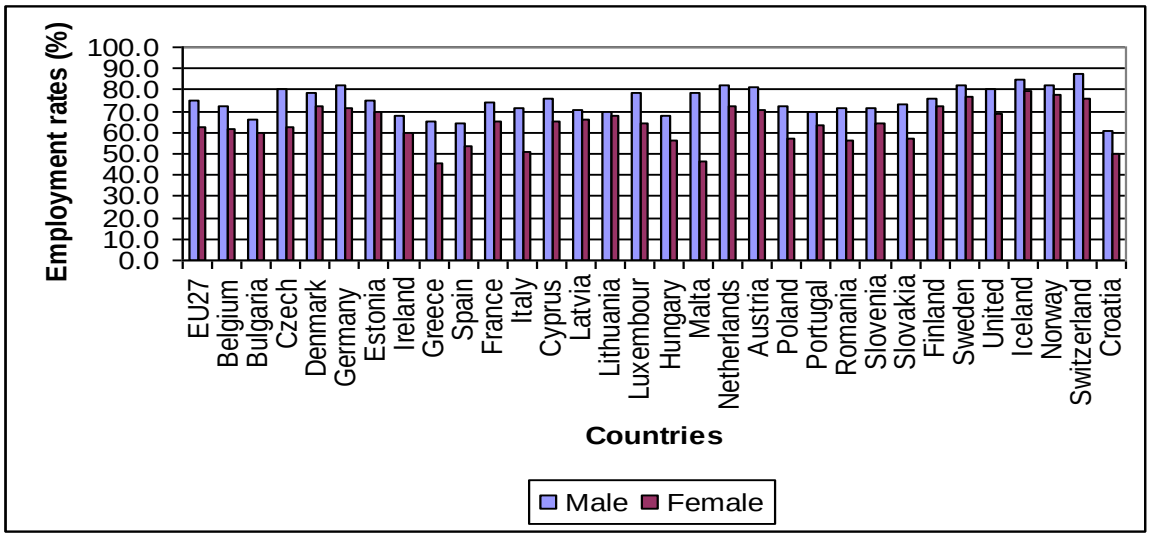
Source: Eurostat (2013) (online data code: lfsi_emp_a).

But for women, the vast majority of countries have not yet achieved the target of 75% employment. According to data of the year of 2011, only Sweden has achieved the target with 77.2% female employment. Other countries with employment rates close to the target of 75% are the following: Denmark (72.4%), Finland (71.9%) the Netherlands (71.4%) and Germany (71.1%) (Table 4) (Eurostat 2013). The landscape of female employment remains the same also for 2012, since only Sweden has achieved the relevant target with 76.8%

female employment. Countries with employment rates close to 75% are Denmark (72.2%), Finland (72.5%) the Netherlands (71.9%) and Germany (71.5%) (Table 4) (Eurostat 2013).

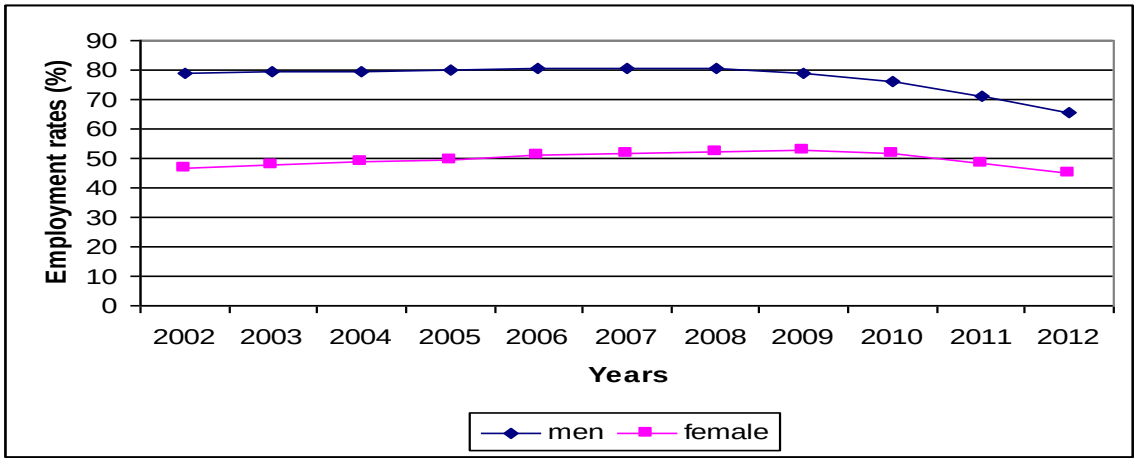
Below, it is also presented the graphical representation of employment rates by gender for the year of 2012 (Figure 4). For all countries, the employment rate of men is higher compared to that of women. However, the smallest difference (1.5%) is located in Lithuania (69.4% for men and 67.9% for women). Countries with also small differences are Finland (3.0%) (75.5% for men and 72.5% for women) and Latvia (3.8%) (69.4% for men and 67.9% for women). On the other hand, the highest difference is located in Malta with 32.2% (79.0% for men and 46.8% for women). Another two southern countries follow, Italy with 21.1% (71.6% and 50.5% respectively) and Greece with 20.1% difference between men and women (65.3% and 45.2% respectively) (Figure 4) (Eurostat 2013). We could therefore say that the southern part of Europe dominates in gender employment gap. Specifically for Greece, the employment rates by gender are clearly different. For example, for men, there was a difference of 9.2% between the years of 2006 (80.3%) and 2011 (71.1%). The difference for women was 2.6% between the years of 2006 (51.2%) and 2011 (48.6%) (Figure 5) (Eurostat 2013).

Figure 4. Employment rates by gender for persons aged 20 to 64 years and for the year 2012.



Source: Eurostat (2013) (online data code: lfsi_emp_a).

Figure 5. Employment rates by gender for Greece and for the period 2002 – 2012.



Source: Eurostat (2013) (online data code: lfsi_emp_a).

4.3 Pattern of Employment Change by Working Time

According to the data for the year 2011 (Eurostat 2013), the proportion of the workforce stated that their main job was part - time increased from 16.2% in 2002 to 19.5% in 2011 and to 20% in 2012. For the year of 2011, the highest proportion of persons that worked under part - time terms was found in the Netherlands (49.1%), followed by the United Kingdom (26.8%), Germany (26.6%), Sweden (26.0%), Denmark (25.9%) and Austria (25.2%). In the above mentioned countries, part – time employment represents about one quarter of the total employment. In contrast, part - time employment rate was relatively small in Greece and

Hungary (6.8%), the Czech Republic (5.5%), Slovakia (4.1%) and almost nonexistent in Bulgaria (2.4%) (Table 5).

For 2012, the landscape remains the same since the highest part – time employment rates were found in the Netherlands (49.8%), followed by the United Kingdom (27.2%), Germany (26.7%), Sweden (26.5%), Denmark (25.7%) and Austria (25.7%). Again part - time employment rate was relatively small in Greece (7.7%), Hungary (7.0%), the Czech Republic (5.8%), Slovakia (4.1%) and almost nonexistent in Bulgaria (2.4%) (Table 5). Although Greece has one of the lowest part – time employment rate, it should be highlighted the significant increase of the relevant rate (Figure 6).

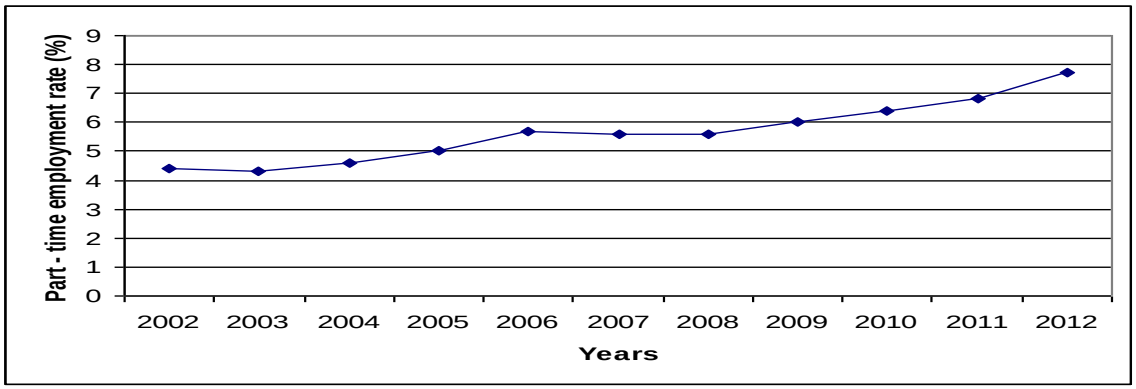
Table 5. Part – time employment rates for age group 20 - 64 years, by country and for the period 2002 – 2012.

Countries	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU27	16.2	16.6	17.2	17.8	18.1	18.2	18.2	18.8	19.2	19.5	20
Belgium	19.1	20.5	21.4	22	22.2	22.1	22.6	23.4	24	25.1	25.1
Bulgaria	2.5	2.3	2.4	2.1	2	1.7	2.3	2.3	2.4	2.4	2.4
Czech Republic	4.9	5	4.9	4.9	5	5	4.9	5.5	5.9	5.5	5.8
Denmark	20	21.3	22.2	22.1	23.6	23.7	24.4	25.9	26.3	25.9	25.7
Germany	20.8	21.7	22.3	24	25.8	26.1	25.9	26.1	26.2	26.6	26.7
Estonia	7.7	8.5	8	7.8	7.8	8.2	7.2	10.5	11	10.6	10.4
Ireland	16.5	16.9	16.8	:	:	17.7	18.6	21.3	22.7	23.6	24
Greece	4.4	4.3	4.6	5	5.7	5.6	5.6	6	6.4	6.8	7.7
Spain	8	8.2	8.7	12.4	12	11.8	12	12.8	13.3	13.8	14.7
France	16.4	16.8	17	17.2	17.2	17.3	17	17.4	17.8	17.9	18
Italy	8.6	8.5	12.7	12.8	13.3	13.6	14.3	14.3	15	15.5	17.1
Cyprus	7.2	8.9	8.6	8.9	7.7	7.3	7.8	8.6	9.5	10.2	10.7
Latvia	9.7	10.3	10.4	8.3	6.5	6.4	6.3	8.9	9.7	9.2	9.4
Lithuania	10.8	9.6	8.4	7.1	9.9	8.6	6.7	8.3	8.1	8.9	9.4
Luxembourg	10.7	13.4	16.4	17.4	17.1	17.8	18	18.2	17.9	18.4	19
Hungary	3.6	4.4	4.7	4.1	4	4.1	4.6	5.6	5.8	6.8	7
Malta	8.3	9.2	8.7	9.6	10	10.9	11.5	11.3	12.5	13.2	14
Netherlands	43.9	45	45.5	46.1	46.2	46.8	47.3	48.3	48.9	49.1	49.8
Austria	19	18.7	19.8	21.1	21.8	22.6	23.3	24.6	25.2	25.2	25.7
Poland	10.8	10.5	10.8	10.8	9.8	9.2	8.5	8.4	8.3	8	7.9
Portugal	11.2	11.7	11.3	11.2	11.3	12.1	11.9	11.6	11.6	13.3	14.3
Romania	11.8	11.5	10.6	10.2	9.7	9.7	9.9	9.8	11	10.5	10.2
Slovenia	6.1	6.2	9.3	9	9.2	9.3	9	10.6	11.4	10.4	9.8
Slovakia	1.9	2.4	2.7	2.5	2.8	2.6	2.7	3.6	3.9	4.1	4.1
Finland	12.8	13	13.5	13.7	14	14.1	13.3	14	14.6	14.9	15.1
Sweden	21.5	22.9	23.6	24.7	25.1	25	26.6	27	27	26.5	26.5
United Kingdom	25.3	25.6	25.7	25.2	25.3	25.2	25.3	26.1	26.9	26.8	27.2
Iceland	:	22.1	22.2	22.2	17.1	21.7	20.5	23.6	22.9	20.8	21.2
Norway	26.4	28.8	29.2	28.2	28.7	28.2	28.2	28.6	28.4	28.1	28.1
Switzerland	31.7	32.7	33	33.1	33.3	33.5	34.3	34.8	35.3	35.2	35.9
Croatia	8.3	8.5	8.5	10.1	9.4	8.6	8.8	9	9.7	9.9	8.4

Note: (:) No available data.
Source: Eurostat (2013) (online data code: tps00159 & lfsa_e2gis).

In addition, part - time employment rates significantly differ between men and women. In 2011, one third (32.1%) of employed women in the EU27 Member States has worked under part - time terms, compared with 9.0% of men. The Netherlands holds the highest rate in part – time employment of women, since 76.7% of them employed under part – time terms in 2011. At the other side, the lower rate was found in Bulgaria with 2.6%. The same pattern prevails among men, with the highest rate found in the Netherlands (2.5%) and the lowest in Bulgaria (2.6%). In 2012, 32.6% of employed women in the EU27 Member States have worked under part - time terms, compared with 9.5% of men. Again, the highest rate in part – time employment of women holds the Netherlands (77%) and the lowest (2.7%) in Bulgaria.

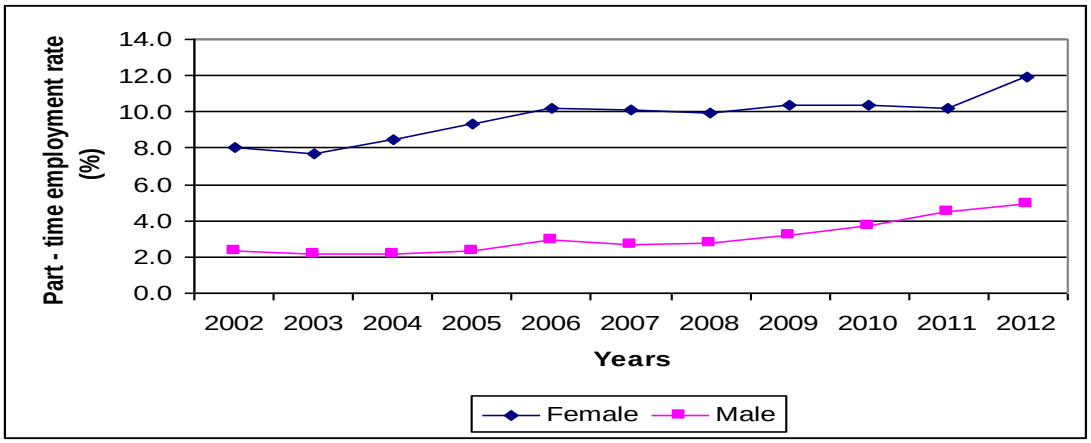
Figure 6. Part – time employment rate in Greece for the period 2002 – 2012.



Source: Eurostat (2013) (online data code: tps00159 & lfsa_e2gis).

In Greece, the part – time employment pattern for men was increased from 2.3% in 2002, to 2.9% in 2006 and 4.9% in 2012. For female population of the country, the rates range from 8% in 2002, to 10.2% in 2006 and 11.9% in 2012. The highest difference between men and women was observed in the year of 2007 with 7.4% (Figure 7), (Eurostat 2013).

Figure 7. Part – time employment rates by gender in Greece, for 2002 – 2012



Source: Eurostat (2013) (online data code: tps00159 & lfsa_e2gis).

5. Conclusion

In an era of financial crisis, the European labor market is of course changing. In this short paper, we have approached the issue of labor market based on the latest data from Eurostat. We attempted to review some of the main aspects of the European labor market, such as employment rates and participation in part – time jobs, distinguished by gender. But despite formal commitments and promises, the gap between men and women remains. On this account, we are absolutely convinced that understanding employment also by gender is essential for the attainment of equality between men and women in response to the current financial crisis. Despite the hardships, women can play a significant role in the labor market landscape. A possible interpretation is that technology could have a similarly polarizing effect on employment rates everywhere, together with the speed of policy response across European countries and the initial structure of the labor market. The persistent segregation of household activities is the main factor justifying the increased partial employment of women and reduced hours of work, which does not allow the promotion to positions of increased responsibility and work full time.

