Ao meu filho, André

RESUMO

O contexto internacional é um ambiente dinâmico cuja complexidade dificulta às empresas garantir o desempenho actual sem perturbar o futuro. Este estudo introduziu as capacidades dinâmicas como forma viável de balancear os desempenhos actual e futuro. Além de incluir um domínio importante às capacidades dinâmicas (mercado); e considerar o contexto relevante mas pouco estudado da exportação, o estudo tem três contribuições: (1) estende trabalho prévio, estudando o impacto da orientação para o mercado exportador nas capacidades dinâmicas de desenvolvimento do produto e de mercado; (2) é pioneiro a desenlear os efeitos destas capacidades nos desempenhos actual e futuro, e (3) testa coordenação interfuncional e turbulência ambiental como moderadoras da ligação capacidades dinâmicas–desempenho. Aplicou-se um questionário online a fabricantes exportadores Portugueses. Os resultados sugerem que as dimensões da orientação para o mercado exportador – cliente e concorrência – não se relacionam igualmente com as capacidades dinâmicas. A orientação para o cliente antecede as exploitativas e as explorativas, enquanto a orientação para o concorrente apenas promove as exploitativas. Os efeitos das capacidades dinâmicas no desempenho actual e futuro são distintos. As exploitativas relacionam-se positivamente com o desempenho actual. As explorativas de desenvolvimento do produto relacionam-se positivamente com o desempenho actual e as de mercado de forma oposta. As exploitativas de mercado e as explorativas de desenvolvimento do produto relacionam-se positivamente com o desempenho futuro. Quanto aos moderadores, confirma-se a moderação da coordenação interfuncional na ligação capacidades explorativas–desempenho. As dimensões da turbulência ambiental – tecnologia e mercado – moderam de forma oposta a ligação capacidades dinâmicas–desempenho.

Palavras-chave: Orientação de mercado, Capacidades dinâmicas, Exportação, Desempenho
Classificações: M31 – Marketing; M10 - General

ABSTRACT

The international context is a dynamic, complex environment in which it is hard for firms to secure current performance without hindering future performance. This study developed specific dynamic capabilities as a feasible way to balance current and future export performance. Besides including an important domain to dynamic capabilities (market) and considering the relevant but understudied context of exporting, the study's contribution is threefold: (1) it extends previous work and studies the impact of export market orientation on product development and market-related dynamic capabilities, (2) it is the first to disentangle the effects of dynamic capabilities on current and future performance, and (3) it tests interfunctional coordination and environmental turbulence as moderators of the dynamic capabilities–performance link. An online survey was administered to Portuguese export manufacturers. The findings suggest that export market orientation dimensions – customer and competitor – are not similarly related to dynamic capabilities. Export customer orientation is an antecedent of both exploitative and explorative capabilities, whereas export competitor orientation promotes only exploitative capabilities. The effects of dynamic capabilities on current and future performance are distinct. Exploitative capabilities are positively related to current performance. Product development explorative capabilities are positively related to current performance, whereas market-related explorative capabilities have the opposite effect. Market-related exploitative capabilities and product development explorative capabilities relate positively to future performance. With respect to moderating effects, findings confirm the role of interfunctional coordination as moderator of the explorative capabilities–performance link. Environmental turbulence dimensions – technological and market – moderate the dynamic capabilities–performance link, but do so divergently.

Keywords: Market orientation, Dynamic capabilities, Exporting, Performance
Classifications: M31 – Marketing; M10 – General

EXECUTIVE SUMMARY

This research investigates three main issues. The first issue is the influence of export market orientation on dynamic capabilities. An orientation toward export market knowledge may help firms develop adequate capabilities to adapt to evolving markets. The second issue is the impact of dynamic capabilities on an exporting firm's performance. The international context is a complex and dynamic environment, and dynamic capabilities may help firms better cope with that environment. The third issue is the examination of specific conditions that may facilitate or inhibit the effects of dynamic capabilities on firm export performance.

The study adds substantial contribution to existent literature. In general, along with the analysis of product development capabilities, the study adds an important domain to dynamic capabilities (market), and it examines the role of dynamic capabilities in the relevant but understudied context of exporting. More concretely, (1) the study extends previous work and studies the impact of export market orientation on product development and market-related dynamic capabilities; (2) it is the first to disentangle the effects of dynamic capabilities on current and future performance; (3) and it pioneers testing of internal and external factors – interfunctional coordination and environmental turbulence – as moderating variables of the dynamic capabilities–performance link.

The research was implemented using method triangulation, with exploratory in-depth interviews and a quantitative online self-administered survey of Portuguese export manufacturers. The research model was tested with 261 valid surveys and structural equation modelling.

The findings suggest that export market orientation dimensions – customer and competitor – are not similarly related to dynamic capabilities. Specifically, export customer orientation is an antecedent of both exploitative and explorative capabilities, whereas export competitor orientation promotes only exploitative capabilities. The effects of dynamic capabilities on current and future performance are distinct. Exploitative capabilities are positively related to current performance. With respect to explorative capabilities, product development capabilities are positively related to current performance, whereas market-related capabilities have the opposite effect. Market-related exploitative capabilities and product development explorative capabilities have a positive relationship to future performance. With respect to

moderating effects, findings confirm the role of interfunctional coordination as a moderator of the link between explorative capabilities and performance. Environmental turbulence dimensions – technological and market – moderate the dynamic capabilities–performance link, but do so divergently. Technological turbulence enhances the importance of explorative capabilities and incentivises firms to be more innovative and to go along with market evolution. In contrast, market turbulence represents a source of instability and uncertainty that highlights the costs and risks of making the wrong choices, thereby providing more value to exploitative capabilities.

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INDEX

TABLE INDEX

FIGURE INDEX

SECTION 1. INTRODUCTION

Firms face a rapidly changing environment. World markets are evolving at a rapid pace, and it is increasingly challenging for firms to achieve a sustainable competitive advantage and superior performance. In particular, the tension between current and future firm performance is more and more in the spotlight. In order for the firm to survive and prosper, it must secure short-term survival (or even success) without hindering long-term viability. The dynamic capabilities literature has explored firm's ability to adapt to dynamic markets and their ability to renew capabilities as main drivers of performance in quickly changing settings (e.g. O'Reilly and Tushman, 2004; Özsomer and Genctürk, 2003). The dramatic economic shift from the manufacturing focus to the information and knowledge focus and the increase in the contribution of intangible assets toward total market capitalization of firms has introduced a new order (Ramaswami, Srivastava and Bhargava, 2009). As a result, the source of competitive advantage and the ability to drive current and future cash flows and market capitalization has moved from manufacturing and physical assets to market-based assets and capabilities, especially dynamic capabilities. Nevertheless, the literature has come up short in providing evidence on which capabilities lead to beneficial current and future performance and on the interplay among those effects. This study aims to contribute to furthering the understanding of this dynamic.

Firms are encouraged to develop dynamic capabilities, that is, to integrate, build, and reconfigure their capabilities to better adapt to changing environments and to obtain higher outcomes (Teece, 2007; Teece, Pisano and Shuen, 1997). In particular, exploitation and exploration, two organizational learning concepts, have been emphasized as important dynamic capabilities in this quest (Yalcinkaya, Calantone and Griffith, 2007; Eisenhardt and Martin, 2000). March (2006, 1996, 1991) was the first author to refer to these concepts, distinguishing *exploitation*, which concerns the refining and extending of existing skills and capabilities, and *exploration*, which entails the challenge of existing ideas with innovative and entrepreneurial concepts. In addition to being valuable on their own, exploration and exploitation bear a synergistic effect and form a dynamic path of absorptive capacity (i.e., "*the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends*"; Cohen and Levinthal, 1990: 128). This path constitutes an

additional source of firm advantage and, as such, a determinant of performance (March, 2006, 1996, 1991; He and Wong, 2004; Benner and Tushman, 2003; Katila and Ahuja, 2002; Ancona, Goodman, Lawrence and Tushman, 2001a; Ancona, Okhuysen and Perlow, 2001b; Levinthal and March, 1993).

Although prior research has undoubtedly advanced the understanding of how some dynamic capabilities affect different aspects of firm performance (e.g. Yalcinkaya *et al*., 2007; Özsomer and Genctürk, 2003), the bulk of studies have mainly contemplated technology and product development capabilities, and have disregarded other possible capability domains, such as information or relationship building. Nonetheless, the exclusive focus on technology may convey performance problems. Firms may discover new technological solutions that are exquisite but whose advantages are difficult to communicate to clients (e.g. Ernst, 2002). Thus, this difficulty leads to product acceptance problems with inherent costs to the firm. The mini-disc technology that Sony announced in 1991 is one example of this. The technology represented a great advance in over the audio data storage devices existent of the time. However, the mini-disc had a low uptake and never gained significant ground. In contrast, firms may develop technologically advanced products but fail in their timing to market, thus incurring the bulk of research and development costs but leaving positive returns to late players. For instance, Xerox invented the computer mouse and graphical user interface, but it did not invest in a timely manner in their potential; as such, these products' profits benefited other firms. There is a need to complement previous work and consider other possible capability domains than merely the product development one (e.g. Uotila, Maula, Keil and Zahra, 2009). This study adds a capability domain (market) to the one that is the current focus of the literature (product development) and explores the impact of both on firm performance. This inclusion will enhance the existing understanding of exploitative and explorative capabilities.

The magnitude of markets, and specifically customers, in the success of firms and their offerings has been highlighted in previous – new product development – literature (e.g. Griese, Pick and Kleinaltenkamp, 2010; Yli-Renko and Janakiraman, 2008; Knudsen, 2007; Faems, Van Looy and Debackere, 2005; Bonner and Walker, 2004; Ernst, 2002; Cristiano, Liker and White, 2000; Souder, Buisson and Garrett, 1997). The significance of markets is

especially felt in dynamic settings, such as the international one (e.g. Morgan, Kaleka and Katsikeas, 2004). The influence of markets may be felt in numerous ways. For instance, markets may provide useful insights that firms can incorporate into their offerings. Moreover, markets ultimately will or will not accept the innovations and offerings of firms and, hence, determine their success. Therefore, the examination of market-related capabilities is particularly relevant. The inclusion of such dynamic capabilities opens up new research paths. It should be noted that, though there is a strong theoretical argument in favour of the balance between exploitative and explorative capabilities effects, they reflect two distinct logics and strategies that firms find difficult to balance (e.g. Atuahene-Gima and Murray, 2007; Atuahene-Gima, 2005). Whereas exploitation reflects a more incremental evolution and more or less stable background, exploration entails a significant rupture with what is currently being done. It has been suggested that these conflicting forces can be reconciled by dynamically balancing exploration and exploitation across domains, such as product development and market (Lavie and Rosenkopf, 2006).

In addition, the antecedents and performance outcomes of exploration and exploitation, together with the need for balancing their effects, have attracted considerable research attention (Uotila *et al*., 2009; Atuahene-Gima, 2005; Auh and Menguc, 2005; He and Wong, 2004). However, this research is mainly concentrated in the domestic markets and there is little empirical work on the role of explorative and exploitative capabilities in the context of exporting (for exceptions, see Yalcinkaya *et al.*, 2007 and Luo, 2000). This is surprising considering that (1) growing liberalization of the world trade, (2) intense domestic market competition, (3) convergence of worldwide economic conditions and (4) advances in communication, transportation, and information technologies have led an increasing number of firms to seek opportunities in international markets to obtain growth while safeguarding their market position and survival (Katsikeas, 2003; Leonidou, Katsikeas and Samiee, 2002). Exporting is a viable strategic option of internationalization and is the most frequently used foreign market entry mode chosen by firms (Zhao and Zou, 2002) given its greater flexibility and cost effectiveness in comparison to other entry modes (Leonidou, 1995). Hence, exporting activities are increasingly important for the survival, growth, and success of modern firms (Morgan *et al*., 2004; Golder, 2000). Furthermore, the development of dynamic capabilities is highly relevant in international markets because they are of the highest level of complexity; the dynamism of international markets makes previous recipes for success less

useful and existent capabilities obsolete (e.g. Brown and Eisenhardt, 1998; Achrol, 1991). In international markets, firms are even more exposed and require greater adaptability.

Against this background, this study adds a domain to dynamic capabilities (market); and using the context of exporting, intends to examine (1) export market orientation as an antecedent of exploitative and explorative capabilities and (2) the performance outcomes of product development and market-related exploitative and explorative capabilities in export markets. The performance outcomes considered are two elements of *current* export performance (profit and market effectiveness), as well as *future* export performance, in response to Hult and colleagues' (2008) call for research on distinct elements of performance. Finally, in addition to our main study, we test different moderators such as interfunctional coordination and environmental turbulence.

1.1. THEORETICAL BACKGROUND

The model integrates distinct but intertwined theories, dynamic capabilities, and organizational learning. The dynamic capabilities framework posits that firms that create flexible strategies to continuously coordinate and redeploy resources are able to adjust to or even change marketplaces and, as a result, warrant a sustainable competitive advantage (Song, Droge, Hanvanich, and Calantone, 2005; Griffith and Harvey, 2001; Dyer and Nobeoka, 2000; Eisenhardt and Martin, 2000; Teece et al., 1997). In addition, following the work of previous studies (e.g. Yalcinkaya *et al*., 2007; Atuahene-Gima, 2005), this research focuses on two organizational learning concepts that act as dynamic capabilities, exploitation and exploration.

According to the knowledge-based view of the firm and marketing theory, market orientation can lead to the development of idiosyncratic capabilities, such as knowledge-based capabilities (Atuahene-Gima, 2005). Firms that are more prone to heed the market are better able to adapt to it and to evolve accordingly. Similarly, firms with international activities should be oriented toward the export market if they want to succeed in it. As such, export market orientation is presented as an antecedent of dynamic capabilities.

Drawing on the literature of organizational learning, dynamic capabilities, and international marketing and business we investigate the direct effects of exploitative and explorative product-development and market-related capabilities on current and future export performance outcomes.

In addition to the focus on dynamic capabilities, this study incorporates two specific moderating effects of the dynamic capabilities–export performance link. The inclusion of these moderators was based on the contingency theory (e.g. Zeithaml, Varadarajan and Zeithaml, 1988), according to which the influence of variables on a phenomenon vary under different circumstances. Considering the international context in which this study develops, internal circumstances, namely the firm's interfunctional coordination, and external circumstances, specifically the environmental turbulence, were taken into account.

1.2. MAIN RESEARCH QUESTION

How does export market orientation affect dynamic capabilities of different domains and what is the impact of those dynamic capabilities on the firm's export performance?

1.3. RESEARCH AIMS

1.3.1. General Aim

To identify the relative role of export market orientation as an antecedent of different domains of dynamic capabilities in international markets and to identify the impact of dynamic capabilities on distinct elements of firm's export performance.

1.3.2. Specific Aim

To analyze two potential moderators of the dynamic capabilities–export performance relationship: interfunctional coordination and environmental turbulence.

1.4. CONTRIBUTION PROPOSED

This study intends to contribute to both theoretical and managerial knowledge. It integrates the literatures on organizational learning, dynamic capabilities and international marketing and business. Furthering the previously studied product development dynamic capabilities, the study includes market-related dynamic capabilities, which are a relevant input to both literatures. Dynamic capabilities, specifically the consideration of these two different domains (product development and market) are the centrepiece of the model. Nonetheless, there are also contributions both upstream and downstream with respect to the model's focus. The study extends previous work on the sources of dynamic capabilities (e.g. Atuahene-Gima, 2005) by considering the role of export market orientation as an antecedent of dynamic capabilities in international markets. Regarding the outcomes of dynamic capabilities, the study simultaneously contemplates current and future aspects of export performance.

Internal and external circumstances, interfunctional coordination, and environmental turbulence, respectively, are presented as important moderating variables to consider in the conversion of dynamic capabilities into export performance outcomes.

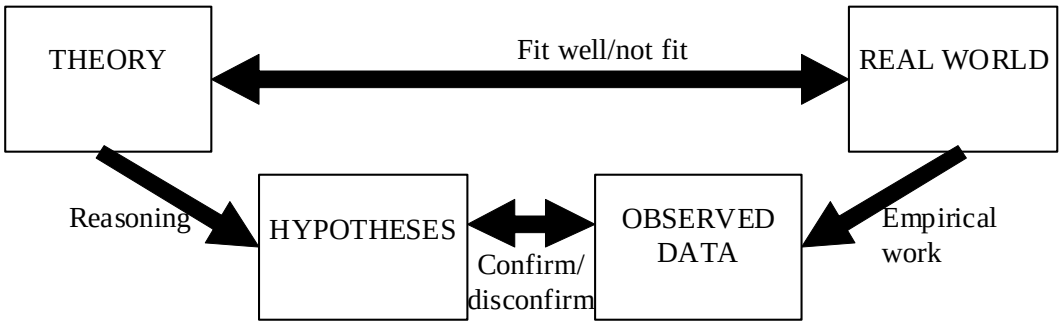
In terms of managerial contributions, the study intends to clarify the source of distinct dynamic capabilities in international markets. In dynamic, highly complex markets, it is crucial for firms to understand which capabilities to develop and how to adapt to the markets. The study shows how a firm's organizational climate acts as a source of dynamic capabilities' development. It distinguishes the impact of product development and market-related exploitative and explorative capabilities on current and future performance. Likewise, it calls managers attention to specific internal and external conditions that may facilitate or inhibit the effects of dynamic capabilities on firm performance and, thus, lead to higher or lower export performance outcomes.

1.5. EPISTEMOLOGY

This study follows a post-positivist approach, an approach that has been gaining supporters over the past decade (Trochim and Donnelly, 2006). Post-positivism has convergent and divergent aspects with positivism. Positivism holds that the goal of knowledge is to describe the phenomenon experienced in a rigorous, nonsubjective way. For positivists, science is *the* way to understand the world and to focus on what researchers can directly observe and measure (Bryant and Giddens, 1996). Deductive reasoning is used to postulate theories and define theoretical hypothesis that will then be tested empirically. On the basis of the research's empirical results, scientists acknowledge whether the theory fits well with the facts and whether there is a need to revise that theory to better predict reality.

Post-positivism also uses theory to develop hypotheses. Adopting a top-down perspective, it uses the hypothetical-deductive method which employs theory about a specific research area to define research hypotheses (Riley, Woodman, Clark, Williamson and Szivas, 2000). As in positivism, the specified hypotheses are then tested empirically. As a result, the observed data confirms, or not, the hypotheses developed (figure 1).

Figure 1: Hypothetical-deductive Method



Source: Adapted from Lau (2010)

Despite the fact that post-positivism shares with positivism the same ontological view and uses the same scientific method of testing, it admits some criticisms of positivism and addresses them by conducting research in more naturalistic settings. Post-positivists recognize

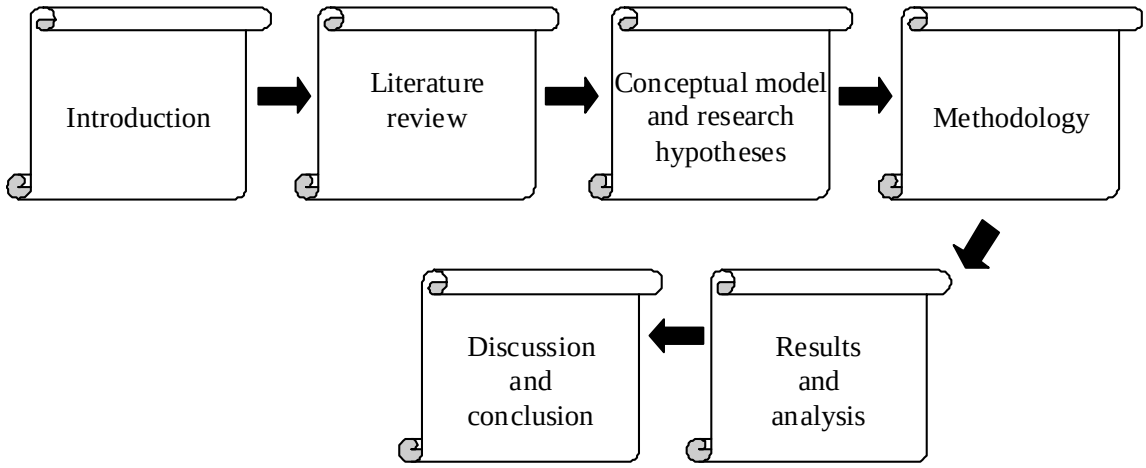
that all observation is fallible and that there is no error-free research. So, researchers are not able to know the *real* world. Because of the flawed nature of measurement, post-positivists emphasize the importance of using multiple measures and observations. Researchers, as all human beings, are biased, which affects all of their observations. Scientists are inherently influenced by their cultural experiences, worldviews, and so on. They cannot be completely objective, because they are intrinsically linked to the context and cannot dissociate it from their investigation – particularly in the social sciences research. Thus, researchers can never achieve objectivity perfectly; they can approach it only through triangulation across multiple fallible perspectives (Trochim and Donnelly, 2006).

Based in the post-positivism, this research uses the hypothetical-deductive method so as to define theory-driven hypotheses. Derived from sound theories and extant organizational learning, dynamic capabilities and international marketing and business literatures, the study specifies eleven hypotheses. To test the hypotheses, empirical work was performed. Methodological triangulation was used, which involves using more than one method to gather data, such as interviews and surveys (Denzin, 2006). Through the combination of quantitative and qualitative techniques, we assessed whether the theory fit the data well (Guba and Lincoln, 1998). Qualitative research methods – specifically in-depth interviews – supplemented our survey quantitative method and brought context and meaning to the quantitative research findings.

1.6. STRUCTURE OF THE DISSERTATION

Six sections constitute this dissertation (figure 2). After this first introductory section, we develop the literature review, which is organized according to four topics: dynamic capabilities, sources of dynamic capabilities, dynamic capabilities outcomes and moderators. The third section presents the conceptual model and research hypotheses. The fourth section introduces the methodology. In the fifth section, data analysis is presented. Finally, the sixth section presents the discussion of the results, explicits the theoretical and managerial implications and concludes the dissertation.

Figure 2: Structure of the Dissertation



Source: Author.

SECTION 2. LITERATURE REVIEW

In trying to access existing knowledge on dynamic capabilities, we started by visiting the literature on dynamic capabilities and organizational learning. This helped us conceptualizing dynamic capabilities and gaining a further understanding of their importance nowadays. Then, we focused on the literature on product innovation and new product development, which has shown advances in the operationalization and application of dynamic capabilities – especially exploitation and exploration. Subsequently, we analyzed the international marketing and business literature (specifically the exporting literature) for a full picture of the work done in this context and to assess the relevance of our constructs and study in such setting. Our literature review is structured in four main topics: (1) dynamic capabilities, specifically exploitation and exploration; (2) sources of dynamic capabilities, both internal and external; (3) outcomes of dynamic capabilities; and (4) moderators (internal and external factors).

2.1. DYNAMIC CAPABILITIES; EXPLOITATION AND EXPLORATION

The *resource-based view* (RBV) of the firm is one of the most cited theories for explaining firms' success, competitive advantage and performance (e.g. Morgan *et al*., 2004; Dierickx and Cool, 1989). It envisions the firm as an unique combination of tangible and intangible *resources* (Barney, 1996, 1991; Barney and Zajac, 1994; Amit and Schoemaker, 1993; Peteraf, 1993). These resources include all the "*assets, capabilities, organizational processes, firm attributes, information, knowledge, etc., controlled by a firm that enable the firm to conceive of and implement strategies that are efficient and effective*" (Barney, 1991: 101). According to this theoretical perspective, firms' success depends on their bundles of resources, which are, by definition, different from those of other firms (Hunt and Morgan, 1995; Day, 1994; Day and Nedungadi, 1994; Day and Wensley, 1988). These valuable, rare, inimitable, and nonsubstitutable resources are the main drivers of competitive advantage. So, if a firm possesses assets such as economy of scale, scope and efficiency of facilities and systems, reputation, spatial preemption, brand equity, or a privileged location of activities for factor costs and government support, it has greater chances of success. However, the resources – commonly are referred to as *assets* – that the firm possesses and controls are not, *per se*, a source of competitive advantage (Hsu, Chen and Jen, 2008).

To be able to convert resources into customer value, the firm needs idiosyncratic internal *capabilities* (Dutta, Narasimhan and Rajiv, 2005; Winter, 2003; Barney, 1996, 1991; Hunt and Morgan, 1995; Barney and Zajac, 1994; Day, 1994; Day and Nedungadi, 1994; Amit and Schoemaker, 1993; Bharadwaj, Varadarajan and Fahy, 1993; Rumelt, Schendel and Teece, 1991; Day and Wensley, 1988). Capabilities encompass knowledge, skills and related routines (Day, 1994). They are "*the glue that brings assets together and enables them to be deployed advantageously*" (Day, 1994: 38). Defining capabilities as routines reflects behaviour processes that engender procedural knowledge or skill (Kogut and Zander, 1996, 1992). As such, capabilities are embedded in the firm and are unlikely to be either observed directly or duplicated (Grewal and Slotegraaf, 2007).

According to the RBV, the intricate blend of skills and accumulated knowledge, exercised through organizational processes, enables firms to obtain competitive advantages. These advantages happen because of (1) the resources' relative immobility, either because they cannot be traded (Dierickx and Cool, 1989) or because they are much more valuable where they are currently employed than they would be elsewhere (Newbert, 2008, 2007; Reed and DeFillippi, 1990), (2) the difficulty that competitors face in understanding and imitating firm's resources as a result of their hard-to-duplicate nature (Reed and DeFillippi, 1990; Dierickx and Cool, 1989) and (3) due to the resources' scarcity (Newbert, 2008; Reed and DeFillippi, 1990).

The RBV has definitely been an influential theoretical framework in researchers' and managers' understanding of firm performance. Nonetheless, it has been criticized for its inability to explain *how* firms *develop* and *deploy* resources (e.g. Priem and Butler, 2001). Even though RBV helps explain how firms achieve competitive advantage, it does not adequately explain how firms achieve that competitive advantage in the context of the fast-changing environments to which they have to adapt (Eisenhardt and Martin, 2000). It is clear that the competitive landscape is changing worldwide and the premises that were once suitable aren't working any more. Globalization of markets and technologies, higher customer expectations, increasing hypercompetition with intense competitive pressure and shorter cycle times are the trends firms are facing nowadays (Özsomer and Genctürk, 2003). The RBV was developed in a different context and was suited to that context. However, the increased and

increasing speed of change and the escalating complexity of the markets firms deal with has shown the manner firms were resource determined and the previous "success formulas" to be inappropriate (Brown and Eisenhardt, 1998).

Given the context-based nature of resources, their value depends on the characteristics of a given environment (Zhou and Li, 2010). In addition, "*resources also are relatively stickier than their environment, their changes and adaptations often lag behind environmental changes*" (Teece *et al*., 1997: 225). As a result, in rapidly changing markets, firms that concentrate on core resources may create rigidities that prevent them from adapting their resources to the new competitive environment (Zhou and Li, 2010; Leonard-Barton, 1992). Now, attention has deviated to dynamic capabilities and their role in creating and sustaining competitive advantages (Teece, 2007; Eisenhardt and Martin, 2000; Helfat, 2000; Teece *et al*., 1997).

When the dynamic capabilities perspective first appeared, it was perceived as an extension of the RBV (Acedo, Barroso and Galan, 2006; Peteraf, 1993; Barney, 1991). Some authors linked it to the knowledge-based view of the firm (e.g. Teece, 2007; Acedo *et al*., 2006; Teece *et al*., 1997; Nelson and Winter, 1982), because it stresses knowledge-related capabilities as the most important capabilities to consider (Nickerson and Zenger, 2004; Grant, 1996). Recently, dynamic capabilities have been disentangled from these theoretical perspectives, and it has been proposed to assume a more autonomous role: the *dynamic capabilities framework* (Morgan, Slotegraaf and Vorhies, 2009a; Morgan, Vorhies and Mason, 2009b; Danneels, 2008; Helfat and Peteraf, 2003). According to the dynamic capabilities framework, some firms are better than others at altering their resource base through the addition, reconfiguration, and deletion of internal and external resources or competences to address rapidly changing environments (Danneels, 2008; Teece, 2007; Eisenhardt and Martin, 2000; Teece *et al*., 1997).

Dynamic capabilities are the "*processes to integrate, reconfigure, gain and release resources – to match and even create market change.* [They] *are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die*" (Eisenhardt and Martin, 2000: 1107). In this conceptualization, we can acknowledge several unique features of dynamic capabilities. First, dynamic capabilities are

processes and routines. They are entrenched in the firms' operations and, for that reason, reflect uniqueness (Grewal and Slotegraaf, 2007). Second, they have an ongoing dynamic nature. As such, dynamic capabilities are not restricted to the integration and coordination of resources. They go further and reconfigure and redeploy resources effectively (Yalcinkaya *et al*., 2007; Eisenhardt and Martin, 2000; Teece *et al.*, 1997). Finally, the purpose of developing dynamic capabilities is to successfully adjust their strategic combination to the unique characteristics of the marketplace (Eisenhardt and Martin, 2000; Grant, 1996; Pisano, 1994). The value of dynamic capabilities lies in the resource configurations they create or enhance, which in turn enable the firm to pursue opportunities in new, unpredictable markets (Døving and Gooderham, 2008). The extent to which a firm can develop and employ superior (and inimitable) dynamic capabilities determines the nature and amount of intangible assets it creates and/or assembles and the level of economic profits it can earn. In fact, the development of dynamic capavilities has shown to generate significant intraindustry differential firm performance (Zott, 2003).

The dynamic capabilities framework recognizes that the firm is shaped by its past but not necessarily trapped by it. Management can bring about major differences, through investment choices and other decisions. At the extreme, firms can even shape their ecosystem. Dynamic capabilities endeavour to capture the key variables and relationships that need to be "manipulated" to create, protect and leverage intangible assets. These assets enable firms to achieve superior performance and to avoid the *zero-profit trap*. However, building and assembling tangible and intangible assets and making change happen is difficult. Managers, as people, are naturally resistant to change (Pettigrew, Woodman and Cameron, 2001; Diamond, 1986). Bringing change into the firm may represent the destruction of what the firm already has (Fox-Wolfgramm, Boal and Hunt, 1998; Greve, 1998; Kimberly and Bouchikhi, 1995). Inherently, change may trigger managers' and collaborators' fears and discomfort related to the efforts in which they have already invested. Nevertheless, long-run success likely depends on an internal creative rupture with current activities, products and technologies (Walker, Madsen and Carini, 2002; Whittington, Pettigrew, Peck, Fenton and Conyon, 1999).

Researchers, namely evolutionary theory researchers, have presented evidence of the need to break with organizational inertia (Miner, Bassoff and Moorman, 2001; Karim and Mitchell, 2000; Leana and Barry, 2000; Tripsas and Gavetti, 2000; Barnett and Burgelman, 1996;

Miller, 1994; Huff, Huff and Thomas, 1992; Mintzberg and Westley, 1992; Hannan and Freeman, 1984; Nelson and Winter, 1982). In short, firms may be more like biological organisms than some economists, managers and strategy scholars are willing to admit (Hodgkinson and Healey, 2009). Yet, firms are also more malleable than some organizational ecologists are willing to recognize. Even though there may not be a joyful embracement of the idea to create organizational change, there is an acknowledgment of its importance to the future.

