

# Innovativeness of Small and Medium-Sized Enterprises in Greece: An Empirical Investigation

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## Abstract

Economic theories recognize the leading role of innovations in the process of economic growth. Undoubtedly investing in innovation is a challenge for all enterprises operating in the modern highly competitive environment. The role and position of small and medium enterprises is unique and extremely important in this matter. The main objective of this study is to examine the conditions of undertaking innovative activities by SME sector in Greece and the identification of the critical success factors of SMEs in the field of innovation. The analysis used the results of the survey and statistical materials of SME from a sample of 410 respondents. The paper is organized as follows: in the next section we briefly present the importance of SMEs for sustained economic development and the actual development of SMEs growth in Greece. This is followed by the presentation of research methodology and the data sources used in the analysis. The results are presented and discussed in section four. We conclude with study limitations and further opportunities for research.

**Keywords:** SME, Innovation, Greece

**JEL Classification:** D2, D81

## 1. Introduction

Encouraging innovation in small and medium-sized enterprises (SMEs) remains at the heart of policy initiatives for stimulating economic development at the local, regional, national and European level (Edwards et al., 2005). The term "innovation" can be defined by many ways. One of the most wide definition is this in which innovation refers to the creation of competitive advantage by perceiving or discovering new and better ways of competing in an industry, and bringing them to the market (Porter, 1990). More broadly, innovation can be defined as "the implementation of a new or significantly improved product (that is, a physical good or service), process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (OECD, 2010).

During the previous years, increasing attention was devoted to the enterprise innovativeness. Effective implementation of innovativeness is one of the most important problems faced by many companies all over the world (Abubakar, 2012; Tidd, et al., 2005). This problem is especially important today in the era of rapid technological changes, increasing competition and globalization. For the Greek enterprises innovations studies are sparse and there is a lack of research concerning small and medium enterprises sector. The question of whether innovativeness has been achieved and what are the main problems in implementation of innovations have not been subject to systematic investigation in the Greek setting. Attempting to fill this research gap this study examines Greek innovativeness using data from the SME sector in Greece.

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## **2. SME Sector - Main Characteristics**

The SME sector plays a very important role in today's economy. It is confirmed by the experience of highly developed countries, whose economies are dominated by the network of small (or virtually very small) and medium-sized enterprises (Mulhern, 1995). Two most important measures of the role played by SMEs in the economy are: the share of this sector in the total number of economic unit and its ability to create new jobs (OECD, European Observatory for SMEs, 1997). The SME sector is practically the only sector of the economy in contemporary developed countries, which generates net jobs (Hyz, 2006). New job creation takes place both through setting up new economic units and through developing already operating firms. The SME sector is also recognized as a major source of inventions (OECD, 1995). It distinguishes itself by a high efficiency in the field of innovations launching them at lower costs than big companies (Gibb, 2000). The importance of innovation propensity in the SME sector is emphasised more strongly in developed countries (Chesbrough, 2006). Small innovative firms and especially those operating in high technology fields contribute significantly to creating and developing new fields of manufacturing, new industrial branches based on modern technologies. That is, smaller firms are the innovators in more innovative industries (Acs, et al. 1997). Small innovative firms are frequently fast-growing firms creating new jobs (Mulhern, 1995).

Greece is considered as the country where SMEs amount for 99,9% businesses, 57,4% of value added, 69% of total employment and 85% of private employment (EC, 2013). More than 97% of all Greek enterprises are micro companies (see tab.1). The currently observed slow down in the development of the SME sector, posing a threat to the economic situation of Greece and especially for some regions of Greece<sup>3</sup>. This evolution leads to the need to examine the main barriers of SME development. Most of those barriers have macroeconomic character and can be rather overcome at the national level, like: labour market legislation, inconsistent economic law, barriers in access to banking services (Hyz, 2011). But the impact of regional environment related to human capital development, infrastructure, regional development should not be underestimated (Hyz, 2010). The SMEs are closely linked to the area in which they operate. The local market is for them the main source of factors of production, services, consumers, suppliers and other resources.