Therefore, women are less likely to be the main workers in the family. But despite the seemingly better conditions for workers in part - time employment in terms of working time flexibility is precisely the workers who have little access to positive aspects of work, such as training. This reflects in this way, the disadvantages of part - time workers (European Foundation for the Improvement of Living and Working Conditions, 2007; Eurostat, 2013). In other European countries, the high cost of childcare enhances also the part - time employment for women. However it should be noted that part - time employment is still associated more with women's work (European Foundation for the Improvement of Living and Working Conditions, 2007).

Another explanation given for the high part – time employment rate in countries, such as the Netherlands and Germany, is the support by government subsidies. This kind of policy contributes to maintaining employment levels, since many enterprises retain workers on shorter hours (Torres 2010).

Thus, it is in the hands of governments, institutions and organizations to untie the Gordian knot of the European and especially of the Greek labor market. The employment policy of the European Union should follow new norms in terms of jobs, in order to follow the new slogan "New skills for new jobs" of "Europe 2020" Strategy. Consequently, Greece as a country - member of the European Union should follow the line of European politics, since it is characterized by a great increase in part - time jobs and informal economy.

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Gentrification in the frame of Tourism: A case study in the City of Athens

Abstract:
Recently, in Greek cities, there is an ongoing debate among urban researchers about which is the most appropriate method for measuring urban renewal in the city of Athens, while at the same time taking into account its peculiarities. Last years, it is observed that the Urban Renewal term progresses to the idea of qualitative regeneration of central regions. Urban renewal interventions are taking place in different spaces and scales in Athens, but especially it is more obvious the phenomenon of Gentrification. Gentrification, as a specialized term of urban renewal, circumscribed, analyzed and evaluated using different tools and always in relation to methodological differences. The relationships between variables and indicators are the first step in the analysis, and then paired with one of the most appropriate simulation model. The final result is a gentrification model which may be applied in any neighborhood of Athens and it can be used as a tool for urban renewal, historic preservation and tourism. By this effort through the simulation capabilities of specialized spatial analysis tools, give us the perfect prospects for further research, even if there is great range and important levels of complexity in such urban phenomena.

Key words: Gentrification, Urban renewal, Development, Geographical Information Systems, Tourism Gentrification

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1. Introduction

In the modern world, urban renewal interventions in urban space, is a common challenge that takes place either extensively within the urban fabric or on a smaller scale. The urban identity even at neighborhood mutates over time, and in recent years, it has spread more and more widely a change in the concept of urban renewal that transcends the umbrella of quality renaissance. The concept of gentrification taking active action on the relocation of the middle class in refurbished or renewed properties of neighborhoods of cities, where previously inhabited by low income populations. Sometimes, gentrification connects with the term Tourism Gentrification, which refers to the transformation of a middle-class neighborhood into an affluent enclave ruled by a proliferation of corporate entertainment and tourism venues. Especially, Athens, as a Mediterranean city translates this phenomenon according to local peculiarities of this city. The research focuses in this phenomenon during the last five years, a period before and during the crisis. The interpretation of Gentrification and Tourism Gentrification has many dimensions and depends on which aspect the phenomenon is recognized. After defining the concept of gentrification, it is reasonable in the next chapters to identify the connection of gentrification with tourism and historic preservation, to evaluate the detailed measurement tools of such a phenomenon as the methodological particularities in each case. Gentrification is not the same everywhere and a deeper more nuanced understanding of its heterogeneity, and complexity, must be achieved through geographically sensitive research that pays close attention to both temporal and spatial context (Lees L., 2000). In the end, it's the presentation and the discussion of the results and the first conclusions.

2. Analysis of Gentrification in combination with historical preservation and tourism development

Historic preservation has begun to be viewed by cities and planners as a means to economic development and urban renewal. The term historic preservation implies the maintenance of both the social environment and the physical environment (Bures R., 2001). Gentrification, on the other hand, implies the improvement of the physical environment at the expense of the existing social environment (Bures R., 2001). In the European context, some cities have taken a different approach and place greater emphasis on maintaining social diversity in redeveloped areas (Fitch M., 1990). Gentrification is depending on its geography (Lees L., 2000). Both historic preservation and gentrification are social processes that evolve over time (Bures R., 2001). Historic preservation, gentrification, and tourism are three related, yet distinct, redevelopment processes (Bures R., 2001). Tourism is an "invisible" industry, that's

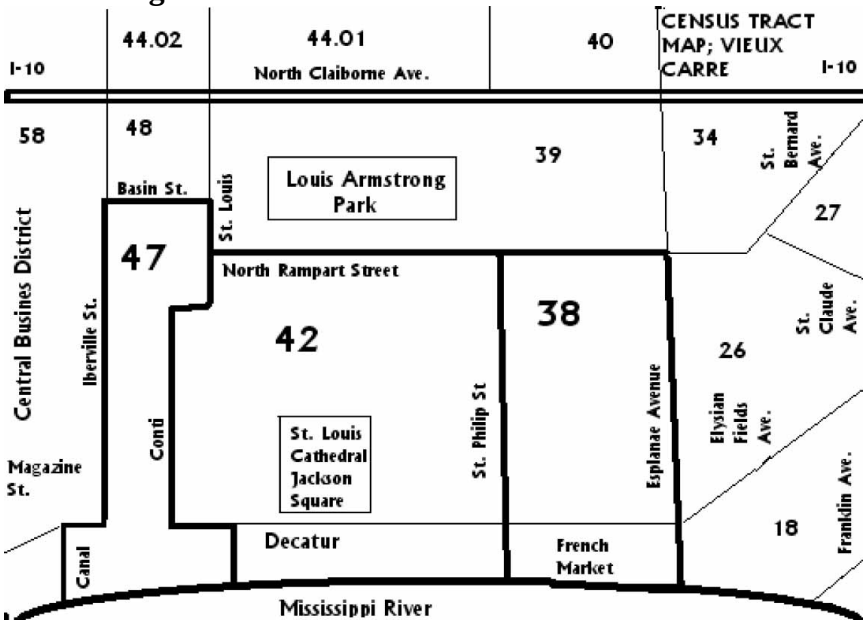
why it became lately as one of planning's "emerging specializations" (Harrill R. & T.Potts, 2011). All three can lead to improvements in the physical environment of a city but will have different consequences for the social environment according to two theoretical perspectives: human ecology and political economy (Bures R., 2001). The changing ecology of communities leads to neighborhood succession, while changes in the political economy of an area may result in the dislocation of residents (Bures R., 2001). Gentrification emerged as a consequence of historic preservation and the preservation movement originated as a strategy to control development (Bures R., 2001).

Recently, economic and political support for historic preservation have accelerated the gentrification process and contributed to the growth of tourism as a major industry in the city (Bures R., 2001). Perhaps the most important economic benefit resulting from historic preservation is in its effects on the tourism industry (Lapenas D., 2002). Historic preservation is also valuable in that it helps conserve scarce economic resources by promoting reuse of existing buildings and infrastructure (Lapenas D., 2002). For example, historic preservation districts in tourism cities play two important roles: a tourism attraction and a "symbolic community" important to the city's identity (Harrill R. & T.Potts, 2011). Something that also happen, by the process of gentrification and that's why a new term has come up known as "tourism gentrification". In other words, this represents one of the contradictions often inherent in preservation: present-day communities may be destroyed in order to restore the past, but at the same time is a opportunity to regain a sense of community identity that is often lost in the process of urbanization (Bures R., 2001). It is important that all of these perspectives are considered when measuring the success or failure of an economic development strategy to ensure that the community is experiencing development and not simply economic growth regardless of its effects on quality of life issues (Lapenas D., 2002). But the governmental strategy to use gentrification to increase the city's competitiveness is a questionable tactic (Riegler J., 2011). This can potentially lead to significant divisions between different economic classes, races, and other groups within communities as some residents begin to view building and renovation regulations as limiting or beyond their financial means (Lapenas D., 2002). One other of the biggest concerns about historic preservation is the gentrification that may divide communities and cause resentment once an area has begun to redevelop (Lapenas D., 2002). The final problem with using historic preservation as a means to economic development is again one that could apply to all economic development strategies (Lapenas D., 2002). This is the fact that it simply will not be able to work for all areas that struggle from physical, social and economic decay (Lapenas D.,

2002). Not all areas are equally inviting or capable of supporting tourism, and there are only so many heritage tourists in the world to support every widespread little tourist town, rural landscape, and historic urban neighborhood (Lapenas D., 2002).

Tourism gentrification highlights the twin processes of globalization and localization that define modern urbanization and redevelopment processes (Gotham K., 2005). Tourism may be a 'global' force, it is also a locally based set of activities and organizations involved in the production of local distinctiveness, local cultures and different local histories that appeal to visitors'tastes for the exotic and unique (Gotham K., 2005). As Gotham underlines, the nexus of globalization and localization is apparent in the Vieux Carre (Fig.1) where corporate entertainment firms and retail chains are plugged into global financial circuits to leverage capital to redevelop residential and commercial space (Gotham K., 2005).

Figure1: The cencus tracts of the Vieux Carre



Gotham K. Fox, 2005, "Tourism Gentrification: The Case of New Orleans'Vieux Carre (French Quarter), Urban Studies, 42 (7), 1107.

On the other hand, there are some extreme cases where tourism occurs between negative sightseeing and gentrification, as it happens in Harlem, New York. As Sandford underlines tourism as an industry in an economically depressed area must sell its product almost before it is marketable (Sandford M, 1987). Promoting the neighborhood through tourism will improve its image but, in the process of convincing "out – of – towners" to visit Harlem, "in-towners"will be convinced to move there and consequently, real estate values will be rise (Sandford M., 1987). By this procedure gentrification is the main outcome.

To sum up, there is a complex relationship between historic preservation, gentrification, and tourism. Examining the interrelationship between tourism and gentrification allows us to make connections between global and local markets and interests,

as well as between production-side and demand-side explanations of urban change (Bures R. & C.Cain, 2000). In utilizing historic preservation in economic development and urban revitalization, it is extremely important to do specific planning and consideration before any projects are presented to the public (Lapenas D., 2002). While change is an important part of the urban environment, we need to consider more innovative approaches to maintaining community and social environment while preserving the physical environment (Bures R., 2001). That's the main reason that leads the research to focus on developing the best methodology for such phenomena. Understanding patterns of growth and change in Athens can help urban scholars better anticipate the consequences of tourism and gentrification for the social environment.

3. The methodology approach in the City of Athens

Briefly, the methodological approach of an urban phenomenon as gentrification requires the analysis of theoretical base both locally and globally. Then, perform a review of methods and techniques followed by the international literature, understanding the components surrounding this phenomenon. A combination of quantitative and qualitative methodological approaches are necessary. The key question is whether Athens is ready for such a phenomenon and how it could address any of the assumptions.

Then, at the analysis stage visualize specific indicators that display the phenomenon of gentrification. Mainly a census-based measure for identifying the changing character of a neighborhood may be the proportion of "native" residents (Bures R. & C.Cain, 2008). Taking into account the particularities of the Greek reality and shaping indicators depending on data availability. The visualization of the indicators outline the current situation and as well if there is evidence of gentrification or is likely to occur in the area. The method shows that each index must be visualized separately, then determine the relationships between the variables and at the end to create an equation (with the above variables) defining gentrification and it can be re-visualized. The next step involves creating spatial models with CA (cellular automata) and GIS (geographical information systems), which calculate some parameters that shape possible growth patterns of gentrification in the city. Once selected the appropriate patterns in time parameter, it will start production models, like flexible recording of data in databases. Finally, there is a cartographic visualization of data and results, so as to draw conclusions and make suggestions.

3.1. Measurement Tools of gentrification

The international literature has shown that the use of Geographic Information Systems (GIS) in conjunction with cellular automata (CA), is one of the most appropriate solutions for the management of urban gentrification. Furthermore, the two main features of CA based models is the realism and interactivity (Takeyama & Clouclelis, 1997). GIS additionally give the possibility through the spatial statistics to identify the effects of variables of the indicators, as well as the degree of interaction between them. Regression method is again investigating the dependence of the values of a variable with the corresponding values of one or more other variables (Halkias, 2006). Visualization of Indicators, statistical analysis and spatial analysis capabilities of GIS can be used to work actively for decisions and policies (Sidiropoulos G. & M. Stergiou 2012).

Analyzing gentrification through specific indicators is not easy procedure. Specifically, the most important is the age of the building stock, changes in real estate taxes (or increases the value of land) and market prices (price changes in land value) to determine locations with gentrification (Levy L., 2009). At this point, it's important to underline the difficulty in studying the population shift, social involvement, whereas it is easier to identify any demographic changes, for instance these gentrification variables by Atkinson (Atkinson R., 2000). Nevertheless, GIS is identifying and analyzing the dynamic nature of the phenomenon. The term dynamically means changes made in space and time (Fig.2). Within a system, the dynamics is the DNA of the digital system (Dietzel & Clarke, 2004).

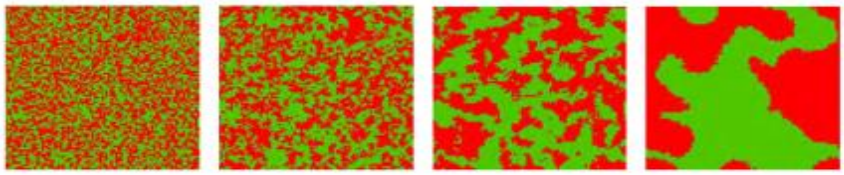
In conclusion, the main urban CA models that can implement an urban phenomenon as gentrification are the following: Sleuth, model O'Sullivan, the model of Nuno Pinto, model re -gentrification. Each individual has its advantages and disadvantages during application. Today, this Mediterranean city shows a multiplex model in its urban systems, the dynamics that affect the urban space are various and sometimes contradictory. Especially, the last decade with the host of Olympic Games in 2004, many policies were implemented with urgent rhythms. The most known plan was referred to the pedestrianisation of an area which connects the main archaeological sites. This project affected immediately the around areas, giving the chance to phenomena as gentrification to Psiri and to Metaksourgio Area (Dritsa, 2009).

3.2. The Particularities of Athens

Any attempt to measure such an urban phenomenon must take into consideration the circumstances and factors prevailing in each case study, even within the same city. The particularities of the city of Athens are diverse both in theoretical and practical side. This paper is an attempt to identify these particular elements that need to be taken into account by the designer to be able to investigate this phenomenon in the Athenian neighborhoods.

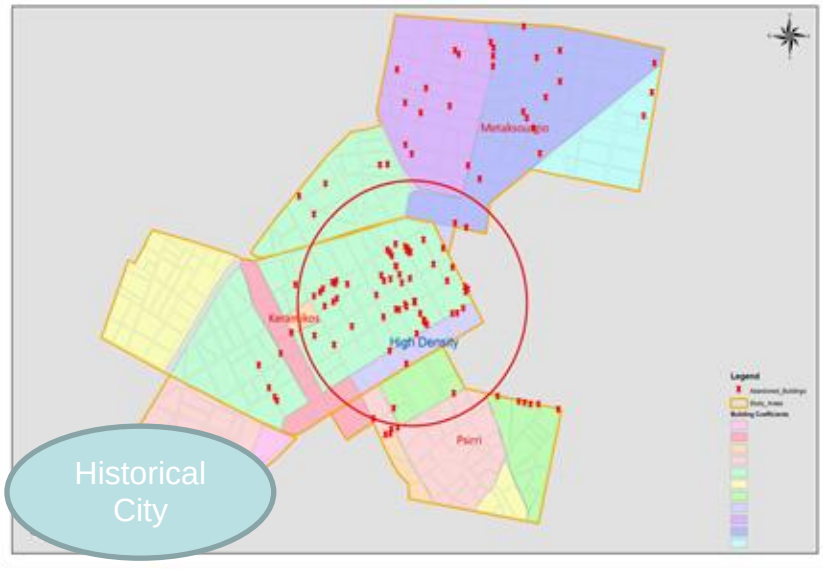
A. Finding appropriate indicators and micro-data at spatial and temporal unit. The collection of necessary data for the indicators presented problematic because while the spatial units of analysis of gentrification is the neighborhood, the smallest spatial unit of National Statistics is per block. For instance (Fig.3) the measurement of the abandoned buildings per block.

Figure 2.: Recording of the random pattern unit time



Batty, M., 2007, "Complexity in City Systems: Understanding, Evolution & Design". Paper 117 UCL Centre for Advanced Spatial Analysis, p.17.

