

HOW DOES ENTREPRENEURIAL ORIENTATION INFLUENCES EXPLOITATION OF KNOWLEDGE?

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ABSTRACT

The processes for exploitation of knowledge became an essential element for firms to adapt to changes in the competitive environment. The exploitation of this knowledge should be undertaken with proactivity, innovation and risk-taking. Building on well established theories, our research explores the influence of entrepreneurial orientation in exploitation of knowledge of Portuguese small and medium enterprises (SMEs) of footwear associated to the Portuguese Footwear, Components and Leather Goods Association (APICCAPS). Based on survey data from 42 firms, our empirical results indicate that globally entrepreneurial orientation have a positive and significant influence on exploitation of knowledge, and that the entrepreneurial orientation's dimensions that most contribute to this end are innovation and risk-taking.

Keywords: *entrepreneurial orientation, absorptive capacities, exploitation of knowledge, SMEs, Portuguese footwear industry.*

INTRODUCTION

In a dynamic and turbulent environment, knowledge represents a critical resource to create value and to develop and sustain competitive advantages (Teece, Pisano and Shuen, 1997). However, fast changing environments, technologies and competitiveness intensify the challenges firms face in attaining self-sufficiency in knowledge creation (Camisón and Forés, 2010).

Entrepreneurial orientation is a strategic orientation of a company that encompasses specific entrepreneurs aspects such as style, methods and decision-making practices (Frank, Kessler and Fink, 2010), constituting a capacity that can attract resources to exploit opportunities (Alvarez and Busenitz, 2001). On the other hand, literature in the field of strategic management has focused on dynamic capabilities (for a review see Barreto, 2010). The firms' success depends not only on its' resources and capabilities, but also the ability to adapt itself to the industry contingencies and the markets in which

operates. Firms may possess resources but must display dynamic capabilities otherwise shareholder value will be destroyed (Bowman and Ambrosini, 2003). It is in this context that emerges the Dynamic Capabilities View (DCV) (Amit and Schoemaker, 1993; Teece et al., 1997) to support the adjustment to environmental change.

DCV is not divergent but rather an important stream of Resource-Based View (RBV) to gain competitive advantage in increasingly demanding environments (Ambrosini and Bowman, 2009; Barreto, 2010; Eisenhardt and Martin, 2000; Wang and Ahmed, 2007). Monteiro, Soares and Rua (in press) defend that in versatile markets the firms' capabilities should be dynamic and managers must display the ability to ensure consistency between the business environment and strategy in order to continuously renew skills.

Dynamic capabilities as a mind-set constantly integrate, reconfigure, renew and recreate its core capabilities in response to the ever changing environment in order to achieve and sustain competitive advantage (Wang and Ahmed, 2007). Moreover, these capabilities sense and shape opportunities and threats, seize opportunities, and maintain competitiveness by enhancing, combining, protecting, and reconfiguring the businesses' intangible and tangible resources (Teece, 2007).

Absorptive capacity (ACAP) has become one of the most significant constructs in the last twenty years. Absorptive capacity is the dynamic capability that allows firms to gain and sustain a competitive advantage through the management of the external knowledge (Camisón and Forés, 2010).

Building on well established theories, our research aims at exploring the influence of entrepreneurial orientation in exploitation of knowledge of Portuguese SMEs exporting footwear, by analyzing the contributions of this capability in such construct.

THEORETICAL FRAMEWORK

Entrepreneurial orientation

Entrepreneurial orientation emerged from entrepreneurship definition which suggests that a company's entrepreneurial degree can be measured by how it take risks, innovate and act proactively (Miller, 1983). Entrepreneurship is connected to new business and entrepreneurial orientation relates to the process of undertaking, namely, methods, practices and decision-making styles used to act entrepreneurially. Thus, the focus is not on the person but in the process of undertake (Wiklund, 2006).

Companies can be regarded as entrepreneurial entities and entrepreneurial behaviour can be part of its activities (Covin and Slevin, 1991). Entrepreneurial orientation emerges from a deliberate strategic

choice, where new business opportunities can be successfully undertaken (Lumpkin and Dess, 1996). Thus, there is an entrepreneurial attitude mediating the vision and operations of an organization (Covin and Miles, 1999).