Innovation is at the heart of the spirit of enterprise: practically all new firms are born from a development which is innovative, at least in comparison to its existing competitors on the market. If it is subsequently to survive and develop, however, firms must constantly innovate even if only gradually (EC, 1995). Innovation is regarded as a continuum of changes, including, on the one hand, a simple modification of existing products, processes and practices (which may be new to the company, but not necessary to the industry) to fundamentally new products and processes, on the other (which are new for the company and for the industry) (Mazzarol, 2002; Bigliardi, et al. 2011). Under this assumption, SMEs can be divided in two main groups: innovative and non-innovative. In the first group we can consider the diversification of companies according to the type of innovations. Extremely important is to recognize the type of external environment and firm resources, which favour the innovativeness. As external environment we consider the complex relationships between infrastructure, location, network of companies, research support, education, financing etc. and firm resources include all assets, capabilities, organizational processes, firm attitudes, information and knowledge (Daft, 2007). Some of those factors are of special importance for small and medium enterprises since these firms are too small to have all the necessary resources normally available in large enterprises (for reviews see: Acs et al., 1988, 1991, 1996). SMEs have less financial resources for innovation and fewer technological assets, they cannot create a multi-disciplinary research teams, they do not have access to "global resources", knowledge, etc. (for reviews see: Acs and Audretsch, 1987; Vanhaverbeke, 2011; Chesbrough, 2006). To survive, they have to cooperate with other firms and

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<sup>3</sup>For the situation of Greek SME during the last economic crisis see: EWCO, (2013), Economic Crisis hits Small Businesses hard, <http://www.eurofound.europa.eu/ewco/2012/11/GR1211019I.htm>; Hyz, A., Gikas, G., (2012), The SME sector in Greece. Financial Gap during the crisis, National Agricultural University, Agrarna Ekonomika, No 1-2, T.5, Lviv, Ukraine

institutions (Hyz, 2010; Hyz, Gikas, 2006) .Cooperation through the network helps them to overcome some of those weaknesses (for reviews see: Baum et al.2000; Lee et.al., 2010). They suffer also from a number of mainly material disadvantages e.g. inability to spread risk over a portfolio of new products; difficulties in market start-up abroad; problems in funding longer-term R&D (Rothwell and Dodgson, 1991). The individual characteristics of SMEs differ significantly. Each of the companies has its own specific strategy (Barney, 1991) and "way of behaviour" -from simple imitation to radical innovation. This influence SME demand for various types of external services (technical, advisory, financial, etc.), and contacts with the environment(other companies, R & D, supporting institutions, etc.).

**Table 1: SMEs in Greece - Basic Figure**

	Number of enterprises			Number of employees			Value added		
	Greece		EU27	Greece		EU27	Greece		EU27
	Number	Share	Share	Number	Share	Share	Billion euro	Share	Share
Micro	513.780	96,7%	92,3%	916.074	54,5%	28,9%	17	34,6%	21,1%
Small	14.978	2,8%	6,5%	282.808	16,8%	20,2%	9	18,1%	18,1%
Medium-sized	2.301	0,4%	1,1%	227.958	13,6%	17,3%	8	16,3%	18,2%
SMEs	531.059	99,9%	99,8%	1.426.840	84,8%	66,4%	34	69,0%	57,4%
Large	378	0,1%	0,2%	255.413	15,2%	33,6%	15	31,0%	42,6%
Total	531.437	100,0%	100,0%	1.682.253	100,0%	100,0%	49	100,0%	100,0%

Source: EC, 2013, Enterprise and Industry, 2013 SBA Fact Sheet, Greece

### 3. Data Set and Methodology

Starting point for the survey were the data extracted from ICAP database, containing detailed financial reports annuals (income statements and annuals balance sheets) and statistics on Greek companies. We use the European NACE classification scheme of economic activities. The criteria used for selection of the companies' are three:

1). European Commission criteria for small and medium enterprises<sup>4</sup>, namely:

- i) headcount <= 250
- ii) turnover <=50 million euro
- iii) total balance sheet <= 43 million euro

2).Firms operating in the areas defined as manufacturing, constructions and services (except for wholesale and retail trade).

3). The average time for which the business was operated prior to completing the survey was five years continuously.

The analysis used the results of the survey and statistical materials. The primary research data were collected from the owners or co-owners or their managers. The questionnaire surveys were arranged in such way that representatives of SMEs were expected to answer the same questions but from two different points of view. The first one allows us to describe the current state and the second allow us to describe the firm's expectations. The questionnaire was piloted with a small group of respondents and widely discussed with academic staff to test validity for the designed questions. It was assumed that the survey will be carried out based on e-mail. But because of the specific nature of SME's business culture in Greece and based on the experience of previous surveys we decided to conduct interviews by telephone. The research was carried out

