

IBERIAN MULTINATIONALS DRIVING THE CRISIS RECOVERY



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PART 6: NEW VENTURES AND ENTREPRENEURSHIP

A PROCESS VIEW OF NEW VENTURES INTERNATIONALIZATION: CAPABILITIES, ALERTNESS AND THE MODERATING ROLE OF TECHNOLOGICAL TURBULENCE

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Abstract

This research is based on the perception that the explanation of International New Ventures' (INVs) performance demands a process view, going deeper than the standard approach, in empirical papers, of testing a direct relationship between individual- and company-level antecedents, and performance. In line with Aspelund, Madsen & Moen (2007) and Keupp & Gassmann (2009) arguments, a three-tier model was developed to investigate the process leading to INVs international performance. Based on the dynamic capabilities framework, entrepreneurial alertness was envisaged as the mediating element between firms' capabilities and their international performance. Empirical research confirmed the hypothesized model. Firms' capabilities (entrepreneurial orientation, foreign market knowledge, and absorptive capacity) significantly influence the level of entrepreneurial alertness, which impacts on company international performance. The paper makes three contributions to International Entrepreneurship literature. First, it highlights the key role played by entrepreneurial alertness in explaining INVs' international performance. This is convergent with the dynamic capabilities view on firms' ability to sense and seize specific international business opportunities. Second, it shows that alertness is based on a set of first order capabilities, namely entrepreneurial orientation, foreign market knowledge, and absorptive capacity that simultaneously leverage and constrain alertness. is a key element to foster INVs' higher performance. Third, it underlines the role of technological turbulence as a moderator of the relationship between entrepreneurial alertness and INVs' international performance.

Keywords: international entrepreneurship; international new ventures; international performance; dynamic capabilities; entrepreneurial alertness; technological turbulence.

Introduction

International Entrepreneurship (IE) has increasingly been envisaged from a process perspective, recognizing that it is not appropriate to establish a direct relationship between IE antecedents and international performance. Unfortunately, there is a dearth of quantitative research espousing that process perspective, as Aspelund, Madsen & Moen (2007) and Keupp & Gassmann (2009) have remarked. This paper contributes to fill this gap by addressing one key element that mediates the process going from firms' characteristics to their international performance: entrepreneurial alertness. More specifically, our focus is two-pronged. First, we aim at understanding the role played by entrepreneurial alertness as mediator between a set of individual and firm-level antecedents (entrepreneurial orientation, foreign market knowledge, and absorptive capacity) and international performance. In fact, entrepreneurial alertness has been identified in the literature as a key success factor for IE initiatives. The concept is rooted on Kirzner's views on entrepreneurship: "Entrepreneurial alertness exploits these opportunities when others pass them by" (Kirzner, 1979: 8). Oviatt and McDougall (1994), in their seminal paper, also have pointed out alertness as a critical entrepreneurial capability element. Being alert means, however, that some antecedents should be in place. Otherwise, the distinctive perception of the reality is not possible (Kuemmerle, 2002). Second, we address possible moderators of the relationship between alertness and performance: competitive intensity and technological turbulence.

The empirical testing of the model, carried out on a sample of 416 INVs, confirms that entrepreneurial orientation, foreign market knowledge and absorptive capacity are antecedents to entrepreneurial alertness. The latter shows, as hypothesized, a positive and significant influence on international performance. However, only one of the moderating variables (technological turbulence) has a significant effect on the alertness-international performance relationship. This is an interesting finding, since it shows that alertness is particularly relevant to performance in face of high levels of technological turbulence. This suggests that the capacity to perceive weak signals, often unnoticed by others, gains importance when the pace of technological change is high, thereby providing interesting business opportunities (Mainela, Puhakka, & Servais, 2013).

This makes, in our view, three contributions to IE literature. First, it highlights the key role played by entrepreneurial alertness in explaining INVs' international performance. This is convergent with the dynamic capabilities view on firms' ability to sense and seize specific

international business opportunities. Second, it shows that alertness is based on a set of first order capabilities, namely entrepreneurial orientation, foreign market knowledge, and absorptive capacity that simultaneously leverage and constrain alertness. is a key element to foster INVs' higher performance. Third, it underlines the role of technological turbulence as a moderator of the relationship between entrepreneurial alertness and INVs' international performance.

The paper is organized in six sections, including this introduction. The second section provides a brief review of the literature on which the conceptual model and the hypotheses are based. The methodology used in the empirical research is presented next. The fourth section provides the results of the empirical analysis. The main findings are discussed in the fifth section, against the background provided by extant literature. The effects of moderating variables will be given especial attention. The final section provides the main conclusions of the research and highlights some issues deserving further investigation.

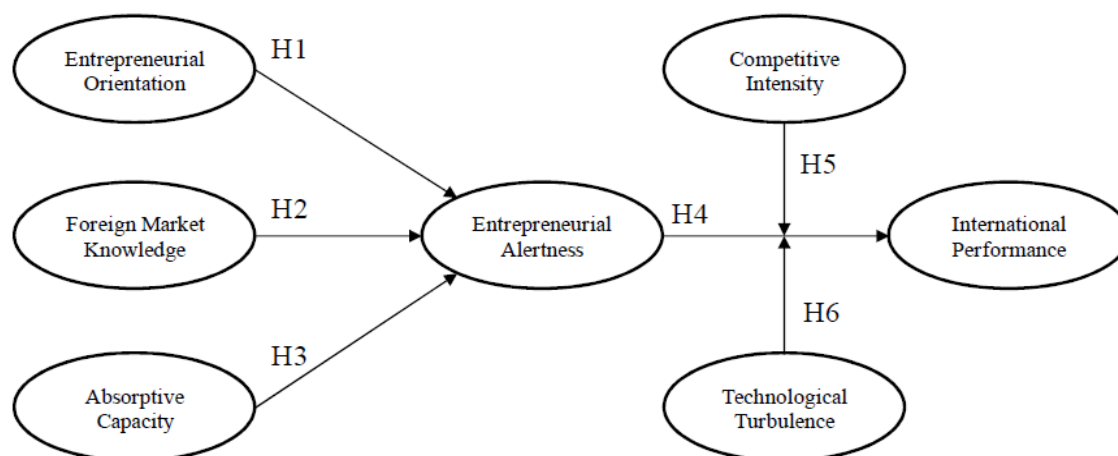
Literature review and conceptual framework

Drawing on the dynamic capabilities perspective, a process model was developed to explain how firms' capabilities are transformed into international performance. The argument is that, in general, resources need to be savvy transformed and focused in order to achieve business results. The focusing device is, particularly for INVs, entrepreneurial alertness. From a Kirznerian perspective, this enables the identification of business opportunities that remain unnoticed to others (Kirzner, 1973;1997;1979). It may be argued, therefore, that entrepreneurial alertness is simultaneously a consequence of specific resources and capabilities (namely entrepreneurial orientation, foreign market knowledge, and absorptive capacity) and a focusing device for the use of such resources to identify and exploit

specific, non-obvious international business opportunities. This is expected to lead to improved international business performance.