Several empirical studies indicate a positive correlation between entrepreneurial orientation and organizational growth (e.g. Miller, 1983; Covin and Slevin, 1991; Lumpkin and Dess, 1996; Wiklund, 2006; Davis, Bell, Payne and Kreiser, 2010; Frank, Kessler and Fink, 2010). Similarly, other studies also confirm that entrepreneurial orientation has a positive correlation with export's performance, enhancing business growth (e.g. Zahra and Garvis, 2000; Okpara, 2009).

The underlying theory of entrepreneurial orientation scale is based on the assumption that the entrepreneurial companies are different from the remaining (Kreiser, Marino and Weaver, 2002), since such are likely to take more risks, act more proactive in seeking new businesses and opportunities (Khandwalla, 1977; Mintzberg, 1973).

Entrepreneurial orientation has been characterized by certain constructs that represent organization's behaviour. Starting from the Miller (1983) definition, three dimensions were identified: innovation, proactiveness and risk-taking, which collectively increase companies' capacity to recognize and exploit market opportunities well ahead of competitors (Zahra and Garvis, 2000). However, Lumpkin and Dess (1996) propose two more dimensions to characterize and distinguish entrepreneurial process: competitive aggressiveness and autonomy. In this study only innovation, risk-taking and proactiveness will be considered, as they are the most consensual and used dimensions to measure entrepreneurial orientation (e.g. Covin and Miller, 2014; Covin and Slevin, 1989, 1991; Davis et al, 2010; Frank et al, 2010; Kreiser et al, 2002; Lisboa, Skarmeas and Lages, 2011; Miller, 1983; Okpara, 2009; Wiklund and Shepherd, 2005; Zahra and Covin, 1995; Zahra and Garvis, 2000).

Absorptive capacity of exploitation of knowledge

In order to survive certain pressures, companies need to recognize, assimilate and apply new external knowledge for commercial purposes (Jansen, Van Den Bosch and Volberda, 2005). This ability, known as absorptive capacity (Cohen and Levinthal, 1990), emerges as an underlying theme in the organizational strategy research (Jansen et al., 2005). Cohen and Levinthal (1990) conceptualize ACAP as the firms' ability to identify, assimilate, and exploit knowledge acquired from external sources. As such, ACAP facilitates knowledge accumulation and its subsequent use. Thus, this ability access and use new external knowledge, regarded as an intangible asset, is critical to success and depends mainly on prior knowledge level, since it is this knowledge that will facilitate the identification and processing of new one. This prior knowledge not only includes the basic capabilities, such as shared language, but also recent technological and scientific data or learning skills. By analyzing this definition is found that absorptive capacity of knowledge only three dimensions: the ability to acquire

external knowledge; the ability to assimilate it inside; and the ability to apply it (Cohen and Levinthal, 1990). Zahra and George (2002) broaden the concept of ACAP from the original three dimensions (identify, assimilate, and exploit) to four dimensions (acquire, assimilate, transform, and exploit).

ACAP is a good example of a dynamic capability since it is embedded in a firm's routines. It combines the firm's resources and capabilities in such a way that together they influence "the firm's ability to create and deploy the knowledge necessary to build other organizational capabilities" (Zahra and George, 2002, p. 188).

According to Zahra and George (2002) ACAP is divided in Potential Absorptive Capacity (PACAP), including knowledge acquisition and assimilation, and Realized Absorptive Capacity (RACAP) that focuses on transformation and exploitation of that knowledge. PACAP reflects the companies' ability to acquire and assimilate knowledge that is vital for their activities. Knowledge acquisition the identification and acquisition and assimilation is related to routines and processes that permit to analyze, process, interpret and understand the external information. RACAP includes knowledge transformation and exploitation, where transformation is the ability to develop and perfect routines that facilitate the integration of newly acquired knowledge in existing one, exploitation are routines which enhance existing skills or create new ones by incorporating acquired and transformed knowledge internally.

Jansen et al. (2005) defend that, although company's exposure to new knowledge, is not sufficient condition to successfully incorporate it, as it needs to develop organizational mechanisms which enable to synthesize and apply newly acquired knowledge in order to cope and enhance each ACAP dimension. Thus, there are coordination mechanisms that increase the exchange of knowledge between sectors and hierarchies, like multitasking teams, participation in decision-making and job rotation. These mechanisms bring together different sources of expertise and increase lateral interaction between functional areas. The system mechanisms are behaviour programs that reduce established deviations, such as routines and formalization. Socialization mechanisms create a broad and tacit understanding of appropriate rules of action, contributing to a common code of communication.