Figure 3: The abandoned buildings per block & Building Coefficients, Metaksourgio Area, Keramikos Area, Psirri & Gazi Areas.



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The scale plays an essential role in the analysis of the phenomenon (Atkinson R., 2003). The availability of data per decades cover the dynamic nature of the phenomenon. Even in areas of Athens that there was gentrification process and no longer exists because of

the crisis, there is no precise evidence to prove as the official Census is every ten years. This directly creates the need for a qualitative analysis or even for field research. In some cases, it is necessary to create a new map in micro-scale to better identify the phenomenon. In most case studies are necessary to adapt the theories and change indicators to be closer to the assumptions of the research.

B. The type of coupling GIS and CA and the decision of the appropriate model CA is highly the actual picture of the phenomenon in the urban space. Basic criteria for selection of the model are as follows according to O'Sullivan: (a) in most applications the urban systems relax the notion of neighborhood and underline the meaning action at a distance, (b) there is difficulty at the scale of urban systems, if there are different procedures for each cell, (c) the need for the CA to meet the rates change and (d) the use of GIS and geo-algebra (O'Sullivan, 2002). While also important particularity in the systems is the type of coupling for the best resolution of space. In some cases the researcher selects the necessary data for the model without giving importance to the spatial resolution, and sometimes the spatial resolution is so detailed that the simulation time is greatly increased (Dietzel & Clarke, 2004). Finally, it is important to note that for the assessment of the results, three are the numerical adaptation indicators of results, the mean error of the map, indicators Lee-Sallee and Kappa (Mandela 2011). So technically, the results are detailed.

C. Selection of the appropriate gentrification theory for each study area. In some cases it is necessary to analyze if the area is below one of the three main theories of gentrification or it occurs with association theories. This is a direct consequence of the setting of the parameters and the establishment of appropriate indicators. Specifically, for Athens proposed a model where coexist all variations of gentrification (Alexandri G., 2011). Especially for the phenomenon of gentrification, the international literature supports practically the CA, but not in all theories of analysis, CA is ideal for Rent Gap Theory (O'Sullivan, 2002).

It is very important to underline that gentrification in Greece as a phenomenon, is not developed in the same way as in other western societies. Therefore, a method or program followed in another country or region, may not be enforceable in the same manner and in the case case of gentrification in Athens. The context of the Greek case may be associated with cases similar to those of the literature and sometimes be completely distinct. A typical example is the analysis of building stock, which sometimes has a social character and sometimes associated with profit from urban land. The empirical measurement, most often in studies of gentrification, is not correctly link the explanation of the phenomenon and measurements (Rowland and Wulff, 2009). Depending on the area of research, it is better to

focus at a time and the goal of the researcher as well as the assumptions chosen as the main components.

The term Gentrification is new and mainly it is implemented point like. There are just a few common points between the classic theories of Gentrification of Anglo-American cities and Greek planning. In Greek cities there are not areas with important size close to city center with industrial or similar uses, which can be gentrified and change the current land uses. The urban land is fragmented in such a degree that Gentrification process occurs in a small scale, which lead to the conclusion that there is no change of the degraded identity. Furthermore, the building stock belongs to individuals and not to the state, something that blocks the implementation and the control of gentrification. As far as the tourism gentrification, it may be implemented only in areas close to the historical city center or the archaeological areas.

3.3 Discussion

Athens as a Mediterranean city is trying to be a business center or a tourism cultural center. The current situation in Athens, the last decade, has features such as change in composition of the population, the increase in average income, the reduction in household size, the increase in property prices means higher rents, rising asset values, crime reduction, changing the identity of the neighborhood and its environment, increase or decrease of urban spaces and significant changes in ownership. The last four years due to the economic crisis many of these factors have changed. Nowadays, with the economic crisis, there is also a social crisis in Athens (the increasing number of unemployment, the strikes, the increasing taxes, the homeless people, the narcotics and even events of urban violence). On the one hand, there are neighborhoods which show tendencies to gentrify, with young people that prefer to live in the center close to their workplace or to cultural events. Of course this is not the main rule, as the unemployment effects young educated people mostly, something that leads these people to turn back to their families' home. Furthermore, families do not prefer to live in the city center, as it is not the ideal place for children. On the other hand, the city center living conditions have deteriorated since the housing stock get older, the social condition gets mixed, and some areas are neglected by the state (Alexandri, 2011). Moreover, in the degraded areas of the city center, where is there is enough building stock, prefer to live foreigners of lower occupational categories. In the current study maintained an average and studied if in the area of interest (eg. Gazi) there were obvious signs of gentrification, if the process of gentrification continues, if it has been stopped or if there is evidence of re-gentrification.

Gentrification in Athens takes place individually and through various nests in the urban fabric of Athens.The dominant question that requires further investigation is whether the infrastructure and socio - economic peculiarity of the country allow the operation of such a model and what are the possible modifications that need to accompany that strong efficacy. The specifications, tools and specificities of research in urban geography of Athens listed above, while success for research is the correct "translation" of the phenomenon in the Athenian neighborhood and proper coding of the operating systems. The urban geography involves the analysis of this factor. Because the false sense of homogeneity and zoning derived primarily from external scholars of space and in many cases is not verified by the residents (Sidiropoulos & Tsilimigkas, 2010). In conclusion, gentrification is a phenomenon to be quantified must first be interpreted qualitatively.

This research aims to standardize the concept of urban renewal, particularly the gentrification. The specification of key parameters, assess and evaluation of them, manifesting in such a manner and to such an extent as to become a key analytical tool in this process of urban renewal. Furthermore, through this process identifies the key requirements in statistical material in order to develop suitable lines for this purpose and broad objectives in the operation of the city. The time of the application can give an evolutionary development model phenomenon for the study area but at the same time applicable to other urban centers or neighborhoods.

The gentrification model will occur should be able to record changes in the region, its historical development, social dimension, and economic phenomena that occur in the study area. The pilot study in specific neighborhoods in both cities and suburbs to city centers such as Athens (in certain districts), or the transformation of each study area could be developed and appropriate models approach and the proper simulation of the change. The detailed data collection will contribute to better implementation of rehabilitation programs, where you can reach the potential impact from the beginning. The indicators should be created to cover all the parameters and their evolution within the city limits.The depth of the analysis of patterns should be enough to allow a comprehensive critical approach such a complex phenomenon and the results should not be confused.

4. Conclusions

Ultimately, by analyzing the theoretical background of the concept of gentrification (and urban renewal), it is obvious that in Athens there is not a standard strategy that can be implemented. Probably, the best choice will be a combination of the above theories. As far as,

the proper software (GIS and CA), data and the production of suitable models to each circumstance depends on the specificity of Athens and her opportunities for research. The production of the prediction model, is quite difficult to be implemented at Greek society to the similar degree as to other metropolitan areas. However, through this simulation, there are prospects for further research, so as to manage such complex urban phenomena, as gentrification, to similar Greek cities or neighborhoods. As far as the gentrification and the tourism gentrification, it is clear that in Athens there are prospects for both phenomena but it depends on the goal of it's implementation.

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Innovation Dynamics: Transforming the European Union Economy

Abstract:
These days there is an on going discussion about the recession and the crisis in European Union. Among other solutions the economists and experts are suggesting heavily the entrepreneurship through innovation. The following paper is going to examine the situation in Greece and European Union as far as it concerns the terms of entrepreneurship and innovation. At the same time the SMEs of the region of Crete will be used as case study.

Keywords: Entrepreneurship and regional development, economic geography, management of innovation

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1. Introduction

1.1 What is Innovation?

The Austrian economist Joseph Shumpeter was one of the founders of the theory of the innovator entrepreneur (*creative destruction*). According to Shumpeter (1934) the innovations can be radical or gradual. The main suggestions that he made were :

- The introduction of a new product (either good or service)
- The quality improvement of an existing product
- The development of an innovation process which is new for an industrial sector
- The opening of a new market
- The conquest of a new source of supply of new materials or parts
- The implementation of changes in the organasisation of the industry

The four elements of innovation are (a) the invention (b) the innovation (c) the planning (d) the transfer and diffusion of technology (Carayannis E. & Bakouros I-2010, Korres G-2010).

2. Main Definitions

2.1 The Measurement of Innovation Activities

According to the manuals of innovation there are four important distinctions of innovation. The Oslo manual defines the innovation in the categories of technological and no technological innovation. The Frascati manual focuses on R&D and related activities. The Canberra manual focuses on human resources in science and technology. The Patent manual focuses on using patent data as science and technology indicators (Korres G. and Polychronopoulos G. -2011). The table 1 illustrates the OECD methodological manuals.

Table 1: OECD methodological manuals

Type of data	**Title**
A 'The Frascati family'	**The measurement of Scientific and Technological Activities Series.**
R&D	Proposed Standard Practice for Surveys of Research and Experimental Development (Frascati Manual). R&D Statistics and Output Measurement in the Higher Education Sector (Frascati Manual Supplement OECD,1989b)
Technology balance payments	Manual for the Measurement and Interpretation of Technology Balance of Payments Data – TBP Manual (OECD,

	1990)[1]
Innovation	OECD Proposed Guidelines for Collecting and Interpreting Technological Innovation Data – Oslo Manual (OECD, 1997a)
Patents	Using Patent Data as Science and Technology Indicators – Patent Manual 1994 (OECD, OCDE/GD(94)114, 1994b)1
S&T personnel	The Measurement of Human Resources Devoted to Science and Technology – Canberra Manual (OECD, 1995)
High-Technology	Revision of High-technology Sector and Product Classification (OECD, STI Working Paper 1997/2)
Bibliometric	Bibliometric Indicators and Analysis of Research Systems, Methods and Examples, by Yoshiko Okubo (OECD, STI Working Paper 1997/1)
΄B Other relevant OECD statistical frameworks. Statistics in the field of education	**Methods, techniques and statistical purposes for the education programming (OECD,1967)**
Education Statistics	OECD Manual for Comparative Education Statistics (forthcoming)
Training Statistics	Manual for Better Training Statistics – Conceptual, Measurement and Survey Issues (OECD, 1997b)

Notes: (1).Deals mainly with problems of classifying and interpreting existing information. OECD 2002-Frascati manual (p.16)

2.2 What is entrepreneurship?

This is *the way* that innovation is linking with entrepreneurship and growth. What is really entrepreneurship? There are three basics school of thought about what is entrepreneurship. These are the following:

- The Austrian school of thought
- The Chicago school of thought
- The German school of thought

Von Mizes, Kirzner and Schackle from the Austrian school argue that the entrepreneur behavior eliminates the mistakes and the adversity in the economy. Knight and Schultz from the Chicago school of thought define the entrepreneur as an individual who is taking better

decisions in an extremely risk environment. Von Thuenen and Shumpeter from the German school of thought define the theory of creative destruction. The entrepreneur is shaping the economy with his/her behaviour (Audretsch D.-2008, Korres G. -2008).

Among all the theories the Schumpeterian tradition has had the greatest impact on the contemporary entrepreneurship literature. In his work in 1934 and 1942 Shumpeter defines the entrepreneurship as a disequilibrating phenomenon. The entrepreneurs seek to reforms or revolutionizes the pattern of production. This is happening either by creating an invention-a patent or by producing new product with new technology or even an old product with new technology (Audretsch D.-2003, Giannitsis T. -1991,Shumpeter -1934).

2.3 Innovation Barriers (internal and external)

Segarra-Blasco (2010), Hadjimanolis (2003) and Neely & Hii (1998) argue that the main barriers of innovation are internal and external to the firm. The administration model of the firm and organizational issues can be internal barriers. Examples are the lack of funding of new ideas, the inappropriate workforce in terms of innovation, the management of the firm and the no existence of alliances with other companies for technology matters. External barrier is the inappropriate current legislation (for example patent rights). The culture of society in terms of innovation and entrepreneurship can be another external barrier (Camagni, R. & Capello, R.- 1999,OECD-2005, Fagerberg, J.-2005).

2.4 Innovation and Entrepreneurship (The Relationship)- Prons and Cons of SMEs (Why SMEs?)

The endogenously developed technology and the exogenous technological inputs are influencing the relationship between entrepreneurship and innovation. The main characteristics of the endogenously developed technology are the firms R&D department capability and the skills of the workforce. Examples of the exogenous technological inputs are the patents, the licenses of technology transfer and last but not least the alliance with other firms which technological environment is significant better (Palaskas T. and Tsampra M.-2003). The study of Palaska T. and Tsampra M. (2003) figures that the highly skilled workforce is the most important innovation in a firm. However the analysts should not underestimate the role of patents and licences of technology transfer. According to Rothwell (1988) the most important advantage of the SMEs compare to the MNEs is that they are better in terms of behavior (for example the telecommunication sector). From the other hand the big ones are more capable in finance and promote their projects (for example the banking sector) (Storey D.-2000, Storey D.-2011).

3. Global Environment-Global Financial Crisis

The current economic recession is creating an uncertain environment on the world economy. The crisis started as financial (US banking system-large financial institutions), however it became a crisis for the real economy (like the 1930s Great Depression). The effect of the economic crisis was not the same across the world. The economic instability in Europe started in the countries known as the PIGs (Portugal, Italy, Ireland, Greece, Spain) (World Bank-2013a, World Economic Forum -2012). The most important implications of the crisis are the increasing social distress, the rise of unemployment, the decrease in the amount of private consumption, credit reductions and more bankrupt businesses. Especially SMEs are suffering from demand shock and loss of credit. Carayannis (2006) and Krugman (1996) argue that the SMEs are very important for the global economic recession. They support the technology transfer and the regional development. They also increase the regional trade and the restructuring of the industries. Finally they compete the MNEs (Xiaoni Li, Pere Segarra Roca and Papaoikonomou E.- 2011).

4. European Context (European Policies-European Financial Crisis)

4.1 European Policies- European Technological Policy

4.1.1 Green Paper on Innovation-Entrepreneurship

The European Commission decided to create the Green paper on innovation in 1995. One of the reasons of that, was for the European Union to catch up its main competitors USA and Japan. The Green paper suggests three teen routes of actions and five main aims. The first aim is the better collaboration among the research and the innovation. For example develop technology monitoring and foresight. The second aim is to encourage the training and education of the human resource (Clark J. and Guy K.-1998, Kokkinou A.-2010, Kourliouros E. and Korres G.-2011). So the workforce can have innovated ideas. The third aim is to reinforce the funding of innovation. The fourth aim has to do with the establishment of a legal and regulatory environment which promotes innovation (i.e. promote intellectual and industrial property). Finally the public state should promote innovation (i.e. eliminate administration barriers) (Commission of the European Communities, 1995). In addition the European Union in Barcelona 2002 decided to create the Green Paper on Entrepreneurship. This happened in order to create new investments, boost the employment and reinforce the innovation and entrepreneurship (European Commission.- 2003).

4.1.2 Lisbon Strategy

The Heads of State and Governments decided at the Lisbon Summit in 2000 to support innovation in European Union with the Lisbon strategy (European Union, 2004). This strategy targets to transform the European Union by 2010 into the most competitive and dynamic knowledge-based economy worldwide (Table 2 Emerging Technologies). Table 2 illustrates the emerging technologies for the EU vis-avis USA and Japan. A lot of things have to be done in order EU to reach the levels of USA and Japan. At the same time greater social cohesion occurs with more and better jobs. The dimensions of the Lisbon strategy are the following three:

- Reinforce the creation, absorption, diffusion and transfer of knowledge
- Improve the social model
- Make the European economic environment stronger and more unite

(Korres G., Tsobanoglou G. and Kokkinou A. ,2011)

Table 2 Emerging Technologies

Europe	**Vis-à-vis the USA**	**Vis-à-vis Japan**
Ahead	Digital Imaging Technology Flexible computer-integrated manufacturing	Flexible computer-integrated manufacturing Software engineering technologies
Level	Advanced semiconductors High-density data storage Sensor technology Software engineering technologies Advanced materials	Artificial technology Digital imaging technology Sensor technology Superconductors Biotechnology Medical equipment
Behind	Artificial intelligence High-performance computers Optoelectronics Biotechnology Medical equipment	Advanced semiconductors High-performance computers Optoelectronics Advanced materials High-density data storage

Source Korres G. (2011) p.204

4.1.3 European Research Area

A basic tool for the support of innovation and the implementation of the Lisbon strategy was the European Research Area (ERA). The European Research Era decided in Lisbon 2000 by the European Commission. The aim was to eliminate the disadvantages of the European research policies (Korres G., 2011). The main disadvantages were the low percentage of investing in R&D and the problematic coordination of the research activities. The main dimensions of the European Research Area are the following:

- Creation of a single market for the research
- Rebuild and coordinate the research system of the European Union and the research policies of the individual member states
- Develop of a European research policy which is going to have as a main influence the national and European policies.