The importance and relevance of dynamic capabilities for firm's prosperity have been acknowledged. Even so, there were critics about the under specification of "dynamic capabilities" (Kraatz and Zajac, 2001) and, even as recently as 2007, empirical work was still considered to be in its infancy (Newbert, 2007). To overcome these matters, in the last decade an increasing bundle of studies have been trying to understand which capabilities can be considered dynamic (e.g. Teece, 2007; Wang and Ahmed, 2007), how can they be developed (e.g. Danneels, 2008; Rothaermel and Hess, 2007; Schreyögg and Kliesch-Eberl, 2007) and what is their influence on outcomes such as product innovation, new product development or firm performance (e.g. Yalcinkaya *et al.*, 2007). Adaptive, absorptive and innovative capabilities (Wang and Ahmed, 2007), sensing, seizing and transforming capabilities (Teece, 2007), and knowledge-related capabilities (e.g. Døving and Gooderham, 2008; Cepeda and Vera, 2007; Yalcinkaya *et al.*, 2007; Eisenhardt and Martin, 2000) have been identified as dynamic capabilities. Specifically, dynamic capabilities associated to knowledge creation, acquisition and transfer have been evidenced as particularly important (Van Wijk, Jansen and Lyles, 2008; Garcia, Calantone and Levine, 2003; Zollo and Winter, 2002; Grant, 1996; Kogut and Zander, 1996).

The knowledge-prevalent role of dynamic capabilities is explained by the dynamism and turbulence of the business environment to which a firm must adapt (Zahra, Ireland and Hitt, 2000; Lyles and Salk, 1996). To be successful and to sustain that achievement in dynamically competitive markets, firms should generate new knowledge and recombine or modify existing knowledge (Schulz, 2001; Easterby-Smith, Crossan, and Nicolini, 2000; Kogut and Zander, 1996, 1992). In this direction, exploitation and exploration have emerged as relevant dynamic capabilities. These two knowledge-creation concepts that have been discussed in several streams of literature, such as organization theory (e.g. Burns and Stalker, 1961), organizational learning (e.g. Levinthal, 1997), strategy (e.g. Burgelman, 2002, 1994, 1991),

managerial economics (for a review see Ghemawat and Costa, 1993), and product innovation (e.g. Rothaermel and Deeds, 2004). While *exploitation* generates incremental knowledge, *exploration* generates new and unsettled knowledge (Schulz, 2001). *Both* capabilities entail a dynamic transformation of the firm's current resources and processes into new capabilities that better match the environment (Yalcinkaya *et al*., 2007; Eisenhardt and Martin, 2000). Even though exploitative capabilities involve small changes and little deviation from the firm's current technology, practices and products, there is still an evolution. Exploitative capabilities do not imply the absence of innovation and evolution: rather, they embody a more incremental type of innovation and evolution (Atuahene-Gima, 2005).

In specifying the concepts of exploitation and exploration, one can better understand their role as dynamic capabilities influencing firm performance. *Exploitation* is "*the refinement and extension of existing competencies, technologies and paradigms*" (March, 1991: 85). Because exploitation involves "*the use and development of things already known*" (Levinthal and March, 1993: 105), it is associated with terms such as *refinement*, *routinization*, *systematic reasoning*, *risk aversion*, and *standardization* (March, 2006, 1996, 1991; Juran and Gryna, 1988; Deming, 1981). Exploiting firms follow a path of knowledge deployment and generation that is closely related to their existing knowledge bases and current organizational routines (Wang and Li, 2008; March, 2006, 1996, 1991). By refining and extending a firm's existing "*knowledge, skills and processes*" (Atuahene-Gima, 2005: 62), exploitation permits the firm to fully use its limited resources (Atuahene-Gima and Murray, 2007). The building-on and replication of prior technological and product-market knowledge and experience allows for learning-curve effects (Shane, 2000). Errors in problem solving are reduced, and mistakes in, for example, new product development are avoided. Transactional costs are minimized and decision-making implementation and control is more expedited. In addition to enhanced efficiency, exploitation provides greater opportunities for new combinations and recombination of existing knowledge, from which new insights may emerge (Atuahene-Gima and Murray, 2007).

Exploitation is established in the minor changes brought into the firm and possible efficiency-related outcomes. Exploitation represents a firm's attempt to lock a comfortable position in the marketplace and guarantee the current viability of the firm against its competitors. Through the focus on current markets and current customer domains and less intense

transformations, exploitation is less likely to create resistance to change. It has been perceived as particularly relevant in situations of stable markets and technologies (Ancona *et al*., 2001a; Ancona *et al*., 2001b; Lewin, Long, and Carroll, 1999; Brown and Eisenhardt, 1998).

Building on mechanistic structures and tightly coupled systems, firms develop exploitative capabilities to implement exploitation. *Exploitative capabilities* are firms' ability to refine, extend and "*improve continuously its existing resources and processes*" and skills (Yalcinkaya *et al*., 2007: 66). They focus on the *development* aspect of the research and development (R&D) process (Garcia *et al*., 2003; Koza and Lewin, 1999, 1998). These capabilities reflect a leverage of firm's existing resources and knowledge in order to generate synergies, and to obtain greater efficiency and reliability (Yalcinkaya *et al*., 2007; March, 2006, 1996, 1991; Rothaermel and Deeds, 2004). Hence, the firm refines and fine-tunes existing competencies and resources and tries to extend its products' life cycles to maximize profitability and operational efficiency. This pull on the firm's existing resources ensures its immediate survival (Lee, Lee, and Lee, 2003; Sitkin and Sutcliffe, 1994) and short-term success (Atuahene-Gima, 2005). Typically, the returns on exploitative capabilities are positive, proximate and predictable (e.g. March, 1991), which allows firms to maintain performance levels at the historical performance trend line (Lewin *et al*., 1999).

Exploration is the "*experimentation with new alternatives*" (March, 1991: 85) and the pursuit of entirely new skills, processes and knowledge (Atuahene-Gima, 2005). Because it involves "*things that might come to be known*" (Levinthal and March, 1993: 105), exploration is associated with terms such as *search*, *risk taking*, *experimentation*, *flexibility*, and *creativity*. Explorative firms make a conscious effort to move away from the existing knowledge base to capitalize on unexplored opportunities (Wang and Li, 2008; March, 2006, 1996, 1991). By moving to new domains of activity exploration increases the firm's ability to add new variants of knowledge to its knowledge repertoire (Danneels, 2008; Jansen, Van Den Bosch and Volberda, 2006; March, 2006, 1996, 1991; Floyd and Lane, 2000). Firms vary and play with ideas, paradigms, technologies, strategies and knowledge with the expectation of finding new alternatives that are superior to obsolete practices. This active process feeds the development of the innovative products required to keep competition at bay, and it ensures that the new products contain emergent ideas that may differentiate them from competitors' offerings and lead customers to judge them as superior (Katila and Ahuja, 2002). The products and services

developed also open new business opportunities for the firm and provide a basis for long-term viability.

The goal of exploration is to prevent (marketing) myopia, by diverting attention away from emerging customers and competitors (Christensen and Bower, 1996). It represents a firm's attempt to identify and explore new market and technological opportunities. Through the focus on emerging markets and technologies, exploration prevents lack of novelty, technological obsolescence and organizational inertia (Lee and Ryu, 2002). It has been perceived as particularly suitable to situations of highly competitive and turbulent markets and technologies (Ancona, at al., 2001a; Ancona, at al., 2001b; Lewin, at al., 1999; Brown and Eisenhardt, 1998; Helfat, 1997)

Building on organic structures, loosely coupled systems, path breaking improvisation, autonomy and chaos, firms develop explorative capabilities. *Explorative capabilities* are firms' "*ability to adopt new processes, products and services that are unique from those used in the past*" (Yalcinkaya *et al*., 2007: 66). They focus on the *research* aspect of the R&D process (Garcia *et al*., 2003; Koza and Lewin, 1999, 1998). Exogenous forces, including competition or technology advances pressure the firm to continually refresh the value of its offerings and to renew its product, process, or service lines (Garcia *et al*., 2003). In this direction, explorative capabilities enable firms to recognize the intrinsic value of other resources or to develop novel strategies before their competitors. The addition of new competences to the firm's repertoire is important for the firm's continued prosperity in a changing environment (Danneels, 2008; Floyd and Lane, 2000; Leonard-Barton, 1992; Dierickx and Cool, 1989).

It is believed that firms cannot achieve long-term success or survival without explorative capabilities. Positive performance outcomes are expected because of the possibility of the firm either discovering a new competency that shapes the rules of the competitive game or expanding into new or emerging markets (Lubatkin, Simsek, Ling and Veiga, 2006; Brown and Eisenhardt, 1997). Through the development of explorative capabilities, the firm increases its likelihood of achieving performance levels significantly above or below its historical trend line (Lewin *et al*., 1999).

However, "*the distance in time and space between the locus of learning and the locus for the realization of returns is generally greater*" in the case of explorative capabilities than in the case of exploitative capabilities (March, 1991: 85). The firm acts without strong prior experience, and therefore requires more time to receive the returns of those activities (Hutt, Reingen and Ronchetto, 1988). Likewise, albeit potentially profitable, explorative outcomes involve a high degree of uncertainty. That is why explorative capabilities "*might be effective but due to* [their] *long term nature*, [they] *might lack a high degree of efficiency*" (Auh and Menguc, 2005: 1653).

Firms, especially those involved in international business, must be able to *exploit the present and explore the future* (O'Reilly and Tushman, 2004). The value of balancing these seemingly contradictory tensions has been identified (Gupta, Smith and Shalley, 2006; Benner and Tushman, 2003; Katila and Ahuja, 2002; Brown and Duguid, 2001; Eisenhardt and Martin, 2000; Adler, Goldoftas and Levine, 1999; Tushman and O'Reilly, 1996; Volberda, 1996; Burgelman, 1991). No firm can build a constantly sustainable competitive advantage because today's strength becomes tomorrow's weakness (D'Aveni, 1994). Therefore, instead of trying to create stability and equilibrium, firms must actively work to disrupt their own advantages and the advantages of competitors by creating a series of temporary advantages (D'Aveni, 1994), that co-evolve (Rindova and Kotha, 2001). The strategic logic is to counterbalance exploitation with exploration. The decision between exploration and exploitation can be compared to a "*subtle duel between portfolios of projects with high variability in timing and payouts and less risky portfolios concentrated on maintaining market presence by enhancing core technologies*" (Garcia *et al*., 2003: 324). A mix between both types of projects, which are characterized by distinct risk and payouts, is needed for a balanced portfolio of projects.

The decision to develop and apply one type of capability to the detriment of the other has undesirable costs and can be the firm's downfall (e.g. Nerkar, 2003; March, 1991). However, it is appealing for firms to *aim solely for exploitation*. With exploitation, not only are the returns immediate and knowable but also the decision to exploit existing capabilities is more comfortable, as it draws on the firm's current experience (March, 1991). The refinement of existing knowledge and learning from experience reduce transaction costs and speed up

decision-making implementation and control (Cyert and March, 1992). However, there are perils associated with the focus on exploitation.

The lower cost and less effort required of exploitation are likely to guide firms to specialize in inferior routines because initial choices and associated returns appear more favourable than unexplored alternatives (Herriott, Levinthal and March, 1985). By relying on established routines and adapting to current environmental demands, exploitation may foster structural inertia and guide firms to focus merely on the nearest future (Hannan and Freeman, 1984). As a result, firms may find themselves trapped in suboptimal equilibriums and in pursuing efficiency in an outdated area (Kyriakopoulos and Moorman, 2004; Özsomer and Genctürk, 2003). Firms can also be directed to what Ahuja and Lampert (2001) call the *familiarity trap*, which means they are enclosed in current knowledge ossification. Leonard-Barton (1992) describes this as the *capability-rigidity paradox*: as core capabilities improve product development, they may evolve into core rigidities that limit innovation. Then, firms can undergo technological exhaustion (Yalcinkaya *et al*., 2007; Lee *et al*. 2003) and face product obsolescence (Levinthal and March, 1993). At the extreme, a sole focus on exploitation can lead to firm ineffectiveness (Yalcinkaya *et al*., 2007) and even induce self-destruction (March, 2006, 1996, 1991).

The excessive focus on current market conditions may be portrayed as a myopic choice (Lee *et al*., 2003; Levinthal and March, 1993) that directs firms to a *competency trap* (Lee *et al*., 2003; Lewin *et al*., 1999; Levitt and March, 1988) or, as Levinthal and March (1993) call it, a *success trap*. Exploitation may act as "*self-imposed straitjackets created through slavishly following existing customers*" (Theoharakis and Hooley, 2008: 71). It may affect the replication of firm's initial market success (Christensen and Bower, 1996), in that the firm is likely to ignore emerging technological and market conditions that deviate substantially from current skills (March, 2006, 1996, 1991; Benner and Tushman, 2003; Levinthal and March, 1993). Accordingly, the firm may miss valuable long-term investments and opportunities (Auh and Menguc, 2005). In addition, firm's attention is diverted away from new and emerging customers and competitors (Christensen and Bower, 1996). Thus, there is a lock-in effect: once a firm accumulates sufficient experience with one technology, one way of doing things or one type of customer or market, it can easily be trapped in this technology, behaviour or market and be blinded to alternative opportunities.

The natural, self-reinforcing favouritism of exploitation inhibits experimentation and discovery (March, 1991), decreases variation in organizational routines and prejudices explorative capabilities (Levinthal and March, 1993). In fact, many firms that are adept at exploiting existing capabilities fail to simultaneously develop new ones (O'Reilly and Tushman, 2004; Dougherty, 1992). The firm's adjustment to novel situations is more difficult (He and Wong, 2004) and probably will hold the firm back (Cyert and March, 1992). In addition, the easy achievement in exploitation strengthens present expertise and makes returns from exploration even "*less certain, more remote and organizationally more distant from the locus of action and adaptation*" (March, 1991: 73).

In contrast, firms that are *too oriented toward exploration* suffer the costs of experimentation without gaining many of its benefits, which results in a *failure trap* in which firms spend too much time searching and experimenting and not enough time exploiting what they have learned. The avoidance of exploration may be caused by (1) discomfort in exploring and dealing with unknown territories, (2) high risks and costs, and/or (3) the nature and timing of payoffs. Entry into unknown territories usually faces resistance. People are likely to impede change from happening. They can feel threatened by the changes themselves or by the eradication of their existing work and efforts (e.g. Diamond, 1986). The short-term costs of change are expectedly high (Hutt *et al*., 1988). An example of these costs is the inefficiency in problem solving that result from experimenting with and often inventing new approaches.

Firms may have new product features and benefits that are underdeveloped, unrefined or incompatible with customer needs (Atuahene-Gima and Murray, 2007). There might be "*too many undeveloped ideas and too little distinctive competence*" (Levinthal and March, 1993: 105). The multiple development of too many (or too radical) ideas and change actions may be difficult to coordinate. Specifically, not taking into account continuity could generate organizational chaos (Levinthal and March, 1993). Moreover, a failed explorative effort may disrupt successful practices in a firm's existing domains, without any significant success in the new domain to compensate for the loss in existing business (He and Wong, 2004; Mitchell and Singh, 1993). In addition to high costs, the firm may never gain returns on its explorative knowledge (Levinthal and March, 1993). Explorative capabilities' envisioned outcomes and paybacks are uncertain and may be recovered only in a distant future, if ever (Auh and Menguc, 2005).

Given the undesirable effects of investing exclusively on exploitation or exploration, the value of balancing these seemingly contradictory tensions has been in the spotlight (e.g. Katila and Ahuja, 2002; Brown and Duguid, 2001; Adler *et al*., 1999). The arguments in favour of the need for their *integration* are well established and accepted (March, 2006, 1996, 1991; Benner and Tushman, 2003; Ancona *et al*., 2001a; Ancona *et al*., 2001b; Eisenhardt and Martin, 2000; Levinthal and March, 1993; Dougherty, 1992). Specifically, firms are advised to "*engage in enough exploitation to ensure the organization's current* [and short-term] *viability and engage in enough exploration to ensure its future* [and long-term] *viability*" (Levinthal and March, 1993: 105). This balance is perceived as a complex capability that is an additional source of competitive advantage, beyond those that exploitative or explorative activities provide individually (Teece, 2007; Atuahene-Gima, 2005; Colbert, 2004; Teece *et al*., 1997; Grant, 1996; Kogut and Zander, 1992). Exploitative and explorative capabilities are central to a firm's advancement and are inextricably linked (March, 2006, 1996, 1991; Holmqvist, 2004, 2003; Rothaermel and Deeds, 2004; Oliver, 2001). They are likely to be interdependent in such a way that a firm benefits from engaging in both types of learning in an ongoing way, depending on the needs of different situations (Özsomer and Genctürk, 2003).

The active management of the tension between the exploitation's path dependence and exploration's vulnerability is required for firm's long-term survival and success. The firm must act as a juggler, balancing its capabilities to compete in mature markets (where cost, efficiency, and incremental innovation are vital) and to develop new products and services and/or to enter emerging markets (where experimentation, speed, and flexibility are critical) (Tushman and O'Reilly, 1996). On the one hand, it is important to "*rapidly build*[ ] *intuition and flexible options in order to learn quickly about and shift with uncertain environments*" (Eisenhardt and Tabrizi, 1995: 91). On the other hand, the firm needs to "*create structure and motivate pace in these settings, because the uncertainty can create paralyzing anxiety about the future*" (Eisenhardt and Tabrizi, 1995: 91). Thus, exploiting current technologies, resources and existing capabilities enables the firm to secure efficiency and endows it with short-term success. Creating variation and renewing and replacing those technologies, resources and capabilities with entirely new ones makes long-term survival possible (Teece, 2007; March, 2006, 1996, 1991; Garcia *et al*., 2003; Lee *et al*., 2003; Teece *et al*., 1997).

In particular, it has been argued that exploitation endows the firm with a foundation of continuing operation on which it can carry out riskier exploration (Yalcinkaya *et al*., 2007).

The accumulated knowledge stock and the exploration of new knowledge are interdependent (Katila and Ahuja, 2002; Penrose, 1959). The existing knowledge stock, associated with exploitative capabilities, not only provides incentives to acquire new knowledge through explorative capabilities but also shapes their scope and direction (Wu and Shanley, 2009). So, exploiting existing capabilities is often essential to exploring new capabilities, and the exploration of new capabilities augments a firm's current knowledge base (Katila and Ahuja, 2002). Exploration is a costly – but possibly above-average-profitable – endeavour that requires significant cash flows. Exploitation capabilities allow the firm to provide value to its existing customer base, which is the basis of a low-risk stream of capital inflow that the firm can use to continue investing in exploration capabilities (Garcia *et al*., 2003). So, rather than trapping the firm, current competencies may be used as leverage points to add new competencies. These capabilities can in turn grant the technological assets and capabilities for the renewal of exploitation capabilities. Particularly in rapidly changing environments there is an intense pressure to change technologies and resource structure to adapt to new environmental opportunities (Makadok, 2001; Karim and Mitchell, 2000).

The integration of exploitation and exploration has been attracting increasing attention from scholars. Even though its theoretical arguments have been widely presented, the actual implementation of this integration still lacks testing. In practice, few firms can successfully manage the balance of exploitation and exploration, given their different logics, strategies and structures (Bierly and Chakrabarti, 1996). The two sets of capabilities compete for resources and thrive under different organizational conditions, which makes them difficult to combine (O'Reilly and Tushman, 2004). March (1991) perceives exploitation and exploration as *fundamentally incompatible*. Inertia and absorptive capacity impose conflicting pressures in attempts to balance exploitation and exploration in domains. Managing these pressures is challenging and forces restraint of "*natural behavioural tendencies and cognitive constraints*" (Lavie and Rosenkopf, 2006: 804).

In addition, the short-term positive feedback of exploitation or exploration can create learning traps and encourage the firm to abandon a balance between the two approaches (Levinthal and March, 1993). Unless the tensions raised in the attempt to pursue them both are well managed, firms may end up worse off. The attempt to pursue different strategies may result in firms being stuck in the middle or mediocre at both exploration and exploitation (Ghemawat and Costa, 1993). Nevertheless, previous studies that refer to the balance of the two sets of

capabilities as impracticable have focused on a single domain of capabilities (product development). Organizational impediments may prevent firms from seeking to reconcile explorative and exploitative capabilities *within* domains. Trying to rely on existent knowledge and search for completely new knowledge with the same object in mind leads inevitably to irreconcilable tensions. It may be seen as pushing the limit and likely creates confusion.

As such, *alternative forms of balance* may be taken into account. As Lewin and Volberda (1999: 523) note, "*These forms need not be contradictory processes. They can be complementary, and organizations must learn how to carry out both forms*". In particular, firms may balance explorative and exploitative capabilities *across domains*, such as product development or relationship building. Considering exploitative and explorative capabilities in different domains, the tensions between simultaneously dealing with distinct logics and strategies are minor. So, the simultaneous pursuit of exploration and exploitation becomes viable through their conceptualization as orthogonal variables (Jansen *et al*., 2006; Lubatkin *et al*., 2006; Auh and Menguc, 2005; Beckman, Haunschild and Phillips, 2004; He and Wong, 2004; Nerkar, 2003; Katila and Ahuja, 2002; Rothaermel, 2001; Baum, Li and Usher, 2000; Koza and Lewin, 1999, 1998).

Considering exploitation and exploration as orthogonal, it is possible for firms to simultaneously nurture organizational routines that regulate exploitation in one domain, such as market, while investing in absorptive capacity to support exploration in other domains, such as technology (Rosenkopf and Almeida, 2003; Rosenkopf and Nerkar, 2001). In doing so, the firm can, for instance, combine its efforts to improve existing products and introduce them into new markets or it can develop completely new products by capitalizing on its existing market presence.

2.2. SOURCES OF DYNAMIC CAPABILITIES

Knowledge and skills underlying capabilities are believed to be "*developed by learning through trial and error, feedback and evaluation*" (Chandler, 1992: 84) as firm managers solve problems. The creation of capabilities is, then, an incremental and path-dependent process of learning from the firm's own experiences (Nelson and Winter, 1982). One can

distinguish internal and external factors that nourish and feed the development of dynamic capabilities.

2.2.1. Internal Factors

2.2.1.1 Strategic Orientation

The firm's strategic orientation reflects the social learning and selection mechanisms that aim to preserve coherence between management's strategic intent and the firm's operational activities (Atuahene-Gima and Ko, 2001). The strategic orientation is based on the belief that there is a deep, culture-driven characteristic of an organization that influences both the firm's internal processes and its strategies (Noble, Sinha and Kumar, 2002). As such, strategic orientation has been treated as a subdimension of culture. It reveals the firm's philosophy on how to conduct business by encouraging appropriate behaviours to achieve superior performance (Gatignon and Xuereb, 1997; Narver and Slater, 1990). Thus, the strategic orientation shapes how firm deals with process information and reacts to the environment. It guides how a firm interacts with external entities, such as customers, competitors and technology (Gatignon and Xuereb, 1997).

As a strategic choice, strategic orientation is a tool that helps firms build dynamic capabilities in fast-changing environments. It reflects an outward-looking view of the fit between strategic choices and environment. Therefore, strategic orientation drives how firms acquire, allocate, and use resources to create dynamic capabilities (Zhou and Li, 2010). The nature of the systems and rewards that strategic orientation engenders encourages and supports desired behaviours. For instance, the firm can be motivated to be more open to risk and experimentation (and to develop explorative capabilities) or, oppositely, to maintain the status quo and encourage efficiency seeking (i.e., to privilege exploitative capabilities).

Despite some studies sustaining a direct association between strategic orientation – namely market orientation – and firm performance, the empirical evidence is not totally consistent (Olavarrieta and Friedmann, 2008; Theoharakis and Hooley, 2008; Zhou, Brown, Dev and Agarwal, 2007; Olson, Slater and Hult, 2005). There are mixed results, specifically regarding the link between market orientation and firm performance (Langerak, 2003; Greenley, 1995;

Diamantopoulos and Hart, 1993; Jaworski and Kohli, 1993). Some studies found a positive direct relationship (e.g. Matsuno, Mentzer and Özsomer, 2002; Slater and Narver 1994; Ruekert, 1992; Narver and Slater, 1990). Some studies failed to find a statistically significant direct relationship between customer orientation and performance (e.g. Noble *et al*., 2002; Han, Kim and Srivastava, 1998). Others even found a negative influence of market orientation on firm performance after a crisis (e.g. Grewal and Tansuhaj, 2001). A possible explanation for the occurrence of inconsistent results is that other variables may mediate the effect of strategic orientation on firm performance. Consequently, a growing bundle of studies – especially more recent ones – have dedicated to examine the mechanisms by which market orientation is transformed into improved firm performance (Taylor, Kim, Ko, Park, Kim and Moon, 2008; Singh and Ranchhod, 2004; Guo, 2002).

Employees relationship commitment (Taylor *et al*., 2008), instrumental use of information available (Gotteland and Boulé, 2006), innovation and innovative activities (De Luca, Verona and Vicari, 2007; Theoharakis and Hooley, 2008; Kirca, Jayachandran and Bearden, 2005; Zhou, Yim and Tse, 2005; Leskiewicz and Sandvik, 2003; Han *et al*., 1998; Hurley and Hult, 1998), intangible resources (Olavarrieta and Friedmann, 2008) and – dynamic – capabilities (Harmancioglu, Grinstein and Goldman, 2010; Jaakkola, Nagy and Tölö, 2010; Morgan *et al*., 2009b; Vorhies and Morgan, 2005) have been demonstrated as important variables that enable the conversion of strategic orientation into higher firm performance.

The business and marketing literature have referred to several strategic orientations. In our quest for possible variables to understand how firms build dynamic capabilities, we analyzed the most studied strategic orientations.

Market orientation is probably the most cited strategic orientation. Nevertheless, it may be myopic to presume that it is the only valid guiding model for business success (Noble *et al*., 2002). Other models such as technological orientation (e.g. Gatignon and Xuereb, 1997), entrepreneurial orientation (Zhou *et al*., 2005), and innovation orientation (Simpson, Siguaw and Enz, 2006), just to name a few, were also given attention by authors.

2.2.1.1.1 Market Orientation

Over the past decades, the marketing, product innovation and business literatures have extensively studied market orientation. It is by now a well-established concept. It is understood as (1) a firm-level belief or unifying frame of reference that emphasizes serving the customer (Homburg and Pflesser, 2000; Deshpandé, Farley and Webster, 1993) or understanding buyers' current and latent needs to create value for them (Slater and Narver, 1999; Narver and Slater, 1990), (2) a collection of firmwide processes involving the generation, dissemination and responsiveness to intelligence pertaining to current and future customer needs (Jaworski and Kohli, 1993; Kohli, Jaworski, and Kumar, 1993; Kohli and Jaworski, 1990), and (3) a firm-level capability that links a firm to its external environment and enables the business to compete by anticipating market requirements ahead of competitors and by creating durable relationships with customers, suppliers and distributors (Day, 1994). The first two roles, that is, culture and behaviour, are closely related and have been dominant in the market orientation research.

The perception of market orientation as the implementation of the marketing concept philosophy allows the consideration of it as a cultural orientation. Authors such as Slater and Narver (1995: 67) define market orientation as "*the culture that (1) places the highest priority on the profitable creation and maintenance of superior customer value while considering the interest of the other stakeholders; and (2) provides norms for behaviour regarding the organizational development and responsiveness to market information*". It has been identified as an important cultural foundation of the learning organization (Slater and Narver, 1995). As a strategic orientation, market orientation reflects a culture and a climate that encourages organizational behaviours that create and perpetuate superior customer value (Deshpandé and Webster, 1989). The "*market-driven culture supports the value of thorough market intelligence and the necessity of functionally coordinated action directed at gaining a competitive advantage*" (Day, 1994: 43). Even though these authors identify market orientation as a reflection of culture, they measure it through behavioural components (customer orientation, competitor orientation and interfunctional coordination) and decision-making criteria (a long-term focus and a profit focus) (e.g. Narver and Slater, 1990). Market orientation measurement components comprise "*the activities of market information acquisition and dissemination and the coordinated creation of customer value*" (Narver and Slater, 1990: 21).

Authors such as Cadogan and colleagues (Cadogan, Kuivalainen and Sundqvist, 2009; Cadogan, Souchon and Procter, 2008; Cadogan, Diamantopoulos and Siguaw, 2002; Cadogan, Diamantopoulos and de Mortanges, 1999; Cadogan and Diamantopoulos, 1995) have offered a more process-driven model. In this activity-centred perspective, market orientation is a set of behaviours and processes (Kohli *et al*., 1993; Kohli and Jaworski, 1990). Its essence is the generic activities associated with the generation, dissemination and response to market intelligence. In accordance, market orientation is represented by three behavioural components – intelligence generation, dissemination and responsiveness – plus an integrative dimension, coordination.

Independently of whether it is perceived as an aspect of culture or a set of behaviours and processes, it has been argued that a firm's market orientation creates the context in which exploitation and exploration can "*cross-pollinate*" (Kyriakopoulos and Moorman, 2004: 224). First of all, market orientation has been conceived of as a precursor to capability building (e.g. Hurley and Hult, 1998; Day, 1994). Particularly, market orientation's role as a source of dynamic capabilities development has been identified (e.g. Yalcinkaya *et al*., 2007). Second, market orientation systematically endorses synergies between exploitative and explorative capabilities, thus creating opportunities for complementarity between them. It acts as an organizational factor that can ensure simultaneous investments in both the exploitation of current capabilities and the exploration of new ones (Atuahene-Gima, 2005).

Some authors have argued that being too market oriented locks the firm into its existent customers, thereby thwarting opportunities in emerging markets (Christensen and Bower, 1996; Hamel and Prahalad, 1996). Others have posited that a market orientation cannot be confused with being led by customers (Slater and Narver, 1999, 1998). That would represent a reactive approach and the consideration of merely one element of the market. In fact, Slater and Narver (1999) have posited that market orientation benefits the firm and that those benefits evolve over the time. Hence, they contradict the idea that market orientation can promote only exploitation. The capture and dissemination of information of not only current elements of the market – such as customers or competitors – but also of potential ones can encourage explorative activities.

Market orientation can have a crucial influence on how to properly deal with the development of exploitative and explorative capabilities. The focus of firms on exploitative capabilities can direct them to become centred and rigid, thereby losing touch with customers' changing needs. This tendency can likely be attenuated with market orientation, because the firm is constantly pushed to consider new customers and new ways of satisfying existing customers. Furthermore, it warrants that customer insights resulting from *exploitation* are disseminated in the firm, which can then employ them in innovation activities. Along with influencing exploitation, market orientation has also demonstrated being of help in developing *exploration*. Firms that cultivate exploration will lean to neglect the potential of the learning curve, which lessens their ability to gain rents from new discoveries (Bierly and Chakrabarti, 1996). That is why strong explorers often pave the way for the imitators who outperform them (Levinthal and March, 1993). To prevent this from happening, market orientation motivates the firm to work hard to exploit the commercialization potential of new knowledge. Moreover, it can conduct the customer insights that explorative capabilities generate toward refining exploitation efforts in current business domains (Kyriakopoulos and Moorman, 2004).

2.2.1.1.2 Technology Orientation

Technology orientation reflects the philosophy of "*technological push*" (Zhou *et al*., 2005: 45). Firms guided by this orientation accumulate plentiful technological knowledge stores through their past experience and processes (Zhou and Li, 2010). Investments in R&D, acquisition of new technologies, and collection of up-to-date technology information are some examples. The foundational argument of opting for such an orientation is that consumers prefer technologically superior products and services. To respond to this inclination, the firm develops a product-oriented management whose priority is making good products and improving them over time. As a result, technology orientation represents a potential for greater competitive advantage (Gatignon and Xuereb, 1997). A technologically oriented firm can use its technical knowledge to build a new technical solution and thus meet new customer needs.