Studying absorptive capacity offers fascinating insights for the strategic management literature and provide new information regarding how firms may develop important sources of sustainable competitive advantages (Jansen et al., 2005). In this paper the focus is on the exploitation of knowledge.

HYPOTHESES

Dynamic capabilities refer to “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece et al., 1997, p. 516).

Barreto (2010, p. 271) argued that a “dynamic capability is the firm’s potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base”. On the other hand, dynamic capabilities enable companies to create, develop and protect resources allowing them to attain superior performance in the long run, are constructed (not acquired in the market), dependent on experience and are embedded in the company’s organizational processes (Ambrosini and Bowman, 2009), not directly affecting the outputs, but contributing through the impact they have on operational capabilities (Teece et al., 1997). These capabilities refer to a firm’s capacity to deploy resources, usually in combination, using both explicit and tacit elements (such as know-how and leadership). For this reason, capabilities are often firm-specific and are developed over time through complex interactions between the firm’s resources (Amit and Schoemaker, 1993). Maintaining these capabilities requires a management that is able to recognize adversity and trends configure and reconfigure resources, adapt processes and organizational structures in order to create and seize opportunities, while remaining aligned with customer preferences. Indeed, dynamic capabilities allow businesses to achieve superior long-term performance (Teece, 2007).

Firms, therefore, need to continually analyze and interpret changing market trends and quickly recognize new opportunities in order to create competitive products (Tzokas, Kim, Akbar and Al-Dajani, 2015). The ACAP construct encompasses an outward-looking perspective that deals with the identification and generation of useful external knowledge and information and an inward-looking component that is related with how this knowledge is analyzed, combined with existing knowledge, and implemented in new products, new technological approaches, or new organizational capabilities (Cohen and Levinthal, 1990).

Ultimately, the following hypotheses is tested:

H1: Entrepreneurial orientation influences positively exploiting of knowledge.

METHODOLOGY

Setting and Data Collection

To test the hypothesis a sample of Portuguese footwear companies was used, that meet the following criteria: companies in which at least 50% of income comes from exports of goods, or companies in which at least 10% of income comes from exports of goods and the export value is higher than 150.000 Euros (INE, 2011).

Data collection was implemented through electronic questionnaire, associating a link to the survey that was online. To reduce misunderstandings, the questionnaire was validated by the research department of Portuguese Footwear, Components and Leather Goods Association (APICCAPS).

We were provided with a database of 231 companies (company name, telephone contact, email, economic activity classification, export markets, export intensity and capital origin). Only 167 companies fulfilled the parameters, and were contacted by email by APICCAPS to respond to the questionnaire. Subsequently, all companies were contacted by the authors via e-mail and telephone, to ensure a higher rate of valid responses. The questionnaires began on April 22, 2014 and ended on July 22, 2014. After finishing the data collection period, 42 valid questionnaires were received, representing a 25% response rate (Table 1). This response rate is considered quite satisfactory, given that the average of top management survey response rates are in the range of 15%-20% (Menon, Bharadwaj, Adidam and Edison, 1999).

Universe of analysis - Portuguese SMEs of footwear
Sample - a non-probabilistic and convenient
Population – 367 firms
Sample – 167 firms
Response rate – 25%
Valid responses - 42
Time period – April 22 to July 22 of 2014

Table 1. *Data summary*

In this investigation we chose a non-probabilistic and convenient sample since its respondents were chosen for being members of APICCAPS.

Measures

For assessment of entrepreneurial orientation was used Covin and Slevin's scale (1989), that consists in nine items: three for innovation, three for proactiveness and three for risk-taking, having been used a five point Likert scale, where 1 means "strongly disagree" and 5 "strongly agree".

To measure exploitation of knowledge, and based in Jansen et al. (2005), it was operationalized the company's ability to explore new external knowledge into their current operations, through six questions (e.g. Jansen et al., 2005; Zahra and George, 2002). A five point Likert scale was used to measure each item, where 1 means "strongly disagree" and 5 "strongly agree".

RESULTS

Reliability analysis

In order to verify the reliability of overall variables we estimated the stability and internal consistency through Cronbach's alpha (α). Generally, an instrument or test is classified with appropriate reliability when α is higher or equal to 0.70 (Nunnally, 1978). However, in some research scenarios in social

sciences an α of 0.60 is considered acceptable, as long as the results are interpreted with caution and the context is taken into account (DeVellis, 2012). For the present study we used the scale proposed by Pestana and Gageiro (2008).