(Korres G., Tsobanoglou G. and Kokkinou A. ,2011)

4.1.4 European Innovation Scoreboard-Innovation Union Competitiveness

Another tool for the support of the innovation (Lisbon strategy) is the European Innovation Scoreboard. The annual report of the European Innovation Scoreboard includes three main types of indicators, eight innovation dimensions and twenty five different indicators (Kourliouros E. and Korres G., 2011). The three main types (blocks) of indicators are the enablers, the firm activities and the outputs. The report monitors innovation trends across the EU27 member states, as well as Croatia, Iceland, the Former Yugoslav Republic of Macedonia, Norway, Serbia, Switzerland and Turkey. The report also includes comparison among EU27 and 10 global competitors (European Commission-2013d, European Commission-2013b).

The enablers have to do with the first three innovation dimensions which are external to the firm (Kourliouros E. and Korres G., 2011). These are the human resources, open excellent and attractive research systems as well as finance and support. Furthermore the first block includes nine indicators of the total twenty nine. The firm activities cover three innovation dimensions which are internal to the firm. These are the firm investments, linkages and entrepreneurship and intellectual assets. The second block includes 11 indicators of the total twenty nine. Finally the outputs cover two innovation dimensions which reflect the affects of firm innovation activities. These are innovators and economic affects. The third block includes nine indicators of the total twenty nine (European Commission-2013d, European Commission-2013b).

According to the above the European Union countries are grouped to the following four distinctions:

- Innovation leader countries are the countries with innovation performance well above that the EU27 average and all other countries
- Innovation followers are the countries with innovation performance below those of the innovation leaders but close or above of the EU27 average
- Moderate innovators are the countries with innovation performance below the EU27 average
- Modest innovators (catching up countries) are the countries with innovation performance well below the EU27 average

(European Commission-2013d, European Commission-2013b)

4.2 European Union Context (inter comparisons)

Table 3 illustrates the Innovation Growth Leaders for 2012. The growth performance between the four groups is very different. Some countries are growing relatively quickly and others more slowly (Korres G., 2011). Four countries (Denmark, Finland, Germany and Sweden) are innovation leaders. Denmark is the growth leader of this group. Ten countries (Estonia, Slovenia, Netherlands, France, United Kingdom, Belgium, Luxembourg, Austria, Ireland and Cyprus) belong to the second group (innovation followers). Estonia and Slovenia are the growth leaders of the second group. Nine countries (Lithuania, Malta, Slovakia, Italy, Czech Republic, Portugal, Hungary, Spain and Greece) are moderate innovators. Lithuania is the growth leader of the moderate innovators. Four countries (Latvia, Romania, Bulgaria and Poland) belong to the last group (modest innovators). Latvia is the growth leader of the last group (European Commission-2013d, European Commission-2013b).

Table 3 Innovation Growth Leaders

Group	Growth rate 2008-2012	Growth leaders	Moderate growers	Slow growers
Innovation Leaders	1.8%	Denmark (DK 2.7%)	Finland (FI 1.9%) Germany (DE 1.8%)	Sweden (SE 0.6%)
Innovation followers	1.9%	Estonia (EE 7.1%) Slovenia (SI 4.1%)	Netherlands (NL 2.7%) France (FR 1.8%) United Kingdom (UK 1.2%) Belgium (BE 1.1%) Luxembourg (LU 0.7%) Austria (AT 0.7%) Ireland (IE 0.7%)	Cyprus (CY-0.7%)
Moderate innovators	2.1%	Lithuania (LT 5.0%)	Malta (MT 3.3%) Slovakia (SK 3.3%) Italy (IT 2.7%) Czech Republic (CZ 2.6%) Portugal (PT 1.7%) Hungary (HU 1.4%) Spain (ES, 0.9%)	Greece (GR - 1.7%)
Modest innovators (Catching up countries)	1.7%	Latvia (LV 4.4%)	Romania (RO 1.2%) Bulgaria (BG 0.6%)	Poland (PL 0.4%)

Source: Innovation Union Scoreboard, 2013

4.2.1 SWOT Analysis of European Innovation Process

The European Innovation Process characterizes from specific features. In order to understand better the internal and external environment of the European Innovation process the experts are using the S.W.O.T analysis (Strenghts, Weaknesses, Opportunities and Threats) (Table 4 SWOT Analysis of European Innovation Process) as a policy instrument. It is quite obvious from the Table 4 that the large number of the SMEs is a weakness as far as it concerns the competitiveness enhancement and the investment enhancement (Kokkinou A.-2010). From

the other hand the high skilled human resources is strength for the competitiveness enhancement, when the small percentage of skilled R&D personnel is a weakness for the human resources and employment enhancement. The technology and knowledge diffusion is an opportunity for the competitiveness enhancement. At the same time the fact that the SMEs can not support effectively knowledge creation and accumulation is a weakness for the productivity enhancement. However the increase of the technology-based firms is strength for the R&D infrastructure enhancement. The low degree of specialization and the limited productive network is a weakness for the investment enhancement, when the regional disparities in technological expenditure and knowledge diffusion are a threat for the R&D infrastructure enhancement (Kokkinou A.-2010).

The EU targets to increase the cohesion on technology and innovation issues. The European Union technological policy aims not only to increase the competitiveness of the Europe but also to eliminate the national differences and the regional differences of the countries.

Table 4 SWOT Analysis of European Innovation Process

a) Strategic goal and Development Pillar: Competitiveness enhancement	
Strengths	High skilled human resources
Weaknesses	Large number of Small and Medium Enterprises (SMEs), low productivity of public sector, imbalances in labor supply and demand
Opportunities	Modern administrative and law framework, technology and knowledge diffusion, clustering enhancement, education
Threats	Delays in market liberalization, labor market rigidities
b) Strategic goal and Development Pillar: Productivity enhancement	
Strengths	Convergence under Lisbon goals, modern European technological policies
Weaknesses	Bureaucracy, credit market rigidities, weaknesses of SMEs to support knowledge creation and accumulation, low value added
Opportunities	EU enlargement with countries with developing economies, low labor cost, high productivity and value added
Threats	Dualism in entrepreneurial activity and development
c) Strategic goal and Development Pillar: Investment enhancement	
Strengths	Mobility and diffusion of entrepreneurial and investment capital, credit market liberalization

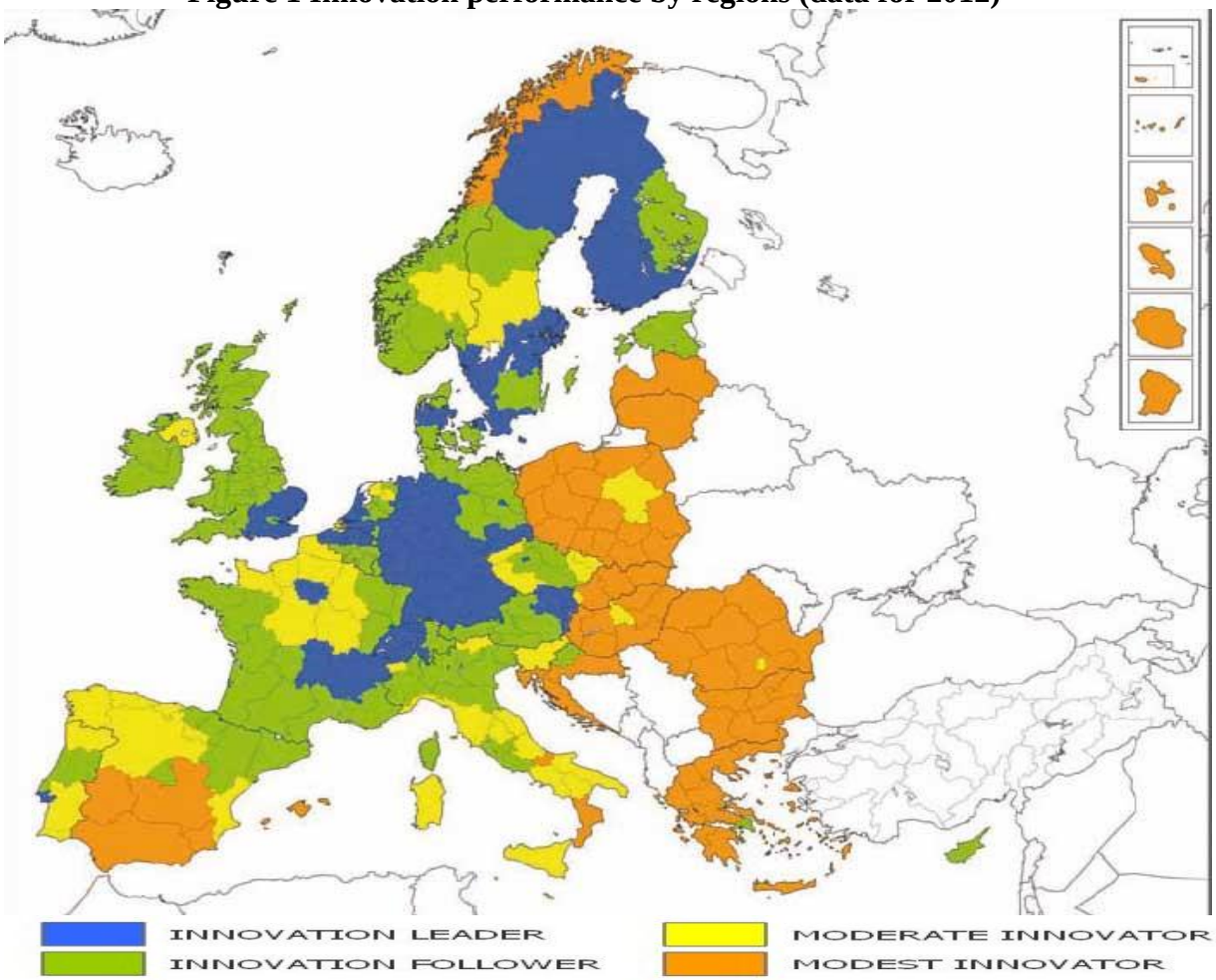
Weaknesses	Large number of SMEs, low degree of specialization, limited productive network, low connection of education with market needs
Opportunities	E.U enlargement with developing economies and markets, European development and innovation programs
Threats	Trade and transport infrastructure weakness, limited business services
d) Strategic goal and Development Pillar: R&D infrastructure enhancement	
Strengths	Increase of the technology-based firms, increase in the technology and innovation expenditure, connection of knowledge creation with economic results and economic products
Weaknesses	Low level of R&D expenditure, low technological infrastructure
Opportunities	International trade trends, tax regimes, European development funds
Threats	Regional disparities in technological expenditure and knowledge diffusion, imperfect competition in energy market
e) Strategic goal and Development Pillar: Environment protection enhancement	
Strengths	New energy resources, clean environment practices
Weaknesses	Insufficient Administrative framework
Opportunities	Development funds, innovation policies
Threats	Global warming, polluting agents
f) Strategic goal and Development Pillar: Human resources & employment enhancement	
Strengths	High skilled human capital, education enhancement, high education expenditures, higher education participation, international research activities
Weaknesses	Small percentage of skilled R&D personnel, limited life-long learning, low human capital mobility
Opportunities	Education infrastructure, regional education and innovation activities
Threats	Brain drain towards U.S.A., labor market rigidities

Source Kokkinou A. (2010) p.96

4.2.2 Closing innovation divide

Table 3 and the Figure 1 show that regional innovation divergences still exist. At the same time risk grows with the crisis. A lot of the European countries have regions at different performance. For the innovative countries innovative regions drive the performance of the country. This is not happening at the same level for others Member States. According to the results plenty of regions are more innovative comparing to the countries where they belong. Therefore the innovation support programmes need better coordination in order to meet the needs of individual regions (European Commission-2013d, European Commission-2013b). East of England and South East in UK are innovation leaders when UK is an innovation follower. Praha is an innovation leader when Czech Republic is a moderate innovator. Lisboa is an innovation leader when Portugal is a moderate innovator. Attiki in Greece is an innovation follower when Greece is a moderate innovator. Bucuresti-ifov is a moderate innovator when Romania is a modest innovator (European Commission-2013d, European Commission-2013b).

Figure 1 Innovation performance by regions (data for 2012)



The EU Member States Cyprus, Estonia, Latvia, Lithuania, Luxembourg and Malta are not included in the RIS analysis

Source: Innovation Union Scoreboard, 2013

4.3 Greek Policies-Greek Financial Crisis

The economic instability in Europe started from Greece. Afterwards the crisis spread to the south Europe countries. The possibility for Greece and perhaps other countries leaving the euro, is now feasible (Ioanidis S.-2013, World Economic Forum-2012). At the latest European Innovation Scoreboard (2013) Greece characterized as a moderate innovator and slow grower with a negative mark (-1.7%). All the regions of Greece are moderate innovators, expect Attiki which is the capital region and innovation follower. Therefore Greece is a homogenous country in terms of innovation performance.

The situation for Greece is even worst in terms of competitiveness. The World Economic Forum (2012) in the Global Competitiveness Report 2012-2013 ranked Greece in the 96th position in a total of 142 countries. In this report Greece was the worst country of the European Union. Greece is even worst compare to Serbia (95^{th}) and Argentina (94^{th}) and slightly better from Jamaica (97^{th}) and Gambia (98^{th}). Greece falls another six places in the rankings compare to the last year report. At the same time Greece ranked in the 87^{th} position as far as it concerns innovation (World Economic Forum, 2012). Some of the most problematic issues for doing business are the inefficient government bureaucracy, the access to financing and the policy instability (World Bank-2013b, World Economic Forum -2012).

According to the European Commission (2011) the innovativeness of the Greek economy depends on imported technology and know-how. This means that there are a lot of organisational and marketing innovations and less on the production and exploitation of new knowledge. In order to overcome such difficulties, the General Secretary of Research and Technology in 2011 decided a new strategy for R&D and innovation (European Commission-2013c, Ioanidis S.-2013). The main directions of the new strategy are the following five:

- Agro-food sector
- Information and communication technologies sector
- Materials/chemicals sector
- Energy-environment sector
- Health/biomedical sector

At the same time the sector of SMEs includes the 99.9 % of the enterprises in Greece and the 99.8 % in the EU 27 (table 4) (www.imegsevee.gr). However the micro-enterprises are more in Greece (96.6%) in comparison with the EU27 (92.2%). The large enterprises are more in EU27. It is quite obvious that in Greece the sector of the SMEs is the *small bone* of the economy. It also includes the 2/3 of the total employment. One of the crisis effects in the Greek sector of the SMEs is the closing down of twenty thousand SMEs in a year (the total

number of SMEs for 2010 was 745.677). The majority of the new start ups are SMEs. A basic characteristic of a start up is the new technology. The Table 5 illustrates the percentage of new entrepreneurial activities which are using new technologies in Greece 2008-2011. The differences among the last four years are not big (Ioanidis S.,2013).

Table 5: Number of Enterprises 2011[2]

	Number (Greece)	% (Greece)	**% (EU27)**
Small to Small	703.648	96,6%	92,2%
Small	21.586	3,0%	6,5%
Medium	2.649	0,4%	1,1%
SMEs	**727.833**	**99,9%**	**99,8%**
Large	399	0,1%	0,2%
Sum	**728.282**	**100,0%**	**100,0%**

Source: (www.imegsevee.gr)

Table 6: Percentage of New Entrepreneurial Activities which are using New Technologies in Greece (2008-2011)

	Radical New Technologies	**New Technologies**	**Existing and Old Technologies**
2008	22,7	17,9	55,4
2009	10,3	31,6	58,1
2010	34,7	10,6	54,7
2011	17,1	24,2	58,7

Source Ioanidis S., (2013),p.38

4.3.1 Case Study of the region of Crete-Empirical Survey of the SMEs

A lot of academic studies have occurred about the innovative performance of the SMEs in the greek regions. Some of these are Kardatos G., Kourliouros E and Iosifides T.,(2007) (*case study area the region of North Aegean*), Copys A, Skuras D., and Tsigenidi K. (2008) (*case studies areas the regions of Evrytania and Achaia)*, Nikolaidis Y. and Bakouros Y. (2009) (*case study area the region of Crete*), Petrakos G., Skayannis P., Papadoulis A. and Anastasiou G. (2009) (*case study area the region of Thessaly*). Crete is a region with specific features. Its innovation performance is below the EU27 average (table 3-figure1 and figure 2 in appendix).