The conceptual framework is depicted on Figure 1 below. Its underlying rationale is presented in the following sections.

Figure 1. Conceptual framework of constructs and linkages



INVs and Dynamic Capabilities

Di Gregorio, Musteen & Thomas (2008: 187) argue that entrepreneurial activity is “about creating and resolving differences in knowledge and resources across time and space”. There has been, in fact, a host of research aimed at identifying the role played by resources, capabilities and knowledge in explaining the success of new ventures’ internationalization. This paper will join that stream of research, adopting a process perspective, and taking the dynamic capabilities perspective (Teece, 2009;2007;Teece, Pisano, & Shuen, 1997) as the key theoretical foundation.

The dynamic capabilities perspective (Teece et al., 1997) argues that sustained competitive advantage is the result of the combination of positions achieved by the firm, paths along time and organizational processes. When addressed to new ventures, instead of established firms, organizational processes become the dominant element. Paths are also relevant, although it is often very difficult to disentangle the paths taken by the entrepreneurial team from those of the firm itself (Simões, 2012). More recently, David Teece went a step further, underlining the process of capability upgrading and renewal through sensing and seizing opportunities, and combining, recombining and reconfiguring assets (Teece, 2009;2007). Based on Oviatt and McDougall (1994), Al-Aali & Teece (2014) apply the dynamic capabilities framework to international activities, including IE, by stressing the role of sensing and seizing, while firm transformation is envisaged as contingent upon environmental requirements.

The use of the dynamic capabilities framework in studying INV is relatively limited (Gassmann & Keupp, 2007;Jantunen, Puumalainen, Saarenketo, & Kyläheiko, 2005;Mort & Weerawardena, 2006;Simões, 2012;Weerawardena, Mort, Liesch, & Knight, 2007;Zettinig &

Benson-Rea, 2008). However, in our view, sensing and seizing international opportunities are at the core of IE (Mainela et al., 2013; Mathews & Zander, 2007). To some extent, the strategic ‘promise’ of resources and capabilities is, according to Teece (2009), transformed into act through the process of sensing and seizing opportunities. Drawing from the dynamic capabilities perspective, it may be argued that the success of INVs’ internationalization is largely due to their capability to transform resources through entrepreneurial alertness. More specifically, entrepreneurial alertness is a key element for sensing and seizing opportunities, mediating the ‘conversion’ of resources into successful international performance.

Entrepreneurial Orientation

Entrepreneurial orientation (EO) is one of the most relevant constructs analyzed in the entrepreneurship field (Keupp & Gassmann, 2009; Rauch, Wiklund, Lumpkin, & Frese, 2009), and particularly in international entrepreneurship research (Hansen, Deitz, Tokman, Marino, & Weaver, 2011; Jantunen et al., 2005). EO reflects the firm’s propensity to develop innovative, proactive, risk- seeking and competition-aggressive behaviors in order to accomplish strategic objectives (Covin & Slevin, 1991; Lumpkin & Dess, 1996). A positive relationship between EO and firm performance has been found in empirical research (v.g. Avlonitis & Salavou, 2007; Jantunen, Nummela, Puumalainen, & Saarenketo, 2008; Lumpkin & Dess, 2001; Wiklund & Shepherd, 2003), though there are exceptions (v.g. Kuivalainen, Sundqvist, Puumalainen, & Cadogan, 2004). In some cases, this relationship is mediated by other factors, such as strategic decisions (Knight, 2000; Knight, 2001; Knight & Cavusgil, 2004) and information technology capabilities (Zhang, Sarker, & Sarker, 2013). Jantunen et al. (2005) linked entrepreneurial orientation to dynamic capabilities, and found a positive relationship between such orientation and subjective measures of firms’ international performance. Zahra and Garvis (2000) also conclude that entrepreneurial activities play a critical role for success in general, and regarding international markets specifically, since entrepreneurial orientation supports opportunity recognition and exploitation within the expansion to foreign markets.

A central issue when analyzing EO as an element of a firm’s drive to achieve sustained competitive advantage (Barney, 1991; Wiklund & Shepherd, 2003) is the identification of new opportunities. From a dynamic capabilities perspective, it may be argued that new ventures exhibiting high entrepreneurial orientation are more likely to explore their resources and capabilities more effectively to identify and exploit business opportunities. To sense and seize new opportunities, the entrepreneur or the entrepreneurial firm must be in a constant state of

alertness (Ardichvili, Cardozo, & Ray, 2003; Ray & Cardozo, 1996). Therefore, it may be expected that firms with higher entrepreneurial orientation will present higher entrepreneurial alertness in order to better identify new opportunities. Therefore, it can be proposed that:

Hypothesis 1 (H1): The higher an INV's entrepreneurial orientation, the higher its level of entrepreneurial alertness.

Foreign Market Knowledge

Former research on INVs' internationalization highlighted the relevance of foreign market knowledge (Autio, Sapienza, & Almeida, 2000; Knight & Cavusgil, 2004; Oviatt & McDougall, 1994; Zhou, 2007). Foreign market knowledge may be defined as "the process of assimilating new knowledge into the organization's knowledge base" (Autio et al., 2000: 911). It is an intangible resource or capability that fosters the competitive advantage of some new ventures in foreign markets (Alavi & Leidner, 2001; Autio et al., 2000; McEvily & Chakravarthy, 2002; Oviatt & McDougall, 2005; Rialp, Rialp, & Knight, 2005).

International experience and exposure to international markets, developed prior to the foundation of the new ventures has been found to be often present among INV's entrepreneurs (Dominginhos, 2007; Kuemmerle, 2002; Madsen & Servais, 1997; McDougall, Covin, Robinson Jr., & Herron, 1994; Reuber & Fischer, 1997), being translated, at least in part, into company capabilities (Simões, 2012; Spence & Crick, 2009).

