CONCEPTUAL APPROACHES REGARDING THE IMPACT OF INNOVATION ON THE ENTERPRISE PERFORMANCE

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Abstract

The purpose of this paper is to identify the main approaches in the literature that describe the company's performance evaluation indicators and the influence that innovation activities have on performance growth. The impact of innovation on company performance extends from effects on turnover and market share to changes of productivity and efficiency. Research carried out falls into the theoretical research category, whose methodology is based on meta-analysis. Object of meta-analysis is the analysis of a number of ten relevant empirical studies which approach the relationship of innovation - performance at the enterprise level. Results of the studies analyzed show that, in general, innovation has significant positive effect on firm performance increase. The increase of this influence is favored of the managers involvement in innovation activities, of market orientation of the company and improving the relationship of internal and external communication. Key indicators for assessing the impact of innovation on overall performance which are used in empirical studies of researchers are represented by financial - accountants indicators: ROA, ROE, revenue growth, return on sales, productivity growth of factors and net profit growth.

Key words: innovation, performance, enterprise

Innovation is, for the present society, the most important way of economic growth and improve the overall performance of the business, especially long-term (Ionescu, 2015). Innovation must provide both an improvement in the economic-financial performance indicators calculated on the basis of accounting information (for example, turnover, total revenues, profits, return) and compliance to sustainable development principles. In other words, existing businesses are no longer evaluated solely by indicators of economic performance and product quality, but also by the ability to improve community life and protect the environment.

Some studies on the relationship between innovation and economic performance of firms use the approach of the production function, according to which firm performance is explained by several independent variables, such as physical capital, human capital, research - development expenditure and other innovations relating to investments (Hatzikian, 2013; Patton, 2014).

Innovation process can improve productivity and income, whereas technical progress reduces operating costs and lead times or can improve quality of invested capital, internal skills and long-term competitiveness of the company (Pianta, 2005; Artz *et al*, 2010). Driven by increased competition in global markets, companies have begun to understand the importance of innovation because rapid changes in these markets and severe global competition quickly erodes the added value of existing products and services (Patton, 2014).

Based on results of studied research, was formulated the main objective of the research, respectively to find the answer to the question: How can be evaluated the relationship between innovation - performance at the enterprise level?

MATERIAL AND METHOD

Object of meta-analysis is the analysis of a number of ten relevant empirical studies addressing the relationship relationship between innovation - performance at the enterprise level. The studies selected for analysis were conducted during the period 2011 - 2015 and is based on empirical research of the impact of innovation on the overall performance of the company.

RESULTS AND DISCUSSIONS

Literature review

Overall performance of the company expresses the aggregation of economic, social and

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environmental performance (Baret, 2006). Performance is relevant in strategic management research. Despite its relevance, it is difficult to reach a consensus on the definition, measurement and dimensionality to that limit progress in research and understanding of this concept (Santos and Brito, 2012).

When defining performance is important to consider two main elements: the time and point of reference. We can distinguish between past and future performance and performance between short, medium or long term. Some scholars believe that another important element in analyzing performance is reference to which we refer, eg industry sector average, results or performance of the main competitors in the past (Silvert, 2011).

Comparisons to the past objectives and performances indicates effectiveness and the company's evolution. However, they are not suitable to compare companies of different sizes and industries, which is why the comparisons are economic analyzes of the mean value of the industry and its main competitors in the market (Santos Brito, 2012). Such assessments indicate the competitive position of companies and could be useful for strategic analysis and determining future policy development. The company's performance is a multidimensional indicator (Glick *et al*, 2005), and researchers must choosethe most relevant dimensions to their research, according to their purpose (Richard *et al*, 2009). In other words, it applies the saying "what you measure is what you get" (Merchant and Van der sted, 2007). The relationships created between company performance indicators determining economic concepts defined in terms of profitability, efficiency, productivity and competitiveness (Ștefan, 2012). The most used methods of performance evaluation are those based on objective indicators, respectively the accounting valuation by specific indicators, such as profit rate, return on asssets, return on capital etc. (Danielson and Press, 2003) and the stock market indicators evaluation. Although the accounting valuation is sometimes seen as reality distorted, because of interpretable accounting policies, of human errors and fraud (Richard *et al*, 2009), it still remains the most accessible method for performance evaluation.

The effects of innovation on the company's performance is expressed by competitive advantage obtained by the innovative enterprise in relation to its competitors. The competitive advantage is held by one who succeeds dominate the market forces (Coca, 2014) and takes two forms: cost advantage and price advantage.