<sup>4</sup>[http://ec.europa.eu/enterprise/enterprise\\_policy/sme\\_definition/index\\_en.htm](http://ec.europa.eu/enterprise/enterprise_policy/sme_definition/index_en.htm)

from October 2013 to May 2014. The final selection of firms taking part in survey has a random sampling character. The total number of 750 enterprises in the SME sector in Greece was chosen. After the survey the database entered 530 companies. But after analyzing the completeness of the data and the coherence of the analysis we use results from 410 companies. It means, response rate 70,7 per cent and usable response rate 54,7 per cent. The majority of respondents stated that their firm size was less than 10 employees (56,1%). Next came those with less than 50 employees (33,7%), with less than 100 employees (8,0%) and finally those with less than 250 employees (2,2%). As far as their activity is concerned: the majority of respondents indicated that their main activity are services (54,4%). 40,8% were a manufacturer and 4,9% were activating in constructions.

#### **4. Results and Findings**

For the purpose of this research we use the OECD definition of innovation (see: Section 1. Introduction). The majority of firms (63,7%) introduced changes in products and 43,6% changes in production process during the past five years. SMEs prefer to improve quality, design, packaging and more rarely they introduce original new products. They prefer product innovations then process innovations. The percentage share of new or improved products in the total sales of innovative enterprises (for this measure see also: Goldberg et al. 2011) differ significantly among firms (from 1% to 100%) with median 24%. In more cases "new products" are new only for the firm (64,8%), for local markets (27,0%), for Greek market (5,8%) and world market (2,4%). Respectively, "new method of production" are new only for firms (78,0%), for local market (6,3%), for Greek market (12,5%) and world market (3,2%). Innovative activities of firms surveyed was primarily based on the use of internal sources, e.g. own ideas, projects, etc. (approximately 73% of firms), external sources (40,3% of firms), purchase of equipment (17,2%), hiring of skilled employees (5,4%).

Next, we try to investigate the relationship between firm-level practice and the external environment.

Cooperation with other companies is an important source of ideas for innovation, provides incentives for the development of the company and - especially in the case of cooperation with large companies - allows access to some resources. According to Rothwell (1991) "innovative SMEs have dense external networks involving other firms (mainly SMEs) in a variety of relationships and involving infra-structural institutions, such as universities and private research institutes" (for a review see also: Edwards, 2005). In Greek reality the situation looks quite different. Most of companies surveyed did not cooperate with other enterprises in the development and introduction of the innovations (73%). For firms, which have cooperation the main partner are other SMEs, especially those with average employment from 50 to 250 people (29.5% of companies). Only 14,2% of SMEs has contacts with large companies. Important is a fact that about 70% of surveyed firms which has cooperation with other firms say that they have regular contacts with other companies in the field of innovations. Regular and more durable contacts potentially are more valuable for their long-term innovative activities. Surveyed firms met many difficulties during their contacts with other firms: lack of appropriate partners (indicated by 48.9% of companies), lack of a tradition of cooperation (indicated by 46.8% of companies), lack of benefits (25,7%). There is an urgent need to change these relations towards greater business cooperation. Important role can play supporting institutions, which will convince SMEs to cooperate, help in finding common needs, help in searching partners (including foreign ones) and making contacts, arranging a place to initiate co operation, etc. Supporting institutions, mostly public in the case of Greece, should act as intermediaries in access of small businesses to external knowledge resources, consulting, finance, referring co operation with different partners. They help small businesses to diagnose the needs, to transfer and adapt foreign solutions etc. But most of the companies surveyed did not cooperate with the supporting institutions (such as chambers of commerce, regional development agencies, training and consulting, loan funds, business incubators, technology transfer centres, professional associations and other professional bodies) in the development and introduction of new products, technology production or organization in the past five years. These kind of contacts was reported only by 25% of companies. Among the companies that cooperate with the institutions most companies

indicated support from regional development agencies, followed by the chambers of commerce and professional associations. A significant proportion of firms collaborated with private advisory offices. The contacts with other categories of supporting institutions were very weak. This applies particularly to institutions specialized in the transfer of technology, incubators, universities and research centres. The majority of companies surveyed (60%) were dissatisfied in cooperation with supporting institutions. Our research was carried out to identify causes of such a situation. As the cause of dissatisfaction managers mentioned lack of information about functioning and offer of supporting institutions (59,6%). According to the managers, the next are problems with communication (37,9%), time-consuming procedures (28,7%), the cost of assistance (36,8%).