Prior knowledge or experience was suggested by several authors as an important determinant of opportunity identification (e.g. Evers & O'Gorman, 2011; Shane, 2000; Shepherd & DeTienne, 2005; Venkataraman, 1997). Some persons and organizations are better at identify entrepreneurial opportunities because they frame such opportunities in the context of the information and knowledge they already possess (Shane, 2000; Venkataraman, 1997). Shane (2000) identifies three dimensions of prior knowledge as relevant for the process of entrepreneurial opportunity discovery: prior knowledge about markets; prior knowledge about ways of serving markets; and prior knowledge about customers' problems. Prior knowledge will enhance their alertness for opportunities that are connected with the new related information. This seems to be particularly relevant in the case of arbitrage opportunities (Mainela et al., 2013).

Ardichvili et al. (2003) proposed that the higher the amount of prior knowledge both on an area of special interest for an entrepreneur and on Shane's three dimensions, the higher the alertness. Tang Kacmar and Busenitz (2012) provide empirical evidence of the influence of

prior knowledge, measured by Shane's (2000) dimensions on entrepreneurial alertness. In the same vein, Siegel and Renko (2012) found that market knowledge enhances the future recognition of entrepreneurial opportunities by firms.

Although these research developments do not analyze specifically the international dimension, it is possible to anticipate that when the focus is on the identification of opportunities across international borders, the rationale will be similar. In line with this, Eriksson Johanson, Majkgard and Sharma (1997) suggest that prior organizational experience and knowledge influences the internationalization process through its relationship with search process or alertness. Accordingly, it may be argued that firms with more foreign market knowledge will exhibit higher entrepreneurial alertness, namely in the international markets.

Hypothesis 2 (H2): The higher a firm's foreign market knowledge, the higher its level of entrepreneurial alertness.

Absorptive Capacity

Cohen & Levinthal (1990: 128) defined absorptive capacity as the firm's ability "to recognize the value of new, external information, assimilate it, and apply it to commercial ends". Zahra & George (2002) distinguish between potential absorptive capacity (acquisition and assimilation of knowledge) and realized absorptive capacity (transformation and exploitation). Absorptive capacity is a firm capability essential for company transformation through the sensing and seizing of opportunities. Empirical evidence on the effect of absorptive capacity on INVs' performance is limited. Zahra, Ireland and Hitt (2000) identify a positive relationship between international expansion and performance, which is strengthened by the firm's organizational capability to absorb knowledge from its international activities. A positive relationship was also found by Lichtenthaler (2009) and by Flatten, Greve and Bettel (2011).

From our standpoint, it may be argued that absorptive capacity is an antecedent to entrepreneurial alertness. In fact, the organizational capability to recognize the value of new external knowledge is likely to be translated alertness about new business opportunities. De Clercq, Sapienza, Yavuz & Zhou (2012) argue that there is an implicit tension between absorptive capacity and the learning advantages of newness (Autio et al., 2000), since new firms may acquire knowledge about international business opportunities more easily if they do not need to unlearn routines designed to achieve competitive advantage in domestic markets (Autio et al., 2000). While recognizing that this may happen in some instances, we do not

subscribe to this view in general, since in Cohen & Levinthal's (1990) absorptive capacity has an outward-looking dimension. Therefore, it may be an antecedent of alertness, to the extent that it is a capability that encourages the search for external knowledge to frame business opportunities. Therefore, we will put forward the following hypothesis,

Hypothesis 3 (H3): The higher a firm's absorptive capacity the higher its level of entrepreneurial alertness.

Entrepreneurial Alertness

As mentioned in the introduction, the concept of entrepreneurial alertness is rooted on Kirzner's (1973;1997;1979) ideas. Alertness is central to opportunity identification, which has been envisaged as the most essential and distinctive entrepreneurial behavior (e.g. Ardichvili et al., 2003;Gaglio & Katz, 2001;Stevenson & Jarillo, 1990). Alertness is capability that enables individuals and organizations to identify business opportunities that remain unnoticed to others (Ardichvili et al., 2003;Kirzner, 1997;1979;Ray & Cardozo, 1996;Tang et al., 2012). For McDougall, Shane & Oviatt (1994: 479) alertness enables to perceive opportunities for "profitable resource combinations". This provides a direct link between alertness and firm performance, through opportunity identification and exploitation. Alertness has been compared to a radar that allows the recognition of gaps in the market ignored by others (Kirzner, 1979); which may lead to higher performance.

Unfortunately, empirical research on the relationship between entrepreneurial alertness and firm performance in general, and specifically regarding internationalization, is still limited. Sambasivan, Abdul and Yusop (2009) observed that opportunity recognition skills positively influences performance. More specifically, alertness mediates the relationship between personal skills and venture performance. However, Baum, Locke and Smith (2001) found a fragile relationship between opportunity recognition and venture growth. Using a case study approach, Park (2005) concludes that opportunity recognition and product innovation guide high-tech start-ups to market success. Focusing on the differences between novice entrepreneurs and experienced serial and portfolio entrepreneurs, Westhead, Ucbasaran and Wright (2005) found that portfolio entrepreneurs present higher entrepreneurial alertness, identify a higher number of opportunities, and achieve higher performance than novice entrepreneurs. Drawing from the above theoretical considerations as well as from the prevailing empirical evidence, one may argue that:

Hypothesis 4 (H4): The higher a firm's entrepreneurial alertness, the higher its international performance.

Environmental Moderating Factors

The relationship between entrepreneurial alertness and international performance is, however, likely to be influenced by contextual moderating variables. In fact, extant IE literature highlights the relevance of moderation effects in some of the links defined in our framework. Covin and Slevin (1991) identify a set of moderating factors that may affect the relationship between entrepreneurial characteristics and firm performance. These variables may be classified in three groups: environmental (technological sophistication, dynamism, hostility and industry life cycle), internal (top management values and philosophies, organizational resources and competencies, organizational culture and organizational structure), and strategic variables (mission strategy and business practices and competitive tactics).

IE research has analyzed the influence of industry factors to distinguish international new ventures from domestic ones (McDougall, 1989;McDougall, Oviatt, & Shrader, 2003) as well as to explain superior performance (McDougall, Robinson, & DeNisi, 1992;Robinson & McDougall, 1998) and higher levels of INV survival (Mudambi & Zahra, 2007). Research on knowledge intensive sectors (e.g. Preece, Miles, & Baetz, 1998) or high-tech businesses implicitly assumes the importance of industry characteristics, since these businesses deal more critically with globalization effects (v.g.Autio et al., 2000;Fontes & Coombs, 1997;Jones, 2001;Shrader, 2001;Spence & Crick, 2006;Zahra et al., 2000). There is evidence that technological turbulence of the industry exhibits a positive relationship to firm performance (Su, Xie, Wang, & Li, 2011).