The on going study highlights the region of Crete as a case study. In this area the empirical survey focus on the development of innovative SMEs. After serious consideration a questionnaire has created. The Community Innovation Survey was a basic inspiration (European Commission, 2006). However others questionnaires from the National Statistic Agency and private consultants such as ICAP have been examined as well. The basic sections of the questionnaire are :

[2] Estimations for 2011 from the statistical base of Eurostat for the period 2005-2009 .

- The SME
- The Human Capital
- The Business Environment and the Competitiveness of the enterprise
- Innovation (Product Innovation, Innovation Process, Innovation Activities and Expenditures, Finance of Innovation, Effects of Innovation, Source of innovation and Co-operation for Innovation Activities, Innovation Barriers)
- The Results of the Crisis
- Recommendations

SMEs data have collected from the business champers all over Crete. The decision for collecting the SMEs data from the four business champers of the four different regions of Crete (Heraklion, Chania, Rethimno and Lasithi) has to do with the reflection of the real business environment in Crete in times of crisis. Three hundred SMEs in Crete are going to answer the questionnaire. From them one hundred and twenty are based in the area of Heraklion, eighty in the area of Chania, sixty in the area of Rethimno and forty in the area of Lasithi. The above statistical methodology is according to the methods of the National Statistic Agency.

The majority of them are local and regional, some others national and fewer international. Few of them are part of the local networks, incubators and clusters. For example in the area of Heraklion there is a network of micro-tourism enterprises called Philloxenia. There is also a network for the trade of wine. For all the regions of Crete there is a network for the common trade of olive-oil called SEDIK. In the areas of Heraklion, Rethimno and Chania there are clusters and incubators (at least one cluster for the renewable energy sources in the area of Heraklion). In the area of Heraklion there is a Technology Park as well.

Different and important sectors of the local economy are going to analyze. These are the following five (1) Software-Telecommunication (2) Energy-Environment (3) Food processing (4) Tourism (5) Logistics-Transportation. The first two sectors classify as high technology (industry of high knowledge). The last three sectors classify as low technology (industry of high labor). These five sectors are case studies of developing economies not only for the regional, national but also in European level. The latest directives from Europe 2020 and Horizon 2020 are in the same direction.

During the research a pilot survey took place. At the beginning the analyst chose to examine the sectors of (1) Software (2) Telecommunication (3) Energy (4) Environment (5) Food processing. The findings of the pilot survey were to examine further the sectors of Tourism and Logistics-Transportation and make one the Software and Telecommunication.

The same happened with Energy and Environment. It is quite obvious that there is a huge collaboration among **the five final sectors**. One example is the interaction among the sector of Tourism with the sectors of Software/Telecommunication and Logistics/Transportation (i.e ebooking-ehandling). The same is happening between the sectors of Food processing and those of Tourism and Software/Telecommunication (i.e cretan products in the Hotels, such as the organic beer of Rethimno-esaling). The majority of the SMEs are located in the cities of Heraklion (Heraklion), Chania (Chania), Rethimno (Rethimno) and Lasithi (Agios Nikolaos, Ierapetra and Sitia). Short examples of the SMEs of the pilot survey were those who produce and trade olive-oil, wine, mineral water, software-hardware and renewable energy sources.

5. Recommended Policies and Conclusions

This paper has illustrated the main theories and policies as far as it concerns the entrepreneurship through innovation. This is the way to growth as Shumpeter figured in the mid 1930s. The current crisis has been also considered not only in Global level but in European, National and Local level as well. The European Union failed to concrete innovation policy. The main reason is the national and regional disparities. Therefore the innovation support programmes need better coordination in order to meet the needs of individual regions. The innovativeness of the Greek economy depends heavily on imported technology and know-how. This is the reason that Greece should focus on the production and exploitation of new knowledge.

In order to escape the downward spiral and return Southern Europe and Greece to a positive growth trajectory, others policies reforms will be required. According to economic geographers such as Lamprianidis L. (2011, 2004) Greece has to develop the existing human capital. The educated workforce which is friendly at adopting new technologies should be used for productivity enhancements (i.e SMEs start-ups) (OECD-2013,OECD-2011). At the same time the government should reinforce the entrepreneurship culture as a tool for local development (Borowik I.M.-2012, European Commision-2013a, OECD-2011). This can be happened with the transfer of technology from the Universities and Research Centers to the local SMEs. In the case of Crete this is not happening. The diffusion of the technology to the local SMEs and to the society as a whole can reduce the costs of the crisis. Alternative forms of entrepreneurship should develop as well (this is an area of future research). These are the social entrepreneurship (i.e social cooperatives) and the social innovation (i.e linux programs).

The European Union and the National policies should support the finance of the SMEs from the high tech industry. For example there are a lot small to small enterprises from the software sector that can not have easy access to finance. The creation of these firms is comparative easily and furthermore they grow rapidly. Traditional industries and sectors which are very crucial for the weaker states and regions should be supported with specific research and technological programs. In the case of Crete and Greece these sectors are Tourism and Agricultural. At the same time greater interaction among the sectors should exist. The exploitation of the linkages between the sectors is a crucial mater. The local SMEs should try to belong to business networks, clusters and incubators. In a firm level a new culture is necessary. The SMEs should learn to manage themselves more easily and effective.

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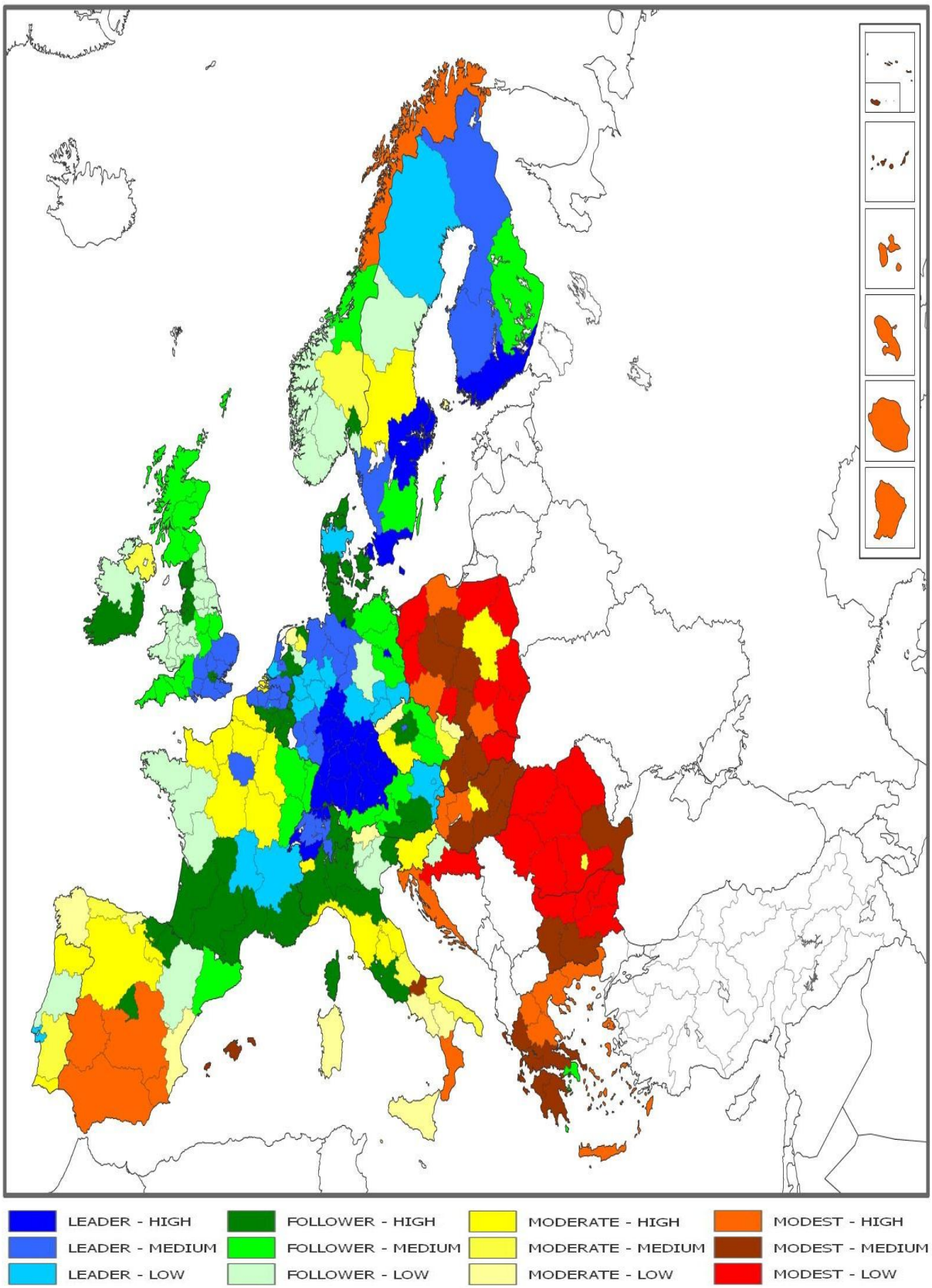
www.imegsevee.gr

Appendix

Figure 2 RIS 2012 innovation performance sub-groups (data for 2011)



Source:http://europa.eu/rapid/press-release_MEMO-12-34_en.htm#PRmetaPress Release_bottom

Green Entrepreneurship, as an innovative tool for enhancement of Hospitality SMEs Competitiveness, Viability and Profitability Strategies

Abstract:
Tourism today consists one of the greatest industries and most dynamic economic activities internationally, as it has been argued and agreed in the World Economic Forum WEF that took place in Davos- Switcherland in February 2009. It is also agreed that tourism consists the prevailing activity in many countries, creating more new job positions than any other industry affecting the rest of the sectors of an economy through its well known 'multiplier effect' and thus contributing to the economic development of nations and the welfare of their citizens. Therefore, supporting this dynamic track of tourism industry should be a priority for public as well as private businesses operating within its environment ensuring sustainability and competitiveness. This paper attempts to analyse the development of green entrepreneurship and innovation by the SMEs operating in the touristt industry, with a focus on the respective practices followed and applied by the Greek hotels as a vital tool for ensuring their viability and maintaining their profitability especially during these unstable and turbulent times.

Key words: Innovation, Hospitality SMEs, Green Entrepreneurship, Marketing tool, People Management.

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1. Introduction

The major environmental and social problems that our planet is facing require active and large incisions. The green growth movement that is constantly gaining momentum in a variety of industries is about promoting and reinforcing economic development and further growth, ensuring at the same time the fact that the natural assets involved continue to provide the environmental services as well as the required resources on which well-being relies. In order to do this it is necessary to foster innovation and its underlying investment, which in turn will underpin sustained growth and give rise to new economic opportunities. The current paper deals with the development of green entrepreneurship and innovation by the SMEs operating in the touristt industry, with a focus on the respective practices followed and applied by the Greek hotels as a vital tool for ensuring their viability and maintaining their profitability especially during these unstable and turbulent times.

2. Innovation – Definition and Context

At this point the term 'innovation' should be defined. According to the official definition provided by the OECD (2005) 'innovation' could be defined as the creation and/or provision of better products and services achieved through improved processes and technological approaches and devices.

These processes and approaches in turn lead to improved organisational structure and effective working relations as well as enhanced connection of a business organisation with its external operating environment (Eurostat/OECD, 2005). It is also very important to note that as OECD argues, innovation comprises the key to economic recovery through 'smart' investments that can halt the financial downturn of contemporary economies and set a sound basis for a strong and viable development. (OECD, Innovation and Crisis 2008).

By reviewing also the relevant literature, it becomes apparent that innovation is considered by the researchers and the specialists as a vital parameter, necessary for the viability of modern businesses which operate in a complex, dynamic and highly competitive globalised environment. It is also evident and clear that 'non innovation' or otherwise complacency of business which remain stagnant without renewing their product / service line consist a matter of time for these organisations to get out of business losing a significant part of their market share.

Considering and viewing innovation through the prism of contemporary economies, the majority of which go through a recession or even a depression stage, one can realise the need for innovation and its significance for the micro as well as the macro world of economy.

Moving to the European level, as Kitsos & Hatzikan (2008) argue if European Union does not transform itself to a 'Union of Innovation', the economy of its countries-members will suffer economic stagnation since innovative ideas, relevant skills and respective potential will become disused and invisible. Moreover, they argue that business innovative performance contribute to the creation of new and stable employment positions which will be able to resist globalisation pressures and safeguard their existence **(**Kitsos & Hatzikian, 2008). As Kotler (2001) argues the theory, which underlines the life cycle model, also implies that all the products and or/services go through a series of alternative stages of the business life cycle, starting with the 'introduction' and the 'development' stages and ending up with the 'maturity' and 'saturation' stages, which in turn may lead to problems with business viability and potential bankruptcy. Another very important lever of pressure that pushes businesses towards innovation, stems from the respective practice applied by competitors who take steps towards introducing innovative products and/or services so that they keep the competitive momentum in the market.

Nevertheless, the concept of innovation is very often confused with the idea of 'new' with many companies or entrepreneurs perceiving automatically any new product or service as an innovative one (Nedis & Byler, 2009).

What should be clarified at this point is that not every new product or service is an innovative one. According to Kuczmarski (2011) the implications of confusing the two terms: 'innovation' with 'modernity'[2] may have detrimental effects since it may lead enterprises to applying wrong approaches and business practices. Therefore, while modernity implies introduction of a new product or service, innovation goes beyond modernity implying transformation of these new ideas into marketable products or services. In other words, the difference between 'new' and 'innovative' lies in the value that the market attaches to the latter through its demand, otherwise we cannot talk about innovation that is developed to contribute to the enhancement of business competitiveness.

On the other hand, the success of innovation, as Heerde &. Mela, (2005) argue depends on the extent to which it satisfies real and specific needs of the market.

Consequently, if a company fails to identify properly and correctly a market need the new idea, product, service or process introduced will most probably fail to be converted into successful innovation and profitable marketable offerings. It is therefore obvious that the successful introduction of innovation is inextricably linked with the proper market research and well targeted promotion. As it has been stated above the focus of this paper is on the

[2] Producing a new product or providing a new service.

SMEs (Small Medium Enterprises) that introduce innovation in the hospitality industry. With respect to that, the World Economic Forum WEF has identified a spectrum of three discrete development stages through which an economy and its businesses can go through. (Francisco Rosales, 2011).

Table 1. : Performance of Greece in Innovation with respect to the Global Competitiveness Index

Indicators of the Global Competitiveness Index in detail	
12^{ος} Pillar : Innovation	
12.01 Capacity for innovation	105
12.02 Quality and infrastructure of the scientific & research institutes	88
12.03 Business Investment in R&D.....	126
12.04 University- Industry co-operation in R&D.....	112
12.05 Government subsidies for innovative and technologically advanced products/services.....	108
12.06 Availability of scientists.....	21
12.07 Patent applicability per million of the country's population….....	37

Source : The Global Competitiveness Report 2011-2012' World Economic Forum

Table 2.: The most problematic factors that halt innovative entrepreneurship in Greece

Corruption.....	14.0
Restrictive labour regulations.....	12.0
Policy instability.....	11.5
Tax regulations.....……	11.1
Access to financing.....	9.9
Inadequate supply of infrastructure	3.9
Tax rates……	3.7
Poor work ethic in national labour force …….	2.3
Government instability……..…….....	2.3
Inadequate educated workforce…….....	1.4
Inflation…….....	0.6
Crime and theft ……..	0.1
Poor public health……	0.1

Source: The Global Competitiveness Report 2011-2012' World Economic Forum

These include a) *the first stage* which is called 'the factor driven stage' based on competitiveness achieved through increased productivity and low wages, b) *the second stage* that is called *the efficiency –driven stage*' whereby businesses are called to develop their processes and improve their products and/or services (through training and development) and c) *the third stage* which is called *'innovation-driven stage'* whereby businesses of an economy are called to compete through entrepreneurial development and innovative practices.