According to the survey main barrier for efficient and effective innovative implementation is a lack of finance (69.6%). This barrier is related and hold for all firm's size classes. The second main strand of barriers are related to the internal competence of the enterprises and their ability to handle the innovative process (45,3%). Next, came a lack of information (33,8%), lack of technological opportunities (17,6%), the difficult access to appropriate suppliers (4,9%). The majority of the surveyed firms do not have a development plan for the coming years (78%). This problem is mainly faced in smallest firms and the likelihood that a company has no plan for the future increase for newest firms and for firms with lower turnover. The surveyed firms present typical for the sector of small and medium-sized enterprises structure of sources of financing of innovations, based to a large extent on own sources due to the barriers and difficulties in accessing to external financing. As Schumpeter recognized, economic growth is dependent on a sophisticated financial system. People with money but no ideas and people with ideas but no money must be brought together (Acs, 1997). The main barrier to business cooperation with financial institutions was complicated, labour and time-consuming procedures (65,9% of firms). Around half feel that interest rates are too high (55,4%). The third one was the requirements of the financial institutions for guarantees that the invested capital will be returned (28,7%). The intangible component raises the problem of the increasing disparity between the guarantees demanded by investors for risk projects and the ability of firms to base these guarantees on solid foundations. Other barriers include the fear of loss of control of the company (18,9%). According to managers banks are not elastic in the situation when a debtor faces liquidity problem and the possibilities of negotiating the repayment of loan rules are very poor. Barriers, such as lack of professionalism of financial institutions, a version to co operation with the firm play a less important role. The surveyed companies basically presents a rather critical attitude in the context of the appropriate of financial support instruments connected to the innovative activities. Although a significant percentage of companies rated these instruments as potentially very useful. Interesting were conclusions from the analysis of expectations of companies at the level of financial policy of supporting companies in the field of innovation. The most preferred types of financial support was direct financial support. Tax investment incentives and preferential credits and loans-by far the most awaited instruments –pointed by 53% of companies and participation in support programs of the European Union (financial instruments related to the EU) and other grants (35.4% of the total surveyed firms). Next, indirect support, mainly: specialized services, human capital training, cooperation and organization -respectively 43.1%, 35% and almost 17% of companies.

## **5. Conclusions and Limitations**

In this paper we examined the problem of innovativeness of small and medium enterprises in Greece. SMEs play an important role in the process of economic growth in contemporary economy. The results of the survey confirm the importance of SMEs in the development of innovations in Greece. The study presented the analysis of SMEs innovativeness in Greece with emphasis on 1/. main barriers, 2/. cooperation with others companies and supporting institutions in two dimensions: present state and expectations, 3/. financing of innovative also in two dimensions: present state and expectations.

Main recommendations according to the results of the study may be formulated as follows: 1/. The policy-makers should increase the possibilities of innovativeness through the elimination of as many barriers as possible, maintaining an efficient institutional environment. 2/. Extremely important is establishing the

appropriate network of contacts with external sources of scientific and technological advice and reinforcing university - industry cooperation in order to facilitate transfers of technology. 3/. Since there is a widespread reluctance to seek information the institutional infrastructure supporting enterprise innovation system requires greater coordination. 4/. Emphasis should be on the extensively networking, supporting and financing in order to improve innovation potential. 5/. Existing and new innovative business support structures should be improved by introducing tools for analysing the needs of enterprises. 6/. Since responsibilities are divided between deferent part one stop shops should be created for access to information and services. 7/. There is no till now efficient follow up process. 8/. Due to the basic characteristics of SME and in order to develop cooperation administrative procedures should be simplifying and become more clearer. 7/. In the financing process emphasis should be given to the simplifications of procedures since complex public support system and the long selection process are not particularly "enterprise-friendly". 8/. The risk averse selection process should be changed (Gikas, Hyz, 2000). 9/. Where appropriate and in order to reach SME in language they understand the use of private operators to administer business support procedures on behalf of the authorities should be introduced and/or improved. 10/. Realistic innovativeness incentives system should be created. And, in general, the policy makers should try to develop innovative-friendly environment in which SMEs may get what they seek.

Because we examined SMEs only from one country, our findings may not be generalizable to SMEs from other countries. The data obtained related to a very specific for Greece period of time characterized by recession and therefore, longitudinal studies should be recommended. Another limitation is the cross-sectional nature of the study. It is very difficult to find a large sample of entrepreneurs and to have them participate in a longitudinal study. Future studies may address these issues and provide greater insight in the task of explaining the problem of SMEs' innovativeness. Despite those limitations, this research may be useful for better understanding of SMEs behaviour and needs.

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