While some authors still argue that the body of evidence regarding the impact and the role of industry structure factors on new ventures internationalization process is still modest (Fernhaber, McDougall, & Oviatt, 2007;Zahra & George, 2002), there is evidence that industry variables moderate several relationships in the IE process. Lumpkin and Dess (2001) found that the stage on industry life cycle moderates the relationship between proactiveness (one of the dimensions of entrepreneurial orientation) and firm performance. In a meta-analysis on the relationship between entrepreneurial orientation and performance, Rauch, Wiklund, Lumpkin and Frese (2009) noticed that technological intensity of the industry could also play a moderating role between these two variables. Home industry competition was also found to moderate the link between firm-specific advantages (specifically technological

capabilities) and international venturing (Yiu, Lau, & Bruton, 2007). Paladino (2008) found that technological turbulence moderates the relationship between resource and market orientation of organizational learning and performance.

To sum up, there is ground to argue that environmental factors, such as competitive intensity and technological turbulence, play a moderating role on the relationship between entrepreneurial alertness and international performance. More specifically, it is hypothesized that higher levels of competitive intensity or technological turbulence are likely to strengthen the link between alertness and performance. When environment conditions are harsher, alertness becomes more important to ensure the identification of distinctive business opportunities enabling higher levels of performance. Therefore, it is proposed that:

Hypothesis 5 (H5): The relationship between a firm's entrepreneurial alertness and its international performance is stronger when competitive intensity of the industry is high than when it is low.

Hypothesis 6 (H6): The relationship between a firm's entrepreneurial alertness and its international performance is stronger when technological turbulence of the industry is high than when it is low.

Method

Sample and Data Collection

Data were collected through an online structured questionnaire, using the key-informant technique. The initial population consisted of a multi-industry set of Portuguese new ventures founded between 2000 and 2009, which remained active in 2009, employed more than 5 people, and exported at least 10% of turnover in 2009.

The firms were drawn from *eInforma(D&B)* database. The firms were contacted by telephone in order to explain the purpose of the study, identify the key-respondent, and get a direct e-mail to send the invitation. A total of 1993 firms were found to be eligible. The questionnaire was pretested with a sample of a dozen firms. A link for the survey questionnaire was then emailed to eligible firms. Three follow-up e-mails were sent to the firms which did not respond within three, five and six weeks. A total of 416 usable responses were received, which corresponds to a 20.9% response rate. This is in line with or even higher than the results of other studies in this field (v.g. Knight & Cavusgil, 2004; McDougall, 1989; Sapienza, De Clercq, & Sandberg, 2005).

Measures

All the constructs included in the model are measured using multi-item scales, using a 7-point Likert scale, usually ranging from “1=strongly disagree” to “7=strongly agree”. Whenever possible, standard and validated instruments from the literature are used or adapted. For all measures included in the model the unit of analysis is the firm. Details of the measurement items and their validity assessment are presented in the Appendix.

The entrepreneurial alertness construct was adapted from Tang, Kacmar and Busenitz (2012), representing an individual’s ability to recognize opportunities that are ignored by others. Since our purpose was to capture organizational, and not individual, alertness, several adjustments to the original scale were introduced. The original scale had a total of 13 items, organized in three dimensions: i) Scanning and Search; ii) Association and Connection; and iii) Evaluation and Judgment. As a result of the pre-test further changes were introduced, leading to a final scale with 11 items.

The entrepreneurial orientation construct traditionally encompasses three dimensions (Covin & Slevin, 1991; Miller, 1983): innovativeness, risk taking, and proactiveness. In this research, the construct of entrepreneurial orientation is measured through a 11-item scale used by Lumpkin and Dess (2001), which was previously developed and tested for reliability by several authors (v.g. Covin & Covin, 1990; Covin & Slevin, 1989; Miller, 1983). Following also Lumpkin & Dess (2001), the items were clustered in four dimensions: proactiveness, innovativeness, risk taking, and competitive aggressiveness.

Absorptive capacity was measured using the 14-item scale developed and validated by Flatten, Engelen, Zahra, & Brettel (2011). These items were aggregated into four dimensions related to acquisition, assimilation, transformation and exploitation of knowledge.

Based on the construct developed by Eriksson et al. (1997), foreign market knowledge encompassed three dimensions: foreign institutional knowledge, foreign business knowledge, and internationalization knowledge. These were measured by 11 items adapted from Zhou (2007).

A subjective measure of international performance, adapted from Jantunen et al. (2008), was used. It assesses respondents’ satisfaction with six dimensions of their companies’ international activities during the preceding 3 years.

Both moderating variables were measured through scales adapted from Jaworski and Kohli (1993). While competitive intensity was measured by a 6-item scale, a 4-item scale was used for technological turbulence.

Since the measures of entrepreneurial alertness, entrepreneurial orientation, foreign market knowledge and absorptive capacity were of second order, their dimensions were averaged in order to construct composite measures for each of those dimensions, after guaranteeing the uni-dimensionality, reliability and validity of the measures.

In addition, four control variables were considered: firm size, industry, international experience, and degree of internationalization. Firm size is measured by the natural logarithm of the number of employees. For industry, data were obtained from the original D&B database: service firms (including industries of services for families and for businesses, construction and commerce) were coded '1', and firms from other industries were coded '0'. In the vein of earlier research (v.g. Mudambi & Zahra, 2007; Sapienza et al., 2005), international experience is operationalized by counting the number of years between the year of first internationalization and 2011 (questionnaire launching year). Firm's degree of internationalization is operationalized as the firm's exports to turnover share.

Analysis and Results

Measurement Assessment Procedures

The two-stage approach recommended by Anderson and Gerbing (1988) was followed. Before including latent variables in the structural model, they need to be evaluated in measurement models (Anderson & Gerbing, 1988; Fornell & Larcker, 1981; Hair, Black, Babin, & Anderson, 2009). A confirmatory factor analyses (CFA), using maximum likelihood estimate, was carried out to assess the unidimensionality, validity and reliability of each latent variable (Bagozzi & Yi, 2012). For this procedure LISREL 8.80 software (Jöreskog & Sörbom, 1996) was used. Scales were purified through an interactive process.

With two exceptions, all the items included in the constructs exhibit loadings above the 0.70 cutoff (Bagozzi & Yi, 1988; Bagozzi & Yi, 2012), which provides evidence of unidimensionality and convergent validity (Hair et al., 2009). All the constructs exhibit good Cronbach's alphas (α) and composite reliabilities (ρ_c) levels: entrepreneurial orientation ($\alpha=0.84/\rho_c=0.77$), foreign market knowledge ($\alpha=0.79/\rho_c=0.82$), absorptive capacity ($\alpha=0.92/\rho_c=0.92$), entrepreneurial alertness ($\alpha=0.84/\rho_c=0.85$), international performance ($\alpha=0.88/\rho_c=0.89$), competitive intensity ($\alpha=0.83/\rho_c=0.89$) and technological turbulence ($\alpha=0.88/\rho_c=0.89$).

c0.88). Additionally, all the pairs of constructs pass Fornell and Larcker's (1981) tests of discriminant validity, since all the measures present values for average variance extracted (AVE or α) above the 0.50 cutoff and the square root of AVE from each construct is higher than the values of correlations estimate (r^2) between the construct and the other constructs included in the model (see Table 1) [See Appendix].