A technology orientation enables firms to recognize emerging or potential technological trends and to reconfigure resources to capitalize on those opportunities (Zhou *et al*., 2005). A

technology-oriented firm champions the use of the latest technologies in its new products and heavily devotes its resources to R&D (Zhou *et al*., 2005; Gatignon and Xuereb, 1997). It advocates openness to new ideas and favours those that employ state-of-the-art technologies. The creativity and invention environment of these firms drives the path to breakthrough innovations and, thus, to *explorative* capabilities (Zhou *et al*., 2005).

2.2.1.1.3 Entrepreneurial Orientation

Entrepreneurial orientation reflects a firm's inclination to engage in "*the pursuit of new market opportunities and the renewal of existing areas of operation*" (Hult and Ketchen, 2001: 901). Entrepreneurial orientation focuses on the use of knowledge-based resources and captures specific aspects of decision-making styles, methods, and practices. Entrepreneurial firms invest in out-of-the-box strategy-making and decision-making processes (Baker and Sinkula, 2009; Avlonitis and Salavou, 2007). These processes facilitate firm action based on early signals from its internal and external environments (Wiklund and Shepherd, 2003).

Values such as being highly proactive toward market opportunities, being tolerant to risk, and being receptive to innovations are encouraged (Zhou *et al*., 2005). As such, entrepreneurial orientation motivates the firm to embark on proactive and aggressive initiatives to alter the competitive scene to its advantage (Avlonitis and Salavou, 2007; Atuahene-Gima and Ko, 2001). The emphasis on proactivity toward new opportunities cultivates capacities that enable firms to create products not only ahead of competitors but also before existing customers become aware of their needs (Slater and Narver, 1995). It is possible, however, that the high tolerance to risk leads firms to devote efforts toward exploring opportunities that result in costly fiascos (Zhou *et al*., 2005).

In highlighting the spirit of creating new business out of ongoing practices and of rejuvenating stagnant firms, entrepreneurial orientation leads to frame-breaking activities. Firms with entrepreneurial cultures are more willing to exchange ideas and information and are more open to adopting outsider ideas. Thus, such firms are more likely to acquire knowledge through exploration (Brockman and Morgan, 2003; Slater and Narver, 1995). Entrepreneurship can act as a learning and selection mechanism that engenders exploratory and risk-seeking behaviours. It may also lead to the creation of new resource combinations

that may require competencies not currently available in the firm (Atuahene-Gima and Ko, 2001). It induces the firm to question previously held assumptions about customers, competition, and the environment, and as such, it promotes exploration (March, 2006, 1996, 1991). Not surprisingly, it has been found that entrepreneurial firms foster tech- and market-based innovations (Zhou *et al*., 2005), as well as a firm's ability to introduce new products (Avlonitis and Salavou, 2007), two outcomes that are highly linked to *exploration*.

2.2.1.1.4 Innovation Orientation

An innovation orientation involves the implementation of new ideas, products or processes (Zaltman, Duncan and Holbek, 1973). This orientation involves a set of organization-wide shared beliefs and understandings that drive a firm's ability to innovate continuously (Siguaw, Simpson and Enz, 2006; Calantone, Cavusgil and Zhao, 2002). An innovation-oriented firm focuses on developing key organizational competencies in resource allocation, technology, employees, operations and markets so as to constantly innovate (Simpson *et al*., 2006). More innovative firms are timelier, creative, prolific in the introduction of new products or services and quicker in modifying existing offerings so as to provide superior benefits to their customers (Moorman, 1995; Deshpandé *et al*., 1993). The innovation-oriented knowledge structure has been proved to enhance performance (e.g. Hult, Hurley and Knight, 2004; Deshpandé *et al*., 1993), stock market value (e.g. Sharma and Lacey, 2004), order of market entry (e.g. Manu and Sriram, 1996), market success (Atuahene-Gima, 1996), generation of innovations and ideas (Han *et al*., 1998) and innovative productivity; shorten cycle times and timing of innovation modifications; and to encourage continuous incremental innovation, amongst other outcomes (Simpson *et al*., 2006). For those reasons, it can be coupled with both *exploitative* and *explorative* capabilities.

2.2.1.1.5 Resource Orientation

Resource orientation reflects the extent to which a firm is oriented toward developing valuable and unique resource bundles in the firm, therefore describing the degree to which a firm practices the RBV (Paladino, 2008). Resource-oriented firms focus on developing and deploying their resources. They are concerned with accumulating a unique resource base that is immobile, heterogeneous and difficult and costly to imitate (Barney, 1991). To provide

these features to their resources, firms attempt to build synergy, uniqueness and dynamism in their resources and routines. In addition, these firms foster collective learning and transfer information and skills to facilitate innovation. They then use the resultant resource base to exploit any opportunities or to neutralize any threats that arise from the external environment. Specifically, resource orientation has had a positive influence on innovative outcomes, namely product quality, new product success and innovation (e.g. Paladino, 2008). These innovative outcomes comprise elements associated to both *exploitation* and *exploration*.

2.2.1.1.6 Orientation Toward the Future

Orientation toward the future reflects firms' attention to events that have yet to occur (Tellis, Prabhu and Chandy, 2009; Chandy and Tellis, 1998). Firms with a future focus are keenly aware of market-related developments and their potential effects (e.g. Hamel and Prahalad, 1996). This orientation decreases the likelihood that the firm is preoccupied exclusively with concerns of the past and present. This orientation broadens the horizons of managers and alerts them to new technologies, competitors and customers (Deshpandé *et al*., 1993). Greater attention on the future facilitates the pursuit and obtaining of innovation outcomes (Tellis *et al*., 2009; Chandy and Tellis, 1998). Firms oriented toward the future acknowledge the restrictions of the current technology and the emergence of a new generation of technology that may become dominant in the future (Tellis *et al*., 2009; Christensen and Bower, 1996). Not only are those firms more aware of opportunities, but they also tend to be prepared for the changes in the technological and market landscapes. Hence, firms focused on the future have been shown to develop extraradical innovations, which are intrinsic to *explorative* capabilities (Tellis *et al*., 2009).

2.2.1.2 Resources

Resources are the "*assets, capabilities, organizational processes, firm attributes, information, knowledge, (...) controlled by a firm*" (Barney, 1991: 101). According to the RBV, resources are key to a firm's positional advantage and performance (e.g. Newbert, 2007; Morgan, Vorhies and Schlegelmilch, 2006; Piercy, Kaleka and Katsikeas, 1998). In general, resources and capabilities have been distinguished as dissimilar. Resources are the firm-controlled asset stocks that constitute the raw materials available to the firm, whereas capabilities are the

processes by which the firm deploys available resources and combines and transforms them into value offerings for the market (e.g. Morgan *et al*., 2004). Hence, resources are inputs to capabilities.

Several types of resources have been mentioned as positive influences on capability development in existing literature (e.g. Morgan *et al*., 2006). For example, reputational resources are intangible image-based assets available to the firm, such as brand equity. Financial resources concern the ability to access cash and capital. Human resources refer to the number and characteristics of personnel available to formulate and implement strategy, such as managers or export personnel's experience, knowledge, and skills. Cultural resources concern the shared values, beliefs, and assumptions that provide the behavioural norms that shape planned competitive strategy. Relational resources concern the number, strength and quality of existing relationships with key constituents such as customers and distributors. Informational resources refer to data that have been interpreted and given meaning concerning various domains pertinent to competitive strategy.

Resources such as human, physical, organizational and social capitals have been highlighted as important to promoting dynamic capabilities and innovative activities. Human capital, namely professional know-how and operational and managerial knowledge has been shown to positively influence innovative activities (Tellis *et al*., 2009; Wu, 2007; Subramaniam and Youndt, 2005; Özsomer and Genctürk, 2003). Financial and physical capital, that is, money, land, buildings and equipment have likewise been demonstrated to influence dynamic capabilities (Tellis *et al*., 2009; Wu, 2007). Organizational capital, or the institutionalized knowledge and codified experience residing in and used through databases, patents, manuals, structures, systems and processes, positively influences incremental innovative capability (exploitation) (Subramaniam and Youndt, 2005). In particular, the existence of formalization, or of following rules and procedures in performing one's job, is a source of exploitation (Özsomer and Genctürk, 2003). Similarly, process management, that is, combined efforts to map, improve, and adhere to organizational processes, is perceived as important to both exploration and exploitation (Benner and Tushman, 2003). Social capital, or the knowledge embedded in, available through, and used by interactions among individuals and their networks of interrelationships, has also been demonstrated to play a significant role in both incremental and radical innovative capabilities (Subramaniam and Youndt, 2005). Similarly, it has been found that the socialization of a firm's employees influences exploitation and

exploration (Özsomer and Genctürk, 2003). Thus, resources can source both *exploitation* and *exploration*.

2.2.1.3 Slack Resources

Slack resources, or organizational slack, are resources that the firm does not consume in its continual daily operations (Garcia *et al*., 2003; Singh, 1986; Bourgeois, 1981). Specifically, organizational slack is "*that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment*" (Bourgeois, 1981: 30). Overdesigned equipment, cash reserves, overqualified personnel, undiscovered improvements in current technology, relaxed managerial control procedures and underused knowledge bases are some examples of such uncommitted resources (Garcia *et al*., 2003). They represent an excess stock of resources that are available to spend on explorative activities (Voss, Sirdeshmukh and Voss, 2008; Nohria and Gulati, 1996). For instance, cash reserves are resources available to hire new experts or to buy new equipment or materials that are not directly related to the firm's current activities (Danneels, 2008).

The type of effects of slack resources on exploration and exploitation is not consensual. One perspective states that slack provides the margin necessary for the firm to undertake *explorative* activities (Danneels, 2008; Garcia *et al*., 2003; Özsomer and Genctürk, 2003). A firm without slack resources might prefer the immediate return of exploitative activities given the time-distant nature of the explorative returns. In this line of thought, the existence of slack "*encourages search activities that cannot be justified in terms of their expected return for the organization*" (Levinthal, 1991: 309) and even new ideas in advance of actual needs. In this regard, slack enables organizations to divert attention away from fire-fighting to focus on expansive thinking and risky, innovative ventures with potentially high payoffs (Nohria and Gulati, 1996). The opposing perspective states that, even though the firm has uncommitted resources, it will not necessarily use them, as it does not feel the pressure to do so. In this line of thought, slack leads to risk aversion, which results in low exploration, passivity in organizational responses and increased motivation to capitalize on known competencies (Levinthal and March, 1993).

Voss and colleagues (2008) have identified several dimensions of slack, to better understand its effect on dynamic capabilities: customer relational slack, operational slack and human resource slack. Customer relational slack is the slack attributable to relational, or committed, customers, which is difficult to build and negatively influences product exploration. Managers tend to protect such hard-earned and difficult-to-recoup resources and are unwilling to stray from ongoing value-creating activities central to existing relationships (Christensen and Bower, 1996). So, they might be cautions in pursuing explorative activities that can lead to reputation failure and compromise relational capital. Operational slack derives from unused or underused operational resources, such as excess production capacity (Bourgeois, 1981). Because operational slack is usually tied to a specific purpose in a firm, it is difficult to readily reallocate it to alternative uses. So, it might lead to risk aversion and a focus on restricting losses, thus negatively influencing exploration and favouring exploitation. Human resource slack refers to specialized and skilled human resources, which are hard to acquire, especially in competitive markets. Competitive markets foster efforts to retain and protect skilled, specialized people given their importance to long-term competitive advantage (Barney, 1991). These human resources are allocated to the firm's current operations and are difficult to reallocate in the short term, which encourages *exploitation*.

2.2.1.4 Willingness to Cannibalize

Willingness to cannibalize might enhance exploration. Willingness to cannibalize is conceptualized as the extent to which a firm is prepared to reduce the actual or potential value of its investments in assets and organizational routines (Chandy and Tellis, 1998). The reason of this detachment to already-made investments can be twofold. First, firms may be more willing to cannibalize their investments than to let competitors affect them. This way, they would be quicker than competitors having more chances to outperform them. Second, it eases the search for new areas and domains.

Over time, firms develop routines, which represent a lost cost investment specific to the firm's historical domains of activity (Danneels, 2008). If the firm is devoted to its current resource base and engages only in new directions that fit its existing resources, it will shun initiatives that diverge from what it is currently doing, thus inhibiting exploration. In contrast,

if the firm is willing to invest in what possibly will make its existing resources obsolete, it will enhance *exploration* (Danneels, 2008, 2002; Chandy and Tellis, 1998). Firms that express this attitude will review and might sacrifice current profit-generating assets, including current profitable and successful innovations, to get ahead with the next generation of innovations (Tellis *et al*., 2009).

2.2.1.5 Constructive Conflict

Given the enticement of multiple views and options, constructive conflict has been considered an antecedent to exploration (e.g. Danneels, 2008). Constructive conflict involves firm members' vigorous debate of ideas, beliefs and assumptions (Danneels, 2008). There is a clear distinction between constructive and dysfunctional conflict. With constructive conflict, opposing views are openly discussed, thus facilitating the generation and a careful consideration of alternatives. Conversely, with dysfunctional conflict, there may be a withholding or even distortion of information. As a consequence, there may be a breach in behind-the-scenes politicking, as managers might hold back information as a strategy to obtain the desired outcomes. In addition, there is a higher probability for conflict regarding a specific task turning it into personal attacks (Danneels, 2008).

Constructive conflict encourages firm collaborators to speak freely and challenge the premises of other members' viewpoints without the threat of anger, resentment, or retribution. Thus, by creating an environment in which controversial, dissenting, or minority opinions can be expressed and explored, this type of conflict provides a safety net for new ideas (Danneels, 2008; Levinthal and March, 1993). Because *explorative* activities challenge the status quo, they have a favourable background in firms that encourage constructive conflict.

2.2.1.6 Tolerance for Failure

Firms that express a tolerance for failure regard failure as inescapable on the path of reaching new directions (Danneels, 2008). As such, unsuccessful projects do not become scapegoats and are even perceived as opportunities to learn (Levinthal and March, 1993). In contrast, firms that are intolerant to failure or risk have a punitive climate in which firm members are disheartened from taking any risky actions.

This risk and trade-off do not come naturally to managers. Therefore, risk-taking actions are likely to trigger opposition. Exploration and explorative capabilities involve uncertainty and greater risk of failure (e.g. March, 2006, 1996, 1991). Investing in explorative activities involves trading a current, sure stream of profits for a time distant, uncertain stream of profits. A punitive climate thwarts exploration, because it reinforces the natural avoidance of risk and possible failure. However, the fostering and promotion of a risk-tolerant climate enhances *explorative* activities (Tellis *et al*., 2009), particularly technological explorative activities (Danneels, 2008).

2.2.1.7 Environmental Scanning

Environmental scanning reflects the extent to which firms make an effort to learn about events and trends in their environment (Danneels, 2008). The screening and analysis of the environment fosters the recognition of opportunities in terms of new markets and new technologies (exploration). It can be implemented through the participation in industry associations: in professional and trade activities and in the development of relationships with peers and centres of knowledge, trade and professional literature. These sources of information increase the richness of knowledge inside the firm and promote the identification and pursuit of opportunities for *exploration* (Danneels, 2008).

2.2.1.8 Empowerment and Incentives

Empowerment is the process of increasing the capacity of firm members to make choices and transform those choices into desired actions and outcomes (Markham and Griffin, 1998; Shane, 1994; Howell and Higgins, 1990). Through this practice, a firm gives permission and resources to an individual so that he or she can explore, research and build on promising but uncertain technologies (Tellis *et al*., 2009). The motivation of a person's initiative and the provision of authority and resources to put it in practice benefits innovation and explorative capabilities.

The firm needs to establish incentives (Zenger and Lazzarini, 2004). A firm's incentives are rewards that aim to incite action or greater effort (Makri, Lane and Gomez-Mejia, 2006). If

managers are rewarded for their explorative capabilities and finding off new perspectives, they have the motivation to overcome the initial fears associated with exploration. The existence of incentives to firm members who explore or build new businesses for the firm assist radical innovations and *explorative* activities (Tellis *et al*., 2009).

In conclusion, internal factors may promote dynamic capabilities. Strategic orientation – specifically market orientation – and resources (the possession of specific resources and having slack resources) are the factors that have received more attention as sources of dynamic capabilities. More recent studies have broadened the antecedent alternatives to include factors such as willingness to cannibalize, constructive conflict, tolerance for failure, environmental scanning and empowerment and incentives. Nevertheless, innovative activities and dynamic capabilities are influenced not only by firm factors but also by elements outside the firm.

2.2.2. External Factors

Environmental determinants of the setting in which the firm operates may provide incentives or deterrents for a firm to develop innovation or dynamic capabilities (Cui, Griffith and Cavusgil, 2005). Researchers have identified competitive intensity and market dynamism as being directly associated with firms' strategic usage of knowledge resources (e.g. Jap, 1999; Jaworski and Kohli, 1993). Firms, particularly those involved in international activities, face the challenge of competing with numerous competitors and of quickly reacting to dynamic changes in the market. Thus, firms must develop knowledge-creation and management capabilities to cope with such competitive conditions (Cui *et al*., 2005). The existence of firm's partners and their willingness to cooperate and provide extra resources should be taken into account given their importance in helping the firm develop dynamic capabilities.

2.2.2.1 Competitive Intensity

Competitive intensity refers to the degree to which a firm faces competition in a given market (Grewal and Tansuhaj, 2001; Jaworski and Kohli, 1993; Porter, 1985). In markets characterized by intense competition, customers have many alternatives and firms must

monitor and respond to customer needs to ensure they choose their offerings over those of competitors (Kohli and Jaworski, 1990). In such markets, firms strive to develop greater knowledge capabilities to enhance their understanding of customer needs (Cui *et al*., 2005). When competition becomes fierce, identifying the sources of a defensible, hard-to-duplicate competitive position becomes critical (Rumelt *et al*., 1991). As a result, high competitive intensity adds pressure to develop *explorative* capabilities. Conversely, low competitive markets release the burden to continually look for new ways of doing business and to continually innovate. In such markets, firms can more easily – and for a longer period of time – sustain a competitive position with *exploitative* capabilities.

2.2.2.2 Market Dynamism

Market dynamism refers to the degree of change in a given market (Jap, 1999; Achrol, 1991), such as modifications in customer demand, technology or competitor structure (Cui *et al*., 2005). The conceptualization of dynamic capabilities encompasses market dynamism as an influential factor for firm capability development and evolution (Eisenhardt and Martin, 2000). In highly dynamic markets, there are frequent changes in customer demand, technology and business practices, changes that compel firms to develop *explorative* capabilities to remain competitive (Wang and Ahmed, 2007; Cui *et al*., 2005). The firm is forced to innovate and move along with the markets if it wants to survive in them. Therefore, exploration will be privileged. Alternatively, less dynamic markets have a relative stability in customer demand, technology and business practices, which requires less product or service modifications. Hence, in such markets, *exploitation* will be more valued.

2.2.2.3 External Partners' Willingness to Cooperate

Firms are not islands. They develop relationships with other firms or organizations, such as customers, suppliers and even competitors. Particularly, they can rely on downstream channels to get their products to end users, or they can partner with research institutions to access new technologies. Thus, other firms or organizations can provide a firm resources that are necessary or that complement its existing resources (Wu, 2007). External partners' willingness to cooperate refers to other firms' willingness to provide the extra, complementary resources necessary to the firm (Wu, 2007). The importance of the

cooperation of support firms in obtaining access to the requisite complementary resources has been highlighted in the alliances literature (e.g. Tiwana, 2008; Tiwana and Keil, 2007), the embeddedness literature (e.g. McEvily and Marcus, 2005; McEvily and Zaheer, 1999) and the network studies literature (e.g. Gulati, 1999). The willingness of support firms to cooperate and even provide complementary resources positively influences the development of dynamic capabilities (Wu, 2007). The abundance of these external resources permits the integration, reconfiguration and learning of resources, such that they become meaningful. Therefore, both *exploitation* and *exploration* will be developed.

2.3. OUTCOMES OF DYNAMIC CAPABILITIES

Performance, namely innovation performance and firm performance has been proposed as an outcome to be expected from dynamic capabilities (e.g. Atuahene-Gima, 2005; Özsomer and Genctürk, 2003). Even though there has been a prominent theoretical evolution of the influence of exploitation and exploration or both dynamic capabilities in several dimensions of performance, there have been fewer empirical studies. Since March (1991) first proposed the exploitation and exploration concepts, numerous studies have built on his work. These studies can be split into two groups: (1) those that have used objective data and (2) those that have opted to develop or use existent multi-item measures. The first group of studies, mainly from the strategic and business literatures, tend to use financial and R&D databases to assess the influence of exploitation and exploration on performance (e.g. Uotila *et al.*, 2009). To measure exploitation and exploration, these studies typically have used objective, single items, such as R&D intensity (i.e., the percentage of sales invested in R&D). These studies have made some advances in disentangling short-term and long-term effects on firm performance through the use of longitudinal techniques. The latter group of studies, from the product innovation and new product development literatures, have made progress in building multi-item measures of exploitation and exploration (e.g. Atuahene-Gima, 2005; Kyriakopoulos and Moorman, 2004). These studies provide a deeper understanding of the dynamic capabilities and exploitation and exploration activities themselves.

2.3.1. Firm Performance

Firm performance is among the most researched dependent variables in the management literature (for a review of export performance, see Sousa, Martínez-López and Coelho, 2008; Zou and Stan, 1998). It is "*an indispensable guide for any company analyzing its level of success, both in the domestic and international arenas*" (Lages, 2000: 32). Even though there is no uniform definition of the term, firm performance can be described as "*the extent to which a firm's objectives, both economic and strategic (…) are achieved through planning and execution of (…) marketing strategy*" (Cavusgil and Zou, 1994: 4). Although this definition captures effectiveness, other concepts can be equally important to measuring performance (for a framework of export performance, see Diamantopoulos and Kakkos, 2007). In particular, efficiency, that is, the ratio of performance outcomes to the inputs required to achieve them is usually observed together with effectiveness.

There is some discussion as to whether firm performance should be assessed at the firm level or at a lower level, such as the export venture level (i.e., a single product or product line commercialized in a single market). The main theoretical justification for adopting a firm-level perspective is internalization which posits that, in imperfect markets, firms should internalize their specific advantages to obtain the utmost economic rent (e.g. Buckley and Casson, 1985). This way, firm's advantages are not restrained to a particular product or venture but are associated with the total learning process of the firm. In fact, for some firms it does not make sense to examine export success at the venture or product levels (Katsikeas, Leonidou and Morgan, 2000). A different view comes from supporters of a venture level approach (e.g. Morgan *et al*., 2004; Cavusgil and Zou, 1994) that argue that there are considerable variations in performance across various product-market ventures of the same firm. Firms with multiple ventures are unlikely to have the same results in all ventures, even if they adopt the same marketing strategy. In conclusion, there is no consensus in the literature regarding which level of analysis is most appropriate although there is some agreement that the level depends on the aim of the research (Sousa *et al*., 2008). If a researcher is studying interfirm variation, then variables of interest may occur at the broader multiproduct market level (i.e., things that happen across the firm's markets) or may be specific to the firm (e.g., the firm's culture) and not just in a single market. For the purposes of our study, capabilities, namely dynamic capabilities, develop in markets and over time, but eventually they are firm-

level capabilities. As a result, one would expect capabilities to have a halo-like effect on performance across the firm's ventures and, thus, be captured at the firm level.

There is concrete evidence of exploitative and explorative capabilities on the firm's financial and economic performance (e.g. Uotila *et al*., 2009; Wang and Li, 2008; Wu, 2007; Özsomer and Genctürk, 2003), market performance (Yalcinkaya *et al*., 2007), firm value (e.g. He and Wang, 2009; Døving and Gooderham, 2008), effectiveness and efficiency (e.g. Auh and Menguc, 2005; Song *et al*., 2005; Özsomer and Genctürk, 2003), and revenue and margin growth (Morgan *et al*., 2009a).

When considering the outcomes of exploitative and explorative capabilities, it is relevant to distinguish between long-term performance and short-term performance. Although long-term performance (of an export venture) can be generalized as the "*financial and strategic performance and the firm's satisfaction with the export venture*" (Zou, Taylor and Osland, 1998: 41), short-term performance refers to the "*satisfaction with short-term performance improvement, short-term exporting intensity improvement and expected short-term performance improvement over a one-year period*" (Lages and Lages, 2004: 40). It has been argued that exploitative capabilities enable a firm to enhance its short-term performance (Rothaermel and Deeds, 2004; Garcia *et al*., 2003; Lee *et al*., 2003) through moderate but certain and immediate returns. By leveraging a firm's existing products and services, these exploitative capabilities enable it to deepen its value delivery in an existing target market (Yalcinkaya *et al*., 2007), to improve efficiency (Özsomer and Genctürk, 2003), to increase present performance (Rothaermel and Deeds, 2004; Garcia *et al*., 2003; Lee *et al*., 2003), and to ensure the firm's immediate survival (Lee *et al*., 2003; Sitkin and Sutcliffe, 1994) and short-term success (Atuahene-Gima, 2005). Therefore, in the short term, this stable, predictable flux of benefits is expected, and inherently, a positive influence of exploitative capabilities on short-term performance is also expected (March, 2006, 1996, 1991; Lewin, et al., 1999). Exploitative capabilities' effect on long-term performance is likely lower than the effects of successful explorative capabilities' returns (Yalcinkaya *et al*., 2007). Exploration activities are traditionally risky (Lewin *et al*., 1999), but are crucial to long-term performance. Explorative capabilities provide less certain and more distant outcomes but possibly greater-than-average outcomes. They may have a positive impact only on a long-term basis.

2.3.2. New Product Development

New product development and performance are affected by both exploitative capabilities (e.g. Atuahene-Gima and Murray, 2007; Özsomer and Genctürk, 2003) and explorative capabilities (e.g. Yalcinkaya *et al*., 2007). New product development is considered crucial to firm performance and survival (Atuahene-Gima and Murray, 2007; Kleinschmidt, de Brentani and Salomo, 2007; Montoya-Weiss and Calantone, 1994). It reflects the process of bringing a new product or service to the market. The building and replication of existent technological and product-market knowledge and experience enables the firm to improve its current capabilities, to reduce errors in problem solving and to avoid mistakes in new product development (Atuahene-Gima and Murray, 2007). As a result, the firm's efficiency (Shane, 2000), and the product development process (Cyert and March, 1992) improve. However, a focus on current capabilities might make the firm privilege familiar knowledge and avoid newer knowledge that deviates substantially from its current skills (Benner and Tushman, 2003; Levinthal and March, 1993; March, 1991). Because a firm's purpose is to reduce variety and improve productivity, the firm maintains minimal extensions from its existing products and service portfolio (Yalcinkaya *et al*., 2007; Danneels, 2002; Christensen and Bower, 1996). This knowledge ossification and favour of existent practices leads the firm to disregard innovations that are very different from what the firm currently has (Danneels, 2002; Christensen and Bower, 1996). Hence, investment in exploitative capabilities affects new product development because it represents a restraining force in what regards, for instance, the inclusion of new features (e.g. Atuahene-Gima and Murray, 2007; Özsomer and Genctürk, 2003).

The development of explorative capabilities encourages the firm to introduce entirely new products and services into the market. They are associated with issues such as risk taking, radical innovation or disinnovation and discovery (Atuahene-Gima, 2005). This introduction of new products and services can help the firm overcome some prior limitations and can help enhance the delivery of value to current customers and the extension of products and services to new customers (Yalcinkaya *et al*., 2007). The resultant new products will contain emergent ideas that may differentiate them from competitors' offerings and be considered superior by customers (Katila and Ahuja, 2002). Hence, exploration might also be related – positively – to new product development and performance.

2.3.3. Innovation Performance

Overall, new product development represents the design and launch of a firm new offering. Although some studies have treated new product development as a whole (e.g. Yalcinkaya *et al*., 2007), others have distinguished the type of innovation each new product enclosed (e.g. Atuahene-Gima, 2005). Particularly, the latter group of studies have stated that exploitative and explorative capabilities have distinct effects on different types of innovations and introduced the innovation performance outcome concept. Innovation performance can be defined as the "*number of new product innovations introduced by the firm, percentage of sales of new product innovations and the relative frequency of introducing innovations compared with competitors*" (Atuahene-Gima, 2005: 65). There are two types of innovation performance: incremental and radical. Incremental innovation performance relates to the "*product improvements and line extensions that are usually aimed at satisfying the needs of existing customers*" (Atuahene-Gima, 2005: 65), whereas radical innovation performance refers to the "*fundamental changes in technology for the firm, typically address the needs of emerging customers, are new to the firm and/or industry, and offer substantial new benefits to customers*" (Atuahene-Gima, 2005: 65).

Exploitative capabilities, which build on an existing set of resources or capabilities under the firm's control (March, 2006, 1996, 1991; Rothaermel and Deeds, 2004), tend to rely on problem solutions in the neighbourhood of the firm's current experience (March, 2006, 1996, 1991; Atuahene-Gima, 2005). Exploitative capabilities focus on current customer needs, existent markets, familiar technologies and products, and they aim for efficiency and productivity. Firms that develop exploitative capabilities will better adapt to current environmental conditions and to existing customers' needs (Lubatkin *et al*., 2006). They will benefit from small changes and reduced deviations in operations, thus increasing a firm's incremental innovations (Atuahene-Gima, 2005; Leonard-Barton, 1992).

Explorative capabilities involve acquiring entirely new knowledge, skills and processes and aim for greater flexibility and novelty (March, 2006, 1996, 1991). Consequently, the firm tends to deviate from its current know-how and expresses an ability to add new variants of knowledge to its knowledge repertoire (Atuahene-Gima and Murray, 2007; March, 2006, 1996, 1991). Because of the importance given to experimentation and the focus on emerging markets and technologies, explorative capabilities produce radical innovations that offer

entirely new value to customers (Atuahene-Gima, 2005). Then, the firm can promptly capitalize on formerly unexplored opportunities (Atuahene-Gima, 2005) and become proficient in proactively responding to environmental changes by looking for revolutionary innovations (Lubatkin *et al*., 2006). Therefore, explorative capabilities represent fundamental changes and an increased deviation from the way the firm has traditionally operated (Atuahene-Gima, 2005; Leonard-Barton, 1992).

Distinct product innovations (e.g. Danneels, 2002; Henard and Szymanski, 2001) and incremental and radical new product innovations (e.g. Atuahene-Gima, 2005) are some outcomes of dynamic capabilities that have received concrete evidence.

2.4. MODERATORS

According to contingency theory, there is no single best way to strategize, and no strategic choice is universally beneficial in all conditions (Ginsberg and Venkatraman, 1985; Lawrence and Lorsch, 1967). This theory emphasizes the importance of contingency factors, including external and internal factors, in moderating the strength of the strategy–performance relationship (Zhou *et al*., 2007). A moderator variable systematically modifies either the form and/or the strength of the relationship between a predictor and criterion variable (Baron and Kenny, 1986; Sharma, Durand and Gur-Arie, 1981). A moderator variable does not explain or mediate the relationship between the predictor and the criterion variables; that is, it does not imply a causal relationship and it does not operate as a facilitator by allowing the relationship to be possible. It moderates the relationship, which means that it produces changes in the relationship or modifies the relationship. The importance of testing moderator variables effects has been already recognized (Hall and Rosenthal, 1991). When the literature reaches an adequate level of sophistication and development – such as what is currently happening in the exporting literature, for example – researchers tend not only to focus on detecting the main effects of independent variables but also to analyze moderating effects (Sousa *et al*., 2008).