The cost advantage is obtained mainly through economies of scale in mature markets and is an effect of experience and process innovation, while the price advantage is obtained through differentiation and product innovation. Economic experience has shown that on consumer goods market, with consumption very elastic to price, companies compete by reducing costs and hence of sales prices (Brem *et al*, 2015). Regarding the luxury goods market, consumers are attracted by the goods with high quality and differentiation, while practicing a high price determines the increase of market demand. The research of Mansury and Love showed that innovation service has positive effects on increasing revenues, but has no effect on productivity, which is why growth due to innovation can be attributed to external links taken into innovation process (2008), which favored the transfer of knowledge. Although many studies have highlighted the positive impact of innovation and technical progress on labor productivity, some authors have found a negative relationship between them. Thus, the negative impact on performance is given by the lack of skills to properly use new technologies, high costs in the process of adapting to change, learning costs (Ahn, 1999) or the technological and organizational rigidities which may arise (Benner and Tushman, 2002).

The main results of meta-analysis

Innovation allows companies to gain a competitive advantage that can only be maintained through a continuous process of innovation. To identify how innovation influence growth of enterprise performance, we conducted an analysis of ten relevant scientific papers in the field *(table 1)*, identifying indicators for assessing the of the relationship innovation - performance.

Table 1

Selective studies regarding the impact of innovation on the performance

Study code	Authors	Year of publication
01	Gunday, G., Ulusoy, G., Kilic, K. and Alpkan, L.	2011
02	Kostopoulos, K., Papalexandris, A., Papachroni, M. and Ioannou,G.	2011
03	Postruznik, N., Moretti, M. and Gospodarstvo, N.	2012
04	Güven, A., Muzaffer, B., Cengiz, Y and Pinar, B.	2012
05	Fernandes, C. I., Ferreira, J. J. M. and Raposo, M. L.	2013
06	Moghaddam, A.G., Imani, Y.A., Erteza, N. and Setayeshi, L.	2013
07	Javier, A.C.	2013
08	Prorokowski, L.	2014
09	Waleed, O.	2015
10	Fujii, H., Edamura, K., Sumikura, K., Furusawa, Y. Fukuzawa, N. and Managi, S.	2015

Table 2

Meta-analysis of relevant studies regarding the impact of innovation on the performance

Study code	Research Methodology	Performance evaluation variables	Innovation evaluation variables	Main results
01	- analysis on a sample of 184 companies in Turkey with RDI activities; - applying questionnaires and interviews with company managers.	- return on total assets (ROA); - general profitability of the company; - return on sales; - market share; - customers satisfaction; - duration of the production cycle.	- quality of new services and products; -number of research projects for products and services; - organizational innovation; - marketing innovation.	-the performance of the company is directly and positively affected by organizational , product and marketing innovations; - marketing innovation is considered the most powerful determinant of performance; - innovative production and performance indirectly have a positive impact on financial performance through marketing performance.
02	-analysis on a sample of 461 enterprises in Greece; - applying statistical questionnaire.	- return on sales (ROS); - return on total assets (ROA).	- external diversity and quality of information retrieved; - R & D expenditure share in total revenues; - the share of employees in total employees RDI activities; -the value of investments in scientific and technical training.	- absorption capacity of innovation positively affects the financial performance; - the relationship innovative performance - financial performance is positive and significant; - involvement of firms in collaboration innovation positively affects performance.
03	- the application of semi-structured interviews to managers of 11 companies in Slovenia.	- return on total assets (ROA); - return on equity (ROE); - internal communication; - culture of marketing.	- the importance degree of innovation to managers by investing in research - development.	- enterprises that have allocated more importance to innovation and deployment of innovative communication methods had a higher financial performance; - between ROA and the level of importance for innovation there is a higher correlation than between ROE and innovation.
04	- sample that included 112 companies from Turkey; - applying questionnaires and interviews with company managers.	- ROI; - market share; - total sales growth; - the share of foreign capital	- product innovation; - process innovation; - organizational innovation; - market efficiency (product quality, new product development).	- company's performance has a direct relationship with strong product innovation and process; - market efficiency is positively influenced by all kinds of innovation; - the share of foreign capital is positively influenced by organizational innovation; - firm performance and innovative capacity are better at the experienced enterprises compared to start-ups.
05	- analysis on a sample of 61 companies that took innovative activities in the two neighboring countries (Portugal and Spain); -applying statistical questionnaire.	- turnover; - overall competitiveness.	- product innovation.	- at the Portuguese companies level there is no significant association between the importance attributed to different factors of innovation and growth of turnover; - regarding the Spanish companies the level of importance attributed to product innovation is significantly associated with turnover; - the relationship between innovation and financial performance has been validated statistically for Spanish companies who confirmed that the introduction of a greater number of innovative products has led to a higher total turnovers.