The overall measurement model shows a good fit. The chi-square test is significant ($\chi^2(357)=730,64$, $p=0.000$), and the chi-square/degree of freedom ratio is below 3.0 ($\chi^2/df=2.05$), indicating a good fit (Iacobucci, 2010;Kline, 2005). In addition, all the other indices show good fit, namely: goodness of fit index (GFI) = 0.90, normed fit index (NFI) = 0.96, non-normed fit index (NNFI) = 0.97, comparative fit index (CFI) = 0.98, incremental fit index (IFI) = 0.98, relative fit index (RFI) = 0.94, standardized root mean square residual (SRMR) = 0.044, and root mean square error of approximation (RMSEA) = 0.05.

Data Analysis

Data were analyzed in two stages. First, descriptive statistics and inter-measure correlations were computed to examine the characteristics of the sample (Table 1). In a second step, in order to test the research hypotheses, structural equation modeling, using LISREL software, were carried out.

In order to test for nonresponse bias, the responses of early and late respondents (first 75% / last 25% of returned questionnaires) were compared for all the constructs included in the theoretical model and for several firm characteristics, namely number of employees, industry, age of the company, degree of internationalization, and age when internationalization started (Armstrong & Overton, 1977). Additionally, respondents and non-respondents were compared using secondary data such as number of employees, industry, age of the company and degree of internationalization. In both procedures, no significant differences were found between the two groups. Therefore, non-response bias is not a problem (Armstrong & Overton, 1977).

When developing the questionnaire, several procedures were followed in order to prevent common method bias (Podsakoff, MacKenzie, Jeong-Yeon, & Podsakoff, 2003;Podsakoff & Organ, 1986). Additionally, to control for the common method biases, the Harman's one-factor test was performed, including all the study variables into an exploratory factor analysis. This procedure resulted in 4 factors with eigenvalues above 1 (accounting for a total variance explained of 62,65%), the first factor accounting for 31.4% of the total variance only. This

indicates that the relationships among the variables were not caused by common-method variance (Podsakoff & Organ, 1986).

To assess informants' quality, we followed Atuahene-Gima (2005). Respondents were asked to indicate on a seven-point scale (1 = "very limited"; 7 = "very substantial") their degree of knowledge about the issues addressed in the questionnaire. The mean for the degree of knowledge was 5.56 (standard deviation = 1.04). This result indicates that the informants were considered to have enough knowledge about the issues under study, namely firm and industry characteristics, firm's capabilities, and international activities.

Table 1. Descriptive Statistics and Correlation Matrix

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-----------------------------------|----------|---------|--------|--------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 1. Firm Size | - | | | | | | | | | | |
| 2. Firm Industry | -0.132** | - | | | | | | | | | |
| 3. International Experience | 0.158** | -0.027 | - | | | | | | | | |
| 4. Degree of Internationalization | 0.144** | -0.036 | 0.091 | - | | | | | | | |
| 5. Entrepreneurial Orientation | -0.086 | 0.195** | 0.085 | -0.005 | 0.755 | | | | | | |
| 6. Foreign Market Knowledge | -0.019 | 0.124* | 0.005 | 0.108* | 0.517* | 0.877 | | | | | |
| 7. Absorptive Capacity | -0.082 | 0.205** | 0.012 | -0.062 | 0.605** | 0.485** | 0.812 | | | | |
| 8. Entrepreneurial Alertness | -0.004 | 0.162** | 0.034 | -0.066 | 0.607** | 0.565** | 0.659** | 0.806 | | | |
| 9. International Performance | -0.004 | 0.068 | 0.017 | 0.099* | 0.410** | 0.467** | 0.447** | 0.483** | 0.812 | | |
| 10. Competitive Intensity | -0.60 | -0.019 | -0.079 | -0.065 | 0.147** | 0.153** | 0.106* | 0.159** | 0.009 | 0.812 | |
| 11. Technological Turbulence | -0.70 | 0.142** | 0.054 | -0.091 | 0.418** | 0.211** | 0.433** | 0.397** | 0.210** | 0.120* | 0.848 |
| Mean | 2.732 | 0.546 | 5.125 | 44.44 | 4.854 | 4.841 | 5.292 | 5.204 | 4.949 | 5.532 | 4.762 |
| Standard Deviation | 0.834 | 0.499 | 2.566 | 29.91 | 1.042 | 1.111 | 0.989 | 0.899 | 1.068 | 1.138 | 1.362 |

Note: The boldface scores on the diagonal are the square root of AVE.

* $p < 0.05$; ** $p < 0.01$ ($n = 416$)

In order to check for possible collinearity problems among any variables, variance inflation factors (VIF) were inspected. The VIF ranged from 1.043 to 1.759 across all the regression models, well below the cutoff of 10, indicating that multicollinearity was not a serious problem in this model either (Hair et al., 2009).

Findings

The standardized parameter estimates and t -values for the hypothesized paths and the fit indices of the base and final models are presented in Table 2. Although both structural models present good fit, the final model is slightly superior: the chi-square/degrees of freedom ratio is above 2.0 ($\chi^2/df = 2.08$), GFI=0.89, NFI=0.95, NNFI=0.97, CFI=0.98, IFI=0.98, RFI=0.94, SRMR=0.047, and RMSEA=0.051.

Overall, given the number of potential factors that could affect international performance, the model explains a considerable amount of the observed variance in international performance (41%). This result is even better for entrepreneurial alertness, in which the model explains about 76% of the observed variance.

The results confirm that entrepreneurial alertness mediates the effects of INV's knowledge and capabilities on international performance. Concerning hypotheses testing, support was found for H1, which posits that firm's entrepreneurial orientation is positively associated to entrepreneurial alertness ($\beta=0.26$, $p<0.001$). Similarly, H2 is supported, the relationship between foreign market knowledge and entrepreneurial alertness being positive and significant ($\beta=0.21$, $p<0.001$). The positive relationship between absorptive capacity and entrepreneurial alertness, (H3), was also supported ($\beta=0.52$, $p<0.001$).