A recent review of the exporting literature indicated that the effects of several firm characteristics on export performance depend on the specific *context* of the firm (Sousa *et al*.,

2008). That is, there are contingent circumstances that should be taken into account when studying export performance. Specifically, one can distinguish between internal and external moderators of the relationship between firm characteristics and export performance.

2.4.1. Internal Factors

2.4.1.1 Interfunctional Coordination

Interfunctional coordination is described as "*the coordinated utilization of company resources in creating superior value for target customers*" (Narver and Slater, 1990: 22). Organizational knowledge creation, management and transfer have been increasing considered crucial to the creation of competitive advantage. Nevertheless, knowledge transfer in particular presents some difficulties (e.g. Charles Galunic and Rodan, 1998; Szulanski, 1996). To have that effect, the integration of differentiated knowledge is required (Van Wijk *et al*., 2008). Interfunctional coordination reflects a coordinated effort to create superior value (Narver and Slater, 1990) and reflects an organization-wide responsibility for market-oriented activities (Kohli and Jaworski, 1990). It ensures that market-oriented activities are carried out effectively and efficiently (Cadogan and Diamantopoulos, 1995). The competitive advantage and improved performance that a firm's capabilities confer depends on the efficiency with which the firm integrates those capabilities (Day and Wensley, 1988; Granovetter, 1985). Interfunctional coordination is a key (informal) knowledge integration mechanism (Gatignon and Xuereb, 1997; Olson, Walker and Ruekert, 1995).

Interfunctional coordination aligns the goals of functional areas. Marketing and manufacturing, for example, may experience conflicting goals. Whilst marketing wants to satisfy the needs of intermediaries and customers by ensuring timely delivery of products, manufacturing wants to avoid the additional costs incurred from meeting the different delivery requirements (Zhang, Hu and Gu, 2008). By integrating and balancing the diverging needs of the functional areas, interfunctional coordination improves firms activities (Cadogan *et al*., 2002). This coordination prevents conflicts and mistrust among functions and allows the firm to effectively use its capabilities (Zahra and Nielsen, 2002). As a result, the firm can use its resources to obtain innovation and performance outcomes (Troy, Hirunyawipada and Paswan, 2008; Gatignon and Xuereb, 1997). Its moderating effect has been observed in the weakening of the negative effect of exploitative capabilities on radical innovation

performance and on the strengthening of the positive effect of explorative capabilities on radical innovation performance (Atuahene-Gima, 2005).

2.4.1.2 Entrepreneurial Orientation

As discussed in point 2.2.1.1.3. of this dissertation (pages 29-30), entrepreneurial orientation constitutes a firm's strategic orientation. Entrepreneurial orientation can enhance other firm resources and capabilities and enhance the impact of resources and capabilities over firm performance (Wiklund and Shepherd, 2003). A firm well endowed with knowledge-based resources performs even better if it is entrepreneurial. If a firm possesses knowledge-based resources, it knows where to look for opportunities and can more accurately assess and extract their value (Cohen and Levinthal, 1990). Nevertheless, if the firm is reluctant to grasp and enthusiastically pursue such opportunities, the knowledge-based resources and capabilities are likely to be underused (Wiklund and Shepherd, 2003). In this direction, entrepreneurial orientation is crucial in the motivation of the search for opportunities and the benefit from these opportunities. This suggests that the willingness to be innovative, proactive and take risks boosts the positive impact of explorative capabilities on performance.

2.4.2. External Factors

2.4.2.1 Environmental Turbulence

Environmental turbulence reflects the degree of changes in composition of customers, customer preferences and competitor strategies (market turbulence) and technology (technological turbulence) (Tu, 2010; Jaworski and Kohli, 1993; Narver and Slater, 1990). It has been shown to affect the nature and extent of organizational learning (Menon, Bharadwaj, Adidam and Edison, 1999; Slater and Narver, 1995; Sinkula, 1994). Both market and technological turbulence can make existent firm capabilities obsolete (Carbonell and Rodriguez, 2006; Tushman and Nelson, 1990) and pressure a firm to refine its current capabilities and develop new ones (Day, 1994). As a result, the contribution of dynamic capabilities, namely exploitative and explorative capabilities, to performance depends on the amount of turbulence in the firm's environment (Özsomer and Genctürk, 2003).

Stable environments are relatively well understood and do not require firms to make major changes in their practices or in the products they commercialize. So, in stable markets, firms tend to develop exploitative capabilities, which rely on refinement, control and implementation (Özsomer and Genctürk, 2003). In contrast, turbulent environments imply constant changes in technology and customer preferences, which require more flexibility and experimentation, as well as more frequent adaptations and introduction of new products. So, turbulent markets place greater value on explorative capabilities, associated with search, variation and discovery (Özsomer and Genctürk, 2003; Li and Atuahene-Gima, 2001).

Turbulence appears to decrease the value of exploitation and increase the value of exploration (Özsomer and Genctürk, 2003). For instance, Covin and Slevin (1989) found that environmental turbulence enhanced the effectiveness of product innovation, which is highly related to dynamic capabilities. In their study, (small) firms in volatile and *hostile* environments generated greater performance from product innovation than did firms that operated in stable and *benign* settings.

2.4.2.2 Competitive Intensity

Competitive intensity is a situation in which competition is fierce because of the number or strength of competitors in the market and the lack of potential opportunities for further growth. In particular, competitive intensity is one of the factors contributing to environmental hostility (Zahra and Covin, 1995). As such, competitive intensity pressures firms to invest more in exploratory activities and strategic renewal (Auh and Menguc, 2005; Zahra and Covin, 1995). When competitive intensity increases, predictability and certainty diminish and firms cannot be certain of the best actions to take. A firm's behaviour is likely to be highly influenced by its competitor's actions and contingencies. Consequently, the firm needs to engage in risk-taking and proactive activities, and to innovate in both products and processes. In addition, it is pushed to explore new markets, in order to find new ways to compete and try to differentiate from competitors (Auh and Menguc, 2005). Thus, competitive intensity influences the conversion of dynamic capabilities into performance.

SECTION 3. CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

In this section we introduce our conceptual model and explain the theoretical arguments supporting the research hypotheses. The model presents the relationships between the constructs chosen and suggests the research hypotheses that will be empirically tested. Our model and hypotheses are theoretically driven. The direct hypotheses are based on dynamic capabilities and international marketing and business literatures and organizational learning theory whereas the inclusion of moderators has its foundation on contingency theory.

3.1. CONCEPTUAL MODEL

The extant dynamic capabilities literature has suggested that the achievement of an enduring competitive advantage in dynamic markets (as the international) depends on firms' ability to obtain, integrate and reconfigure available resources in ways that match their evolving environment (e.g. Teece *et al*., 1997). To coordinate and redeploy resources effectively and thus create timely responses and flexible strategies, firms must possess appropriate capabilities (Teece, 2007; Yalcinkaya *et al*., 2007; Song *et al*., 2005; Griffith and Harvey, 2001; Eisenhardt and Martin, 2000; Teece *et al*., 1997). The idiosyncrasy of these capabilities is built on their embeddedness in firm's routines (Grant, 1996) and in internal processes and efforts, with consequent uniqueness and difficulty-to-imitate (Zhou and Li, 2010; Grewal and Slotegraaf, 2007; Griffith and Harvey, 2001; Day, 1994). So, some firms are more proficient than others at changing their resource base through the possession and renewal of these capabilities (Danneels, 2008; Yalcinkaya *et al*., 2007; Eisenhardt and Martin, 2000; Teece *et al*., 1997). Through developing dynamic capabilities, firms can respond promptly and implement flexible strategies to adapt to the unique characteristics of the marketplace (Teece, 2007; Song *et al*., 2005; Griffith and Harvey, 2001; Grant, 1996; Pisano, 1994).

Dynamic capabilities' relevance and importance to firms, specifically in the nowadays dynamic business world, is recognized. As such, it became crucial to ascertain which capabilities were dynamic and how to develop them. Amongst the dynamic capabilities identified, knowledge-creation capabilities such as exploration and exploitation have been highlighted as particularly important to firms (Yalcinkaya *et al*., 2007; Eisenhardt and Martin, 2000). Both exploitative and explorative capabilities entail a dynamic transformation of the

firm's current resources and processes into new capabilities that better match the environment (Yalcinkaya *et al*., 2007). Exploitative capabilities involve refining and extending existing paradigms (March, 1991), as well as knowledge, skills and processes (Atuahene-Gima, 2005). Explorative capabilities involve testing, searching for and applying new options to capitalize on formerly unexplored opportunities (March, 1991). They involve acquiring entirely new knowledge, skills and processes (Atuahene-Gima, 2005). With explorative capabilities, fundamental changes in the firm's current practices are more pronounced.

The path of knowledge and studies about dynamic capabilities has been accumulating, especially in the last decade. Nevertheless, the dynamic capabilities field is still rather recent and empirical work is in an initial phase (Newbert, 2007). Researchers are striving to broaden and deepen the understanding of dynamic capabilities and much is left to be discovered. Specifically, the exploitative and explorative capabilities' work has been mostly developed in the product development area. Recently, researchers called attention to the need of inclusion of other capability domains rather than merely the product development one (Uotila *et al*., 2009). Product, and product development, is important for firms, but it is not the only responsible element for the firm's success. Other capability domains such as distribution or marketing communication can also be seen through the dynamic capabilities perspective (Morgan *et al*., 2009b). A particularly relevant domain is market, due to its significance to firm's success, specifically innovation success (e.g. Yli-Renko and Janakiraman, 2008). Not only can markets, and more predominantly customers and distributors, provide useful insights to firms, but they can also determine the survival and success of firms through the acceptance of firm's offerings. Thus, the firm needs to appropriately manage its presence in the markets and the relationships it develops with markets' elements (such as customers or distributors).

With the inclusion of the market domain along with the product development domain, we broad the variety of dynamic capabilities to four types: product development exploitative capabilities, market-related exploitative capabilities, product development explorative capabilities and market-related explorative capabilities. Product development exploitative capabilities involve existing product modification or improvement. Market-related exploitative capabilities entail the reinforcement of the firm's presence and relationships in current markets. Product development explorative capabilities involve new product development. Market-related explorative capabilities involve searching new markets and developing new relationships with customers and distributors in those markets.

It is important not only to understand dynamic capabilities *per se*, but also to know how to develop them. There have been some studies of the antecedents (e.g. Danneels, 2008) and the necessary conditions (e.g. Rothaermel and Hess, 2007) to nurture dynamic capabilities. However, these have been mostly applied to domestic markets. Other contexts, characterized by high levels of dynamism, have been disregarded. The exporting context emerges as highly pertinent to dynamic capabilities, considering the magnitude exporting activities have on the success of firms (e.g. Golder, 2000) and the complex and dynamic nature of international markets (e.g. Brown and Eisenhardt, 1998). So, one has to check if the antecedents identified in the domestic context are also applicable to the exporting context or if there are specific antecedents to this latter context. We opted to test a previously found antecedent – market orientation – to confirm if this sourcing role is extended to the exporting context.

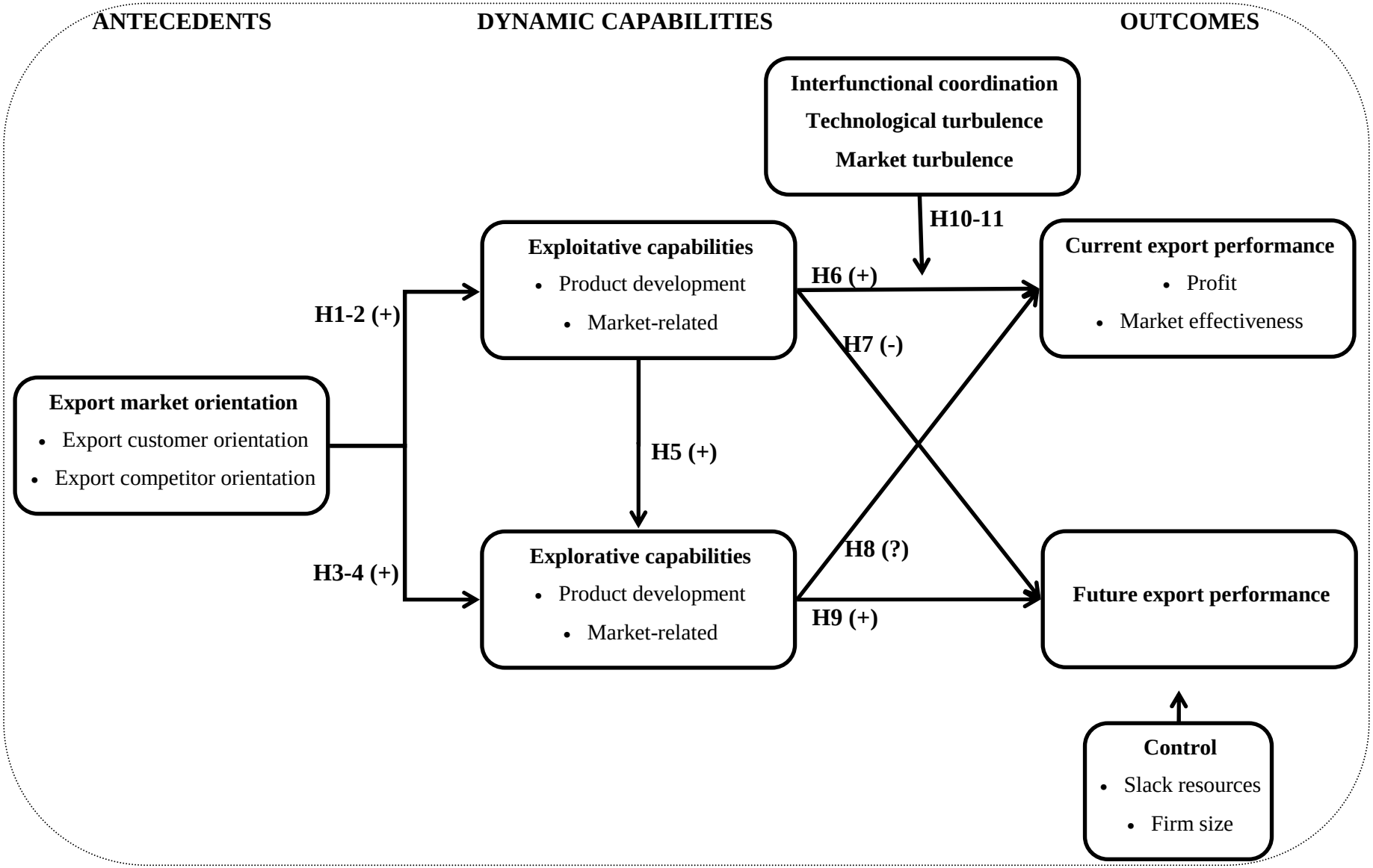
Market orientation, which is a strategic orientation with the creation of *superior customer value* in mind (Slater and Narver, 1995: 67), has been directly associated to performance. However, there were mixed results which have created some stir among researchers (e.g. Langerak, 2003). A possible explanation to those inconsistent results is that the effect of market orientation may be mediated by other variables, such as dynamic capabilities (e.g. Harmancioglu *et al.*, 2010). Specifically, the mediating role of product development exploitative and explorative capabilities in the relationship between market orientation and performance has been previously tested and confirmed (e.g. Atuahene-Gima, 2005). Hence, we build on previous work and test the antecedent role of market orientation in dynamic capabilities in a new context and considering and additional domain.

The potential outcomes of dynamic capabilities also call for more empirical studies. The influence of exploitation and exploration on firm's performance, such as financial performance (e.g. Wu, 2007) or efficiency (e.g. Auh and Menguc, 2005) has been tested in a domestic context and in a moment in time. Firms are not going to invest in the development of dynamic capabilities unless they feel that investment pays off. So, it is also relevant to ascertain the effects dynamic capabilities have on firm's outcomes on more than one period of time. Due to the conceptual differences of exploitative and explorative capabilities, there are potentially distinct effects in different periods of time – present and future. Even though there is theoretical work dedicated to the distinction of exploitation and exploration's potential effects on the short run and on the long run (e.g. March, 1991), empirical work is needed to

concretely test and confirm – or reject – the existence of those effects. In this direction, our study has current and future export performance as dynamic capabilities' outcomes.

We propose that export market orientation can lead to the development of different domains – product development and market – of dynamic capabilities. Furthermore, we propose that these dynamic capabilities are directly related to current and future export performance. Briefly, export market orientation acts as an antecedent of a firm's (1) *product development exploitative* capabilities, (2) *market-related exploitative* capabilities, (3) *product development explorative* capabilities, and (4) *market-related explorative* capabilities, which in turn influence firm's *current export performance* in terms of *profit* and *market effectiveness* and *future export performance.* In addition to the test of these direct effects, we include moderating effects. Particularly, an internal factor (*interfunctional coordination*) and an external factor (*environmental turbulence*, both *market* and *technological)* are studied as moderators of the dynamic capabilities–export performance relationship. Figure 3 presents an overview of the research model.

Figure 3: Conceptual Model of Dynamic Capabilities in the International Market



3.2. RESEARCH HYPOTHESES

The rationale behind the hypotheses exhibited in figure 3 is now discussed.

3.2.1. Sources of Dynamic Capabilities

Among the multiple possible sources of dynamic capabilities, given the international nature and context of the study, we chose *export market orientation*. The knowledge-based view and marketing theory suggest that market orientation influences the development of capabilities. Knowledge, specifically market knowledge can be used to generate idiosyncratic capabilities (Winter, 2003; Hunt and Morgan, 1995; Day, 1994; Amit and Schoemaker, 1993; Bharadwaj *et al*., 1993; Barney, 1991; Rumelt *et al*., 1991; Day and Wensley, 1988), such as dynamic capabilities (Atuahene-Gima, 2005; Griffith and Harvey, 2001; Hurley and Hult, 1998; Slater and Narver, 1995).

Market orientation consists of three behavioural components (customer orientation, competitor orientation, and interfunctional coordination) and comprises "*the activities of market information acquisition and dissemination and the coordinated creation of customer value*" (Narver and Slater, 1990: 21). Specifically, customer orientation entails generating information about current and future customers and disseminating and applying it in the firm (Jaworski and Kohli, 1993; Narver and Slater, 1990). Competitor orientation refers to generating information about current and future competitors and disseminating and applying it in the firm (Jaworski and Kohli, 1993; Narver and Slater, 1990). Interfunctional coordination constitutes the "*coordinated utilization of company resources in creating superior value for target customers*" (Narver and Slater, 1990: 22).

Consumer and competitor orientations aim to gather and disseminate information. Interfunctional coordination acts as an informal integration mechanism of the information gathered from the two orientations (customer and competitor) into a firm's activities. Because of their crucial role in the capture of information, customer and competitor orientations have

received extra attention from some authors (e.g. Zhou and Li, 2010; Baker and Sinkula, 2009; Theoharakis and Hooley, 2008; Gotteland and Boule, 2006). Moreover, even though some researchers believe that the two components are conceptually of equal importance (Slater and Narver, 1994; Narver and Slater, 1990), others argue that customer orientation is the most fundamental aspect of market orientation (Zhou *et al*., 2007).

The investment on an export market orientation has been highlighted as key to export firms (Cadogan *et al*., 2002). Greater export market orientation represents greater knowledge of export customers and competitors which will provide knowledge bases for developing dynamic capabilities (Griffith and Harvey, 2001). These firms tend to be more aware of the inadequacies of existing capabilities for export operations and of the need to adapt (exploitation) or develop new ones (exploration) (e.g. Atuahene-Gima, 2005)

Export customer-oriented firms show a continuous, proactive disposition toward identifying and meeting export customers' expressed and latent needs (Han *et al*., 1998). They have "*sufficient understanding of one's target buyers to be able to create superior value for them continuously*" (Narver and Slater, 1990: 21). Not only do these firms excel in creating and maintaining bonds with their export customers; they also obtain timely feedback from them (Zhou and Li, 2010). So, export customer-oriented firms are more aware of the potential obsolescence of existing capabilities and the requirement to adapt them.

H_1: Export *customer* orientation is positively related to (a) product development *exploitative* capabilities and to (b) market-related *exploitative* capabilities.

Export competitor orientation involves the prioritization of the competition, materialized by in-depth assessments of competitors' objectives, strategies, offerings, resources and capabilities. By actively collecting competitor-related information and monitoring rivals' behaviour, export competitor-oriented firms identify their strengths and weaknesses in comparison with their competitors in terms of resources, cost position and financial performance (Narver and Slater, 1990; Day and Wensley, 1988). By deeply understanding their rivals, firms can assess their relative position, determine appropriate strategies and respond quickly to competitors' actions. The aim of this orientation is to keep pace with or

remain ahead of competitors (Han *et al.*, 1998). Through being aware of competitors' strategic moves and their relative market position, export competitor-oriented firms are more prone to adapt to the changing environment and conditions. Furthermore, their perception of both their own and their competitors' strengths and weaknesses permits them to identify possible inadequacies of existing capabilities.

H_2: Export *competitor* orientation is positively related to (a) product development *exploitative* capabilities and to (b) market-related *exploitative* capabilities.

Export market-oriented firms take into account current export market conditions and they anticipate future export market conditions (Chandy and Tellis, 1998; Slater and Narver, 1995; Day, 1994; Kohli and Jaworski, 1990). By proactively capturing and disseminating customer information, they can detect rapid changes. To deal with alterations in customers' preferences, firms can promote adequate investments. Accordingly, they can invest the necessary resources to develop appropriate new products or services, refine production processes and offer a flexible product line to cater to customers' changing preferences (Zhou and Li, 2010; Slater and Narver, 1998). Hence, export customer-oriented firms are more prone to invest in the development of new (explorative) capabilities so as to respond to – or even act in advance of – market changes effectively.

H_3: Export *customer* orientation is positively related to (a) product development *explorative* capabilities and to (b) market-related *explorative* capabilities.

Competitor-oriented firms recognize "*the short-term strengths and weaknesses and long-term capabilities and strategies of both the key current and the key potential competitors*" (Narver and Slater, 1990: 21–22). The superior understanding of competitors hastens exporting firms to foresee and respond to export competitors' actions. Likewise, it facilitates firms' ability to calibrate the necessary activities for change or to prepare for necessary adjustments ahead of competitors (Teece *et al.*, 1997). The capture and dissemination of current and potential competitors' information helps firms adapt to market shifts rapidly and in an appropriate manner (Zhou and Li, 2010). The insights obtained from competitors' scrutiny may lead firms to conclude that their existing capabilities are not up to the required level. As a result, the

development of new capabilities emerges as a need to effectively adapt to intensively competitive conditions (Makadok, 2001).

H_4: Export *competitor* orientation is positively related to (a) product development *explorative* capabilities and to (b) market-related *explorative* capabilities.

3.2.2. Outcomes of Dynamic Capabilities

Although exploitative and explorative capabilities evolve from different directives, they are intertwined (e.g. Rothaermel and Deeds, 2004). Firms must engage in the establishment and development of both capabilities for short- and long-term success (Teece, 2007; March, 2006, 1996, 1991; Garcia *et al*., 2003; Lee *et al*., 2003). They need to exploit current resources and capabilities to secure efficiency without disregarding the creation of new value through exploratory innovation (Teece, 2007; March, 2006, 1996, 1991; Teece *et al*., 1997). This explorative behaviour is required for firms to build and maintain competitive advantage (Teece, 2007; Eisenhardt and Martin, 2000; Teece *et al*., 1997).

Exploitative and explorative capabilities "*can be complementary*" (Lewin and Volberda, 1999: 523). Exploitation supports *current* organizational viability, whereas exploration supports *future* viability (Danneels, 2008; Wang and Li, 2008). For that reason, the integration of exploitative and explorative capabilities is desirable (Teece *et al*., 1997; Grant, 1996; Levinthal and March, 1993; Kogut and Zander, 1992; March, 1991). Specifically, exploitative capabilities are the foundation on which explorative capabilities can exist (Yalcinkaya *et al*., 2007).

This foundation is created by multiple reasons. First, current knowledge and knowledge stock that a firm has accumulated over time are interdependent with exploring new knowledge (Dierickx and Cool, 1989) in that they incentivise a firm to acquire new knowledge and shape the scope and direction of future exploration (Wu and Shanley, 2009; Katila and Ahuja, 2002). Thus, the stronger the organization's existing knowledge base, the better is its ability to both recognize and exploit new opportunities (Brockman and Morgan, 2003). Second, exploitative capabilities provide a continuing, stable operation on which riskier activities can

occur. They also allow firms a low-risk stream of capital inflow to continue investing in explorative activities (Garcia *et al*., 2003).

H_5: (a) *Product development exploitative* capabilities are positively related to *product development explorative* capabilities and (b) *market-related exploitative* capabilities are positively related to *market-related explorative* capabilities.

Recent research has focused on the direct link between capabilities and firm performance (e.g. Jaakkola *et al.*, 2010; Morgan *et al*., 2009a; Vorhies and Morgan, 2005). Even though this link could be called tautological, these studies legitimize and reinforce the influence of capabilities, specifically dynamic capabilities, on performance outcomes. As knowledge-based processes that become embedded over time, dynamic capabilities may be difficult for competitors to imitate (e.g. Teece *et al*., 1997; Grant, 1996). As a result, interfirm performance variations can be explained by heterogeneity in those organizational capabilities (Morgan *et al*., 2009b). In addition, there is evidence that dynamic capabilities, namely exploitative and explorative capabilities, directly influence firm performance (e.g. Yalcinkaya *et al.*, 2007).

Even though firm performance is a multidimensional phenomenon (Venkatraman and Ramanujam, 1986), market effectiveness and profit are particularly important performance dimensions (e.g. Morgan *et al*., 2006). Market effectiveness refers to the degree to which the firm's goals were achieved with respect to market outcomes, such as sales volume or market share growth (e.g. Vorhies and Morgan, 2005). Profit refers to firm's achievements in terms of, for instance, return on investment or return on sales. Whereas profit provides an overall finance-based measure, market effectiveness is a more specific, growth-based measure. To obtain an enhanced perspective of current export performance, this study analyzes two dimensions: profit and market effectiveness. In addition, the study intends to disentangle the current and future performance effects of dynamic capabilities. Therefore, the firm's future export performance (i.e., the firm's export performance over the next three years) is included.

Exploitative capabilities are associated with refinement (March, 2006, 1996, 1991) and have positive, immediate and foreseeable returns. By leveraging a firm's existing products or markets, exploitative capabilities tend to improve efficiency (Özsomer and Genctürk, 2003),

increase performance (Rothaermel and Deeds, 2004; Garcia *et al*., 2003) and ensure firm's immediate survival (Lee *et al*., 2003; Sitkin and Sutcliffe, 1994) and short-term success (Atuahene-Gima, 2005). By reducing variety, increasing efficiency and improving adaptation to current environments, exploitative activities can lead to positive performance effects in the present (Uotila *et al*., 2009).

H_6: (a) Product development *exploitative* capabilities are positively related to *current* export (i) profit and (ii) market effectiveness performance;

(b) market-related *exploitative* capabilities are positively related to *current* export (i) profit and (ii) market effectiveness performance.

Although exploitative capabilities' returns are positive, immediate (typical development projects take three to nine months; Garcia *et al*., 2003) and foreseeable (March, 2006, 1996, 1991), they are not necessarily sustainable. Reduced variety and the adaptation to the external environment become liabilities as environments change over time (Uotila *et al*., 2009). Firms may fail to adapt to emerging technological and market conditions that deviate substantially from current skills (March, 2006, 1996, 1991; Levinthal and March, 1993) and neglect potentially valuable long-term opportunities (Auh and Menguc, 2005). Firms may find themselves specializing in inferior routines because initial choices and allied revenue streams appear more favourable than unselected or unexplored alternatives. This focus may lead to technological exhaustion (Yalcinkaya *et al*., 2007; Lee *et al*., 2003), obsolescence (Levinthal and March, 1993), lack of novelty and (at the extreme) self-destruction (March, 2006, 1996, 1991), specially for firms acting in turbulent markets. This indicates that returns on exploitative capabilities can have a positive effect on future performance but less of an effect, on average, than returns on successful explorative capabilities (Yalcinkaya *et al*., 2007). At the extreme, for firms that rely exclusively on exploitative capabilities, they will likely negatively influence future performance.

H_7: (a) Product development *exploitative* capabilities and (b) market-related *exploitative* capabilities are negatively related to *future* export performance.

As far as the influence of explorative capabilities on performance is concerned, there are contradictory findings from previous studies. Although there is a relative consensus on the importance of explorative capabilities in providing future sustainability (e.g. March, 1991), their effect in the present time is not clear. On the one hand, explorative capabilities require high investments and have less certainty and take more time to produce returns, which may decrease performance (e.g. Teece, 2007).

Explorative initiatives are costly, requiring substantial investments. Their short-term costs are expectedly high as firms act without strong prior experience (Hutt *et al*., 1988). In addition, they entail some inherent risk, given the difficulty in estimating their benefits *a priori* and the uncertain nature of those benefits. Garcia and colleagues (2003) mentioned that typical R&D endeavours take twelve to thirty-six months, and historically, 20% to 80% of all research projects are unsuccessful (Cooper, 1993). Explorative capabilities are associated with experimentation; with search; and with deviating from firms' current knowledge, technology and markets. This adventure into new domains has unforeseeable results. Firms enter unknown territory and the inherent returns on their new paths are systematically unsure; less guaranteed; and may take years to realize, if at all (e.g. Teece, 2007; Lubatkin *et al*., 2006). Consequently, it is expected that exploratory capabilities influence negatively performance, as they require substantial investments without an immediate return. They involve experimenting with and often inventing new approaches, which may affect firm efficiency.

On the other hand, exploration may increase performance (e.g. Yalcinkaya *et al*., 2007). Although explorative activities are inherently risky, they significantly increase performance levels of the firms (Lewin *et al*., 1999), because firms engage in a series of innovative and creative activities (Yalcinkaya *et al*., 2007). Given the renewal and adaptation to novel situations, they have the potential to offer above-average profits. Exploration reduces the risk of value erosion associated with firms' existing capabilities under environmental pressure by broadening the number of design alternatives available to manage potential environmental changes (Wang and Li, 2008).

H_8: (a) Product development *explorative* capabilities are related to *current* export (i) profit and (ii) market effectiveness performance;

(b) market-related *explorative* capabilities are related to *current* export (i) profit and (ii) market effectiveness performance.

There are substantial theoretical arguments supporting a positive influence of explorative capabilities on future performance. This effect is twofold. First, explorative capabilities allow firms to continuously renew their resource base and adapt to market changes. Then firms can develop new products and be aware of new markets to adapt to opportunities (Karim and Mitchell, 2000; Levitt and March, 1988). In particular, the flexibility brought about by exploration helps firms overcome organizational inertia (Wang and Li, 2008). These elements of renewal and flexibility are key to firms' survival and prosperity in changing environments, such as the international market. When firms disregard exploration, they may suffer from technological exhaustion (Lee *et al*., 2003) or even market collapse. Second, their positive influence may start to be noted only later (Özsomer and Genctürk, 2003; Lewin *et al*., 1999).

H_9: (a) Product development *explorative* capabilities and (b) market-related *explorative* capabilities are positively related to *future* export performance.