The result of 0.855 achieved for all of variables is considered very good, confirming the sample's internal consistency. It was also conducted an internal consistency test for all variables in each construct to assess their reliability (Table 2).

Construct	Cronbach's α	Items Nr.	N	Analysis
Entrepreneurial orientation	.739	9	42	Good
Exploitation of knowledge	.897	6	42	Very good

Table 2. *Internal consistency test by construct (Cronbach's Alpha)*

We found that entrepreneurial orientation has good consistency and that exploitation of knowledge presents very good reliability.

Exploratory factor analysis

We performed a factor analysis, with Varimax rotation, of entrepreneurial orientation construct items that comprise the scale, with the purpose of finding a solution that was more easily interpretable. Three factors were extracted and there was no need to delete items. Thus, we obtained a scale composed of 9 items, distributed over three factors that explain 77.09% of total variance, with 35.52% of variance explained by the first factor, *Proactiveness*, 27.48% for the second factor, *Innovation*, and 14.09% by the third factor, *Risk-taking*. Analyzing the internal consistency of the three factors, we found that Cronbach's Alphas have a good internal consistency. KMO test indicates that there is a reasonable correlation between the variables (0.695). Bartlett's sphericity test registered a value of $\chi^2(36, N=42)=171.176, p<0.05$, therefore is confirmed that $\chi^2>\chi_{0.95}^2$, so the null hypothesis is rejected, i.e. the variables are correlated.

In the factor analysis, with Varimax rotation, of exploitation of knowledge we got a scale with 6 items, distributed by 1 factor, that explained 69.17% of total variance, whose saturations range between 0.804 and 0.578. The internal consistency of the factor is $\alpha=0.897$, indicating this value that these dimension presented a very good internal consistency. KMO test confirm a good correlation between the variables (0.831). Bartlett's sphericity test registered a value of $\chi^2(10, N=42)=114.439, p<0.05$, therefore is confirmed that $\chi^2>\chi_{0.95}^2$, so the null hypothesis is rejected and the variables are correlated.

Multiple regression analysis

Multiple regression analysis is a statistical technique that is used to analyze the relationship between a single dependent (criterion) variable and several independent (predictor) variables. The objective of multiple regression analysis is to use the independent variables whose values are known to predict the single dependent value selected by the researcher. Each independent variable is weighted by the regression analysis procedure to ensure maximal prediction from the set of independent variables.

The most commonly used measure of predictive accuracy for the regression model is the coefficient of determination (R^2). This coefficient measures the proportion of total variability that can be explained by regression ($0 \leq R \leq 1$), measuring the effect of independent variables on the dependent variable. When $R^2=0$ the model clearly does not adjust to data and when $R^2=1$ the adjustment is perfect. In social sciences when $R^2 > 0.500$ the adjustment is considered acceptable (Marôco, 2011). In the table 3 we present the results of the multiple regression analysis of our model.

Model	R	R ²	Adj. R ²	Standard Error	F	Sig.
1	.556 ^a	.309	.254	.86350080	5.662	.003*

a. Predictors: (Constante), Entrepreneurial orientation.

b. Dependent variable: Knowledge exploitation.

* $p < 0.05$.

Tabela 3. *Summary and ANOVA of multiple regression analysis^b*

The previous table presents for model 1 a value of $F=5.662$, with $q\text{-value} < 0.05$ (Sig.), so H_0 is rejected in favour of H_1 . Thus, this hypotheses is supported.

A mere comparison of the regression coefficients is not valid to evaluate the importance of each independent variable models, since these variables have different magnitudes. Thus, it is essential to use standard variables, known as Beta (β) coefficients, in the models adjustment so that the independent variables can be compared.

Variables	Beta	Sig.
ENTREPRENEURIAL ORIENTATION		
Proactiveness	.076	n.s.
Innovation	.445	.002*
Risk-taking	.325	.021*

* $p < 0.05$.

n.s. – non significant.

a. Dependent variable: Knowledge exploitation.

Table 4. *Standardized beta coefficient*^a

Beta coefficient allows a direct comparison between coefficients as to their relative explanatory power of the dependent variable. Table 4 shows that the variables that have higher contribution to knowledge exploitation are *Innovation* ($\beta=0.445$) and *Risk-taking* ($\beta=0.325$).