Nevertheless, as it is reflected on the Table 1 below, based on the official data published by the WEF, although Greece and its businesses are found at the 3rd stage, they

have a low ranking in comparison with the rest of the economies and with respect to innovation, while they present a number of factors that act as burdens suppressing innovation and entrepreneurship of Greek enterprises.

3. The significance of Tourism and Hospitality for an economy – a focus on the Greek economy

According to the conclusions drawn and agreements reached in the World Economic Forum WEF that took place in Davos- Switcherland in February 2009, tourism and hospitality compose the dominant business activity in many countries, creating far more new job opportunities than any other industry hence affecting the rest of the sectors of an economy through its well known 'multiplier effect', contributing in this way both to the welfare of citizens as well as the to the economic development of the involved nations. Therefore, supporting this dynamic track of tourism industry should be a priority for public as well as private businesses operating within its environment ensuring sustainability and competitiveness.

The high degree of complexity and dynamism of the environment in which the tourist and hospitality industry currently operates, is another important parameter that has been officially established ***in the*** WEF Annual Meeting, 2009.

As far as the Greek society and economy are concerned the role of hospitality and tourism in terms of their beneficial contribution is exceptionally immense. Indicatively, it can be pointed out that the input of hospitality and tourism in the country's Gross National Product GNP reached 18% in 2008 while a number of 833.000 new job positions were created and offered in the industry. This represents a 20% of the total employment in the country (SETE, 2008-2009).

In relation to the Greek economy and in order to realise and appreciate the economic significance as well as the dynamism of tourism and hospitality for the status of the Greek economy, it should be mentioned that the total contribution of tourism and hospitality to GDP is expected to rise on average by 4.0% per year from EUR 35.3 billion (15.8% of GDP) in 2011 to EUR 52.2 billion (18.5%) by 2021 (World Travel and Tourism Council (WTTC).

The work of the Tourism Committee of the OECD has recognised the importance of Competitiveness as an issue for tourism policy makers and entrepreneur. Moreover, as it has been estimated by a great number of economists the tourism industry can act as a main mechanism of development and growth that will lead Greek economy out of its current problematic state. (http://www.traveldailynews.gr/news/article/47008)

However, apparently there is a great deal of conflicting opinions and controversy with respect to the current reality of Greek tourism and hospitality as well as the factors and variables that determine its competitiveness. According to the reports that the World Tourism Organisation (UNWTO) and the World economic Forum (WEF) issued in 2009, Greece holds the 24th place. Nevertheless, according to the General Index of Competitiveness it holds the 67th position. On the basis of these results, a reasonable question that might rise could be related to the likely factors that underline this reality.

According to the former General Operations Manager of Sunwing Hotels Hellas S.A[3] (the interview with whom consists a main source of the primary research data drawn fro the purposes of the present study): 'The picture of the Greek Tourist industry becomes blurred when it is viewed through the prism of the wider framework of state infrastructure, the exogenous touristic cost and the rest of the public services that a tourist pays for directly and/or indirectly '. Consequently, one can easily realise and understand that the real 'weight' of the industry's competitiveness is placed on the 'shoulders' of the individual business units that operate in the industry. In the light of the above one could pose the question about what a realistic approach and a feasible strategy could be, so that Greek hospitality SMEs could respectively follow and implement and hence be able to respond to these complex and dynamic challenges and establish their competitiveness?'

The answer to this question should be given in line with the market demand. In that respect, within the hotel sector, a constantly rising number of guests exhibit a tendency to choose a green hotel which implements environmentally friendly policies and practices, demonstrating a serious concern about the ecological degradation (Han, Hsu, & Sheu, 2010; Manaktola & Jauhari, 2007). Recognising the momentum of this eco-friendly customers' need and their emerging concerns, nowadays many hotel firms seek to incorporate these concerns about the environment in their marketing and management decision-making process and their applied policies and procedures with respect to environmental awareness and tourism customers' sensitivity. (Bohdanowicz, 2006; Lee, Hsu, Han, & Kim, 2010; Mensah, 2006). Professionals as well as academics specialising in the hospitality sector have come to the conclusion that the action by hotel operations in order to be 'green' has become a necessity in order for them to achieve noticeable and essential improvement in the degree of their ability

[3] In this paper the case of Sunwing Hotels Hellas S.A is used as an example of best practice since its hotels were awarded the first eco label (EU Flower) in Europe and recompenses all its environmental efforts for the last decade with the help of the Scandinavian Organization "The Natural Step". Additionally Sunwing Hotels in Greece are awarded continuously since 1985, the European Blue Flag for the way they manage and maintain their coastal environment and beach. Moreover, in 2006 Sunwing Resort Kallithea was awarded the 2nd ecological prize award among the Greek enterprises.
http://www.csrhellas.org/csr_last2/portal/gr/misc/674oz_20071113674.php3

to compete in the sector (Han, Hsu, & Lee, 2009; Manaktola & Jauhari, 2007). Credible pieces of evidence which demonstrate the increase of environmentally friendly customer behaviour are provided by the studies carried out by a number of specialists in the field, justifying the increased number of guests who demonstrate strong willingness and intention to pay premium prices for green services and/or products (Laroche, Bergeron, & Barbaro-Forleo, 2011).

It should be noted that as Bohdanowicz (2005) argues, an increasing number of tourists globally exhibit the tendency to prefer what are known as 'green hotels'.For example, an 80% of the German hotel guests state firmly that high environmental standards compose a determinant factor in their decision making process when they are choosing destination and accommodation .

However, the oxymoron is that despite all of these new facts, hotel businesses do not react in a suitable way as it would be expected and they do not seem to realise the concept and the potential of 'Green entrepreneurship' as a competitive tool that could ensure their viability and profitability in these times of high turbulence and uncertainty that economies, markets and enterprises are going through.

4. The Concept of 'Green Entrepreneurship' and its entity as a vehicle of innovation

A widely acceptable definition of 'Green entrepreneurship' is that it is a kind of economic activity that places the nature and environment at the heart of a business strategy and practices. Green entrepreneurship focuses on the economic operation of the business unit (Esty and Winston, 2006). The term economic operation indicates the business activities where energy, labour, natural resources, and raw materials are carefully used and not wasted. A business operating in the hospitality industry and manages to operate in line with the principles of green entrepreneurship can enjoy direct financial benefits, by saving energy consumed through the use of alternative energy sources, which in turn leads to a reduction in operating costs by saving energy and using alternative sources increasing thus its long term profits.

Within the context of green entrepreneurship the green strategies that may be introduced in the hotel industry include the following general areas (Spanos, 2009):

A. Energy Saving.

B. Regular maintenance.

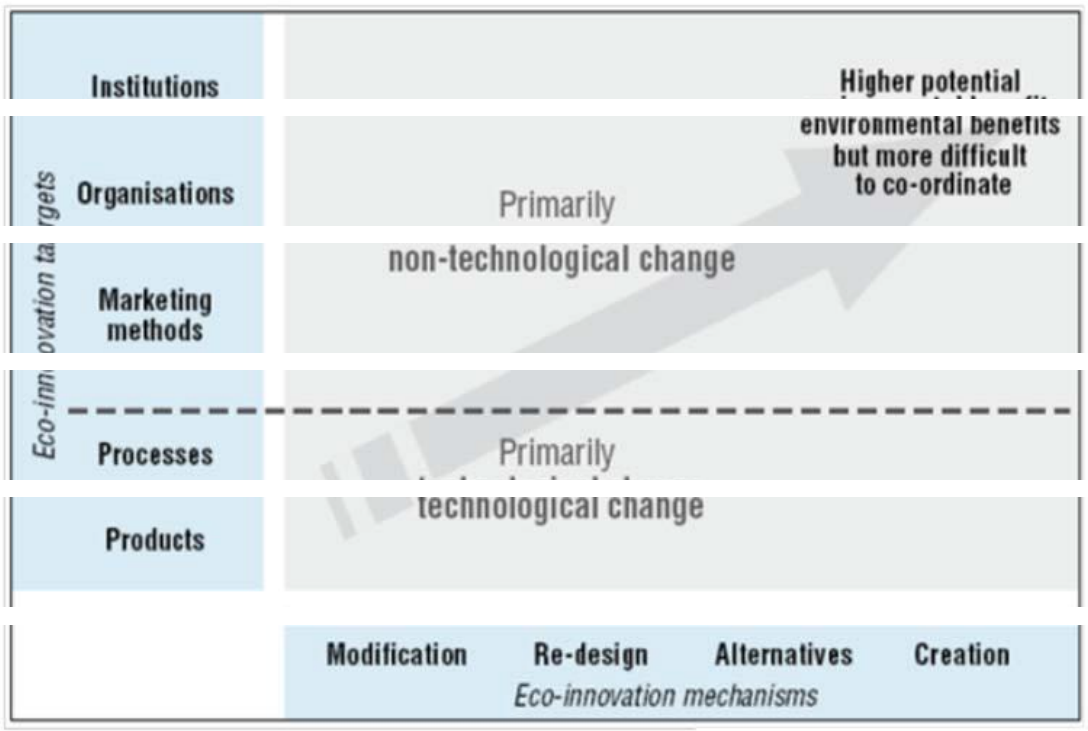
C. Waste Reduction and Waste Management.

D. Recycling paper, plastic and glass.

E. Training and motivating employees on the use of new equipment and procedures

Green entrepreneurship and growth for SMEs implies increasing environmental awareness and the derived pressures while expanding economic opportunities (OECD, 2011a). The challenge of combining the achievement of economic and environmental performance goals can be hardly met by businesses as usual. What is required is a stronger and cleaner growth path, implying innovation through the creation of new products, services, their underlying processes as well as their application and diffusion (OECD, 2011a). What seems to be combining the above parameters: innovation, application of environmental technologies and SMEs competitiveness is Eco-innovation, which leads to environmental improvements compared to relevant alternatives through the implementation of new organisational structures, processes, marketing strategies that in turn lead to the production of improved and eco-friendly products and services (OECD, 2009a).

Figure 1: Facets of eco-innovation



Source: OECD, 2009b.

It is important to note that there exists an uneven distribution of small firm innovation, between a few highly innovative firms with high growth potential, and the great majority of SMEs that innovate very little compared to their large counterparts (OECD, 2010). It is also very significant to note that eco-innovation besides the environmental technologies it also embraces several non-technological parameters. Based on the above and in line with the

relevant definition as this has been outlined in the Oslo Manual : '*eco-innovation is the implementation of new, or significantly improved, products (goods or services), processes, marketing methods, organisational structures and institutional arrangements which, with or without intent, lead to environmental improvements compared to relevant alternatives"* (OECD, 2009a).

According to this definition, eco-innovation is distinguished from other types of innovation solely by its environmental effects, whether intended or not. However, eco-innovation can also be defined more broadly than in the conventional sense covered by the *Oslo Manual*, as it also includes changes in 'institutional arrangements', together with innovation in products, processes, marketing methods and organisational practices (Figure.1.above).

The eco-innovation can also be differentiated in terms of degree of novelty and impact on existing artefacts, processes, organisational practices or technological regimes into : i) *Incremental* innovations that occur by modifying existing technology, ii) *Disruptive* innovations that consist of changing how functions are fulfilled and generally things are done and iii) *Radical* innovations which occurs when an entirely new solution is created and leads to a full-scale shift in the technological regime at the time (OECD, 2009a). -

5. Achieving competitiveness in the hospitality industry[4] through green entrepreneurship and eco-innovation

In the light of the above definitions and frameworks it becomes evident that green entrepreneurs can become pioneers in green business practices by introducing eco-innovation. Nevertheless, one could reasonably set the following question: 'besides their social contribution how can green entrepreneurship through eco-innovation ensure and/or increase competitiveness of firms?'

A response to that question could be that, besides its reputation, the adoption of green policies can lead to competitive advantage, especially when there is a relevant certification, thereby creating new opportunities for providing improved service quality to customers (Roth, 2002).

The above of course also apply to the tourism and hotel industry where 'green economic revolution', as it is characterised by Roth (2002), gives hoteliers and business operators the unique opportunity to increase revenues and market share by harmonising the services that their companies offer with the growing preference of customers for 'green hotels'. There is a general misconception, evidenced by the results of empirical research as we

[4] The focus is on hotels' sector.

shall see below, by which it is believed that the implementation of green practices in the hotel industry is very expensive and only the hotels that can charge high prices may be involved in the implementation of the specific strategies[5]. However, this is incorrect because even though an initial investment in technology and the related know-how is required, the reduced costs and the economy achieved in conjunction with its appeal to customers quickly pay back for the investment. Specifically, a 75% of tourists clearly state a preference for eco-labeled hotels while another 25% declare willingness to pay a premium price for their stay in green hotels (Wight, 2003; Yunhiand Heesup, 2013).

According to the results of the US Travel Association **(**http://www.ustravel.org/) a surprisingly high number of 55.1 million American tourists confirm that they belong to the category of environmentally sensitive customers. Also, according to a survey by Edelman Public Relations (http://www.edelman.com/) 91% of global consumers consider environmental protection as the most important cause that should be pursued by firms and the 82% of them expressed increased preference for and confidence in companies that are making progress and are taking action in environmental issues (Colona, 2010).

The results also of an empirical research carried out by the Green Hotels Association (Business Link, 2011), provided evidence that hotel companies which implement environmental policies and practices have 9% higher rate of growth in sales, 4% higher return on invested capital and 17% higher increase in operating income than lodging operations that do not apply any environmentally friendly culture and practices. Likewise, another survey carried out on a sample of 100 hotels in Phuket more than a decade ago (Oines and Assenov, 2000) provided evidence about the beneficial economic results that could be derived from the implementation of green practices in hotels (i.e. reduction in operating cost and savings of 20% -30%. The same survey carried out by the Green Hotels Association concludes that hotel companies, which implement green strategies, manage to develop the following advantages:

Cost-competitive advantage: The reduction of operating costs through green practices is the goal of many businesses today. In these times of global and national economic downturn, the 'going green' strategy can make a difference by allowing the respective businesses to compete on cost.

Green revenue growth: This is the focal point of the 'green growth', an opportunity of trillions of dollars exposed worldwide by companies that are willing to focus on environmental practices.

[5] Smarter Hotelier, "Green Hotels offer Brand Differentiation to mid-tier Hotels" Retrieved from: http://smarterhotelier.com/green-hotels-offer-brand-differentiation-to-mid-tier-hotels/

Green Entrepreneurship: In any economic revolution, such as the 'green' revolution there are opportunities for the innovative entrepreneurs who will be the first movers in the new directions and horizons. The hotel guests are looking for new solutions that meet their environmental sensitivity and increasing requirements.

Differentiation competitive advantage: By investing in innovation, technology, expertise and supporting staff training, the hotels can offer differentiated services that can attract more and 'better quality' of tourists. Undoubtedly, achieving and maintaining competitive advantage is the most important objective of a business that wishes to remain profitable in an increasingly competitive environment with challenges and difficulties.

There are two basic strategies for developing a strong competitive business through creating firm-specific competitive advantages: cost leadership and differentiation. Two main positions of increased importance seem to dominate the particular theory of Porter's 'generic strategies':

a) Companies that pursue either cost leadership or differentiation seem to ensure greater market share and are more profitable, and

b) A firm must either pursue cost leadership strategy or differentiation; otherwise it might "be stuck in the middle" (Porter, 2004).

Based on a review of the literature conducted and the opinions presented below, the author of this study concluded that the main thrust of Porter's theory on competitive advantage has been reversed.

According to Hambrick (1983), differentiation is a more profitable strategy than cost leadership, since the leading companies that occupy the largest shares have a tendency to compete on differentiation basis. Similarly, Peters and Waterman (1982) add that high performance companies tend to focus more on customer value and differentiation rather than cost. Additionally, a series of survey-results provide evidence that the basis of the differentiation strategy - offering products and services of superior quality - is a much more fundamental competitive factor than any other parameter including market share, low cost and position on the learning curve (Buzzell & Gale, 1987, Jacobson & Aaker, 1987).