3.2.3. Moderators

The contingency perspective that underscores the effectiveness of exploitative and explorative capabilities under different contextual conditions is scarcely documented in the literature. Our research studies interfunctional coordination and environmental turbulence as moderators of the relationship between dynamic capabilities and current export performance[1]. As moderators, these firm characteristics and market conditions will not account for the relationship between dynamic capabilities and performance. Rather, we will observe relationship changes depending on whether firms have higher or lower coordination of their functions and operate in a more or less dynamic market. Interfunctional coordination was chosen as a possible moderator because of its role as an informal knowledge integration mechanism (Atuahene-Gima, 2005; Gatignon and Xuereb, 1997) and therefore will likely improve the translation of dynamic capabilities into firm performance. Environmental

[1] Our moderating variables test will be performed only on the dynamic capabilities–current performance relationships. There are supporting theoretical arguments of the role of interfunctional coordination and environmental turbulence as potential moderators in the literature. However, to the best of our knowledge, the existing theoretical arguments refer exclusively to the capabilities–present performance relationship.

turbulence was chosen because it has been identified as environmental market conditions that are linked to knowledge-type capabilities (e.g. Jap, 1999; Jaworski and Kohli, 1993).

3.2.3.1 Interfunctional Coordination

A firm's competitive advantage, success and sustainability in the market are based not only on the capabilities the firm possesses but also, more importantly, on the efficiency with which it *integrates* those (Grant, 1996; Day and Wensley, 1988). Knowledge is difficult to create and transfer in the firm (Charles Galunic and Rodan, 1998; Kogut and Zander, 1996, 1992; Szulanski, 1996), because of its complex and tacit nature. Its conversion to value depends on knowledge integration mechanisms (Zahra and Nielsen, 2002; Zahra *et al*., 2000; Grant, 1996). Interfunctional coordination can act as an informal knowledge integration mechanism (Atuahene-Gima, 2005; Olson *et al.*, 1995; Day, 1994). Without the interaction and coordination of the firm's diverse functional units, the efficient combination of the distinct functional insights needed to transform firm's capabilities into superior customer value would not be possible (Kogut and Zander, 1996, 1992; Olson *et al*., 1995; Henderson and Cockburn, 1994; Kohli and Jaworski, 1990). It reduces cross-functional conflict and advocates trust and commitment among the functional units, which enables the firm to better use its resources to achieve the desired outcomes (Atuahene-Gima, 2005; Gatignon and Xuereb, 1997).

Facilitating communication among different functions is considered a best practice in encouraging innovative capabilities (Troy *et al.*, 2008). It is a positive factor in effective new product development and innovative activities. As such, it enables the synthesis, integration and application of current and newly acquired external knowledge and enables transformation into outcomes that benefit firm performance. So, it is likely that interfunctional coordination strengthens the positive and weakens the negative effects of exploitative and explorative capabilities on current export performance.

H_{10}: The greater the *interfunctional coordination*, the stronger is the effect of dynamic capabilities (*exploitative* and *explorative*) on *current* export performance.

3.2.3.2 Environmental Turbulence

Environmental turbulence reflects changes both in the composition of customers, customer preferences and competitor strategies (market turbulence) and in technology (technological turbulence) (Tu, 2010; Jaworski and Kohli, 1993; Narver and Slater, 1990) and can lead to capabilities becoming obsolete (Tushman and Nelson, 1990). Consequently, turbulence pressures the firm to refine its current capabilities and to develop new ones (Day, 1994). The rate of technology change and of marketplace evolutions may greatly affect a firm's research (exploitation) versus development (exploration) focus (Garcia *et al*., 2003). As such, the amount of turbulence in the market in which firms operate affects the contribution of exploitative and explorative capabilities to firm performance.

The moderating effect of environmental turbulence exists because learning processes (e.g., the one inherent to dynamic capabilities) involve lag in adjusting to changes in the environment (Özsomer and Genctürk, 2003). Stable environments are relatively well understood and do not require major changes in the practices followed or the products commercialized. So, exploitative capabilities, which rely on refinement, implementation and routine, tend to be developed (Özsomer and Genctürk, 2003). In the absence of environmental demand for change, organizational performance often simply reflects how firms take the best advantage of their existing knowledge assets, routines and capabilities (Wang and Li, 2008). In contrast, turbulent environments imply constant changes in technology and customer preferences. They require more flexibility and frequent introduction of new products and different ways of interacting with customers (Troy *et al*., 2008). So, explorative capabilities, associated with variation, experimentation and discovery, are more valued in such environments (Özsomer and Genctürk, 2003; Zahra and Covin, 1995). In turbulent markets, success likely depends more on creating new knowledge than on the ability to refine existing knowledge (Özsomer and Genctürk, 2003). On the one hand, in rapidly changing environments, existent capabilities may not able to keep up with the frequent changes in the market and technological conditions (Uotila *et al*., 2009; Wang and Li, 2008). If they do not invest in dynamic capabilities, firms may become obsolete because of competitor activity, shifts in customer preferences, or some other uncontrollable force (Carbonell and Rodriguez, 2006). On the other hand, turbulent environments trigger *unlearning* of existing routines and create new opportunities to benefit of emerging market needs (Li and Atuahene-Gima, 2001). Firms are required to update their

knowledge base continuously so as to adapt more effectively to the changing environment (Teece *et al*., 1997).

Market volatility creates adaptation problems and requires firms to make subsequent, flexible adjustments (Zhang *et al*., 2008; Bello and Gilliland, 1997). In a rapidly changing operating environment there is a greater probability of obsolete technologies. There are greater chances of misfit between a firm's existing capabilities and the environment in which the firm deploys its existing routines or capabilities (Wang and Li, 2008). Moreover, when the decision context changes, a firm that engaged in excessive exploitation develops a stronger inertia and becomes less likely to give up existing routines and operational approaches even when environmental conditions have rendered a particular search direction less attractive (Wang and Li, 2008). That is, the relationship of exploratory capabilities with market effectiveness and profit performance is stronger when turbulence in the firm's market is high. Oppositely, the relationship of exploitative capabilities with export performance is weaker at high levels of environmental turbulence.

H_{11}: The greater the *environmental turbulence* (a) the weaker is the effect of *exploitative* capabilities on *current* export performance and (b) the stronger is the effect of *explorative* capabilities on *current* export performance.

Table 1 presents our 11 research hypotheses.

Table 1: Hypotheses Statement

		Expected impact
H_1	Export customer orientation – exploitative capabilities	
	a) Product development	(+)
	b) Market-related	(+)
H_2	Export competitor orientation – exploitative capabilities	
	a) Product development	(+)
	b) Market-related	(+)
H_3	Export customer orientation – explorative capabilities	
	a) Product development	(+)
	b) Market-related	(+)
H_4	Export competitor orientation – explorative capabilities	
	a) Product development	(+)
	b) Market-related	(+)

(cont.)

		Expected impact
H_5	Exploitative capabilities – explorative capabilities	
	a) Product development	(+)
	b) Market-related	(+)
H_6	a) Product development exploitative capabilities – current export performance	
	i. Profit	(+)
	ii. Market effectiveness	(+)
	b) Market-related exploitative capabilities – current export performance	
	i. Profit	(+)
	ii. Market effectiveness	(+)
H_7	a) Product development exploitative capabilities – future export performance	(-)
	a) Market-related exploitative capabilities – future export performance	(-)
H_8	b) Product development explorative capabilities – current export performance	
	i. Profit	(?)
	ii. Market effectiveness	(?)
	c) Market-related explorative capabilities – current export performance	
	i. Profit	
	ii. Market effectiveness	(?)
		(?)
H_9	a) Product development explorative capabilities – future export performance	(+)
	b) Market-related explorative capabilities – future export performance	(+)
H_{10}	Interfunctional coordination moderates:	
	a) Exploitative capabilities – current export performance	
	i. Product development – profit	(+)
	ii. Market-related – profit	(+)
	iii. Product development – market effectiveness	(+)
	iv. Market-related – market effectiveness	(+)
	b) Explorative capabilities – current export performance	
	i. Product development – profit	
	ii. Market-related – profit	(+)
	iii. Product development – market effectiveness	(+)
	iv. Market-related – market effectiveness	(+)
		(+)
H_{11}	Environmental turbulence moderates:	
	a) Exploitative capabilities – current export performance	
	i. Product development – profit	(-)
	ii. Market-related – profit	(-)
	iii. Product development – market effectiveness	(-)
	iv. Market-related – market effectiveness	(-)
	b) Explorative capabilities – current export performance	
	i. Product development – profit	
	ii. Market-related – profit	(+)
	iii. Product development – market effectiveness	(+)
	iv. Market-related – market effectiveness	(+)
		(+)

SECTION 4. METHODOLOGY

In this section we introduce our methodology. In particular, we describe and justify the methodological options adopted in the operationalization and application of the research, namely (1) research context chosen, (2) qualitative research, (3) quantitative research, (4) measures and (5) data collection procedures.

4.1. RESEARCH CONTEXT

The research hypotheses were tested in an online survey of Portuguese manufacturing exporters. A multi-industry sample was used to ensure a sample size large enough to allow for a rigorous analysis of the data and to enhance the generalizability of findings (Morgan *et al*., 2004; Cannon and Perreault, 1999; Bello and Gilliland, 1997). The Portuguese National Statistics Institute database was our sampling frame's foundation. We focused on the export operations of the firm so as to capture the exporting context of the research.

4.1.1. Portugal

Portugal was selected because of the small size of its domestic market, which pressures firms to develop international activities (Sousa and Bradley, 2006). Economic growth in Portugal depends heavily on exporting success of firms. Exports are considered the *eternal growth engine* of the Portuguese economy (Jornal de Negócios, 2010). In particular, Portuguese external commerce has contributed significantly to the economic development of the country, representing 55–70% of the total gross domestic product (GDP) during the past two decades. The importance of the country's exporting activities has increased since it entered the European Union (EU) in 1986. The EU itself is the world's largest exporter of goods, and it has maintained a stable share of approximately one-fifth of total world exports (intra-EU trade excluded) since 1990 (European Commission, 2009).

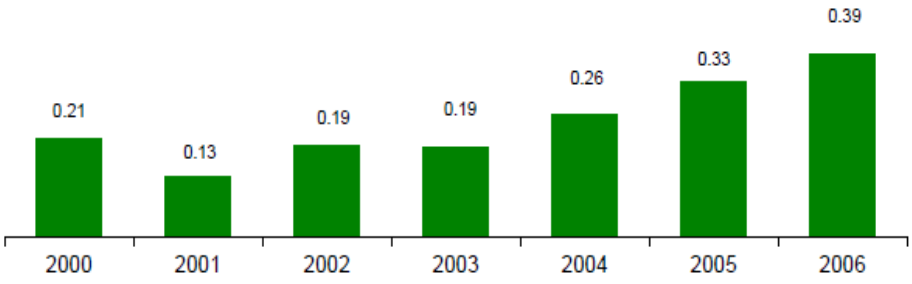
4.1.2. Profile of Portuguese Exports

Portugal is traditionally associated with specific industries, such as wine, textile, leather (namely shoes) or cork (Azevedo and Farhangmehr, 2003; Porter, 1994). Portuguese firms have an accumulated experience in these industries, which has been translated into a greater comparative advantage of Portugal's exports toward other countries' exports. Nevertheless, given the country's high exporting profile and the international context's greater complexity, firms and industries have been forced to evolve. This evolution is reflected in the alteration of the relative weight of each industry on the exports' value and volume.

The weight of exports in the Portuguese GDP was stable from 1995 to 2005. In the period of 2005-2008 the exports grew. This growth reflected a greater international success of traditional products (namely wine) and an increase of exports with greater technological content (Jornal de Negócios, 2010).

In evaluating the major exporting Portuguese industries these trends become clear. We present the evolution of the export value of each industry, as well as the comparative advantage[2] of the industry. For instance, the food and beverages industries, in which the wine industry is included, are industries in which Portugal has a comparative advantage (figure 4).

Figure 4: Comparative Advantage of the Food and Beverages Industries

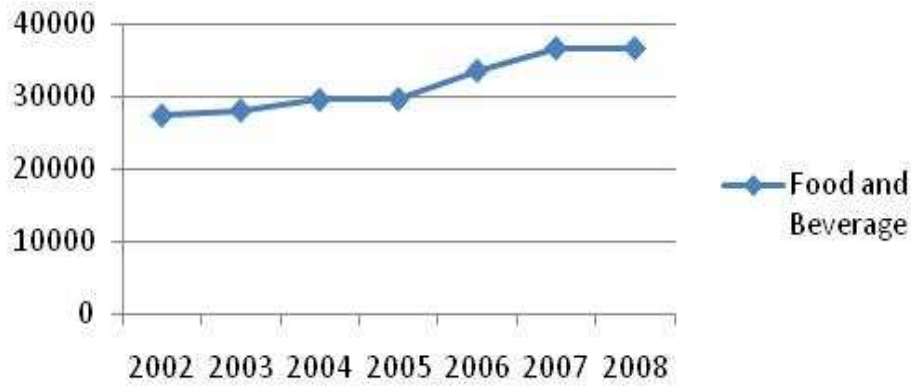


Source: Gabinete de Estratégia e Estudos (2010)

[2] Logaritm of the ratio between the world share of Portuguese exports in this industry and the share of all the Portuguese exports on the world exports

Their total weight on Portuguese exports grew from 7.3% in 2006 to 9% in 2008 (figure 5). As mentioned, this evolution reflects a greater international success of products such as wine.

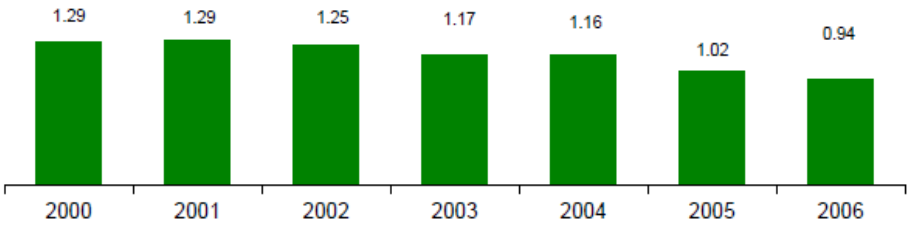
Figure 5: Evolution of Export Value of the Food and Beverages Industries (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The textile and clothing industries are two of the traditional exporting Portuguese industries, in which there is a comparative advantage (figure 6).

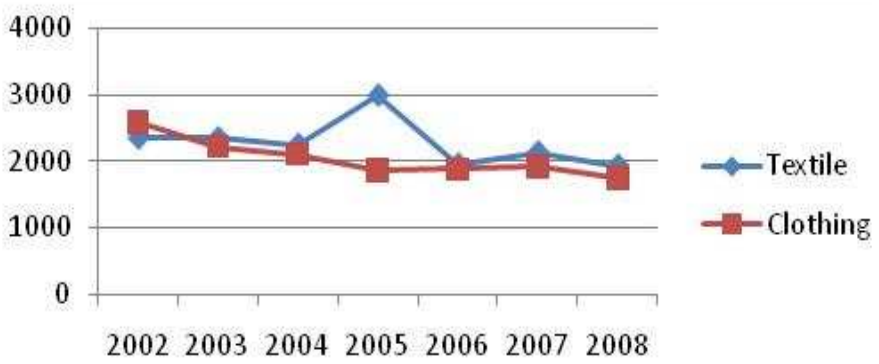
Figure 6: Comparative Advantage of the Textile and Clothing Industries



Source: Gabinete de Estratégia e Estudos (2010)

These are traditional industries, with the highest representativity in the Portuguese industrial structure. Nevertheless, the weight on exports of both have been decreasing (textile from 5.8% in 2006 to 5.3% in 2008 and clothing from 5.6% in 2006 to 4.7% in 2008) (figure 7).

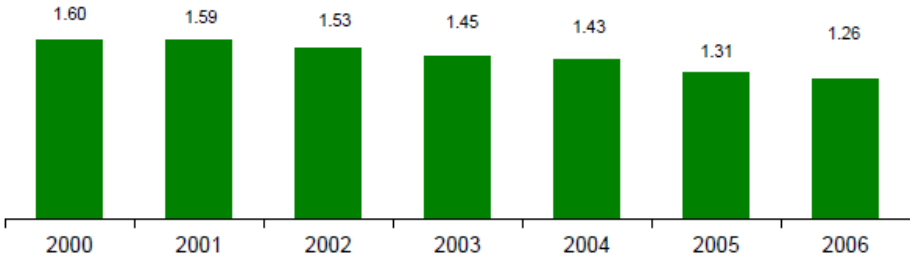
Figure 7: Evolution of Export Value of the Textile and Clothing Industries (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The leather and leather products industry is an example of a traditional industry in which there is a comparative advantage (figure 8).

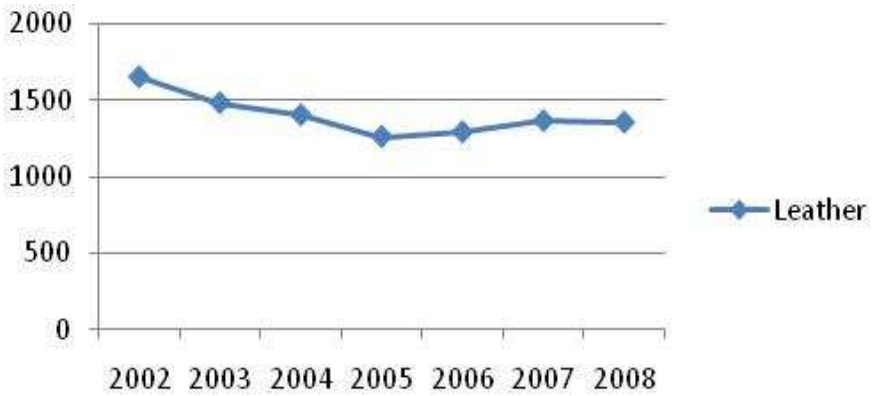
Figure 8: Comparative Advantage of the Leather and Leather Products Industry



Source: Gabinete de Estratégia e Estudos (2010)

Its total weight on Portuguese exports has been stable, around 3. 7% (figure 9).

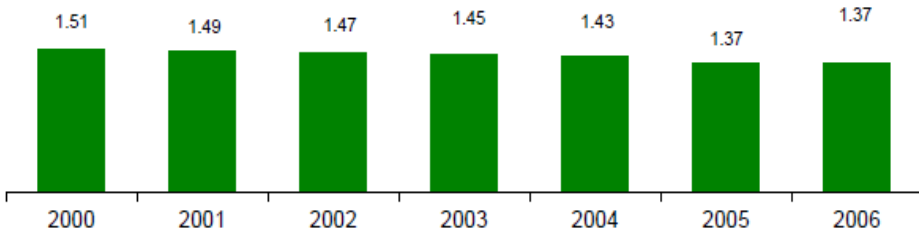
Figure 9: Evolution of Export Value of the Leather and Leather Products Industry (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The wood and cork industry is also a traditional industry in which there is a relative stable comparative advantage (figure 10).

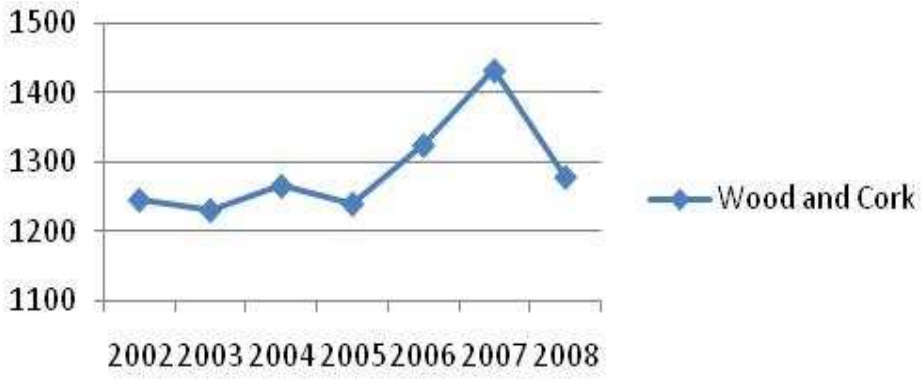
Figure 10: Comparative Advantage of the Wood and Cork Industry



Source: Gabinete de Estratégia e Estudos (2010)

Despite that comparative advantage, this industry's total weight on Portuguese exports has been decreasing (3.9% in 2006 to 3.5% in 2008) (figure 11).

Figure 11: Evolution of Export Value of the Wood and Cork Industry (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

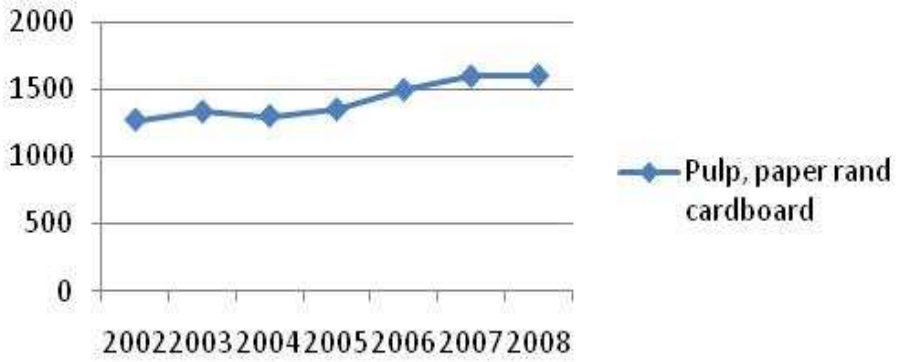
The pulp, paper rand cardboard industry was an industry in which Portugal had a comparative advantage, however in more recent years it lost competitiveness in it (figure 12).

Figure 12: Comparative Advantage of the Pulp, Paper Rand Cardboard Industry

Source: Gabinete de Estratégia e Estudos (2010)

Its total weight on Portuguese exports has been relatively stable in percentage (4.4% in 2006 and 2008), even though in value it has been rising (figure 13).

Figure 13: Evolution of Export Value of the Pulp, Paper Rand Cardboard Industry (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

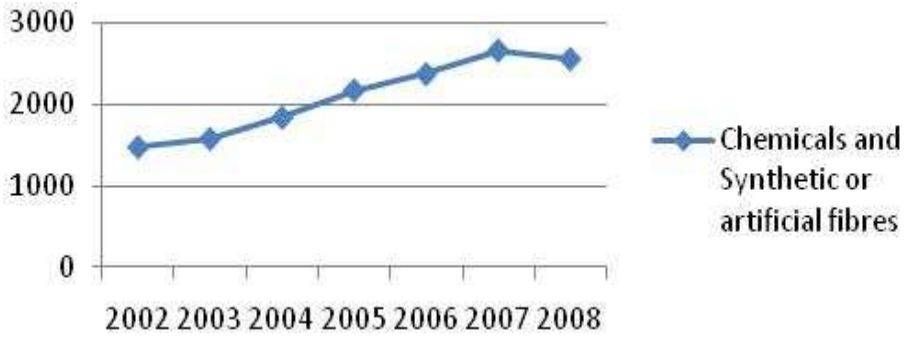
The chemicals and synthetic or artificial fibres industry is an industry in which Portugal does not have a comparative advantage (figure 14).

Figure 14: Comparative Advantage of the Chemicals and Synthetic or Artificial Fibres Industry

Source: Gabinete de Estratégia e Estudos (2010)

Nevertheless, its weight is about 7%, due to the higher price of products and the industry's relative importance in Portuguese exports has been gaining ground (figure 15).

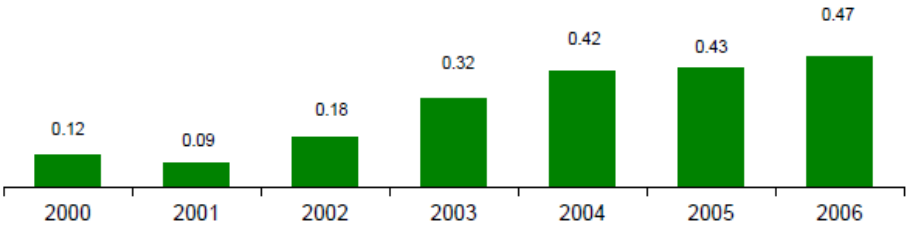
Figure 15: Evolution of Export Value of the Chemicals and Synthetic or Artificial Fibres Industry (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The rubber products and plastics industry is an industry in which Portugal has been gaining a greater comparative advantage over the years (figure 16).

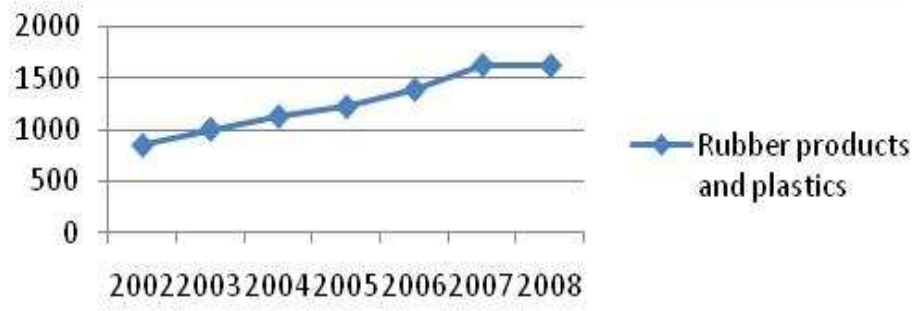
Figure 16: Comparative Advantage of the Rubber Products and Plastics Industry



Source: Gabinete de Estratégia e Estudos (2010)

Its total weight on Portuguese exports has risen (4.1% in 2006 to 4.4% in 2008) (figure 17). This may be associated to market trends. Analyzing the evolution of this industry in comparison to the evolution (decrease) of the leather and leather products industry, one may come to this conclusion. Specifically, rubber products are mostly referent to shoe components and the recent trends in the shoe applications is the emergence of more colourful, rubber products in deterrence of the traditional leather products.

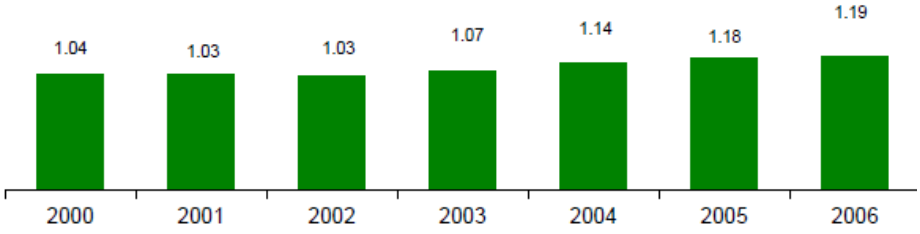
Figure 17: Evolution of Export Value of the Rubber Products and Plastics Industry (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The other non-metallic mineral products industry is an industry in which there is a comparative advantage (figure 18).

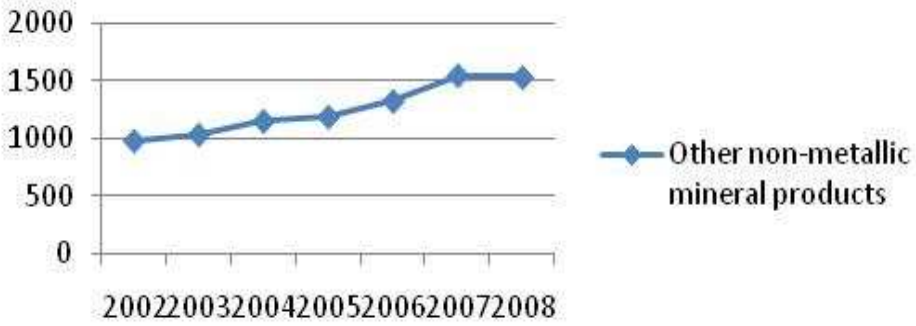
Figure 18: Comparative Advantage of the Other Non-metallic Mineral Products Industry



Source: Gabinete de Estratégia e Estudos (2010)

Its total weight on Portuguese exports has risen (3.9% in 2006 to 4.2% in 2008) (figure 19).

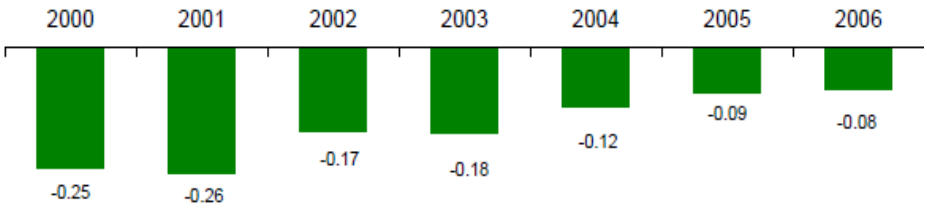
Figure 19: Evolution of Export Value of the Other Non-metallic Mineral Products Industry (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The metallurgic and the metallic products industries were industries in which Portugal did not have a comparative advantage, but has been overcoming this situation over the years (figure 20). One of the components of this industry is moulds, that have been gaining competitiveness abroad and have contributed to change the image of Portugal's ability to innovate.

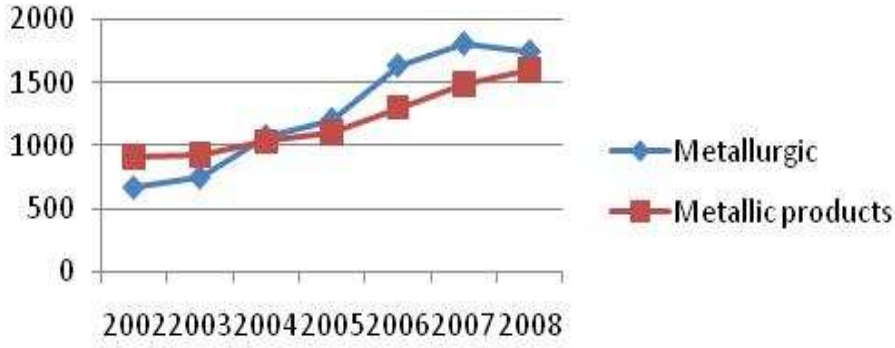
Figure 20: Comparative Advantage of the Metallurgic and Metallic Products Industries



Source: Gabinete de Estratégia e Estudos (2010)

Both these industries have been gaining ground in the Portuguese exports, with the metallic products rising from 3.9% in 2006 to 4.4% in 2008 and the mettalurgic industry dropping slightly from 4.9% in 2006 anto 4.7% in 2008 (figure 21).

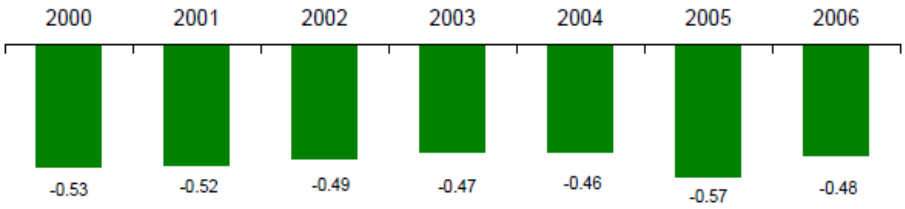
Figure 21: Evolution of Export Value of the Metallurgic and Metallic Products Industries (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The machine and equipment industry is an industry in which Portugal does not have a comparative advantage (figure 22).