Table 2. Hypotheses testing results

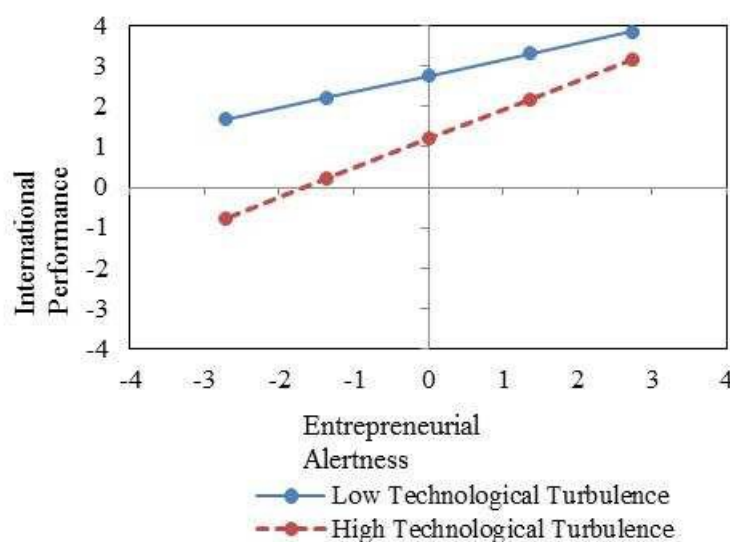
| | Hyp. | Base Model Standardized Estimate (t-value) | R ² | Final Model Standardized Estimate (t-value) | R ² | Conclusion |
|---|------|---|----------------|--|----------------|---------------|
| Entrepreneurial Orientation → Entrepreneurial Alertness | H1 | 0.25 (3.90)*** | | 0.26 (4.12)*** | | Supported |
| Foreign Market Knowledge → Entrepreneurial Alertness | H2 | 0.21 (4.60)*** | | 0.21 (4.44)*** | | Supported |
| Absorptive Capacity → Entrepreneurial Alertness | H3 | 0.52 (8.29)*** | 0.75 | 0.52 (8.22)*** | 0.76 | Supported |
| Entrepreneurial Alertness → International Performance | H4 | 0.57 (10.67)** | | 0.60 (10.10) | | Supported |
| Competitive Intensity → International Performance | | | | -0.046 (-0.94) | | |
| Technological Turbulence → International Performance | | | | -0.005 (-0.088) | | |
| Entrepreneurial Alertness x Competitive Intensity → International Performance | H5 | | | 0.026 (0.56) | | Not Supported |
| Entrepreneurial Alertness x Technological Turbulence → International Performance | H6 | | 0.38 | 0.11 (2.92)** | 0.41 | Supported |
| Control Variables | | | | | | |
| Firm size → International Performance | - | -0.063 (-0.99) | | -0.08 (-1.27) | | |
| Firm industry → International Performance | - | -0.085 (-0.72) | | -0.092 (-0.77) | | |
| International experience → International Performance | - | -0.009 (-0.50) | | -0.013 (-0.73) | | |
| Degree Internationalizat.. → International Performance | - | 1.28 (3.51)*** | | 1.35 (3.62)*** | | |
| Overall Structural Model Fit: | | | | | | |
| Base Model: $\chi^2(181)=429.69$, $p=0.000$; $\chi^2/df=2.37$; GFI=0.91; NFI=0.97; NNFI=0.97; CFI=0.98; IFI=0.98; RFI=0.96; SRMR=0.048; RMSEA=0.058 | | | | | | |
| Final Model: $\chi^2(368)=766.80$, $p=0.000$; $\chi^2/df=2.08$; GFI=0.89; NFI=0.95; NNFI=0.97; CFI=0.98; IFI=0.98; RFI=0.94; SRMR=0.047; RMSEA=0.051 | | | | | | |

Note: *** $p<0.001$; ** $p<0.01$; * $p<0.05$

As hypothesized, INVs' entrepreneurial alertness also exhibited a positive and significant relationship with their international performance, supporting H4 ($\beta=0.60$, $p<0.001$).

No support was found for H5, which suggested a moderating effect of competitive intensity on the relationship between entrepreneurial alertness and international performance ($\beta=0.026$, $p=0.56$). In contrast, the moderating effect of technological turbulence on the relationship between entrepreneurial alertness and international performance was supported ($\beta=0.11$, $p<0.01$), in accordance with H6. The plot in Figure 2 shows that high technological turbulence strengthens the effect of entrepreneurial alertness on international performance. Technological turbulence is a pure moderator, since it is directly unrelated to international performance ($\beta=-0.005$, $p=-0.088$).

Figure 2. Moderation effect of technological turbulence



As to the control variables, the degree of internationalization was the only to show a significant positive effect on INVs' international performance. This is in line with some IE literature (v.g. Lu & Beamish, 2006; McDougall & Oviatt, 1996; Zahra et al., 2000).

Discussion

The thrust of this paper has been to develop and test a process model aimed at uncovering the factors behind INVs' international performance. More specifically, adopting a dynamic capabilities perspective, we investigated the role of entrepreneurial alertness in mediating the conversion of firm capabilities (entrepreneurial orientation, foreign market knowledge and absorptive capacity) into international performance.

The basic hypotheses have been supported. The model highlights the role played by entrepreneurial alertness as a focusing device, enabling the transformation of capabilities

regarding the entrepreneurial drive, knowledge about foreign markets and the absorption of external knowledge into INV's international success. The research confirms that entrepreneurial alertness works as a conversion factor, insofar it focuses capabilities towards the identification and exploitation of specific international business opportunities.

This finding is, in our view, in line with the dynamic capabilities perspective. In fact, entrepreneurial alertness is the focusing device that triggers the process of sensing and seizing opportunities pointed out by Teece (2009). Alertness enables firms to identify and make sense of changes, discrepancies, differences and trends to discover or create (Mathews & Zander, 2007) new business opportunities.

Capturing the unnoticed provides firms with distinctive value proposals that create specific international niches, leading to increased performance. Alertness is dynamic insofar as it is not 'depleted' in a single application. Rather, if espoused by the whole organization (which seems more likely in young, organic new ventures than in large, established companies), earlier initiatives may feed the development of a distinctive capability to identify and seize opportunities. Alertness become a key element of the process of "astute orchestration of tangible and intangible assets [that] lies at the heart of the rationale" for international entrepreneurship (Al-Aali & Teece, 2014: 103).