With respect to the second pillar of the theory where Porter argues that a low-cost strategy requires a large market share, many analysts reply that a large market share is acquired through high quality and differentiation strategy. So while even Porter identifies GM as an example of companies that successfully implement a cost leadership strategy, nevertheless, the company reports show that quality and differentiation played very important role in the success.

Finally, as Mintzberg (1988), and other surveys suggest: 'a low-cost strategy is actually a differentiation strategy based on low price'. In other words even though Porter insisted that any strategy requires its own culture and philosophy, the strategy of differentiation and low cost can actually coexist.

Evidently, Porter's position 'either cost leadership or differentiation or otherwise stuck in the middle' is obsolete and its validity has been challenged by many analysts. The most demonstrative position is the one stated by of Booth and Philip (2000) who declared that businesses should be more flexible and combine 'differentiation' and 'cost leadership' strategies in order to offer unique value to customers. A possible error though, can rise by the basic principle that automatically connects differentiation to premium prices charged, a situation that is rather incompatible with high market share.

Finally, according to the information presented above, hotels that implement green strategies have the potential to succeed in both cost leadership and differentiation.

6. Mentality of the Greek Hotel Management as a barrier to the implementation of Green entrepreneurship and eco-innovation

On the basis of comparative analysis of Greek hotels vis-à-vis best practice hotels operating in Greece it could be drawn that there is an apparent 'gap' in their philosophy and culture as these are reflected on their respective organisational values, policies and the practices applied. The majority of the former:

- consider green strategies as a rather 'costly business approach' that bring about results on a long term time span, while some of them consider them as a merely marketing trick with no essential meaning and useful implications for their company's competitiveness.
- apply a limited range of green practices compared with the approach followed by best practice hotels and do not use these practices as marketing tools to promote their company's' image to an increasingly environmentally aware clientele and thus they fail to create a competitive advantage
- do not invest in their people training and development and the know how necessary to support green strategies' implementation.

On the contrary, best practice hotels in green entrepreneurship apply the whole range of the required green strategies to meet the criteria of reputable awarding bodies such as Eco Flower, Blue Sea etc. and use their certification and labels as promotional tools to target more environmentally aware customers.

Finally, what seems to be the main underlying reason for this disheartening reality that small-medium hotel operations in Greece present with respect to the implementation of green

strategies is their management attitude, beliefs and the subsequent lack of their commitment to the idea and implementation of green strategies. The interview results with the former Operations Manager of Sunwing Hotels Hellas S.A, provided evidence on the fact that hotels managers have a dated attitude and appear to be rather skeptical about the potential that green strategies can offer to their businesses in terms of enhancing and strengthening their competitive position in the market. This attitude combined with a serious lack of respective valuable marketing knowledge as well as with expressed reservations about eco labels and certification, have resulted in Rhodes' hotels applying some green practices in a haphazard manner and hence not being able to make the most of green strategies to achieve core competence and sustainable competitive advantage.

Nevertheless, it should be stressed that a positive aspect of the case of Greek hotels, with respect to green entrepreneurship, is the fact that they have the right organisational culture (their employees' values and beliefs) and apply the appropriate human resource management style on which the foundations for green entrepreneurship and eco-innovation could be 'built'. In other words, employees' cultural values and beliefs as well as the way that they are managed are two factors that the management of Greek hotels can make optimum application should they wish to support the successful implementation of green strategies.

On the other hand, hotel managers' attitude and beliefs with respect to the potential of green strategies seem to be the main deterrent factor that prevents Greek hotels from making the most of such an approach and the benefits they could possibly gain.

7. Conclusions and Recommendations

In the light of all the above, operators in hospitality have to realise that competitiveness of the Greek hotel sector is not guaranteed and it needs a constant analysis and consideration of evolving market trends. Greek hoteliers must realise that they are faced with intense competition coming from economies with low labour cost and hence they have to devise alternatives in order to improve their degree of competitiveness. They have to understand that their belief: 'once a competitive advantage always a competitive advantage' can be a dangerously wrong assumption leading to possible disastrous introversion.

Apparently, there is an apparent delay in the hotels' transition to what is called 'knowledge economy' and the application of innovative technologies and approaches. As it has been discussed above, Greek hotels' management have not fully accepted the value and potential of green development and respective strategies, demonstrating a serious lack of awareness of relevant underpinning concepts and principles such as corporate social

responsibility and innovation. Consequently, Greek hotels need to adopt a new developmental framework that above all will be supported, beyond any necessary structure, by the appropriate mentality, attitudes knowledge and beliefs of the management team. This development has to be accompanied with and based on extrovert behaviour and market oriented approach that will lead the management of Greek hotels to analyse the important market trends and 'listen' more carefully to their customers' constantly evolving wants and requirements.

It is also very important for the hotel enterprises in Greece to assess the wider economic environment in which they currently operate and realise that the economic depression, Greek economy is currently going through, may lead to heavier taxation measures that will be imposed on the businesses in order for the country to be able to respond to high borrowing requirements.

Therefore, at this point one could reasonable ask what might be a realistic and feasible solution that could protect hotel business sector from this hard situation. The answer coincides with the view of the General Operations Manager of best practice hotels in Greece, who strongly argued, based on his own extended practice and experience, that strategies such as green strategies and Social Corporate Responsibility could act as a 'shield' to protect hotel enterprises from the adverse effects of economic depression.

Consequently, Greek hotel enterprises need to make the most of their strengths and competences in order to move from products and services of low technology and low quality to products that create added value and offer high quality services to their customers.

This high quality of services offered combined with the traditional advantages (i.e. geographical position and scenery, sea, sun etc.) will enable Greek hotel enterprises to develop unique core competence, establish their competitiveness and safeguard it during these hard economic times.

Based on the results and analysis carried out in the present study, the main recommendations for the Greek hotel operations, in order to make the most of green entrepreneurship idea and pracyice, could be summarised as follows:

(1). Development of marketing knowledge and adoption of an 'extrovert orientated' attitude

(2). Focus on market research and analysis of the prevailing dynamic trends in terms of customer preferences, attitudes and buying behaviour as well as new practices developed by competitors.

(3). Follow the example of best practice hotels and expand the implementation of green strategies covering the whole range of their practices: i.e. waste management – clean sea

programmes, systematic and regular maintenance of relevant equipment, personnel training and development of Corporate Social Responsibility CSR policy.

(4). Enrichment and expansion of the applied green practices with alternative and more economical sources of energy, i.e. aeolic energy (wind energy), biomass etc.

(5). Investment of resources in: a) personnel training and b) development of the technical environmental know how and the required management skills.

(6). Application for certification awarded by established Eco Awarding Organisations, i.e. Eco Flower, of international and global status and recognition.

(7). Use of green strategies and certification labels as tools for promotion in the tourist markets to attract environmentally sensitive customers who tend to exhibit a price inelastic buying behaviour when it comes to choosing 'green' accommodation.

(8). 'Lobbying' and 'Networking' with: a) best practice hotels for benchmarking purposes and b) tour operators and travel agencies for intensive promotion

(9). Cooperation with tourism organisations that can provide expert guidance on available funding programmes for the hotels to use in order to support their green strategies implementation venture.

Finally, it should be stressed that a business organisation does not have to be built and developed as a green company from its foundation. It can also be transformed to a green one at a later stage of its operation (although this may prove to be more costly, according to Crosby's tenet: 'quality first time'). It should also be noted that for such a venture training as well as management commitment to long term results comprise two of the most fundamental requirements for success. .

In the light of all of the above, it becomes obvious the paramount importance of the need for the Greek hoteliers to see clearly the facts according to which they have to be 'well equipped' in order to respond to the constantly increasing share of environmentally and socially aware clientele and adopt the full range of green strategies as well as the appropriate attitude and culture. If they keep on the present myopic attitude, ignoring this reality, they will most probably find themselves out of the market due to fierce competition that will deprive them of tourist demand which is of invaluable contribution to economic viability of Greek enterprises and economy alike.

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The Frame of Education and the effects in the Growth in E.U

Abstract:
The European Union invests considerably in education contributing to the growth of human resources. Education, training and lifelong training constitute one of the most important "levers" for the growth of competitiveness in a modern society. The Specialized and experienced workers can contribute immediately to the aid of competitiveness and to the more general economic and social growth. The considerable role of educational process at all levels is not only just a simple truth that is continuously verified. It is a certainty in which Europe is progressively and continuously supported. It is a collective investment that a priority is connected unbreakably with various macroeconomic and micro-economic sizes of economy, the harmonious social growth of member states of the European Community and mainly the intellectual culture of people.

The EU has already began invest in the education and the continuing professional training, from the treaty of Maastricht and with starting line two "White Bibles". The first White Bible, in 1994, concerned growth, competitiveness and employment. The second Bible, in 1995, gave particular accent to education and training. In 1997, the European Union with the treaty of Amsterdam developed a coordinated strategy for employment and contributes to the creation of specialized human resources via the possibility of access in continuing education. With the beginning of a new millennium in Lisbon in March of 2000, said that education is one of the most important things in the European Union and became the most developed society of knowledge at world level. At the European Council in March 2003 it was there decided that should be investment specifically in human capital. Thus existence competitiveness, so as to achieve high rhythms of growth and employment for the establishment of an economy that would be based on knowledge (European Commission,2003).Through the Council of Barcelona in March 2002 the "Agreement in detail Program of Work for 2010" was decided, that would include the timetable for the future objectives of systems in education and training. Studying various sessions of the European Union we observe that the gravity and the qualitative accent that is observed for education, training and via life learning, are immediately interwoven with the individual parameters and repercussions that offer to the wider economy, social and cultural growth of member states in their aggregate. This article aims to analyze the frame of education and training in the European Union and also it investigates and analyzes the repercussions from the growth and training of human recourses in the economic enlargement, competitiveness and social growth.

Keywords: Education, Growth, Cohesion, European Union

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1. Introduction:

Education is a fundamental right of everybody. Help in the social and cultural growth contributing to the acquisition of knowledge and dexterities. Education is determined by each type of science, enacted form of teaching that is carried out in educational institutions, independent of whether it is provided by the state or by private institutions.

The United Nations report that education should aim at the complete growth of human personality and to aid the respect of human rights and fundamental freedoms. It should promote friendship between nations and should encourage the growth of activities of the United Nations in order to maintain peace (United Nations, 1948).

With regard to the definition that the World Bank gives for education it reports that education is for all, big or small, in order to acquire knowledge and be possible to read and write rightly. Their three pylons of strategy are: invest fast, invest intelligently and invest for all. This strategy that they applied reflects correctly the best idea for what it work in education, emanating from their world consultations with governments, schoolteachers, students, parents and citizens in the above 100 cities in European Union.

Education constitutes an activity with cost in the present and investment in the future. It has that is to say a future output because it increases and improves knowledge and faculties of the individual and gives occasions to the individual to offer services in the private or public sector, that will involve economic and not only utilities.

Cost of education is distinguished in private, which concerns the cost that pays the individuals, and in social which concerns cost of state for education. The utilities from education also can be separated in private and social and they take forms of finances and not economic utilities, individual and social.

2. Life learning and economic growth

Rapid developments in science and in technology have been placed as fundamental strategic objective, in order that an economy is competitive, dynamic and capable of viable growth. The need in life of education and training is henceforth reality. In the modern society the education and the training are placed between the higher strategic priorities. The creation of high level of knowledge and acquisition of dexterities and faculties are considered essential conditions for the attendance of individuals in all the aspects of modern society, as professional integration, competitiveness, productivity, activation, personal growth and extension for economic growth of country.

The education constitutes continuous activity, continuous circle of action and acquisition of new experiences, treatment and interconnection with existing knowledge, from which are drawn conclusions that dictate with line new action. We live and developed in a world economy. Thousands workers, graduates, unemployed and not, executives and academicians face today challenge the continuing in life education. Upgrade of knowledge, change of direction and re-designing of business, are variables that we continuously more often meet and will meet in the direct future.

With the term economic growth we do not only mean the faculty of country increases her production but also a line of structural changes and institutional changes of frame that determine the way of production and their force of income. A process that makes the persons generally wealthier, increasing their control in goods and extending their choices, by develop their biotic level.

3. Education with Social Growth

When the term growth is reported in a more general frame social, economic and cultural life of population, we speak about "social growth" .

The basic beginning of social growth is the admission that knowledge constitutes a condition for the energetic attendance of citizens in social and cultural life and aims for the growth of the personality in the rapid international socio-economic, scientific and technological developments, for the growth of attendance of citizens in situations that concern them, for the contribution and for attendance, in the creation of cultural goods, in the balanced social progress and in the confrontation of each form of discriminations and inequalities.

Growth as an objective aim and as a process includes a change in the basic values of life and work as well as their social, cultural and political institutions. Mr Streeten sees the process of growth through the progress and dimensions of standards production and income, conditions of production, levels of life (diet, living, health, education), behavior and attitude towards work, the institutions and the tactics that are followed. From above the result is that growth is a multidimensional process and collection of aims, where the dimensions are social, political and cultural.

4. Education and economic growth in the European Union

Education constitutes an integral and particularly important factor, which contributes to the economic growth of a country. Between education and the economy there exists a process of continuous adaptation and intense interdependence: changes in the operation of economy, as

for example the industrial revolution, place in movement forces that radically alter the character of education and vice versa. New technologies that emanate from the education system and its development fundamentally affect economic relations.

In the report of Team of Work of European Committee, which was constituted on the subject "the application of education and training 2010", it was reported that the essential annual increase of investments in human resources, through education and training, is the key to the intensification of the place of Europe in the sector of economy and the aid of social cohesion in 21st century. More concretely, it is marked that education, training and life learning play a vital role in the growth of economies and societies.

Investments in education have a long-term output, which are difficult to calculate. In most countries these investments are responsible of mainly the public sector. However, public funds are limited a particular accent is given to the increase in investments in education from the private sector. Moreover, private level, profits exist at an individual level with the significance of the quality of life the rise in the standard of living and active social role.

For evaluation issuing of economic resources is given particular accent in significances of efficiency and feeling of right, what is very important for equitable management of government owned budget and improvement of quality and effectiveness of educational systems in the European Union (European Commission, 2004 v). First significance concern in the relation "surges – flows" in the education, while second in affair that the current school is imposed it includes students, depending on their individual particularities, in a single educational frame, capable it ensures the equality of occasions and the better success for all. Excluding restrictions that are presented by exterior factors as the economic situation of family and the geographic place of place of residence (Commission of the European Communities, 2005). Characteristic example they are the results of researches in schools of Secondary Education, where it is realized that the school escape is smaller, when the available Economic Resources in education and training are bigger (Ruseas & Vretakou, 2006).

4.1 Education and growth

The growth of human resources is also this process of learning which aims at a bigger time horizon and the worker acquires knowledge in order to develop faculties that will be of use in the future, in work that requires more responsibility and initiative. Education helps employees to work methodically. On the contrary growth helps the worker to be prepared to undertake future, new responsibilities, different from those of the present.

Education and growth are relative between these terms. We often use the phrase "education and growth personal". Education, not alone, is a means of growth. However in order to be effective education should also be supported by a line of other factors, such as our personal priorities, our, behavior and relation with our colleagues, and the culture of enterprise and society.

If we take the significance of growth it has multidimensional content. Generally, is the process of passage of society from a phase in other, superior. It comprehended as a multifaceted process and reported in more permanent character changes in develop of production, as enlargement of social justice in the country or as situation economic and technological maturity that they have conquered certain societies.

It is generally acceptable that the objective of each organized society is the prosperity of its members. Insofar as it has satisfied this objective we speak about growth. When the term growth is reported in the production of economic goods and the improvement in the standard of living of the residents of a country, then we speak about economic growth (Psaxaropoulos, 1999). With the term economic growth we do not only mean the faculty of a country increases its production but a line of structural changes and institutional changes of frame that determine the way of production and force of income. It is to say a process that makes the people in general richer and increasing their control of goods and extending their choices.

Developed are considered today the modern industrial societies, provided that the growth has been connected with the industrialization. Uncontradictable common characteristic of all developed countries is the objective high of education and more generally increased investments in human capital, after "…education is a conjunctive ring key in the conjunctive structure between the culture and development…" and "the human resources constitutes the final base of wealth of nations" (Harbison, 1973).

