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New service innovation success: Analyzing the influence of performance indicator nature

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ABSTRACT

The object of this paper is twofold: on the one side to analyze the role of cooperative learning and information and communication technologies (ICT) use as drivers of new service innovation success. On the other, identify if the nature of the performance indicator used influences on the high and significance of the dependence relationships. For that we analyze a sample of 287 Spanish SME, which in the last two years have developed new service. Also, it is consider that the new service innovation results can be measured in objective terms – abiding by financial measurements – as well as on the basis of the entrepreneur's perception.

The results evidence the direct influence of co-learning, as well as the direct, moderating role of the ICT use in obtaining the maximum level of objective and perceived results. Relevant differences can be observed, depending not only the performance indicator used (objective versus subjective) but also on the contribution of each of the variables to obtaining the maximum result and, therefore, their success. The study provides evidence that enable us to offer certain strategic recommendations of interest for the management of small and medium sized companies (SME). This research provides evidence for the necessity of considering explicit measures of results based on subjective indicators such as the entrepreneur's perception.

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1. Introduction

The information society encouraged tremendous changes that resulted in the rise of the networked company. This type of company is characterized by a strong market orientation as well as flexible structures that are able to offer quick and efficient responses to environmental challenges. However, the current situation makes it necessary to obtain not only economic profits, but also sustainability in social, cultural and environmental terms. Therefore, companies must try to provide quick, innovative and market-oriented responses, which in turn will increase the efficiency and efficacy of the business as a whole (Berraies & Chaher, 2014).

The networked company is characterized, among other things, by an intensive use of information and communication technologies (henceforth: ICT), as well as, a high cooperation degree. Both are two key aspects that impact on the success of innovation processes – especially in the field of products. Furthermore, entrepreneurial practice demonstrates how I cooperation and ICT use help the new products which enterprises launch onto the market to obtain good results. In fact, both provide the context for company to simultaneously address different learning processes: (a) cooperative learning and (b) learning the knowledge provided by the partner involved in the relationship (Kale & Singh, 2007; Sita, Kumaraswamy, & Chitale, 2012; Ribeiro-Soriano, Benavides-Espinosa, & Mohedano-Suanes, 2013). In turn, a new company model involves the adaptation of indicators to properly measure innovation success, as well as the impact of other factors. Hence, along with financial measures, it is recommended to consider other type of indicators (Pike & Roos, 2004), such as those ones including entrepreneurs' perceptions.

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Empirical evidences show how cooperation – particularly when it address to learn, obtain and increase knowledge¹ – and ICT use have important effects on the financial results and the acceptance of the new product in the market have led some authors to point to these factors as authentic determinants of successful innovation (Schroder, 2014; Sita et al., 2012; Sánchez-González, 2008; Xie, Zeng, & Tam, 2013). Acting as driving forces of the processes of entrepreneurial innovation and transformation, cooperation and the use of ICT provide the company with the capacity to confront the strategic challenges which it must face in an environment characterized by continuous and ever faster changes.

In spite of the previous observations, some doubts persist regarding how these factors influence the assessment of a result as a success or failure. This fact is especially relevant when consideration of the success or failure is determined by the type and nature of the indicators which are used to perform the measurement. Organizations normally use objective indicators based on the measurement of financial results, of the acceptance of the market or the consumer which, although they are prone to being influenced by the valuations of those responsible for the decisions (in general, entrepreneurs and executives), usually offer an adequate view of the result achieved and, therefore, of the level of success or failure attained. But on occasions, the judgments, beliefs and perceptions of those responsible have a much greater weight than that of the indicators of the objectives used. In particular, this fact is especially relevant in small and medium-sized enterprises (SME). In these, the strategies and policies introduced are strongly influenced by the figure of the entrepreneur, who is generally also the founder of the company (Zampetakis, Vekini, & Moustakis, 2011). In this way, the result obtained, and consequently the assessment of success or failure, more than depending on obtaining excellent results financial and market results is (a) the result of the global valuation that entrepreneurs carry out of the process and (b) is conditioned by their mental structure (the perceptions, attitudes and judgments).

Starting from these ideas, the present study analyses the effects of learning cooperation (henceforth: co-learning) and the use of ICT in obtaining a high result on the part of the new products developed. It is further considered that the result can be measured in objective terms – abiding by financial measurements – as well as on the basis of the entrepreneur's perception.