As pointed out above, entrepreneurial alertness is neither a stand-alone nor a broad range capability. It is grounded on other firm capabilities which provide the basis for developing a distinctive kind of opportunity sensing and seizing. This research confirms the existence of first order capabilities that support entrepreneurial alertness and opportunity search. First, there is entrepreneurial orientation. Proactiveness, innovativeness, risk taking and competitive aggressiveness provide an organizational climate which entices curiosity and opportunity 'sniffing'. Second, the existence of foreign market knowledge promotes the interest in, and the exposure to, international business. It provides a direction to alertness and opportunity search, as Kuemmerle (2002) has pointed out. The third supporting factor is absorptive capacity. This provides the anchor for the firm to actively search for external knowledge, encouraging an outward-looking approach. Absorptive capacity impinges upon all three features of entrepreneurial alertness: scanning and search; association and connection; and evaluation and judgment.

These foundational elements simultaneously constrain entrepreneurial alertness. The focusing device role of alertness is rooted on the first order capabilities mentioned above. Kirzner's

radar does not work *tous azimuts*, being rather orientated by the set of knowledge, experience, networking and concerns held by the new venture and its managerial team. Opportunity sensing is addressed to a specific slice of the real world, aligned with the above set. This is convergent with most literature on international entrepreneurship (v.g. Jones, Coviello, & Tang, 2011; Mainela et al., 2013). Exposure to social and economic encounters sometimes enables unexpected connections and knowledge linkages, leading to the identification of distinctive opportunities. A key role of alertness is exactly to make business sense from those linkages.

Another interesting feature of this research concerns the role of the factors moderating the relationship between entrepreneurial alertness and performance. While bearing the hypothesized sign, competitive intensity did not achieve significance, while technological turbulence was significant at one per cent.

A possible explanation for the difference might be that firms may more easily escape from the effects of competitive intensity, by choosing the market niches (segments and geographies) in which to do business, than from technological turbulence, which is more pervasive.

As shown in Figure 2, technological turbulence strengthens the effect of entrepreneurial alertness on international performance. This suggests that alertness is even more important in businesses exposed to fast technological change. In such contexts, product life cycles tend to be short, thereby entailing a stronger need for identifying new market opportunities if the firm is to thrive. Since innovation is a probabilistic phenomenon, the capability to continuously sense and seize opportunities becomes a distinctive competitive factor. Furthermore, the dynamic nature of alertness as a focusing device enhances the firms' odds to survive, adapt to a changing technological environment, and obtain higher performance. Therefore, the important role of the capacity to perceive weak signals, often unnoticed by others, to identify business opportunities is sharpened in contexts characterized by high pace of technological change (Mainela et al., 2013).

Conclusions

This research stemmed from the authors perception that the explanation of INV performance demands a process view, escaping from the standard approach, in empirical papers, of establishing a direct relationship between individual- and company-level antecedents, and performance. In line with Aspelund, Madsen & Moen (2007) and Keupp & Gassmann (2009) arguments, a three-tier model was developed to investigate the process leading from

antecedents to outcomes. Based on the dynamic capabilities framework, entrepreneurial alertness was envisaged as the mediating element between firms' capabilities and their international performance.

Empirical research confirmed the hypothesized model. The three firms' capabilities (entrepreneurial orientation, foreign market knowledge, and absorptive capacity) significantly influence the level of entrepreneurial alertness, which impacts on company international performance. The research shows that the capability to sense and seize specific international business opportunities is a key element to foster INVs' higher performance. Another interesting finding was that the effect of alertness on international performance was strengthened in conditions of technological turbulence. These findings provide, in our view, a relevant contribution to enhance our understanding about the process how INVs can achieve higher performance. They have also managerial implications. We would highlight three. First, there is a need to develop capabilities regarding the entrepreneurial drive, the knowledge about foreign markets, and the in-house competences for adopting an outward looking with regard to the absorption of external knowledge. Second, INVs should appropriately staff the organization and instill a culture of alertness so as to foster business identification and exploitation. Third, it is important to bear in mind that the development of alertness capabilities and culture is especially needed in activities characterized by high levels of technological turbulence.

The research has several limitations. First, it is restricted to a single country (Portugal). Second, although we have been very careful in the process, the adaptation to firms of scales originally intended to individuals has not been validated. Third, the model only explains 41% of the variance of INVs' international performance. This shows that the process is complex and involves other factors which, for search of parsimony, have not been included in the model.

This work is intended as a contribution towards a more integrated view of the IE process. There are many further pieces of research that might improve such a view. One is the integration of strategic features in the model. The link between alertness and performance is mediated by the strategic approach followed by firms to take profit from the business opportunities identified. This is much in line with the recent plea by Al-Aali & Teece (2014) to combine dynamic capabilities with strategy as foundations for firms' long-run success.