Always topical is the relation of reason – reasonable, whether, that is to say, the type of education can influence the type of growth or reversely, the type of growth is what can determine the type of education that is provided. In their bidirectional relation that is to say, the side of demand or the side of offer is the most decisive element. The education belongs and simultaneously constitutes one from motive forces of economic growth and the centre of learning in a society. It is, at the same time, place of safeguarding and creation of knowledge.

4.2 The education of human resources priority of European Union

The European Union with the finance that it provides in the educational and social policy shows that it recognizes to a very big degree the importance of education, training and continuing education for the individual, the society and the economy. This becomes practically perceptible, from the conditions, the programs and the policies of growth of human potential that applies in the European Union. The growth of programs of concrete action, that objective aims at the confrontation of problems of strategic importance, as the unemployment of young people and the achievement as the competitiveness of enterprises and the training of citizens for technological developments, certifying the shift of interest for the growth of the personality of European citizens to objectives that are influenced more immediately by the economy.

From 1951, in its founding practice, it was already realized by the institutional frame practiced educational policy of European Union for the continuing education, the importance of professional training and reeducation. The high levels of unemployment, the appearance of new technologies and the globalized economy, that began to characterize the countries of the European Union from the decade of the 1980s, led to the necessity of continuing education. It started giving emphasis to in the improved forms of training and considered the continuing education condition for the social cohesion, the reduction of inequalities, the promotion of economic growth and the improvement of competitiveness, through the better exploitation of human potential and the manning of enterprises with a better trained personnel. Later, in the decade 1990s, accent was given to the upgrading of systems of education and training and the access of all citizens to them.

The European Union began therefore, to invest in education and continuing professional training, something that appears with the treaty of Maastricht based on the two white books that the European Committee has published. First White Bible, in 1994, concerned the growth, the competitiveness and the employment, and second, in 1995, education and training. Its European Year Via life of education and training, in 1996, stressed the importance of continuous education and the active attendance of all in this, for the improvement of competitiveness, the fight against of unemployment, and the attendance of citizens in the social life and the growth of innovation. The European Union with the treaty Amsterdam in 1997, strengthened and developed a coordinated strategy for employment that contribute to the creation of specialized human potential, with the offer in all of the possibility of access to continuing education. Later and with the beginning of new millennium in Lisbon in March 2000, it elected the continuing but also basic education, in order for the European

Union to become the most developed society of knowledge in the world. Even if the main policy gave exclusive competence to the states-member to practice their own policies, at the same time it strengthened the coordinative role of the Union, while it also placed also the future objectives of systems of education and training up to 2010.

Entrepreneurship is a key competence in the European Framework, and an action in both the recent Rethinking Education Commission Communication. The role of entrepreneurship as an instrument to improve employability levels is also stressed in the Annual Growth Survey 2013. Young people should be encouraged to develop entrepreneurial skills through informal and non-formal education like volunteering. Such experiences should also be validated and recognized, in accordance with the proposed commission recommendation in this area.

Whether or not they go on to found businesses or social enterprises, young people who benefit from entrepreneurial learning, develop business knowledge and essential skills and attitudes including creativity, initiative, tenacity, teamwork , understanding of risk and a sense of responsibility. This is the entrepreneurial mind-set that helps entrepreneurs transform ideas into action and alsosignificantly increases employability.

Recently in the agenda of modernisation the European Union places certain objectives. Its first objective is that 40% of individuals of ages 30-34 should have a degree. At an individual level, the prospects of the employment of individuals will be improved. Europe needs a wider spectrum of most Institution of Higher Education in order for it to correspond with the needs of a bigger and more differentiated team of students and ensure that enough individuals with high qualifications exist and innovative ideas in each sector of economy and in society as a whole.

The countries of European Union collaborate more closely so that they ensure:

- the possibility at more students continuing and completing their studies in the maximum education
- that universities and other educational institutions should offer qualitative study that will be more attractive for the students and will correspond more with social and enterprising needs
- that by 2020, young citizens of Europe will have the occasion to do part of their study or their studies abroad

Finally education is a process which is always topical and diachronic and which is immediately related to the social, cultural and economic life of individuals. It is essential nowadays because it helps the social and human growth contribute thus in the acquisition of

knowledge and skills. The European Union has an important role to carry out the promotion of education through a life-long training of individuals through various means and conditions.

The economic help that the European Union provides through its conditions, that concern education, gives an impulse to her countries members to invest more seriously in the education.

4.3 Tertiary education in European Union

The European Union has around 4000 higher education (undergraduate and postgraduate) institutions, with almost 20 million students in 2010. Four member states reported more than 2 million tertiary students in 2010, namely Germany, the United Kingdom, France and Poland. Tertiary student numbers in Italy and Spain were just below this level and together these six countries accounted for two thirds of all European Union students in tertiary education (Table 1).

Across the European Union, just over one third (34,7%) of the students in tertiary education were studying social sciences, business or law. The second largest number of students by field of education was in engineering, manufacturing and construction-related studies which accounted for 14.7% of all students in tertiary education. The third largest number of students (13,9%) was in the health and welfare area (European Union, 2011) (Figure 1).

The median age of students in tertiary education can be influenced by a number of factors: whether students postpone starting tertiary education either by choice or obligation (for example, for military service); the length of the tertiary education courses studied; or the extent to which mature students return to tertiary education later in life. In 2010, the median age of students in tertiary education ranged from 20.3 in Ireland to 24.9 in Sweden. The German figure was above the European Union average of 22.1 years, even though the data exclude those students enrolled in ISCED in level 6 (European Union, 2011).

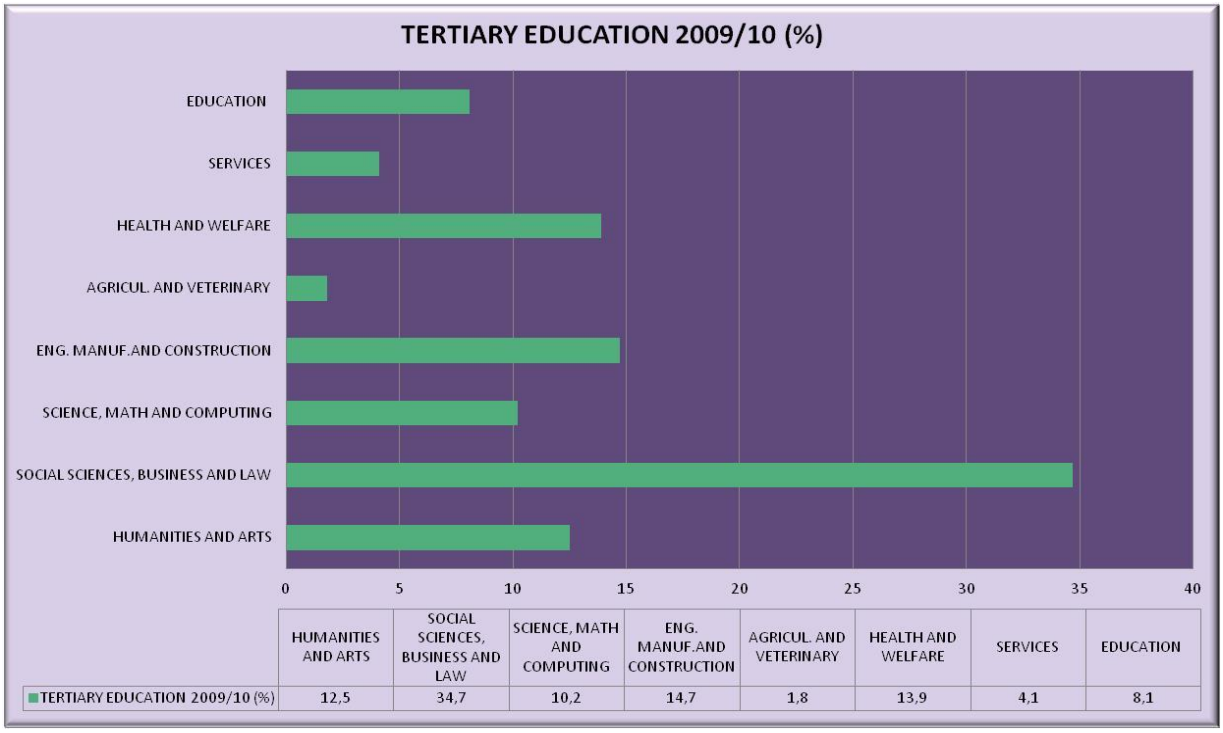
Table 1: Tertiary Education 2009/2010

TERTIARY EDUCATION 2009/10

	TTL NO-STUDENT - TERTIARY EDUCATION	HUMANITIES AND ARTS	SOCIAL SCIENCES, BUSINESS AND LAW	SCIENCE, MATH AND COMPUTING	ENG. MANUF.AND CONSTRUCTION	AGRICUL. AND VETERINARY	HEALTH AND WELFARE	SERVICES	EDUCATION
EU-27	19845,6	12,5	34,7	10,2	14,7	1,8	13,9	4,1	8,1
BE	445,3	10,8	31,7	6,2	11,5	2,8	23,1	1,7	12,2
BG	287,1	7,9	44	5,2	19,2	2,4	7,1	8,5	5,7
CZ	437,4	9	33,7	11,1	14,3	3,7	10,5	5,2	12,5
DK	240,5	14,1	31,9	8,6	10	1,5	21,1	2,3	10,4
DE	2555,6	13,7	26,3	14,2	16,5	1,4	17,9	2,8	7,2
EE	69	13,6	36,4	10,4	13,4	2,2	9,1	8	6,8
IE	194	17	27,5	14,6	13	1,5	16	4	6,4
EL	641,8	12,8	33,2	13,8	18,4	5	8,1	2,7	5,9
ES	1879	10,7	31,6	9,2	17,4	1,7	12,6	5,8	10,9
FR	2245,1	14,2	37,3	12,3	13,2	1,2	16	3,4	2,4
IT	1980,4	15,7	36,5	8,3	16,9	2,2	12,5	3	5,1
CY	32,2	10,1	51,7	8,5	9,8	0,3	7,1	4,3	8,2
LV	112,6	8,5	49,9	5,5	12,6	1,1	8,2	6,1	8,2
LT	201,4	7,3	46,5	5,1	17,1	1,9	8,8	2,9	10,5
LU	5,4	12,1	47,3	11,2	8,1	0	4,5	0	16,8
HU	389	9,6	40,4	7,1	14	2,4	9,3	10,5	6,6
MT	10,8	18,1	33,2	16,4	9,4	0,2	11,6	1,2	10
NL	650,9	8,5	38,9	6,3	8,2	1,1	17,3	65	13,3
AT	350,2	13,4	37,2	11	14,7	1,3	7,9	2,4	11,9
PL	2148,7	9,2	39,7	8,1	13,2	1,9	7,7	6,7	13,6
PT	383,6	8,9	31,8	7,3	22,1	1,8	16,3	6,4	5,4
RO	999,5	7,8	55	4,9	17,9	2,1	7,5	3,3	1,6
SI	114,9	8,3	37,5	6,7	18,9	3,2	8,7	9,3	7,4
SK	2345	6,9	30,7	8,4	15	2,1	18,2	6,2	12,5
FI	303,6	14,3	22,8	10,2	24,9	2,2	15,6	5,1	5
SE	455	13,6	27,2	8,6	16,7	1	17,2	2,5	13,2
UK	2479,2	17	29	14	8,9	1	18,7	1,8	9,5
IS	18,1	14,6	36,9	8,1	9,3	0,6	13,2	1,7	15,6
LI	0,8	-	70,1	-	24,7	-	52	-	-
NO	224,7	10,8	32	8,3	8,1	0,7	20,3	5,2	14,5
CH	248,6	12,1	36,7	9,7	13,2	1,1	13,2	4,8	9,2
HR	149,9	9,5	42,2	6,8	15,3	4,2	8,4	8,8	4,7
MK	61,8	12,2	38,6	11,7	12,5	2,9	9,5	6,3	6,3
TR	3529,3	7,8	53,8	6,5	10,9	3,6	5,9	3,2	8,3

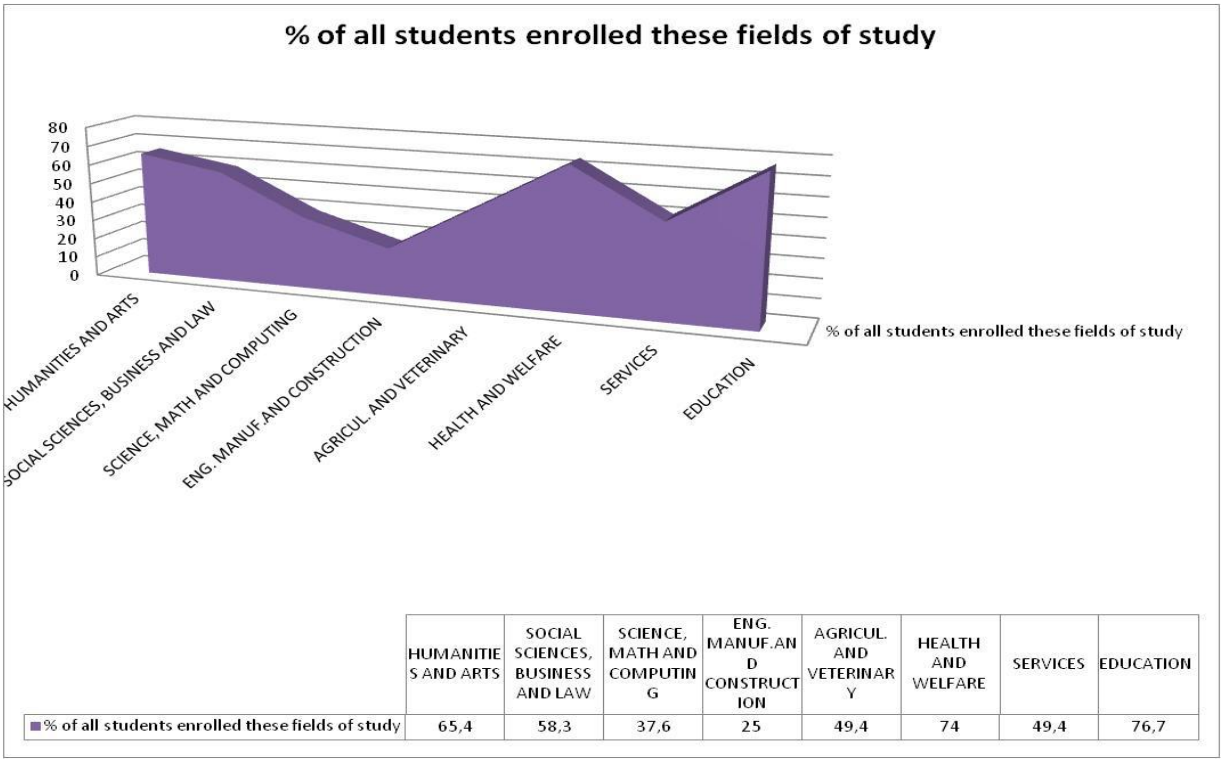
Sources: Eurostat

Figure 1: Tertiary education 2009/10 %



Source: Eurostat

Figure 2: Female students enrolled by



Source: Eurostat

Within the European Union, there were more women studying education, health and welfare, humanities and arts, as well as social sciences, business and law. Men slightly

dominated in agriculture and veterinary fields, more so in services, science, mathematics and computing fields, and by close to four to one in engineering, manufacturing and construction-related fields (Figure 2).

5. Conclusions and Recommendations

The education is a process always topical and diachronic which is related immediately with social, cultural and economic life of persons. It is essential in the days because it helps in the social and human growth contributing thus in the acquisition of knowledge and dexterities. Important role in this it is called to carry out also the European Union promoting the education and the via life training of individuals through her various conditions.

The economic help that provides the European Union through her conditions, that concern the education, gives a impulse in her countries members they invest considerably in the education.

The Streen sees the process of growth through the progress and dimensions of production and incomes, conditions of production, level of life (diet, accommodation, health, and education), behavior and attitude as for the work, the institutions and the tactics that are followed. Thus we lead to the conclusion that the growth is a multidimensional process with total of aims, where the dimensions are social, political and cultural. Certain the growth as process we cannot say that it is synonymous with the economic growth as the last one appears to profit the persons with way unequal.

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