DISCUSSION AND CONCLUSION

The main purpose of this study is to analyze the influence of entrepreneurial orientation on knowledge exploitation. We conducted an empirical research based on a sample of 42 companies, which were applied a questionnaire in order to exploit data to test hypotheses, using proceedings and statistical techniques. It is important to note that companies evaluated entrepreneurial orientation and exploitation of knowledge relative to their major competitors in the export market(s), so the results should be interpreted based on these two aspects.

The Portuguese footwear industry faces considerable challenges, not only concerning the international markets crisis, but also regarding consumption patterns. The reduction of shoe design lifecycles has consequences on the offer. On one hand, the products have to be adapted to different segments specific needs and tastes (custom design, new models in small series, etc.), on the other hand, manufacture processes must be increasingly flexible, adopt just-in-time production, invest in the brand, qualified personnel, technology and innovation (APICCAPS, 2013).

This study demonstrated that the company's innovation and risk-taking have a positive and significant influence on knowledge exploitation. The analyzed companies are able to exploit knowledge through informal knowledge gather, clear definition of tasks, analysis and discussion of market trends and new product development, among others.

Dynamic capabilities can take a variety of forms and be involved in different functions, but the most important common characteristics are that they are higher level capabilities which provide opportunities for knowledge gathering and sharing, constant updating the operational processes, interaction with the environment, and decision-making evaluations (Easterby-Smith, Lyles and Peteraf, 2009). However, the existence of common features does not imply that any particular dynamic

capability is exactly alike across firms, rather they could be developed from different starting points and take unique paths (Eisenhardt and Martin, 2000).

In fact, according to the industrial organization, a company should find a favourable position in its industry from which it can better defend against competitive forces, or to influence them in his favour through strategic actions such as raising barriers to entry, etc. (Porter, 1980). This perspective is consistent with Eisenhardt and Martin (2000) regarding the uniqueness of paths. The results of this study confirm that exploitation of knowledge enable firms to achieve superior long-term performance (Teece, 2007).

Theoretical and practical implications

It is known that strategy includes deliberate and emergent initiatives adopted by management, comprising resource and capabilities use to improve business performance (Nag, Hambrick and Chen, 2007). The findings are a contribution to clarify the influence of entrepreneurial orientation on the company's knowledge exploitation. This study also enabled a thorough analysis of a highly important industry for national exports, such as footwear industry, allowing understanding that entrepreneurial orientation, as an industry strategic determinant, enhancing exploitation of knowledge.

Jansen et al. (2005) defend that companies need to develop organizational mechanisms to combine and apply newly acquired knowledge in order to deal and enhance each absorptive capacity dimension. In this study is notorious the importance of knowledge absorptive capacity to business performance. It is essential that business owners are able to interpret, integrate and apply external knowledge in order to systematically analyze change in the target market and to incorporate this knowledge in their processes to enhance performance.

In addition, the results provide guidance to business practitioners; because they indicate entrepreneurial orientation as a predictor for exploitation of knowledge. Companies are a bundle of resources and capabilities (Peteraf, 1993), it is essential to understand and identify which resources are relevant to gain competitive advantage and superior performance. In this study it is obvious the importance of entrepreneurial orientation to the firms' exploitation of knowledge. Business owners must be able to interpret, integrate and apply external knowledge in order to systematically analyze the changes that arise in their target market(s) and to incorporate this knowledge into their processes, to identify the present and future needs and market trends, anticipate changes in demand and seek new business opportunities.

By building on the literature of entrepreneurial orientation, absorptive capacity and exploitation of knowledge, this study aims to support the strategic development of business management policies designed to increase firms' performance in foreign markets and add value to the current context of change.

Research limitations

The main limitation of this study is related to the sample size, since it was difficult to find companies with the willingness to collaborate in this type of research. The sample is non-probabilistic and convenience and cannot be used to infer to the general population. The study findings should therefore be analyzed with caution.

The fact that the research does not consider the effect of control variables such as size, age, location and target market of the respondents can be seen as a limitation.

Finally, the fact that this study considered only exploitation of knowledge as an absorptive capacity can also be appointed as a limitation.

Future Lines of Research

In future work, we suggest that the model is used in a sample with a higher number of observations to confirm these results.

We further suggest pursuing with the investigation of strategic management in Portugal, focusing in other sectors of national economy, so that in the future one can make a comparison with similar studies, allowing realizing and finding new factors that enhance absorptive capacity.

Finally, the moderating effect of strategic variables (e.g. competitive advantage) in the relationship between entrepreneurial orientation and exploitation of knowledge should be studied.

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