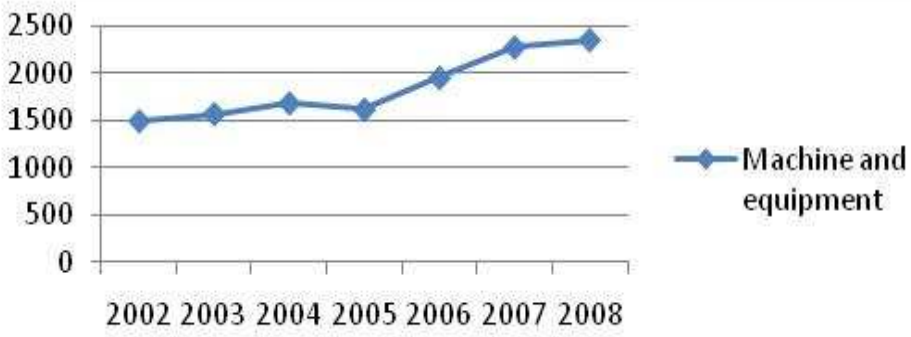
Figure 22: Comparative Advantage of the Machine and Equipment Industry



Source: Gabinete de Estratégia e Estudos (2010)

Its total weight on Portuguese exports rose from 5.8% in 2006 to 6.4% in 2008 (figure 23). Even though there is a long path to go through, this is another industry that has contributed to change Portugal's traditional image and allow associating it with more technological content.

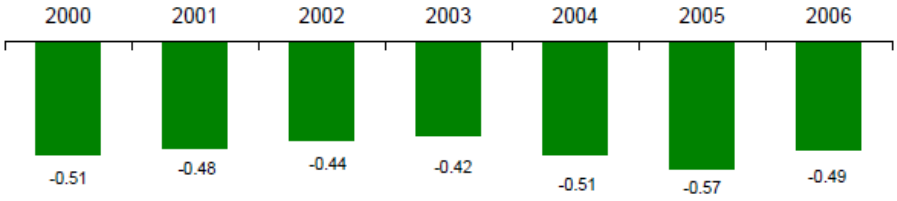
Figure 23: Evolution of Export Value of the Machine and Equipment Industry (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The computer, communication, electronic and optical products and electric equipment industries are industries in which Portugal does not have a comparative advantage (figure 24).

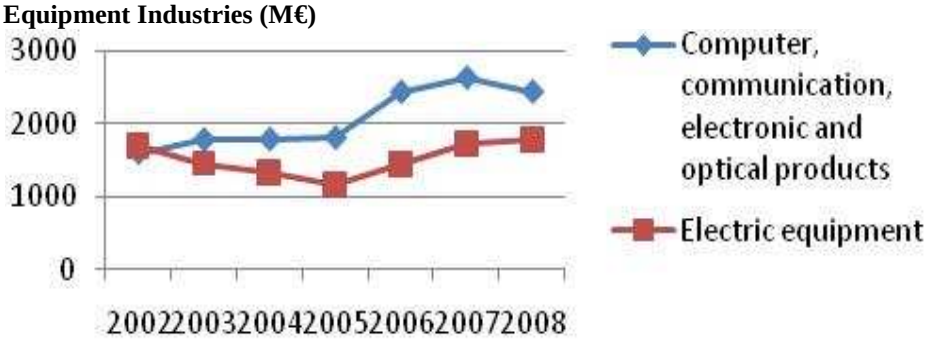
Figure 24: Comparative Advantage of the Computer, Communication, Electronic and Optical Products and Electric Equipment Industries



Source: Gabinete de Estratégia e Estudos (2010)

Their total weight on Portuguese exports has been behaving in an opposite manner:_the computer, communication, electronic and optical products industry has decreased from 7.2% in 2006 to 6.6% in 2008 whereas the electric equipment industry has increased from 4.3% in 2006 to 4.8% in 2008 (figure 25).

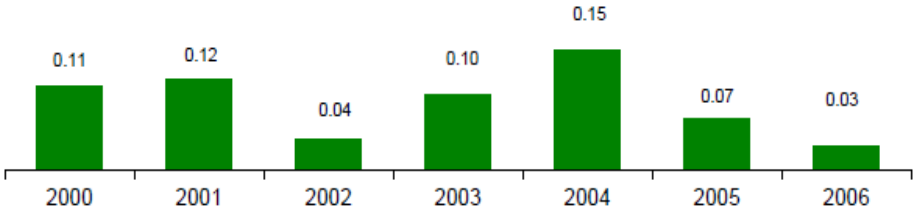
Figure 25: Evolution of Export Value of the Computer, Communication, Electronic and Optical Products and Electric Equipment Industries (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The automobile and other transportation equipment industries are industries in which Portugal has had some highs anf lows in terms of comparative advantage, mainly due to the concentration of the industries in few, multinational players and their volatility (figure 26).

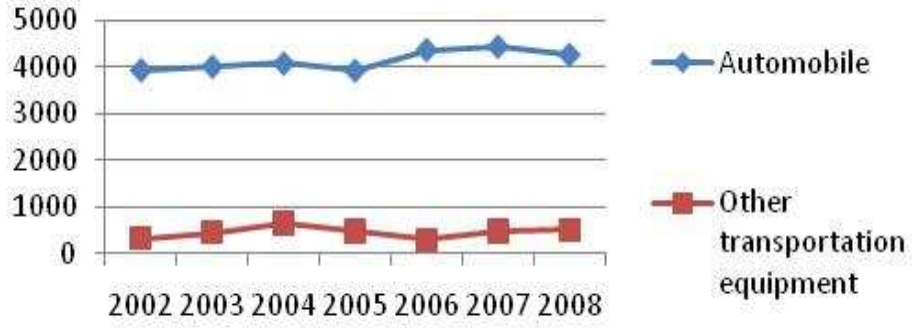
Figure 26: Comparative Advantage of the Automobile and Other Transportation Equipment Industries



Source: Gabinete de Estratégia e Estudos (2010)

The automobile industry has been decreasing its value on exports (13% in 2006 to 11.6% in 2008) whereas the other transportation equipment industry has raised its – still insignificant – weight on exports (0.9% in 2006 to 1.4% in 2008) (figure 27).

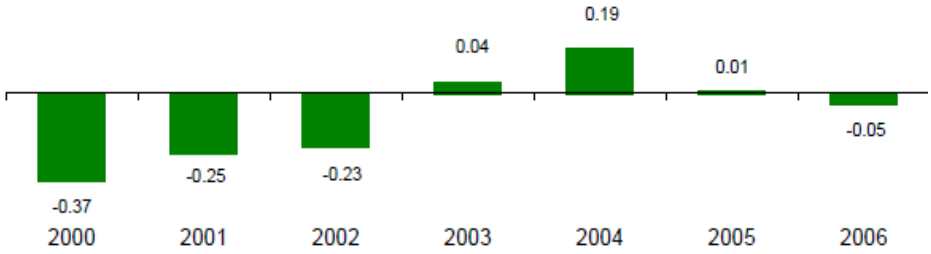
Figure 27: Evolution of Export Value of the Automobile and Other Transportation Equipment Industries (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

The furniture industry is an industry in which Portugal does not have a comparative advantage yet, but has definitely overcome a negative position on it (figure 28).

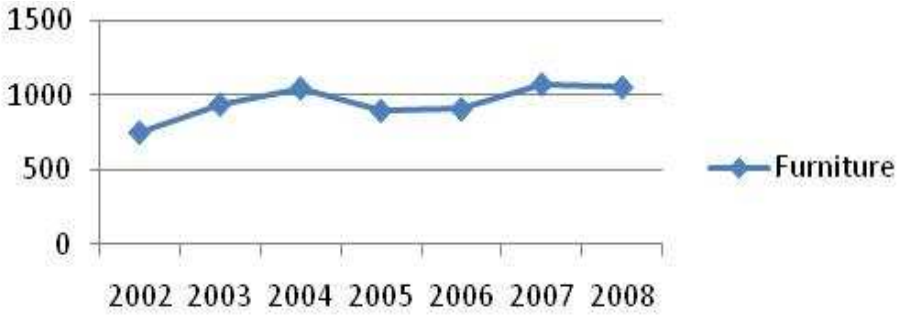
Figure 28: Comparative Advantage of the Furniture Industry



Source: Gabinete de Estratégia e Estudos (2010)

Its total weight on Portuguese exports has risen (2.7% in 2006 to 2.9% in 2008) (figure 29).

Figure 29: Evolution of Export Value of the Furniture Industry (M€)



Source: Adapted from Gabinete de Estratégia e Estudos (2010)

4.2. QUALITATIVE RESEARCH

4.2.1. Field Interviews

Given the unique integration of the organizational learning, dynamic capabilities and international marketing and business literatures, we used exploratory research. We went through a series of in-depth field interviews with industry experts and export managers to explore the composition and structure of the proposed model and to gain insights for the execution of the study. Moreover, the interviews aimed to confirm the relevance of the topic in the specific context of the study and to assess content and face validity of the constructs and measures (Hair, Bush and Ortinau, 2006). All interviews were transcript and their data analyzed.

A panel of seven industry experts with knowledge in international marketing and exporting discussed the composition and structure of the model and confirmed the relevance of the topic in exporting operations. They represented the main Portuguese business associations with international expertise, namely Associação Empresarial Portuguesa (AEP), Câmara do Comércio e Indústria Portuguesa and Plano Tecnológico, just to name a few. These interviews lasted between 60 and 240 minutes.

We used an interview guide, composed of two parts: a first part in which we explained the study and referred the confidentiality and anonymity of all the information collected and a second part in which we captured the insights of respondents (appendix 8.1.). We used content analysis to treat and analyze the information gathered in these field interviews (Bardin, 2004). This technique implies the application of systematic and objective procedures in the content description of the interviews.

In addition, ten export managers from manufacture exporting firms operating in different industry sectors were interviewed. The interviews lasted between 60 and 120 minutes and aimed to gain insights into the role of dynamic capabilities in an international context and to assess content and face validity of the constructs and measures. The guide of the interview is in appendix 8.2. All interviews were also transcript and their data analyzed.

4.2.2. Conclusions of the Field Interviews

The fieldwork revealed that it is usually an export manager's – or, in smaller firms, the chief executive officers (CEO)'s – responsibility to be well informed about overall capabilities and export operations, and it was hard to find a second manager knowledgeable on all aspects under study. The interviews suggested that the model offered a plausible picture of the driver and outcomes of dynamic capabilities in international exchange. Further, the interviews revealed that managers are often unwilling or unable to provide objective export performance data. The fieldwork complemented our literature review in measure development and ensured that managers could easily interpret all study constructs and the items used to tap them.

4.3. QUANTITATIVE RESEARCH

4.3.1. Questionnaire Development

To develop the questionnaire we used several sources and opted by multi-item measures. The development of multi-item scales for the constructs under study was based on the work of Nunnally and Bernstein (1994) given that research into dynamic capabilities in the international context is in its infancy. We followed a triangulation approach, introducing an inductive component in our hypothetical-deductive based approach to confirm the relevance of the selected constructs.

Initially, each construct's conceptual domain was specified. Next, building mostly on the literature on organizational learning, dynamic capabilities and international marketing and business, we drafted the items operationalizing the constructs. We further used the field interviews to develop items that effectively operationalized our constructs and to properly adapt the survey to the specific context of the study.

On the basis of the literature review and on the insights obtained in these exploratory interviews, our questionnaire was drafted and our constructs adapted. The questionnaire was originally developed in English. Back translation was applied, and the questionnaire was used in Portuguese. Finally, three academic experts with extensive knowledge of international marketing and business reviewed the questionnaire. Specifically, they were asked to check if

the questions were clear and easy to understand, if the scale was adequate as well as if the length and time needed to answer the survey was acceptable.

4.3.2. Questionnaire Pre-test

4.3.2.1 Pre-test

We then proceeded to the questionnaire pre-test. Following Babbie (2001), we pre-tested the questionnaire with people to whom the questionnaire is relevant (CEOs and export managers). The pre-test was developed in identical conditions to the real situation, to detect problems with the wording, sequencing of questions, clarity of the instructions and design of the survey instrument and also estimate the response rate. Hence, the questionnaire was pre-tested online, during the first week of March 2009 (a version of the pre-tested questionnaire is available in appendix 8.3.). The option of an online survey made the questionnaire more user friendly and easier to respond to. A random selection of thirty firms was contacted via telephone to identify the key informants and current contacts and to ask for their kindness in filling out the survey (the flowchart of the contact with the firm is in appendix 8.4.). The firms that we contacted for pre-testing were deleted from the master list.

Of the thirty firms, one was bankrupt, two no longer exported and one exported irregularly. An e-mail presenting the study and providing the online link was sent to the remaining twenty six firms (appendix 8.5.). Three responses were obtained (response rate of 11.54%). These firms, as well as the remaining twenty three, were contacted again by telephone and questioned about dynamic capabilities. Even though our pre-testing procedure focused on problems with the wording, sequencing of questions, clarity of the instructions and design of the survey instrument, managers made important comments about the dynamic capabilities domain being exclusively focused on product development and technology.

4.3.2.2 Outcomes of the Pre-test

On the basis of this initial feedback, we developed new in-depth interviews (the interview guide is in appendix 8.6.). Ten business professionals from the main Portuguese manufacture exporting industries were contacted for additional insights into dynamic capabilities in an international context. These interviews were also transcript and their data analyzed. It became

clear that the interviewees considered necessary an expansion of the concept of exploitative and explorative capabilities from mere product development and technology to the market and customer areas. The interviews lasted between 60 to 120 minutes and provided valuable insights of market-related dynamic capabilities. These insights were very helpful in complementing the existing literature.

The final questionnaire was the result of all these steps that helped us improving our initial version substantially. This final version is in appendix 8.7..

4.4. MEASURES

Following previous work, dynamic capabilities are viewed as developed over time and they measure as the extent to which a firm engaged in certain processes in the previous three years (e.g. Atuahene-Gima, 2005).

Export performance was as a multidimensional construct comprising three dimensions: current export profit performance, current export market effectiveness performance and future performance. Because of restrictions, we opted to use an anticipated measure as a *proxy* for future performance, which still allowed us to perceive the potential performance impact of dynamic capabilities. Export researchers have provided extensive discussion on export performance and its measures (for a review, see Katsikeas *et al*., 2000). We used a subjective measure of performance because (1) such measures can control for variations in the performance caused by differences across market environments; (2) previous studies have shown the convergent validity of subjective performance and their objective counterparts; and (3) subjective assessments are often less problematic than more objective financial measures, because the latter may be biased by the purpose for which they are produced (Zhang *et al*., 2008; Gatignon and Xuereb, 1997).

Two control variables were included to minimize spuriousness of results: firm size, defined as the number of full-time employees (operationalized by the logarithm of the number of full-

time employees, for normality purposes) and slack resources, defined as the uncommitted resources that the firm possesses (Garcia *et al*., 2003).

There are conflicting perspectives with respect to the link between firm size and export performance (Brouthers and Nakos, 2005; Kaynak and Kuan, 1993). In general, larger firms have more resources to work with (Zhou *et al*., 2007; Barkema and Vermeulen, 1998), which help them obtain superior export performance (Katsikeas *et al*., 2000). Smaller firms have the natural disadvantage of scale and scope inefficiencies (Ramaswami *et al*., 2009). However, some studies have found a negative relationship between firm size and export performance (e.g. Lages, Silva and Styles, 2009). Sousa and colleagues (2008) present possible reasons for the mixed results and conclude that the divergence may be due to the criterion and the measurement scale used. Other authors refer to the fact that larger firms develop structural inertia associated with the increased complexity of the firm's structures, systems, procedures, and processes, which may negatively affect the firm's evolution and performance (Tushman and O'Reilly, 1996).

There are also conflicting positions regarding slack resources link to export performance. On the one hand, slack resources reflect greater resources and market power for exploiting existing competencies, building new ones and developing innovations (Atuahene-Gima, 2005; Chandy and Tellis, 1998; Gatignon and Xuereb, 1997). Slack allows resources for more uncertain and riskier actions (Nohria and Gulati, 1996; Singh, 1986). Hence, it affects the extent of experimentation and the pursuit of non-traditional and radically different alternatives (Bourgeois, 1980). On the other hand, the possession of slack resources does not necessarily translate into their use. Nevertheless it has been shown that firms with more resource availability perform better in overseas markets, which are more dynamic markets (Katsikeas *et al*., 2000; Beamish, Craig and McLellan, 1993). As such, we expected that slack resources would be positively related to export performance.

All constructs were measured using multi-item scales. A seven-point rating scale format was used to capture responses for all items. A description of the measures included in the final survey follows (table 2).

Table 2: Constructs

Construct	Conceptual definition	Question	Items	Type of scale	Adapted from
Export customer orientation	Firm's orientation toward generating information about current and future export customers and disseminating and applying it within the firm (Jaworski and Kohli, 1993; Narver and Slater, 1990).	Please indicate how much do you agree or disagree with the following statements	6	Likert scale (1=strongly disagree, 7=strongly agree)	(Menguc and Auh, 2008; Olavarrieta and Friedmann, 2008; Theoharakis and Hooley, 2008; Zhou *et al*., 2005; Cadogan *et al*., 2002; Han *et al*., 1998; Narver and Slater, 1990)
Export competitor orientation	Firm's orientation toward generating information about current and future export competitors and disseminating and applying it within the firm	Please indicate how much do you agree or disagree with the following statements	4	Likert scale (1=strongly disagree, 7=strongly agree)	(Menguc and Auh, 2008; Olavarrieta and Friedmann, 2008; Zhou *et al*., 2005; Cadogan *et al*., 2002; Han *et al*., 1998; Narver and Slater, 1990)
Product development exploitative capabilities	Firm's capabilities referring to existing product modification or improvement and upgrade of existing technologies	Please indicate to what extent, over the last three years (2005-2008), has your firm developed the following activities	7	Likert scale (1=to no extent, 7=to a great extent)	(Danneels, 2008; Yalcinkaya *et al*., 2007; Atuahene-Gima, 2005; Morgan *et al*., 2004; Zahra *et al*., 2000)
Market-related exploitative capabilities	Firm's capabilities referring to the reinforcement of the firm's position and relationships in current markets	Please indicate to what extent, over the last three years (2005-2008), has your firm developed the following activities	7	Likert scale (1=to no extent, 7=to a great extent)	Items generated on the basis of past research (Danneels, 2008; Morgan *et al*., 2004; Katsikeas *et al*., 2000; Piercy *et al*., 1998; Zou and Stan, 1998) and the in-depth interviews
Product development explorative capabilities	Firm's capabilities referring to new product development and investment and use of new technology	Please indicate to what extent, over the last three years (2005-2008), has your firm developed the following activities	8	Likert scale (1=to no extent, 7=to a great extent)	(Danneels, 2008; Yalcinkaya *et al*., 2007; Atuahene-Gima, 2005; Morgan *et al*., 2004; Zahra *et al*., 2000)
Market-related explorative capabilities	Firm's capabilities referring to searching new markets and developing new relationships with customers and distributors in those markets	Please indicate to what extent, over the last three years (2005-2008), has your firm developed the following activities	7	Likert scale (1=to no extent, 7=to a great extent)	Items generated on the basis of past research (Danneels, 2008; Morgan *et al*., 2004; Katsikeas *et al*., 2000; Piercy *et al*., 1998; Zou and Stan, 1998) and the in-depth interviews

(cont.)

Construct	Conceptual definition	Question	Items	Type of scale	Adapted from
Current export profit performance	Firm's achievements in terms of financial performance	How well has your firm achieved the following goals	4	Likert scale 4.4.1. (1=not very well, 7=very well)	(Morgan *et al*., 2006; Vorhies and Morgan, 2005)
Current export market effectiveness performance	Degree to which the firms' goals were achieved in what regards market outcomes (Vorhies and Morgan, 2005)	How well has your firm achieved the following goals	5	Likert scale (1=not very well, 7=very well)	(Morgan *et al*., 2006; Vorhies and Morgan, 2005)
Future export performance	Firm's (anticipated) export performance over the next 3 years	How do you anticipate the evolution of the following indicators for the next three years (2009-2011)	4	Likert scale (1=will worsen significantly, 7=will improve significantly)	(Morgan *et al*., 2006; Vorhies and Morgan, 2005)
Slack resources	Uncommitted resources possessed by the firm (Garcia, et al., 2003)	Please indicate how much do you agree or disagree with the following statements	4	Likert scale (1=strongly disagree, 7=strongly agree)	(De Luca and Atuahene-Gima, 2007; Atuahene-Gima, 2005)
Environmental turbulence	Changes in technology (technological) and in the composition of customers, customer preferences, and competitor strategies (market) (Tu, 2010; Jaworski and Kohli, 1993; Narver and Slater, 1990)	Please indicate how much do you agree or disagree with the following statements	4 (technological) 4 (market)	Likert scale (1=strongly disagree, 7=strongly agree)	(De Luca and Atuahene-Gima, 2007)

4.5. DATA COLLECTION PROCEDURES

4.5.1. Sampling Procedure

Following the international marketing and business literature, we focused solely on export manufacturing firms (e.g. Morgan *et al*., 2004). Service firms and firms from primary industries were excluded because of their distinctive characteristics in terms of international expansion, regulation and performance (Zou and Cavusgil, 2002). We used the Portuguese National Statistics Institute database as the sampling frame. The information of this original database was updated through cross-analysis with other databases: AICEP (Government agency of Investments, Trade and Tourism), Kompass, Cotec, Yellow Pages, Câmara do Comércio e Indústria Portuguesa, AEP and Regional Associations databases. This process aimed to check the number of employees, telephone numbers, e-mails and name of person to contact.

To apply the questionnaire, and in line with the work of Lubatkin and colleagues (2006), we concentrated on firms with more than 20 employees. This option had to do with the nature of the Portuguese exporting industry structure, which consists predominantly of small to midsize firms (INE, 2007). Like those of other small European countries, Portuguese small to midsize firms are a vital ingredient in the country's growth (Lages and Montgomery, 2004).

Taking into account the above mentioned restraining conditions (manufacturing firms and over 20 employees), our sampling frame consisted of about 7400 firms. To calculate the sample size to use in this research we used as a reference a confidence level of 99% and a precision level of 2% to a variance estimate of p = .50. As a result, the minimum number of firms to contact should be 2331. As simple random sampling is not the most efficient method and is likely arduous if done manually, we opted to use a systematic sample procedure. In this procedure, of a sample, one selects the *k*th element in the total list, systematically (Babbie, 2001). Considering our total sampling frame and our minimum number of firms to contact, we opted to select one firm in every three lines.

4.5.2. Data Collection

Data on export market orientation, dynamic capabilities, export performance and moderator variables was gathered through an online survey. The online survey link was sent to a key informant previously identified by telephone in each firm of the selected sample. The key informant was defined as someone knowledgeable about and willing to report on the firm's exploitative and explorative capabilities and export operations (Campbell, 1955). Firm-size data were obtained from the financial database SABI, the Iberian Balance Sheet Analysis System, provided by INFORMA D&B and Bureau Van Dijk. This database has general information and annual financial data of Spanish and Portuguese firms.

4.5.2.1 Informant Identification

Our sample of exporting manufacturers' consisted of 2931 firms. As a multi-industry sample, doing so increased observed variance, thereby enhancing the likelihood of generalizability of the research findings (Morgan *et al*., 2004; Cannon and Perreault, 1999; Bello and Gilliland, 1997). All firms were contacted by telephone to explain the purpose of the study, identify key informants, and request their participation. We excluded 715 firms (24.39%) from the initial database: 82 belonged to the same firm or firm group already contacted; 314 no longer exported, exported indirectly through a national firm, or sold only to international headquarters; 176 were facing insolvency or were in bankruptcy; 10 did not respond due to company policy; and 133 were not interested in collaborating.

4.5.2.2 Survey Response

A questionnaire was made available online and its link sent by e-mail to the named key informants in the 1271 firms that agreed to participate. Three incentives were offered to participate: (1) a summary of the findings and strategic recommendations, (2) an invitation to a workshop about internationalization and (3) information about potential clients abroad. One month after sending the first e-mail, if the firm had not answered, a follow-up telephone call was made. Most of the firms requested that the e-mail be sent one more time. One month after the telephone follow-up, an e-mail follow-up was made. This procedure produced 273 responses. After codifying the data, we inserted them in a database and analyzed them in

SPSS (*Statistical Package for the Social Sciences*) 16.0 (Hill and Hill, 2005; Pestana and Gageiro, 1998) and in LISREL (LInear Structural RELations) 8.80 (Salgueiro, 2006; Jöreskog and Sörbom, 1993).

Following the literature, we checked the data for outliers, missing data, heteroskedasticity and normality (Hair, Black, Babin and Anderson, 2009; Dias Curto, 2007; Tabachnick and Fidell, 2006; Babbie, 2001). We first inspected univariate descriptive statistics for screening for accuracy (Tabachnick and Fidell, 2006). Then, we looked at outliers, that is, values that are not within the scale range, by analyzing the box plot for each variable. As suggested by the literature, we eliminated seven surveys, as we detected observations that were a univariate outlier on more than one variable (appendix 8.8. presents the boxplot of two variables with indication of the outliers as an example of the analysis performed) (Tabachnick and Fidell, 2006). Next, we evaluated the amount and distribution of missing data. Four surveys were excluded because of considerable missing responses (more than 30% missing values; Hair *et al*, 2009). The cases of surveys with missing values, but below 30%, were kept and the missing value was replaced using the method *series mean* (Hair *et.al*, 2009). We checked pairwise plots for nonlinearity and heteroskedasticity. Finally, we performed a normality analysis of each variable, using 1% of probability level (Tabachnick and Fidell, 2006). The skewness, kurtosis and Kolmogorov-Smirnov values are presented in appendix 8.9.. We obtained a final sample of 261 valid surveys. This yields an effective response rate of 20.54%, which is in accordance with previous studies (e.g. He and Wong, 2004).

4.5.2.3 Informant Quality

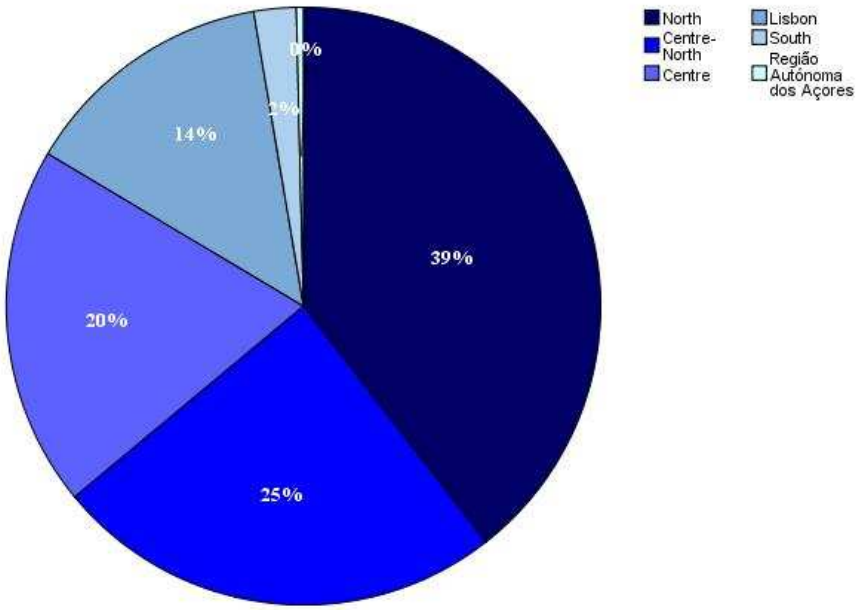
To assess the quality of key informants, informants were asked to indicate on a 7-point scale their degree of knowledge about the issues under study (from 1 = “very limited knowledge,” to 7 = “very substantial knowledge”). The mean for the degree of knowledge was 5.93 (standard deviation = .78). Collectively, this indicates that the respondents had significant knowledge about dynamic capabilities and the firm’s export operations.

4.5.2.4 Sample Profile

The sample is a multi-industry sample of manufacturing exporters. The average firm size, measured by the number of full-time employees is 142. The average age of firms included in the sample is approximately 30 years. The participating firms had significant export experience: the average number of years that firms had engaged in international operations is 22 and the average number of export countries in which firms operated is 15.

The firms included in the sample essentially focused on export operations: the average export intensity, that is, the percentage of a firm's sales that accounts for export activity, is 59%; 64% of firms have an export intensity of more than 50%. The firms are located mostly in the north of the country (39%), the centre-north (25%), the centre (20%) and Lisbon (14%) (figure 30).

Figure 30: Region of the Respondent Firms



Most respondents were CEO (31%) or export managers (32%) (table 3). The average number of years they had worked in the specific firm is 12, and the average number of years they had worked in the current position is 11.

Table 3: Position of the Respondents in the Firm

Position of the respondent	Frequency	Percentage
Export Manager/Commercial Manager	83	31,80%
CEO	80	30,65%
Manager	34	13,03%
Innovation/Technology Manager	14	5,36%
Marketing Manager	11	4,21%
Finance Manager	10	3,83%
Production Manager	10	3,83%
Accountant/Controller	8	3,07%
Operations Manager	8	3,07%
Human Resources Manager	3	1,15%

In general, the distribution patterns of industries in the sample match the actual distribution of Portuguese exports (INE, 2009). In particular, 22% of firms in the sample were active in the textile, clothing and leather products industries; 20% in the metallurgic and metallic products industries; 20% in the chemicals and synthetic or artificial fibres and rubber products and plastics industries, 18% in the transport equipment and machinery industries and 7% in the wood and cork and in the paper industries (table 4). Interestingly, considering our top five industries of the sample, all but one (metallic products industry) are industries that are identified as having a positive comparative advantage. In the metallic products industry there is not a positive comparative advantage yet. However, this industry has been going through an impressive evolution in what regards comparative advantage, as previously seen (point 4.1.2., page 73).

Table 4: Industries in the Sample

Industries	Frequency	Percentage
Metallic products industry (except machines and equipment)	45	17,2
Clothing industry	28	10,7
Other non-metallic mineral products industry	28	10,7
Textile industry	20	7,7
Rubber products and plastics industry	17	6,5
Machine and equipment industry	17	6,5
Food industry	15	5,7
Wood and cork industry (except furniture)	12	4,6
Other manufacturing industries	9	3,5
Leather and leather products industry	8	3,1
Automobile industry	8	3,1
Furniture industry	8	3,1
Chemicals and synthetic or artificial fibres industry (except pharmaceutics)	7	2,7
Pulp, paper rand cardboard industry	6	2,3
Metallurgic industry	6	2,3
Computer, communication, electronic and optical products industry	6	2,3
Electric equipment industry	6	2,3
Other transportation equipment industry	6	2,3
Repair, maintenance, installation of machines and equipment industry	6	2,3
Pharmaceutics industry	3	1,1

4.5.2.5 Unit of Analysis

In line with the dynamic capabilities literature (e.g. Atuahene-Gima, 2005; Auh and Menguc, 2005), we adopted a firm-level approach. We expected that as dynamic capabilities develop over time, they would have a halo-like effect on performance across the firm's products and services. Furthermore, using the firm as the unit of analysis is in line with our aim of understanding the interfirm variation of dynamic capabilities across firms.

4.5.2.6 Nonresponse Bias

We tested for nonresponse bias by comparing early and late respondents (defined as the first 75% and last 25% to return questionnaires, respectively) on the number of years of exporting, number of full-time employees and number of export markets. We found no significant differences between early and late respondents. As such, nonresponse bias was not a significant problem in the study (Armstrong and Overton, 1977).

