Chapter 8

Knowledge, Innovation, and Profitability: An Empirical Analysis in Knowledge Intensive Firms

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ABSTRACT
This chapter studies the identification of the profile of knowledge-intensive firms, analyzing if their innovation activity is a characteristic related with their profitability and employing as framework the ‘Resource-based view of the firm (RBV)’. Using a sample of 202 Spanish biotechnology companies, drawn from SABI database, the author has identified these firms’ available data until 31st December, 2013. It has been used the cluster analysis methodology rarely employed in the preceding literature to characterise the firms of the sample. The empirical analysis results clarify the profile of the analysed firms, helping stakeholders and policy-makers to understand the dynamics of these kinds of firms and making strategic decisions accordingly over their characteristics. This would help them to grow in an orderly way and, thus, promote socio-economic changes to improve competitiveness and economic growth.

INTRODUCTION
The Resource-based view of the firm (RBV) remarks the relevance of the generation and transfer of knowledge in the firms as a core resource to gain innovation and, as a result of innovation, to obtain also competitive advantage and a superior value and profits (Barney, 1991; Conner and Prahalad, 1996; Grant 1996; Kogut and Zander 1992; Nonaka, 1994; Penrose, 1959; Spender, 1996; Wernerfelt, 1984). Therefore, knowledge and innovation are seen as core factors of a vibrant economy, and also as keys to restore the economic growth (Cabrales, et al, 2009; Krugman, 2012, Schumpeter, 1939). As a consequence, in this situation innovation has a relevant role because when firms develop a successful innovation they get something unique that its competitors lack, and also build sustainable competitive advantages and profits.

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This context led to pay attention to knowledge-intensive firms and their links with innovation, as a way to get superior value and increase economic growth and society welfare. In particular, the objective of this chapter is identifying the profile of knowledge-intensive firms, analysing if their innovation activity is a characteristic related with their profitability. The reasons that have motivated this study are the following: the relevance of innovation to all sectors of the economy because firms have to face new global challenges and, therefore, develop more efficient research and innovation policies; the importance of the innovation activity to the firms’ competitiveness and to the growth of economies; and the significance of establishing a typology and characterisation of R&D systems (Barney, 1991; Berchicci, 2013; Buesa et al., 2006; Hill & Jones, 2008; Lome et al, 2016; Lazzarini, S.G., 2015; Potočnik, 2009; Roxas et al, 2014; Schumpeter, 1939; Tzokas et al, 2015).

The author conducts the contrast of this research in a sample of biotechnology companies. There are reasons to selected this kind of firms. First, it is a sample of inherently knowledge intensive firms and therefore, they are suitable to analyse the relationship between innovation and profitability. Also, because the potential of the biotechnology industry in the innovation process has been recognised in industrialized countries whose governments have endorsed the transfer of technical and scientific knowledge from laboratories to firms (Barney, 1991; Gottweis, 1998; Hill & Jones, 2008; Schumpeter, 1939; Wright, 1994). The sample used was drawn from SABI database owned by Bureau van Dijk that contains comprehensive information on companies in Spain and Portugal, such as financial statements, financial strength indicators, directors and contacts, original filings/images, detailed corporate structures or audit report. The author has compiled data available until 31st December 2013. Due to the lack of similar empirical and methodological previous researches to compare data and fieldwork, it has made the decision to focus the investigation on one country, therefore they have been selected Spanish firms that are classified in CNAE code 7211. CNAE is the National Classification of Economic Activities compiled according to the conditions set out in the Regulation NACE (statistical classifications of economic activities developed since 1970 in the European Union). The code 7211 groups the firms which activity is the experimental R&D in biotechnology.

The chapter contributes to the literature in two ways: theoretical and practical. From a theoretical point of view, following a stream of research in the RBV, this chapter links three relevant concepts in the literature: knowledge-intensive firms, innovation and profitability, trying to explore and clarify their theoretical relationship by empirical evidence in the Spanish biotech industry, where there is a lack of previous quantitative analysis exploring this relationship. The author proposes an empirical study using a quantitate methodology rarely used in the preceding literature, the cluster analysis methodology, appropriate to empirically characterise cases of a sample. Moreover, it has been analysed the questioned link from the RBV approach as a framework which has allowed to focusing on firms where knowledge is core, and looking for those relevant features which lead them to develop resources and capabilities of high importance to innovate, to gain a competitive advantage, and a superior value and profits. From a practical point of view, the biotechnological firms’ employees, stakeholders and policy-makers would benefit from understanding the profiles of this kind of firms to develop more efficient research and innovation and management strategies, and policies to gain competitive advantage.

The chapter proceeds as follows. The next section reviews the literature about the Resource-Based View of the firm and the characterisation of knowledge-intensive firms. The research objective and methodology are presented next, followed by the empirical analysis. The results are tabled next, ending with the section where conclusion, limitations and future research agenda are showed.