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Evidence of innovation in Lithuanian low-tech sector: case study analysis

Vitalija Venckuviene[a]*, Jurate Pridotkiene[b], Daiva Laskiene[c]

[a, b, c] Kaunas University of Technology, K. Donelaičio g. 73, LT-44029 Kaunas, Lithuania

Abstract

In general low-tech sector is considered as having small potential for innovation. Measuring innovation by the most popular indicator in scientific literature such as investment in R&D the low-tech sector definitely will be in the bottom of high-tech leaders. It should be admitted that relying on investment in R&D is too narrow if we consider the multifaceted nature of innovation. Thus the case study method was employed to have an in-depth look on the innovation evidence in the low-tech sector. Findings show that a persistent struggle of the low-tech sector to take the high earning markets and to produce the high quality products give an impetus to be in line with the current technologies. Thus the technological potential is the core factor for competitiveness in the low-tech sector.

1. Introduction

The economic crisis that passed in 2008-2009 showed the main constituent for Lithuanian recovery was the export oriented economy. Moreover, low-tech sector that is on the back seat of high-tech and beyond the innovation headlines in Lithuania's strategy has survived and managed to rise for a new start. The low-tech sector is considered of being one that spurs the economic growth and one that creates huge amount of work places not only in Lithuania

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* Corresponding author. Tel.: +37061526636.
 E-mail address: vitalija.venckuviene@ktu.lt

(Pridotkiene, Laskiene, Venckuviene, 2013), but in advanced European economies, such as Germany, as well (Hirsch-Kreinsen, 2006; Kirner, Kinkel and Jaeger, 2009).

The purpose of the paper is to explore in-depth the multifaceted nature of innovations in low-tech sector in Lithuania.

The topic of this article is not the unique one but the problem that is raised – what is the nature of innovations and how it is expressed in low-tech industry - is relevant and up-to-date. The identification of diversity of innovation in low-tech sector enables to look at a whole sector environment, to envisage the main factors for the better performance of this sector and to tailor the most appropriate government's measures in order to improve the current situation. This research contributes to the scientific scope analysing low-tech in terms of innovation capabilities using qualitative methodology perspective.

Volumes are written on innovation topic, and the most popular typology of innovation is presented in the OECD Oslo manual (2005). Despite of wide adaptation of this classification many authors agree that the nature of innovations embeds more dimensions than the OECD manual does (Rogers, 1998; Sawhney et al., 2006).

Due to a multifaceted nature of innovation measurement of them requires a complex system (Rogers, 1998; Sawhney et al., 2006). Innovation reflects the quantitative and qualitative aspect as well. It encompasses indicators such as R&D expenditures, patents, trademarks and designs, as well as costs of training, investments, marketing and new technologies (Rogers, 1998).

Hirsch-Kreinsen (2006) argued that the classification of sectors into four groups (high-tech, medium-high-tech, medium-low-tech, low-tech) should be rethought as it doesn't reflect the real innovative potential in low-tech sector. Other scholars found that low-tech companies not only encompass a great variety of innovation types (Santamaria et al., 2009; Heidenreich, 2009), but may inspire higher technology sectors to create innovations that later are used by low-tech and in that way higher technology sectors even become dependent on low-tech's success in the market in the long-run (Robertson, Patel, 2007).

The paper is organized as follows: first, the appropriate methodology to research the raised question is reviewed; second, results of the qualitative research are discussed. Paper ends with the conclusions.

2. Method

One of the ways to do in-depth research in social sciences is to employ a case study method. This method was widely investigated by Yin (2009), who highlighted the importance of planning, preparing design, preparation, collection, analysis and sharing phases. The decision to do case study research was made due to the lack of in-depth view on the innovation multifaceted nature in low-tech sector in Lithuania.

The semi-structured interview method was employed in order to get as many information as possible. Thus the research instrument was prepared which embedded the open-ended questions covering such topics as: innovation activities in enterprises; international competition and the threats; the newly growing economic centres and unfair competition in international markets; the newly growing economic centres, development and analysis of competitive conditions in the context of threats; factors of the competitive advantage.

In this paper we focus on the innovation phenomena and its evidences in the companies' performance in terms of production process (product and technological innovations), management, and marketing innovation dimensions.

The target companies were chosen from the following three branches of manufacturing industry: Textile and the apparel production; Wood, wood products and paper production; Furniture production. When making the sample list of potential case study participants, the leading companies of each branch were selected (considered, that is why companies from top exporters, or top innovators or other outstanding companies from a particular industry were selected). The criteria for the sample companies were set up as follows:

- accumulated export experience, at least 5 years;
- significant export share, not less than 2/3 of the turnover;
- financially successful.

The interviews were organised with the top team members of each company. The Table 1 depicts the main characteristics of the sampled companies in the case study research. The interview were anonymous, thus the identification of sample companies is limited. In respect of number of employees three of selected companies are middle companies and three of them large ones.