4.5.2.7 *Common Method Bias*

Given the cross-sectional nature of the study and the fact that data on both dependent and independent variables were collected from a single informant, there is a potential problem of common method variance that may have inflated or deflated construct relationships. Hence, we performed some steps for limiting and assessing the effects of common method variance (Podsakoff, MacKenzie and Podsakoff, 2003). First, we guaranteed anonymity to all respondents and asked them to answer questions as honestly as possible, given that there were no right or wrong answers. Second, respondents were not aware of our conceptual model, which avoided respondents from answering based on their beliefs of how the model variables should be related. In addition to these procedures, all the model variables were entered together into an exploratory factor analysis. If a single factor emerges from the data or one factor explains the majority of the variance, there is a common method bias problem (Skarmeas and Robson, 2008). The tests suggest that common method bias is not a problem in this study.

SECTION 5. DATA ANALYSIS

To analyze data and test the proposed model we opted by a structural equation modeling (SEM). This technique examines several dependent relationships simultaneously and allows having latent variables, which are not directly measurable (Salgueiro, 2006). In addition, it provides information about the structural component and the measurement component of the model (Hair et al., 2009).

We decided to use a reflective model, in which a latent variable is posited as the common cause of an item (or indicator) (Edwards and Bagozzi, 2000).

5.1. DESCRIPTIVE ANALYSIS OF MEASURES

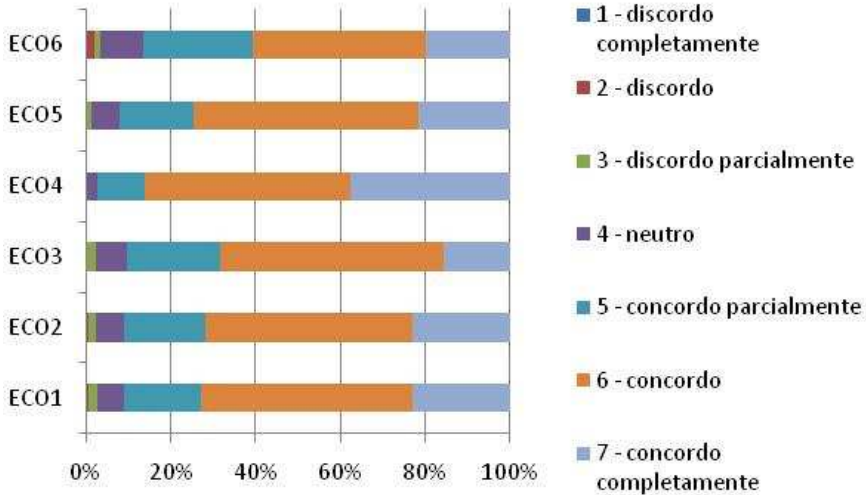
To enhance our understanding of each construct and its items, we perform a descriptive analysis of the measures. This analysis may also help to uncover potential problems with the constructs. In each case we present each item mean, a measure of reliability (Cronbach alpha) and a graph with the weight of each likert scale value to each item. The items are shown in the vertical axis and the accumulated percentage of respondents in the horizontal axis.

5.1.1. Export Customer Orientation

In what regards export customer orientation, all of its six items have an above-the-average mean: ECO1 with 5.83, ECO2 with 5.83, ECO3 with 5.71, ECO4 with 6.21, ECO5 with 5.86 and ECO6 with 5.60 (figure 31).

The Cronbach alpha of the scale is .83.

Figure 31: Export Customer Orientation Measure

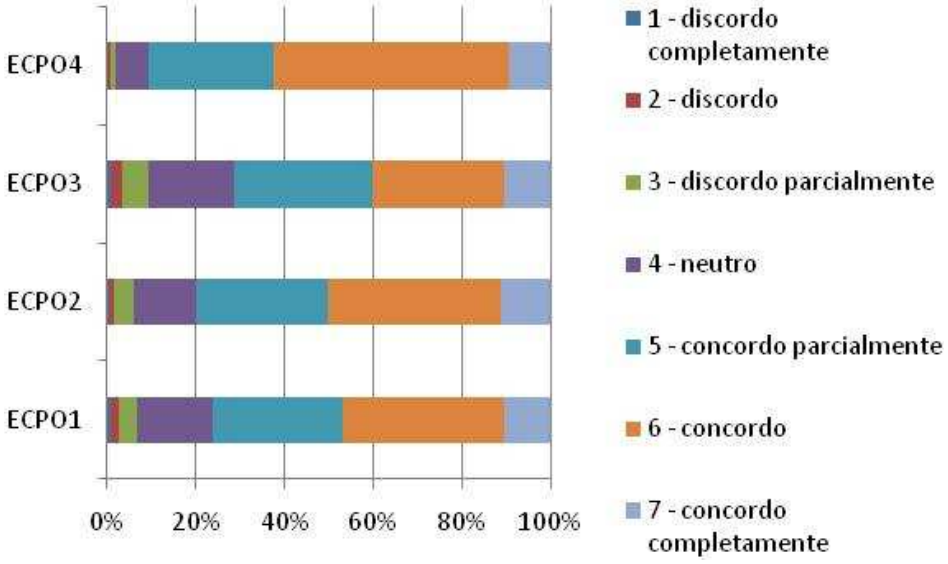


5.1.2. Export Competitor Orientation

In what regards export competitor orientation, all of its four items have an above-the-average mean: ECPO1 with 5.23, ECPO2 with 5.34, ECPO3 with 5.09 and ECPO4 with 5.52 (figure 32).

The Cronbach alpha of the scale is .75, but there is an indication that it may rise to .79 with the deletion of the item ECPO1 ("all information concerning our export competition is shared within this company").

Figure 32: Export Competitor Orientation Measure

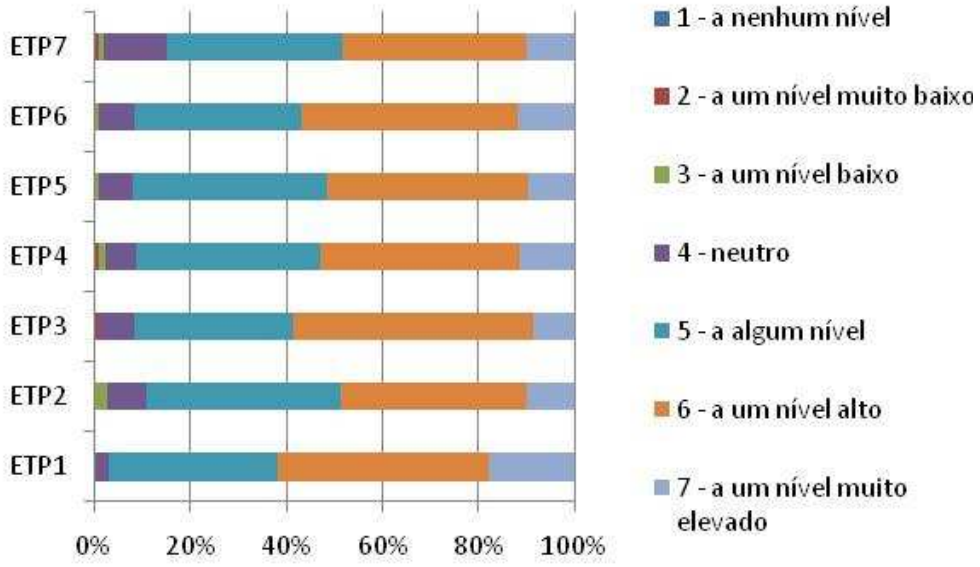


5.1.3. Product Development Exploitative Capabilities

In what regards product development exploitative capabilities, all of its seven items have an above-the-average mean: ETP1 with 5.76, ETP2 with 5.45, ETP3 with 5.56, ETP4 with 5.52, ETP5 with 5.51, ETP6 with 5.59 and ETP7 with 5.40 (figure 33).

The Cronbach alpha of the scale is .89, but there is an indication that it may rise to .90 with the deletion of the item ETP2 ("lowered cost of the firm's export products, services and processes").

Figure 33: Product Development Exploitative Capabilities Measure

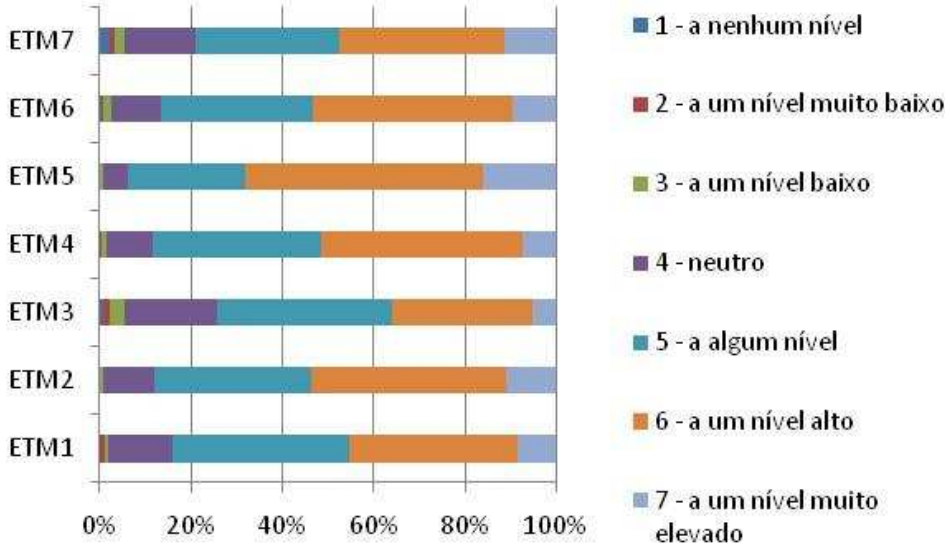


5.1.4. Market-related Exploitative Capabilities

In what regards market-related exploitative capabilities, all of its seven items have an above-the-average mean: ETM1 with 5.35, ETM2 with 5.52, ETM3 with 5.07, ETM4 with 5.46, ETM5 with 5.77, ETM6 with 5.46 and ETM7 with 5.28 (figure 34).

The Cronbach alpha of the scale is .87.

Figure 34: Market-related Exploitative Capabilities Measure

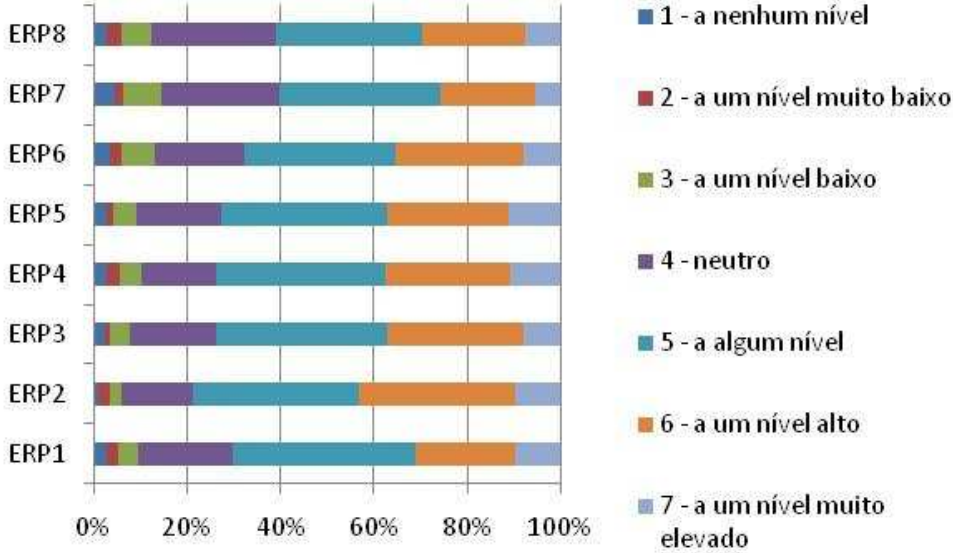


5.1.5. Product Development Explorative Capabilities

In what regards product development explorative capabilities, all of its eight items have an above-the-average mean, even though it is lower than the ones seen so far in the other construct items: ERP1 with 4.93, ERP2 with 5.21, ERP3 with 5.05, ERP4 with 5.03, ERP5 with 5.05, ERP6 with 4.88, ERP with 4.65 and ERP8 with 4.63 (figure 35).

The Cronbach alpha of the scale is .93.

Figure 35: Product Development Explorative Capabilities Measure

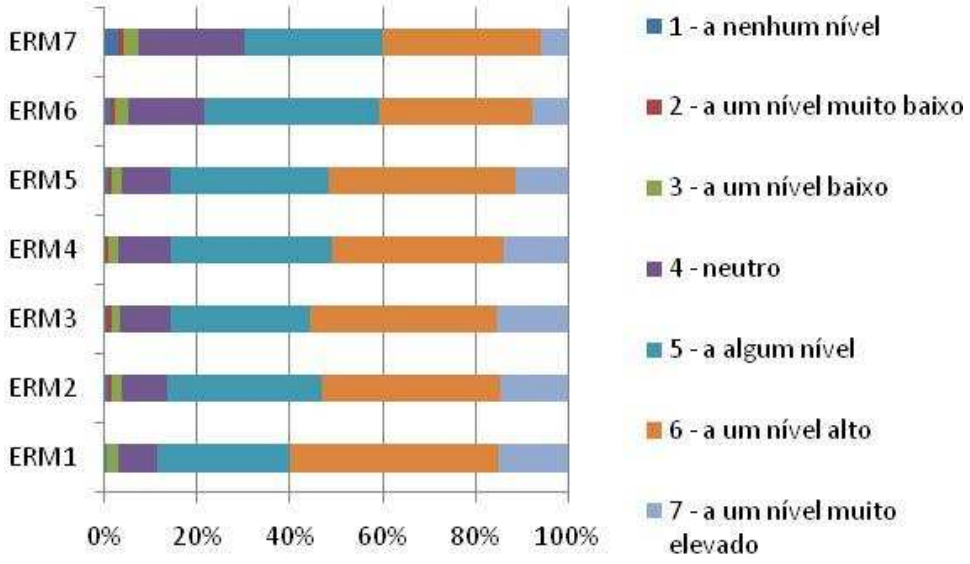


5.1.6. Market-related Explorative Capabilities

In what regards market-related explorative capabilities, all of its seven items have an above-the-average mean: ERM1 with 5.59, ERM2 with 5.49, ERM3 with 5.51, ERM4 with 5.47, ERM5 with 5.44, ERM6 with 5.18 and ERM7 with 5.01 (figure 36).

The Cronbach alpha of the scale is .92.

Figure 36: Market-related Explorative Capabilities Measure

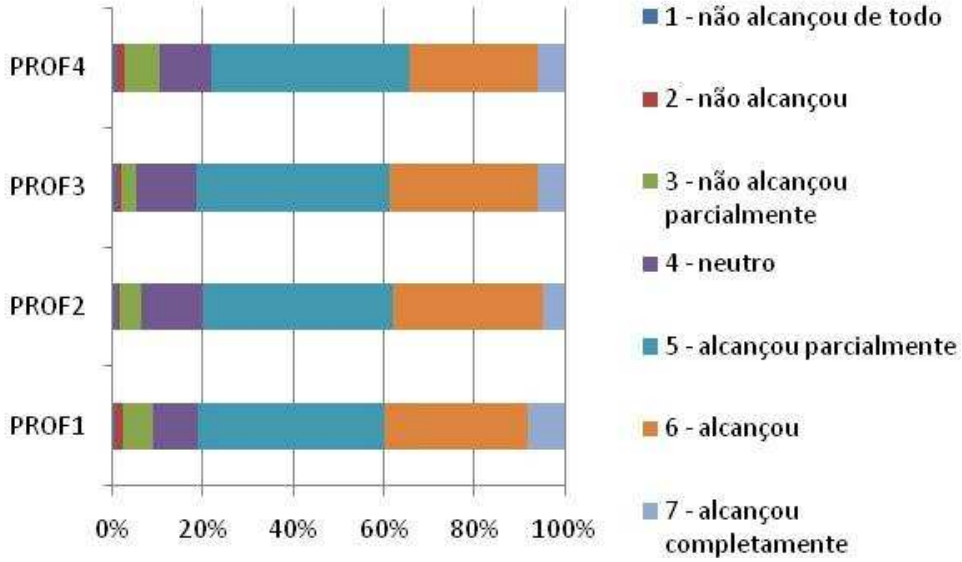


5.1.7. Current Export Profit Performance

In what regards current export profit performance, all of its four items have an above-the-average mean: PROF1 with 5.18, PROF2 with 5.14, PROF3 with 5.19 and PROF4 with 5.05 (figure 37).

The Cronbach alpha of the scale is .94.

Figure 37: Current Export Profit Performance Measure

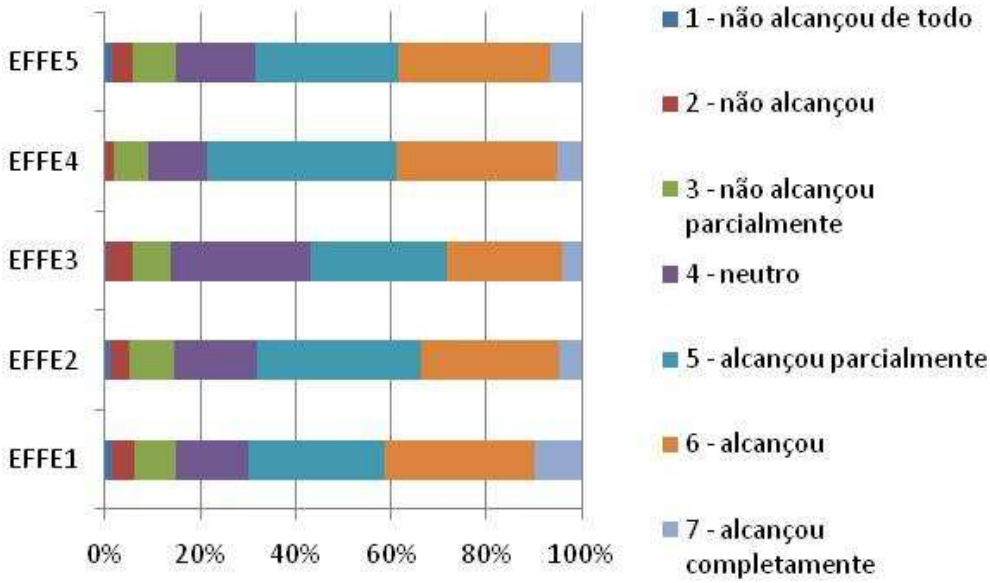


5.1.8. Current Export Market Effectiveness Performance

In what regards current export market effectiveness performance, all of its five items have an above-the-average mean, even though at a lower level than the previously presented construct items: EFFE1 with 4.98, EFFE2 with 4.85, EFFE3 with 4.68, EFFE4 with 5.11 and EFFE5 with 4.91 (figure 38).

The Cronbach alpha of the scale is .91.

Figure 38: Current Export Market Effectiveness Performance Measure

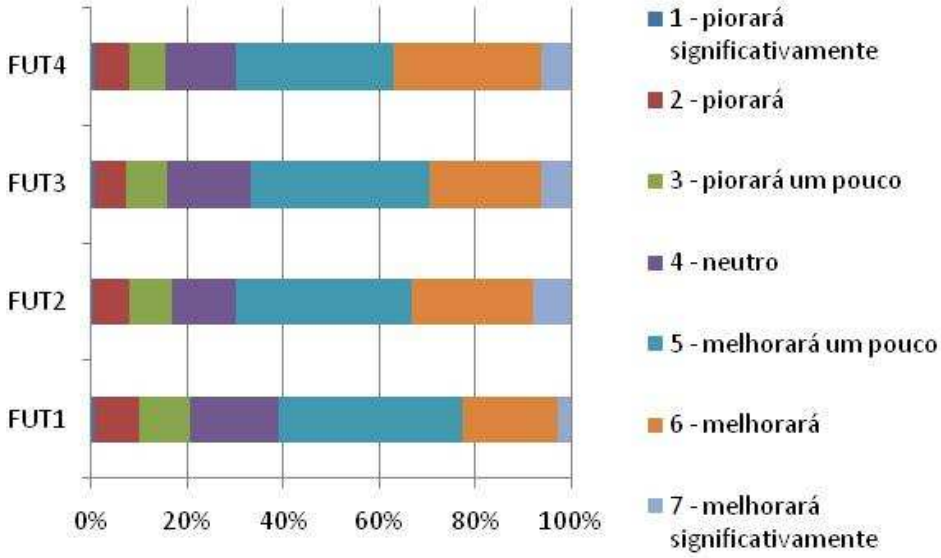


5.1.9. Future Export Performance

In what regards future export performance, all of its four items have a slightly above-the-average mean: FUT1 with 4.53, FUT2 with 4.85, FUT3 with 4.78 and FUT4 with 4.89 (figure 39).

The Cronbach alpha of the scale is .95.

Figure 39: Future Export Performance Measure

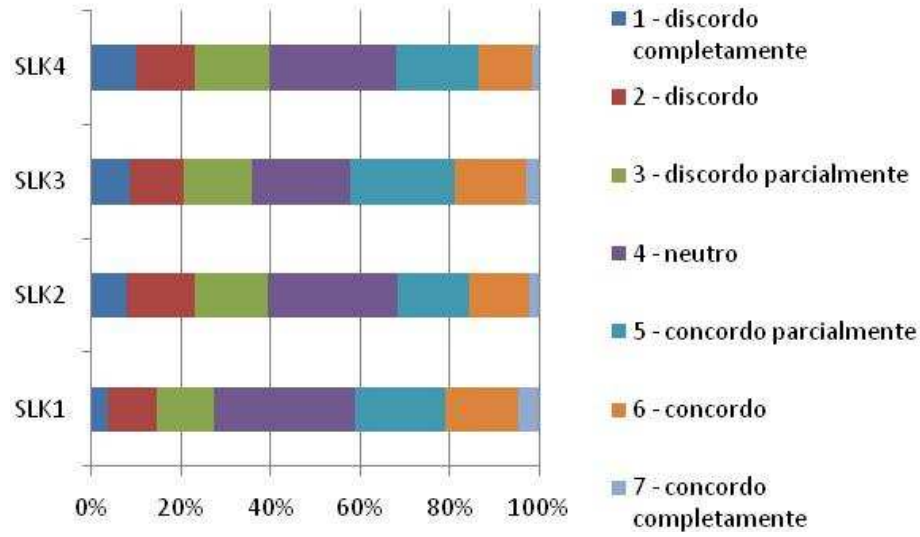


5.1.10. Slack Resources

In what regards the control variable slack resources, with the exception of SLK1, that is, "we have uncommitted resources that can be used to fund strategic initiatives at short notice" (mean 4.21), all of the items have a below-the-average mean: SLK2 with 3.78, SLK3 with 3.98 and SLK4 with 3.73 (figure 40). This situation is not surprising, given the economic and financial crises period in which the data was collected.

The Cronbach alpha of the scale is .92.

Figure 40: Slack Resources Measure

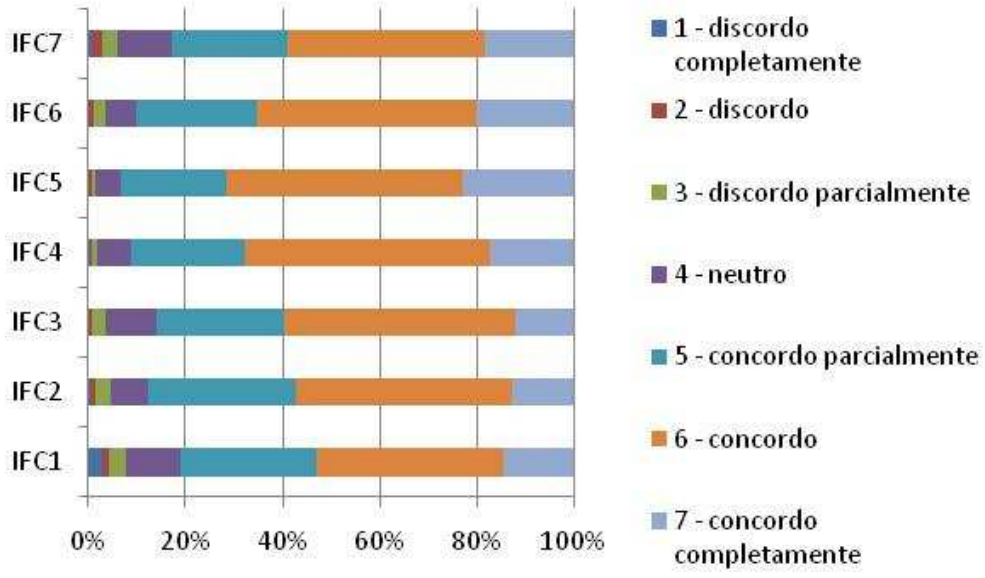


5.1.11. Interfunctional Coordination

In what regards the moderator interfunctional coordination, all of its items have an above-the-average mean: IFC1 with 5.34, IFC2 with 5.52, IFC3 with 5.52, IFC4 with 5.73, IFC5 with 5.86, IFC6 with 5.70 and IFC7 with 5.49 (figure 41).

The Cronbach alpha of the scale is .87.

Figure 41: Interfunctional Coordination Measure

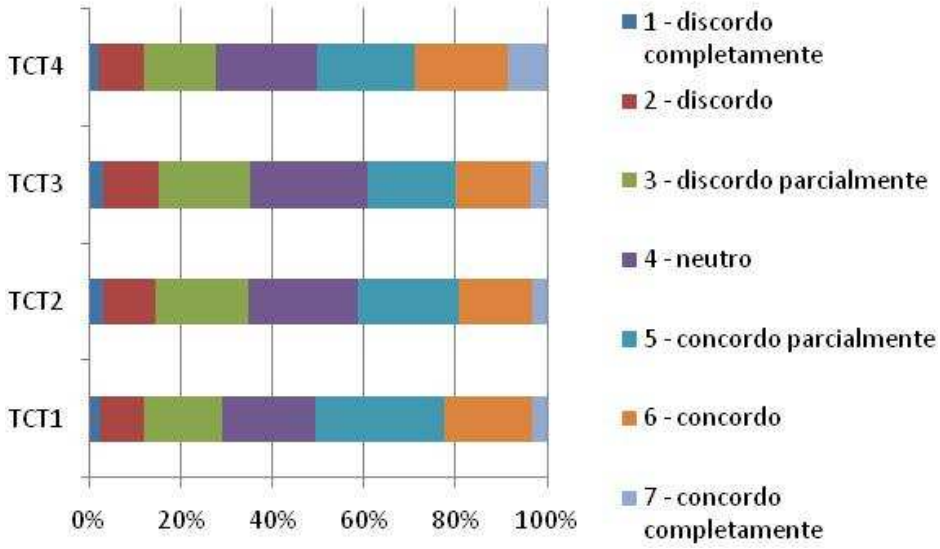


5.1.12. Technological Turbulence

In what regards the moderator variable technological turbulence, all of its four items have an average mean: TCT1 with 4.33, TCT2 with 4.11, TCT3 with 4.09 and TCT4 with 4.47 (figure 42).

The Cronbach alpha of the scale is .86, but it can be improved to .91 through the deletion of TCT4, that is "technologically, our industry was a very complex environment".

Figure 42: Technological Turbulence Measure

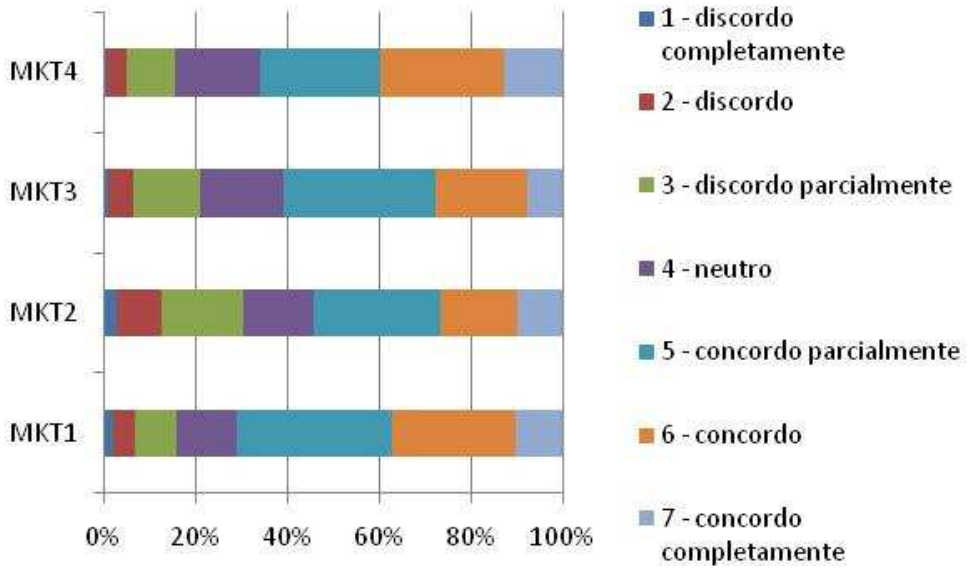


5.1.13. Market Turbulence

In what regards the moderator variable market turbulence, all of its four items have an slightly abover-the-average mean: MKT1 with 4.93, MKT2 with 4.45, MKT3 with 4.67 and MKT4 with 4.97 (figure 42).

The Cronbach alpha of the scale is .89.

Figure 43: Market Turbulence Measure



5.2. VALIDITY AND RELIABILITY OF MEASURES

To assess the validity of the measures, items were subjected to a confirmatory factor analysis (Churchill, 1979) using full-information maximum likelihood (FIML) estimation procedures in LISREL 8.80 (Salgueiro, 2006; Jöreskog and Sörbom, 1993). The confirmatory factor analysis tests pre-established relationships between latent variables and their measurement items (Hair *et.al*, 2009). The proposed model includes thirteen constructs (as shown in figure 3 in page 52). The literature says that, when facing complex models, it is suggested to in a preliminary analysis in which each model construct is individually analyzed (Hair *et.al*, 2009). Each individual diagram is presented in appendix 8.10.

The main criterion to decide to maintain or drop an item in the model is the estimated factor loading. The literature recommends that each loading should be above .70, even though some authors refer that .60 is also acceptable. We used .70 in most cases, but we accepted some cases below that level when we considered that there was a strong conceptual logic that supported the maintenance of the item.

After analyzing each measurement model, some items were dropped given the low level of factor loading presented. Namely, we dropped the items CO5 and CO6, “we understand how everyone in our business can contribute to creating value for export customers” and “we give

close attention to after sales service in our export markets" of the export customer orientation construct; the item CPO1, "all information concerning our export competition is shared within this company" of the export competitor orientation construct; the item ETP2 "lowered cost of the firm's export products, services and processes" of the product development exploitative capabilities construct; the item ETM6 "reinforced its supplier relationships" of the market-related exploitative capabilities construct; the items ERP1 and ERP6, "acquired manufacturing technology and skills entirely new to the firm" and "strengthened innovation skills in areas where it had no prior experience" of the product development explorative capabilities construct; the item ERM6, "built new close supplier relationships" of the market-related explorative capabilities construct; the item IFC1, "our top managers from each business function regularly visit our current and prospective export customers" of interfunctional coordination and the item TCT4, "technologically, our industry was a very complex environment" of the technological turbulence construct.

We decided not to drop item ERM7, "built new overseas distributor relationships". Even though it is below our acceptance level of .65, it is still above the cut-off level of .60. Furthermore, maintaining this item allowed coherence and comparability between the constructs market-related exploitative capabilities and market-related explorative capabilities.