Study code	Research Methodology	Performance evaluation variables	Innovation evaluation variables	Main results
06	- sample that included 169 small businesses in industrial parks; - applying the questionnaires to managers.	- increasing profits; - increasing market share; - increasing the rate of profitability compared to competitors;	- introduction of new products and services; - accumulation of new knowledge in the organization; - consideration of the innovation like a good highest value; - orientation the company to market.	- market orientation positively influence the company's financial performance; - firm orientation towards innovation is positively correlated with performance and increases the company's ability to cope with environmental changes; - combining innovation with market orientation determines obtaining a higher performance.
07	- multiannual analysis on a sample of 88 firms with at least an investment for environmental protection in 14 countries; - application a statstic questionnaire.	- return on total assets (ROA).	- environment patent.	- ecological innovations represent 4% of all patents companies; - green innovation affect significantly and positive the financial performance at the firm level; - with greater rigor environmental rules, the lower is the likelihood that eco-innovation leading to increased financial performance; - firms with a high level of eco-innovation intensity are able to increase their financial performance.
08	- sample that included 2,000 innovative companies in Poland, listed on the Warsaw Stock Exchange; - analysis based on financial statements and applying statistical questionnaire (42 questionnaires).	- return on equity (ROE); - return on asset (ROA); - total revenue growth.	- R & D expenditure share in total revenues; - the share of employees in total employees RDI activities; - innovative business strategies; - product innovation.	- improved financial performance depends on monitoring production costs and maintaining market networks; - the increase ROE and ROA was higher in companies with higher innovative performance; - volatility in sales was lower in innovative enterprises; - market capitalization had an influence on investors wishing to invest in innovative companies; - the percentage of employees CDI has positively influenced the overall performance.
09	- Sample that included 162 SMEs in Tunisia; - applying the questionnaires to managers.	- financial performance: Return on total assets (ROA), financial liquidity, net profits; - non-financial performance: customer satisfaction, increasing the market share.	- innovative behavior of managers; - participation in innovation activities in the past 3 years; - favorable perception of market dynamism.	- financial and non-financial performance is positively affected by the company's innovative capacity; - enterprises in which managers had a great involvement in innovation activities have better performance; - the innovative capacity is directly influenced by the quality of the relationship chief - employee; - the results of innovation are correlated with increased sales.
10	- sample that included 1,067 firms in the manufacturing industry in Japan, rated at Stock exchange; - analysis conducted on the basis of financial statements and applying statistical questionnaire (145 questionnaires)	- sales / employee; - profit / employee; - the cost of labor; - the overall productivity of factors.	- intellectual property rights (patents); - technical progress overall.	- enterprises that were based on innovation, technical progress and the accumulation of knowledge have greatly increased the overall productivity of factors; - the production quality management determined the increase of technical progress; - intellectual property rights positively affects overall productivity and performance.

Analyzing the selected studies, we can say that they are based on empirical research conducted on representative samples from several European and non-European countries. Data collection was done mostly by combining information from financial statements with applying of statistical questionnaires and taking interviews to managers of sampled firms. The

company's financial performance was evaluated mainly by financial indicators - such as accountants ROA, ROE, revenue growth, return on sales, productivity growth factors and net increase profits. Non-financial performance was assessed in particular by increasing market share and customer satisfaction.

Innovation activities was assessed by qualitative indicators: the importance of innovation for managers gain new knowledge in the organization, looking innovation as a good highest value and quantitative indicators: product innovation (new products / services), innovation process (progress technical), number of patents, the share of research - development expenditure in total revenues and the share of revenues from the sale of innovative products in total revenues.

Analyzing the selected studies, it resulted the following main effects of innovation on the enterprise performance: i) the technological and market innovation has a positive influence on financial performance; ii) the collaboration in innovation process has a positive influence on performance; iii) the innovation determines the growth of return on assets; iv) the market effectiveness is positive influenced by all types of innovation; v) there is a positive correlation between product innovation and the growth of turnover; vi) a very rigid environment policy has a bad influence on the adoption of ecological innovations and financial performance; vii) the productivity of production factors is positively influenced by innovation and knowledge acumulation.

We believe the results are relevant to our research question and they will be the starting point in choosing future empirical research variables.

CONCLUSIONS

Process innovation at the enterprise level has as effects: a) it reduces the production costs; b) it reduces the time required to execute the products; c) it increases the rotation of invested capital; d) it increases the potential of company in the market game; e) it increases the competitiveness on medium and long-term; it increases the performance; it increases the effective involvement of labor in production; it improves the communication relations inside and outside the enterprise; it develops creativity and skills to use the information.

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