To achieve our aim, the study has been structured in two distinct parts. The conceptual framework starts reviewing the direct and moderator effects that co-learning and ICT use have on innovation performance. Subsequently, the different types of performance indicators that an organization can use are analyzed. In the second section, we present the empirical study developed from a sample of 287 SME which have carried out product innovation over the last two years, as well as the principal findings reached. The results evidence the direct and moderating influence of co-learning and ICT use. But also, it shows how the drivers of innovation success have a different effect depending on the nature of the performance indicator used. The work concludes by presenting the main conclusions reached as well as offering some recommendations of interest for the management of product innovation on the part of small and medium-sized Spanish companies.

¹ An exploratory factorial analysis was performed, which enabled us to establish the presence of two different external cooperation models followed by the enterprise, bearing in mind the type of agent with which it establishes the relationship: cooperation in the value chain and scientific cooperation. The development of a set of statistical tests allowed us to establish the suitability of the analysis, as well as the reliability of the scale. All the variables of the correlation matrix showed high correlations and their determinant offered a value of 0.0182. The Kaiser-Meyer-Olkin Index showed a value of 0.796, the Bartlett's Test of Sphericity a value of 2190.7554, with a significance of 0.000 and the Cronbach's Alpha showed a value of 0.715. Subsequently, the development of a hierarchical cluster from the points of the factors obtained enabled us to establish different levels of external cooperation.

2. Conceptual framework

2.1. Co-learning as a source of innovation

The need and importance of creating and adding value during the process of product innovation is what leads organizations to cooperate with the agents in their immediate environment. These agents usually have the necessary knowledge, resources and capacities to develop the new product and launch it onto the market (Calantone, Di Benedetto, & Song, 2011; Song, Dyer, & Thieme, 2006). Cooperation facilitates co-learning and engenders collaborative know-how. Cooperative experiences allow organizations to obtain both tangible benefits (decrease innovation cost, time to market, etc.), but also intangible ones (increase product-market fit, or the acquisition and/or generation of some kind of knowledge) of future alliances (Gulati, Lavie, & Singh, 2009).

On the other hand works of Pike (2008), examines how co-learning has effects at individual level about the workers in the companies. From social point of view, collaborative learning is superior to individualistic learning, because it enables positive changes in interpersonal attitudes and promotes their participation and sense of community (Sita et al., 2012). Cooperative learning, also allows organization workers to practice their communication and teamwork skills and explore multiple perspectives from people with different cultural, academic or professional backgrounds. All of these efforts are considered by Berraies and Chaheer (2014), Carbonell and Rodríguez (2006) key elements of developing innovation processes. Even so, the fact should not be forgotten that, however elevated the proximity existing among the agents is, the cooperation relationship may be strongly influenced by external pressures derived from technological development and market globalization (Cursey, Schalk, & Wessel, 2008; Kuen-Hung, Mu-Lin, & Jiann-Chyuan, 2012).

It should be noted that research on learning cooperation has paid little attention to examine the effect of e-learning process, and more specifically its outcome (the cooperative know-how) in new product performance Nielsen (2007).

The challenges and opportunities that the global environment offers have increased the strategic importance of the entrepreneur in this process. The quality and therefore the result of the cooperation process are strongly affected by the decisions that the entrepreneur takes during the design and planning stages of the co-learning relationship (Kim & Higgins, 2005; Zampetakis et al., 2011). On the other hand, the expectations of the entrepreneurs in relation to the process, the degree of risk which they perceive, the importance they give to the degree of product innovation or, simply, the indicator chosen to measure the result of the new product on the market, will determine whether the innovation is considered a success or a failure (Carpenter, Geletkanycz, & Sanders, 2004; Wall, Michie, Patterson, et al., 2004).

In this respect, it is important to mention how the effects of co-learning on the efficiency and efficacy of the process of innovation increase the possibilities of obtaining a good result in the markets (Song & Thieme, 2009). With regard to this question, Lee, Johnson, and Grewal (2008), Sánchez-González (2008), among others, point out that access to certain key resources in the process of innovation constitutes one of the main benefits of this practice. Thus, by facilitating the transfer of information, experience and new technologies among the agents involved, any potential problems can be identified and resolved quickly and efficiently.

Consideration of the previous premises makes it possible to posit the following hypothesis that refers to the influence of cooperation with agents on the results of innovation:

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