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APPENDIX: MEASUREMENT ITEMS AND VALIDITY ASSESSMENT

| CONSTRUCT / DIMENSION / indicator | Standardized Factor Loading |
|--|-----------------------------------|
| ENTREPRENEURIAL ORIENTATION | |
| Please indicate how much do you agree or disagree with the following statements: (1="Strongly disagree"; 7="Strongly agree") $\alpha=0.84/\rho_c=0.77/\rho_v=0.57$ | |
| <i>INNOVATIVENESS</i> $\alpha=0.86/\rho_c=0.87/\rho_v=0.69$ | |
| In dealing with competitors, my firm typically initiates actions which competitors then respond to. | 0.75 |
| In dealing with competitors, my firm is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc. | 0.88 |
| In general, the top managers of my firm have a strong tendency to be ahead of others in introducing novel ideas or products. | 0.84 |
| <i>PROACTIVENESS</i> $\alpha=0.85/\rho_c=0.86/\rho_v=0.67$ | |
| In general, the top managers of my firm favor a strong emphasis on R&D, technological leadership, and innovations.* | |
| Very many new lines of products/services marketed in the past 5 years. | 0.93 |
| Changes in product or service lines have usually been quite dramatic. | 0.84 |
| <i>RISK TAKING</i> $\alpha=0.82/\rho_c=0.83/\rho_v=0.61$ | |
| A strong proclivity for high risk projects (with chances of very high returns). | 0.75 |
| Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives. | 0.76 |
| When confronted with decisions involving uncertainty, my firm typically adopts a bold posture in order to maximize the probability of exploiting opportunities. | 0.83 |
| <i>COMPETITIVE AGGRESSIVENESS</i> $\alpha=0.88/\rho_c=0.88/\rho_v=0.78$ | |
| My firm typically adopts a very competitive "undo-the-competitors" posture. | 0.90 |
| My firm is very aggressive and intensely competitive. | 0.88 |
| FOREIGN MARKET KNOWLEDGE | |
| Compared to your major competitors, how is your own firm rating in the following aspects: (1="Much worse than main competitors"; 7="Much better than main competitors") $\alpha=0.91/\rho_c=0.91/\rho_v=0.77$ | |
| <i>FOREIGN INSTITUTIONAL KNOWLEDGE</i> $\alpha=0.85/\rho_c=0.87/\rho_v=0.69$ | |
| Our top managers' knowledge about foreign language and norms. | 0.79 |
| Our top managers' knowledge about foreign business laws and regulations. | 0.91 |
| Our top managers' knowledge about host government agencies. | 0.78 |
| <i>FOREIGN BUSINESS KNOWLEDGE</i> $\alpha=0.87/\rho_c=0.88/\rho_v=0.72$ | |
| Our top managers' knowledge about foreign competitors. | 0.84 |
| Our top managers' knowledge about the needs of foreign clients/customers. | 0.83 |
| Our top managers' knowledge about foreign distribution channels. | 0.87 |
| Our top managers' knowledge about effective marketing in foreign markets.* | |
| <i>INTERNATIONALIZATION KNOWLEDGE</i> $\alpha=0.93/\rho_c=0.93/\rho_v=0.81$ | |
| Our top managers' international business experience. | 0.93 |
| Our top managers' ability in determining foreign business opportunities. | 0.88 |
| Our top managers' experience in dealing with foreign business contacts.* | |
| Our top managers' capability for managing international operations. | 0.89 |
| ABSORPTIVE CAPACITY | |
| Please indicate how much do you agree or disagree with the following statements: (1="Strongly disagree"; 7="Strongly agree") $\alpha=0.90/\rho_c=0.88/\rho_v=0.66$ | |
| <i>ACQUISITION</i> $\alpha=0.86/\rho_c=0.90/\rho_v=0.74$ | |
| The search for relevant information concerning our industry is every-day business in our company. | 0.83 |
| Our management motivates the employees to use information sources within our industry. | 0.94 |
| Our management expects that the employees deal with information beyond our industry. | 0.81 |
| <i>ASSIMILATION</i> $\alpha=0.83/\rho_c=0.86/\rho_v=0.76$ | |
| In our company ideas and concepts are communicated cross-departmental.* | |
| Our management emphasizes cross-departmental support to solve problems.* | |
| In our company there is a quick information flow, e.g., if a business unit obtains important information it communicates this information promptly to all other business units or departments. | 0.83 |
| Our management demands periodical cross-departmental meetings to interchange new developments, problems, and achievements. | 0.91 |
| <i>TRANSFORMATION</i> $\alpha=0.95/\rho_c=0.97/\rho_v=0.91$ | |
| Our employees have the ability to structure and to use collected knowledge.* | |
| Our employees are used to absorb new knowledge as well as to prepare it for further purposes and to make it available. | 0.94 |
| Our employees successfully link existing knowledge with new insights. | 0.98 |
| Our employees are able to apply new knowledge in their practical work. | 0.94 |

| | |
|--|------|
| EXPLOITATION $\alpha=0.87/p_c=0.90/p_v=0.75$ | |
| Our management supports the development of prototypes. | 0.81 |
| Our company regularly reconsiders technologies and adapts them accordant to new knowledge. | 0.85 |
| Our company has the ability to work more effective by adopting new technologies. | 0.92 |
| ENTREPRENEURIAL ALERTNESS | |
| Please indicate how much do you agree or disagree with the following statements: (1="Strongly disagree"; 7="Strongly agree") $\alpha = 0.84$, $p_c=0.85$, $p_v=0.65$ | |
| SCANNING AND SEARCH $\alpha=0.89/p_c=0.89/p_v=0.68$ | |
| My company has frequent interactions with other entities to acquire new information. | 0.73 |
| Our management team looks systematically new business ideas.* | |
| Our management team is always actively looking for new information. | 0.90 |
| Our management team search regularly new information through the reading of economic and business publications. | 0.82 |
| Our management team search regularly new information through the Internet. | 0.84 |
| ASSOCIATION AND CONNECTION $\alpha=0.79/p_c=0.66/p_v=0.56$ | |
| Our management team sees links between seemingly unrelated pieces of information. | 0.88 |
| Is usual our management team relate day-to-day private situations with the business decisions. | 0.73 |
| Management team implements practices or solutions from other companies in our own business decisions. | 0.61 |
| EVALUATION AND JUDGMENT $\alpha=0.79/p_c=0.86/p_v=0.76$ | |
| Our management team can distinguish between profitable opportunities and not-so-profitable opportunities. | 0.87 |
| When facing multiple opportunities, management team is able to select the good ones. | 0.87 |
| The evaluation of new business opportunities is something ordinary for the company.* | |
| INTERNATIONAL PERFORMANCE | |
| Indicate your level of satisfaction with your international activities during the previous 3 years on the following dimension (1="Very unsatisfied"; 7="Very satisfied") $\alpha=0.88/p_c=0.89/p_v=0.66$ | |
| Sales Volume. | 0.89 |
| Market share. | 0.85 |
| Profitability. | 0.85 |
| Market entry. | 0.64 |
| Image development.* | |
| Knowledge development.* | |
| COMPETITIVE INTENSITY | |
| Please indicate how much do you agree or disagree with the following statements, related with your industry: (1="Strongly disagree"; 7="Strongly agree") $\alpha=0.83/p_c=0.89/p_v=0.66$ | |
| Competition in our industry is cutthroat. | 0.76 |
| There are many "promotion wars" in our industry. | 0.87 |
| Anything that one competitor can offer, others can match readily.* | |
| Price competition is a hallmark of our industry. | 0.68 |
| One hears of a new competitive move almost every day. | 0.71 |
| Our competitors are relatively weak.* | |
| TECHNOLOGICAL TURBULENCE | |
| Please indicate how much do you agree or disagree with the following statements, related with your industry: (1="Strongly disagree"; 7="Strongly agree") $\alpha = 0.88/p_c=0.88/p_v=0.72$ | |
| The technology in our industry is changing rapidly. | 0.72 |
| Technological changes provide big opportunities in our industry. | 0.89 |
| A large number of new product ideas have been made possible through technological breakthroughs in our industry. | 0.92 |
| Technological developments in our industry are rather minor.* | |
| Overall Measurement Model Fit: $\chi^2(357)=730.64$, $p=0.000$; $\chi^2/df=2.05$; GFI=0.90; NFI=0.96; NNFI=0.97; CFI=0.98; IFI=0.98; RFI=0.94; SRMR=0.044; RMSEA=0.050 | |
| Notes: * - This item was deleted during the scale purification process; α = Cronbach's alpha; p_c = composite reliability; p_v = AVE = average variance extracted | |