After this refinement, we tested the full measurement model. To assess the goodness of fit of the measurement model we used both absolute and relative fit tests. As absolute measures of fit we used Chi-square ($\chi 2$) statistics and the root mean square error of approximation (RMSEA). The first measure allows us to test if the specified model is correct whereas RMSEA discriminates *per* degrees of freedom (Salgueiro, 2006). The root mean square error of approximation (RMSEA) was .046, which is considered a good absolute adjustment, as it is below .05. The chi-square for this model was significant ($\chi 2 = 2777.04$, 1799 d.f., $p < .000$).

Because the chi-square statistic is sensitive to sample size, we also assessed additional fit indexes, relative fit tests: the normed fit index (NFI), the comparative fit index (CFI), the incremental fit index (IFI), and the Tucker-Lewis fit index (TLI). All these relative measures compare the proposed model to a reference model (or null model). The NFI measures the proportional improvement obtained by the proposed model im comparison to the null model. The CFI compares the null model to the established model. The IFI adjusts the NFI taking

into account the degrees of freedom and sample size. The TLI is a parcimonious measure that corrects the IFI taking into account the degrees of freedom (Salgueiro, 2006). The NFI, CFI, IFI, and TLI of this model are .93, .97, .97, and .97, respectively. That is, they are all above the desired level of .90 and, thus, allow us to accept the model as appropriate.

In addition to test the measurement model, we tested construct reliability, convergent validity and discriminant validity. Construct reliability can be tested using Cronbach alpha (α) , which assesses reliability through the internal consistency of the items of each construct (Cronbach, 1951); composite reliability (ρ), which represents the internal consistency of all indicators on the latent variable (Bagozzi, 1980) or the average variance extracted (AVE), that measures the extent to which the group of the items variances is explained by the latent variable (Fornell and Larcker, 1981).

All constructs present good internal reliability (α) values: export customer orientation, .81; export competitor orientation, .79; product development exploitative capabilities, .90; market-related exploitative capabilities, .87; product development explorative capabilities, .91; market-related explorative capabilities, .92; current export profit performance, .94; current export market effectiveness performance, .91; and future export performance, .95; slack resources .92; interfunctional coordination, .87; market turbulence, .89; and technological turbulence, .91. As these values are above the desirable level of .70-.80, we conclude that the scales are reliable and the measure has content validity (Churchill, 1979). All constructs also present the desirable levels of composite reliability (ρ), that is, above .70 (Bagozzi, 1980). The levels of AVE of all constructs are likewise greater than the desired level of .50, which means that at least 50% of the variance is explained by the latent variable.

To measure convergent validity, we analyzed factor loadings and t-values (Bagozzi, 1980). The loadings of the items on their respective construct presented acceptable results (average loading was .80, above the desirable level of .60-.70). Each item had large and significant standardized loadings on its intended construct. In addition, we checked these loadings' t-values and level of significance and confirmed they were all significant at $p < 0.001$.

Table 5 shows scale items and reliabilities.

Table 5: Measurement Model Results

Factor and Items	**Standardized loading**	***T-value***
Export customer orientation (ρ = .82, AVE = .53)		
ECO1 We constantly monitor our level of commitment and orientation to serving export customer needs	.80	14.76
ECO2 We measure export customer satisfaction systematically and regularly	.81	14.84
ECO3 Our export strategy for competitive advantage is based on our understanding of export customer needs	.65	11.07
ECO4 Our export business objectives are driven primarily by customer satisfaction	.64	10.90
Export competitor orientation (ρ = .80, AVE = .58)		
ECPO2 We rapidly respond to competitive actions that threaten us in our export markets	.77	13.82
ECPO3 We regularly discuss export competitors' strengths and weaknesses	.72	12.49
ECPO4 Customers are targeted when we have an opportunity for competitive advantage	.79	14.30
Product development exploitative capabilities (ρ = .91, AVE = .62)		
ETP1 Improved quality of the firm's export products, services and processes	.71	12.88
ETP3 Upgraded current knowledge and skills for familiar technologies and export products and services	.79	14.83
ETP4 Invested in enhancing skills in exploiting mature technologies that improve productivity of current innovation operations	.84	16.34
ETP5 Upgraded skills in product development processes in which the firm already possesses significant experience	.86	16.90
ETP6 Enhanced competencies in searching for solutions to customer problems that are near to existing solutions rather than completely new solutions	.72	13.22
ETP7 Strengthened our knowledge and skills for projects that improve efficiency of existing innovation activities	.78	14.56
Market-related exploitative capabilities (ρ = .89, AVE = .57)		
ETM1 Enhanced the capture of important market information of its existing markets	.80	15.04
ETM2 Reinforced its contacts in current export markets	.78	14.69
ETM3 Reinforced the monitoring of competitive products in current export markets	.78	14.61
ETM4 Enhanced its understanding of existing overseas customer requirements	.77	14.42
ETM5 Reinforced its relationships with current overseas customers	.78	14.53
ETM7 Reinforced its overseas distributor relationships	.62	10.78

(cont.)

Factor and Items	**Standardized loading**	***T-value***
Product development explorative capabilities (ρ = .91, AVE = .62)		
ERP2 Learned about technology it has not used before	.75	12.89
ERP3 Learned product development skills and processes (such as product design, prototyping new products, timing of new product introductions and customizing products for local markets) entirely new to the industry	.71	12.79
ERP4 Acquired entirely new managerial and organizational skills that are important for innovation (such as forecasting technological and customer trends, identifying emerging markets and technologies, coordinating and integrating R&D, marketing, manufacturing and other functions, managing the product development process)	.83	16.03
ERP5 Learned new skills in areas such as funding new technology, staffing R&D function, training and development of R&D and engineering personnel for the first time	.87	17.43
ERP7 Implemented new types of production processes	.76	14.13
ERP8 Chose new approaches to export products, services and processes that are different from those used in the past	.79	14.84
Market-related explorative capabilities (ρ = .93, AVE = .69)		
ERM1 Identified prospective customers	.86	17.11
ERM2 Acquired export market-related information of new markets	.92	19.11
ERM3 Assessed the potential of new markets	.89	18.28
ERM4 Researched new competitors and new customers	.84	16.55
ERM5 Built relationships in new markets	.84	16.59
ERM7 Built new overseas distributor relationships	.60	10.39
Current export profit performance (ρ = .95, AVE = .81)		
PROF1 Export profit	.87	17.49
PROF2 Export return on investment	.91	18.75
PROF3 Export return on sales	.92	19.18
PROF4 Export market margins	.91	18.83
Current export market effectiveness performance (ρ = .89, AVE = .63)		
EFFE1 Export market's sales volume growth	.86	16.96
EFFE2 Growth in export market sales revenue	.86	17.10
EFFE3 Export market's market share growth	.78	14.56
EFFE4 Acquiring new export market customers	.64	11.12
EFFE5 Increasing sales to current export customers	.81	15.59

(cont.)

Factor and Items	**Standardized loading**	***T-value***
Future export performance (ρ = .94, AVE = .78)		
FUT1 Export operations profitability	.82	15.86
FUT2 Export sales volume	.93	19.71
FUT3 Achievement of the objectives	.89	18.08
FUT4 Satisfaction with export operations performance	.90	18.36
Slack resources (ρ = .90, AVE = .69)		
SLK1 We have uncommitted resources that can be used to fund strategic initiatives at short notice	.77	14.48
SLK2 We have a large amount of resources available in the short run to fund our initiatives	.92	18.84
SLK3 We will have no problems obtaining resources at short notice to support new strategic initiatives	.76	14.15
SLK4 We have a large amount of resources at the discretion of management to fund new strategic initiatives	.87	17.35
Interfunctional coordination (ρ = .89, AVE = .57)		
IFC2 Our business functions regularly share market information about export customers, technologies, and competitors	.71	12.84
IFC3 The activities of functional units are tightly coordinated to ensure better use of our export market knowledge	.83	16.08
IFC4 Our export business strategies are driven by the goal of increasing export customer value	.66	11.57
IFC5 Export staff share programs and resources with other business units	.76	13.92
IFC6 There is a high level of cooperation and coordination among functional units in setting the goals and priorities for the organization to ensure effective response to export market conditions	.82	15.57
IFC7 Top management promotes communication and cooperation among R&D, marketing, and manufacturing in export market information acquisition and use	.72	13.02
Technological turbulence (ρ = .89, AVE = .74)		
TCT1 It was very difficult to forecast technology developments in our industry	.81	15.17
TCT2 Technology environment was highly uncertain	.92	18.31
TCT3 Technological developments were highly unpredictable	.84	15.94
Market turbulence (ρ = .88, AVE = .65)		
MKT1 Customer needs and product preferences changed quite rapidly	.79	14.65
MKT2 Customer product demands and preferences were highly uncertain	.87	17.10
MKT3 It was difficult to predict changes in customer needs and preferences	.83	15.89
MKT4 Market competitive conditions were highly unpredictable	.72	12.91
Note: $\chi^2_{(1799)} = 2777.04$, $p < .000$, NFI = .93, NNFI = .97, CFI = .97, IFI = .97, RMSEA = .046		

Finally, we tested discriminant validity, which refers to the extent to which a construct does not correlate with the measures of the other constructs presented in the model. We used Fornell and Larcker's (1981) test; all possible pairs of constructs passed the test. Evidence of discriminant validity was revealed by the fact that the shared variance among any two constructs (i.e., the square of their intercorrelation) was less than the average variance explained in the items by the construct (MacKenzie, Podsakoff and Rich, 2001; Fornell and Larcker, 1981).

Overall, the results suggest that the measurement scales are satisfactorily reliable and valid (table 6).

Table 6: Correlation Matrix, Reliability Estimates, and Descriptive Statistics

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Export customer orientation	5.89	.90	**.73**													
2. Export competitor orientation	5.32	1.06	.69*	**.76**												
3. Product development exploitative capabilities	5.56	.87	.63*	.52*	**.79**											
4. Market-related exploitative capabilities	5.41	.95	.53*	.58*	.67*	**.76**										
5. Product development explorative capabilities	4.96	1.27	.50*	.37*	.70*	.55*	**.79**									
6. Market-related explorative capabilities	5.42	1.06	.48*	.45*	.46*	.69*	.59*	**.83**								
7. Current export profit performance	5.14	1.06	.27*	.25*	.43*	.39*	.34*	.18*	**.90**							
8. Current export market effectiveness performance	4.91	1.24	.20*	.24*	.38*	.44*	.38*	.29*	.72*	**.79**						
9. Future export performance	4.76	1.31	.13*	.16*	.30*	.32*	.30*	.29*	.21*	.42*	**.89**					
10. Firm size	4.30	1.04	.01	.02	.02	.10	.20*	-.01	.18*	.07	-.11	**NA**				
11. Slack resources	3.93	1.53	.16*	.18*	.38*	.30*	.37*	.17*	.39*	.39*	.19*	.06	**.83**			
12. Interfunctional coordination	5.63	1.01	.68*	.72*	.62*	.62*	.47*	.52*	.29*	.27*	.15*	.05	.14*	**.75**		
13. Market turbulence	4.76	1.42	.03	-.03	.11*	.04	.14*	.21*	-.07	-.09	-.06	-.14*	.07	.08	**.80**	
14. Technological turbulence	4.18	1.44	.03	.01	.07	.06	.17*	.17*	.10	.03	.00	-.10	.12*	.06	.51*	**.86**
Skewness			-.995	-.546	-.625	-.363	-.722	-.758	-.784	-.706	-.699	NA	-.183	-.745	-.145	-.267
Kurtosis			1.714	.936	2.450	.214	.973	1.345	1.424	.269	.074	NA	-.682	.623	-.554	-.352

*$p < .05$.

Notes: The diagonal (in bold) shows the square roots of the AVE

5.3. STRUCTURAL MODEL RESULTS

To assess the significance of the parameter estimates we used t-values (table 7). The results of the structural model testing showed an acceptable fit (χ^2 =3778.82, 3425 d.f., p < .000, CFI =.98, IFI =.98, TLI =.98, RMSEA = .020).

The model test validated the antecedent role of export market orientation by distinguishing the customer and competitor dimensions effects. Whereas export customer orientation is an antecedent to all dynamic capabilities, export competitor orientation only had a significant effect on the exploitative capabilities. It confirms the foundational role of exploitative capabilities on explorative capabilities and their positive relationship to current export performance. In addition, it shows a positive link between market-related exploitative capabilities and future export performance. Concerning explorative capabilities, the test evidenced differences by domain. Product development explorative capabilities positively related to current and future export performance whereas market-related explorative capabilities negatively related to current export performance. Current export market effectiveness performance is positively related to future export performance. Interfunctional coordination moderates the explorative capabilities–current export performance link, and market and technological turbulence moderate the dynamic capabilities–current export performance link, though in opposite directions.

Overall, the structural model explains 48% of observed variance in product development exploitative capabilities, 45% of observed variance in market-related exploitative capabilities, 55% of observed variance in product development explorative capabilities, 52% of observed variance in market-related explorative capabilities, 48% of observed variance in current export profit performance, 46% of observed variance in current export market effectiveness performance and 16% of observed variance in future export performance. In conclusion, our study provides broad empirical support not only for the pathway through which export market orientation relates to product development and market-related dynamic capabilities but also for the impact of these capabilities on current and future export performance.

Table 7: Structural Model Results

Hypotheses	***Standardized estimate (T-value)***	***Support/ No support***
H_{1a} Export customer orientation (ECO) → Product development exploitative capabilities (ETP)	.44 (4.48***)	Support
H_{1b} ECO → Market-related exploitative capabilities (ETM)	.24 (2.40**)	Support
H_{2a} Export competitor orientation (ECPO)→ ETP	.31 (3.21***)	Support
H_{2b} ECPO → ETM	.48 (4.73***)	Support
H_{3a} ECO → Product development explorative capabilities (ERP)	.23 (2.39**)	Support
H_{3b} ECO → Market-related explorative capabilities (ERM)	.25 (2.84**)	Support
H_{4a} ECPO → ERP	-.15 (-1.53)	No support
H_{4b} ECPO → ERM	-.11 (-1.14)	No support
H_{5a} ETP → ERP	.67 (7.14***)	Support
H_{5b} ETM → ERM	.63 (7.51***)	Support
H_{6ai} ETP→ Current export profit performance (PROF)	.18 (1.85*)	Support
H_{6aii} ETP → Current export market effectiveness performance (EFFE)	.00 (0.05)	No support
H_{6bi} ETM → PROF	.36 (3.89***)	Support
H_{6bii} ETM → EFFE	.45 (4.59***)	Support
H_{7a} ETP → Future export performance (FUT)	-.04 (-0.39)	No support
H_{7b} ETM → FUT	.25 (2.46**)	No support
H_{8ai} ERP→ PROF	.08 (0.99)	No support
H_{8aii}ERP → EFFE	.20 (2.21*)	Support
H_{8bi} ERM → PROF	-.25 (-3.18**)	Support
H_{8bii} ERM→ EFFE	-.15 (-1.84*)	Support
H_{9a} ERP → FUT	.20 (2.05*)	Support
H_{9b} ERM → FUT	.01 (0.06)	No support
MODERATORS		
Interfunctional coordination (IFC)		
IFC → PROF	-.02 (-0.20)	
IFC → EFFE	-.11 (-1.24)	
H_{10ai} IFC × ETP→ PROF	.10 (1.08)	No support
H_{10aii} IFC × ETM → PROF	.05 (0.55)	No support
H_{10aiii} IFC × ETP→ EFFE	.01 (0.09)	No support
H_{10aiv} IFC × ETM → EFFE	-.11 (-1.10)	No support
H_{10bi} IFC × ERP→ PROF	.33 (3.32***)	Support
H_{10bii} IFC × ERM → PROF	-.17 (-1.92*)	Support
H_{10biii} IFC × ERP→ EFFE	.30 (2.89**)	Support
H_{10biv} IFC × ERM → EFFE	.06 (0.65)	No support

(cont.)

Hypotheses	***Standardized estimate (T-value)***	***Support/ No support***
Environmental turbulence		
Market turbulence (MKT) → PROF	-.47 (-5.10***)	
Technological turbulence (TCT) → PROF	.42 (4.63***)	
H_{11ai} MKT × ETP→ PROF	.33 (2.98**)	No support
H_{11ai} TCT × ETP→ PROF	-.39 (-3.57***)	Support
H_{11aii} MKT × ETM → PROF	-.18 (-1.72*)	Support
H_{11aii} TCT × ETM → PROF	.20 (1.72*)	No support
MKT → EFFE	-.46 (-4.84***)	
TCT → EFFE	.31 (3.34***)	
H_{11aiii} MKT × ETP→ EFFE	.26 (2.26*)	No support
H_{11aiii} TCT × ETP→ EFFE	-.36 (-3.17**)	Support
H_{11aiv} MKT × ETM → EFFE	-.11 (-0.99)	No support
H_{11aiv} TCT × ETM → EFFE	.22 (1.82*)	No support
H_{11bi} MKT × ERP→ PROF	-.33 (-3.56***)	No support
H_{11bi} TCT × ERP→ PROF	.22 (2.50**)	Support
H_{11bii} MKT × ERM → PROF	.14 (1.70*)	No support
H_{11bii} TCT × ERM → PROF	-.14 (-1.35)	No support
H_{11biii} MKT × ERP→ EFFE	-.29 (-2.99**)	No support
H_{11biii} TCT × ERP→ EFFE	.29 (3.18**)	Support
H_{11biv} MKT × ERM → EFFE	.19 (2.16*)	No support
$H_{1!biv}$ TCT × ERM → EFFE	-.36 (-3.35***)	Support
CONTROL		
Firm size → PROF	.12 (2.10*)	
Firm size → EFFE	-.04 (-0.65)	
Firm size → FUT	-.17 (-2.78**)	
Slack resources → PROF	.32 (5.27***)	
Slack resources → EFFE	.31 (4.91***)	
Slack resources → FUT	.08 (1.34)	
Note: $\chi^2_{(3425)}$ = 3778.82, p < .000, NFI = .92, NNFI = .98, CFI = .98, IFI = .98, RMSEA = .020		

* p < .05.
** p < .01.
*** p < .001.
Notes: I used a one-tailed test for all hypotheses.

Next, we analyze individually each hypothesis.

5.3.1. Main Effects

5.3.1.1 Sources of Dynamic Capabilities

H_{1a} indicated that export *customer* orientation is *positively* related to *product development exploitative* capabilities. The estimate of the relationship between export customer orientation and product development exploitative capabilities is positive and significant ($\beta = 0.44$, $p < 0.001$). Therefore, we found support for H_{1a}.

H_{1b} stated that export *customer* orientation is *positively* related to *market-related exploitative* capabilities. The estimate of the relationship between export customer orientation and market-related exploitative capabilities is positive and significant ($\beta = 0.24$, $p < 0.01$). Thus, there is support for H_{1b}.

H_{2a} stated that export *competitor* orientation is *positively* related to *product development exploitative* capabilities. The estimate of the relationship between export competitor orientation and product development exploitative capabilities is positive and significant ($\beta = 0.31$, $p < 0.001$). Therefore, H_{2a} is supported.

H_{2b} indicated that export *competitor* orientation is *positively* related to *market-related exploitative* capabilities. The estimate of the relationship between export competitor orientation and market-related exploitative capabilities is also positive and significant ($\beta = 0.48$, $p < 0.001$). So, H_{2b} is supported.

H_{3a} stated that export *customer* orientation is *positively* related to *product development explorative* capabilities. The estimate of the relationship between export customer orientation and product development explorative capabilities is positive and significant ($\beta = 0.23$, $p < 0.01$). Hence, H_{3a} is supported.

H_{3b} indicated that export *customer* orientation is *positively* related to *market-related explorative* capabilities. The estimate of the relationship between export customer orientation and market-related explorative capabilities is also positive and significant ($\beta = 0.25$, $p < 0.01$). Therefore, H_{4a} is supported.

H_{4a} posited that export *competitor* orientation is *positively* related to *product development explorative* capabilities. The estimate of the relationship between export competitor orientation and product development explorative capabilities is not significant ($\beta = -0.15$, n.s.). Therefore, H_{4a} is not supported.

H_{4b} indicated that export *competitor* orientation is *positively* related to *market-related explorative* capabilities. The estimate of the relationship between export competitor orientation and market-related explorative capabilities is not significant ($\beta = -0.11$, n.s.). Thus, H_{4b} is not supported.

5.3.1.2 Outcomes of Dynamic Capabilities

H_{5a} stated that *product development exploitative* capabilities are *positively* related to *product development explorative* capabilities. The estimate of the relationship between product development exploitative and explorative capabilities is positive and significant ($\beta = 0.67$, $p < 0.001$). So, H_{5a} is supported.

H_{5b} stated that *market-related exploitative* capabilities are *positively* related to *market-related explorative* capabilities. The estimate of the relationship between market-related exploitative and explorative capabilities is also positive and significant ($\beta = 0.63$, $p < 0.001$). Hence, H_{5b} is supported.

H_{6ai} indicated that *product development exploitative* capabilities are *positively* related to *current export profit* performance. The estimate of the relationship between product development exploitative capabilities and current export profit performance is positive and significant ($\beta = 0.18$, $p < 0.05$). Hence, H_{6ai} is supported.

H_{6aii} stated that *product development exploitative* capabilities are *positively* related to *current export market effectiveness* performance. The estimate of the relationship between product development exploitative capabilities and effectiveness performance is not significant (β = 0.00, n.s.). As a result, H_{6aii} is not supported.

H_{6bi} indicated that *market-related exploitative* capabilities are *positively* related to *current export profit* performance. The estimate of the relationship between market-related exploitative capabilities and current export profit performance is positive and significant (β = 0.36, $p < 0.001$). Thus, H_{6bi} is supported.

H_{6aii} stated that *market-related exploitative* capabilities are *positively* related to *current export market effectiveness* performance. The estimate of the relationship between market-related exploitative capabilities and current export market effectiveness performance is positive and significant (β = 0.45, $p < 0.001$). Therefore, H_{6aii} is supported.

H_{7a} stated that *product development exploitative* capabilities are *negatively* related to *future* export performance. Even though the estimate of the relationship between product development exploitative capabilities and future export performance is negative, it is not significant (β = –0.04, n.s.). Thus, H_{7a} is not supported.

H_{7b} stated that *market-related exploitative* capabilities are *negatively* related to *future* export performance. The estimate of the relationship between market-related exploitative capabilities and future performance is positive and significant (β = 0.25, $p < 0.01$). Thus, there is no support for H_{7b}. However, there is evidence of a positive relationship between market-related exploitative capabilities and future performance.

H_{8ai} indicated that *product development explorative* capabilities are related to *current export profit* performance. The estimate of the relationship between product development explorative capabilities and current export profit performance is not significant (β = 0.08, n.s.). Hence, H_{8ai} is not supported.

H_{8aii} stated that *product development explorative* capabilities are related to *current export market effectiveness* performance. The estimate of the relationship between product development explorative capabilities and current export market effectiveness performance is positive and significant ($\beta = 0.20$, $p < 0.05$). Thus, H_{8aii} is supported.

H_{8bi} indicated that *market-related explorative* capabilities are related to *current export profit* performance. The estimate of the relationship between market-related explorative capabilities and current export profit performance is negative and significant ($\beta = –0.25$, $p < 0.01$). Thus, H_{8bi} is supported.

H_{8bii} indicated that *market-related explorative* capabilities are related to *current export market effectiveness* performance. The estimate of the relationship between market-related explorative capabilities and current export market effectiveness performance is negative and significant ($\beta = –0.15$, $p < 0.05$). Therefore, H_{8bii} is supported.

H_{9a} stated that *product development explorative* capabilities are *positively* related to *future* export performance. The estimate of this relationship is positive and significant ($\beta = 0.20$, $p < 0.05$). Hence H_{9a} is supported.

H_{9b} stated that *market-related explorative* capabilities are positively related to *future* export performance. The estimate of this relationship is not significant ($\beta = 0.01$, n.s.). Therefore H_{9b} is not supported.

5.3.2. Moderation Effects

5.3.2.1 Interfunctional Coordination

H_{10ai} suggested that *interfunctional coordination moderates* – by strengthening – the *product development exploitative capabilities–current export profit performance* relationship. The estimate of this moderation is not significant ($\beta = 0.10$, n.s.). Hence, H_{10ai} is not supported.

H_{10aii} indicated that *interfunctional coordination moderates* – by strengthening – the *market-related exploitative capabilities–current export profit performance* relationship. The estimate of this moderation is not significant (β = 0.05, n.s.). Thus, H_{10aii} is not supported.

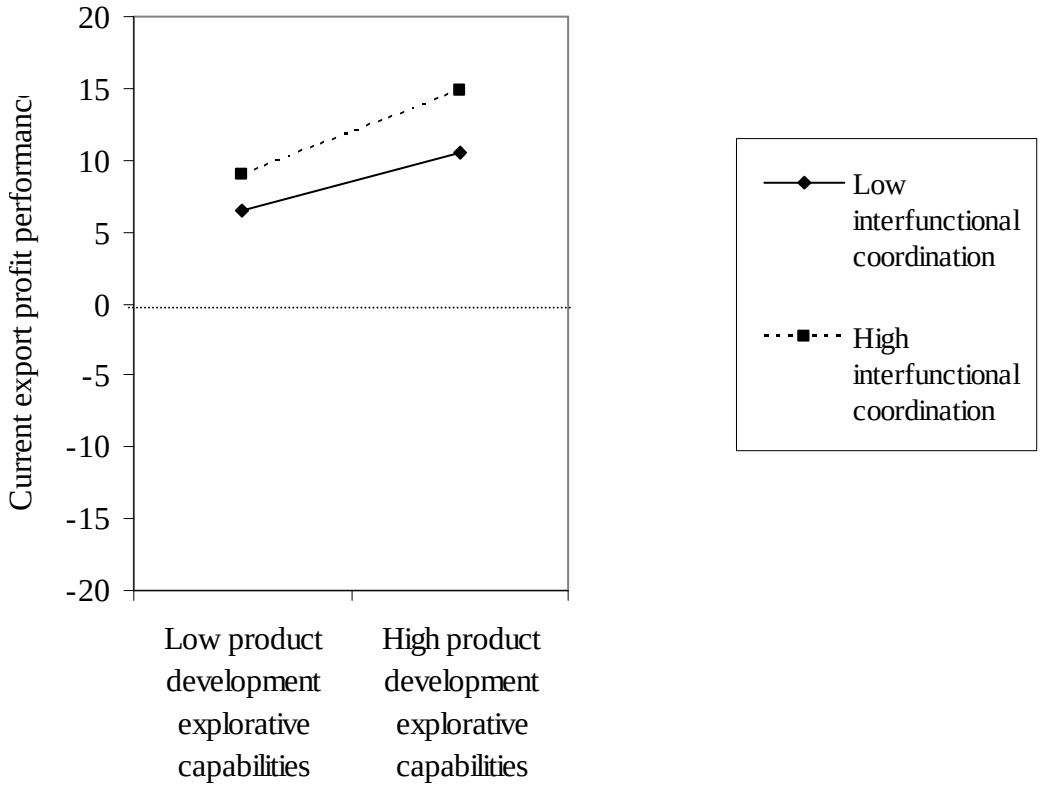
H_{10aiii} stated that *interfunctional coordination moderates* – by strengthening – the *product development exploitative capabilities–current export market effectiveness performance* relationship. The estimate of this moderation is not significant (β = 0.01, n.s.). Hence, H_{10aiii} is not supported.

H_{10aiv} indicated that *interfunctional coordination moderates* – by strengthening – the relationship between *market-related exploitative capabilities and current export market effectiveness* performance. Likewise, the estimate of this moderation is not significant (β = – 0.11, n.s.). H_{10aiv} is not supported.

H_{10bi} indicated that *interfunctional coordination moderates* – by strengthening – the *product development explorative capabilities–current export profit performance* relationship. The estimate of this moderation is positive and significant (β = 0.33, $p < 0.001$). Therefore, H_{10bi} is supported.

The plot in figure 44 shows that the positive link between product development explorative capabilities and current export profit performance is stronger when interfunctional coordination is high. So, the integration and coordination of firm's managerial functions enhances the positive effect of product development explorative capabilities on current export profit performance.

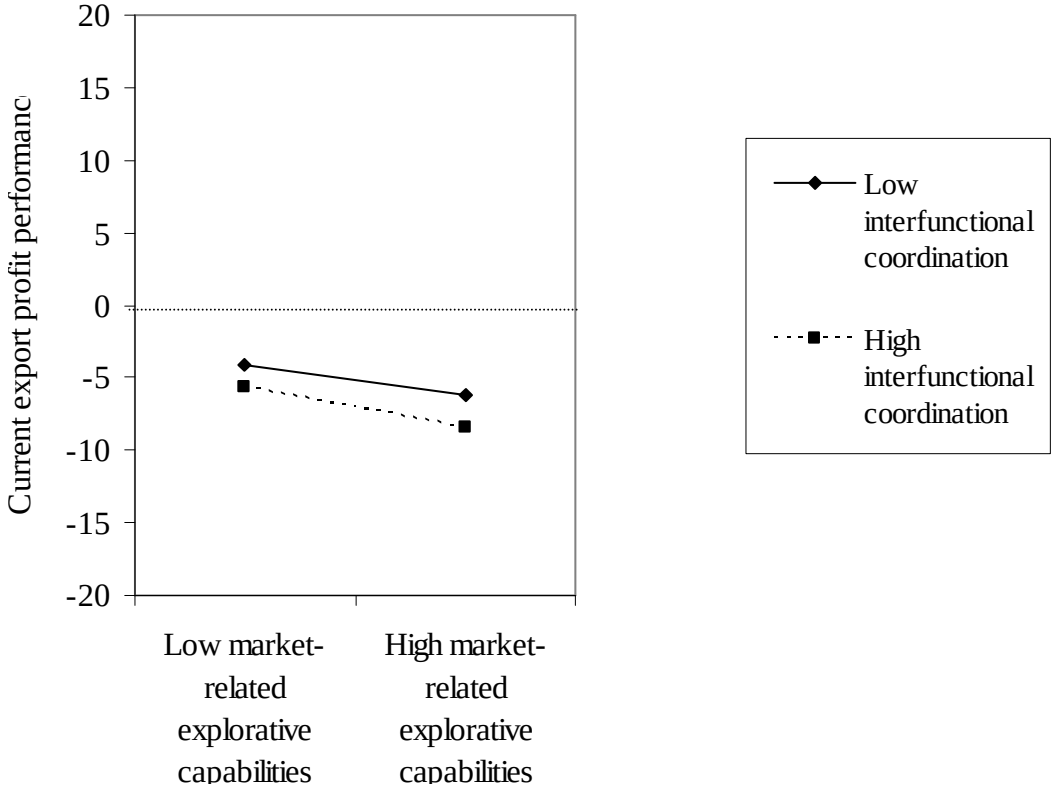
Figure 44: Moderation of Interfunctional Coordination in the Product Development Explorative Capabilities–Current Export Profit Performance Relationship



H_{10bii} indicated that *interfunctional coordination moderates* – by strengthening – the relationship between *market-related explorative capabilities and current export profit* performance. The estimate of the relationship is negative and significant ($\beta = -0.17$, $p < 0.05$). Taking into account that the direct effect of market-related explorative capabilities on current export profit performance is negative, H_{10bii} is supported.

Figure 45 shows that the negative link between market-related explorative capabilities and current export profit performance is weaker when interfunctional coordination is high. Hence, the coordination of functions mitigates the negative effect that the search and development of relationships in new markets can have on current export profit performance.

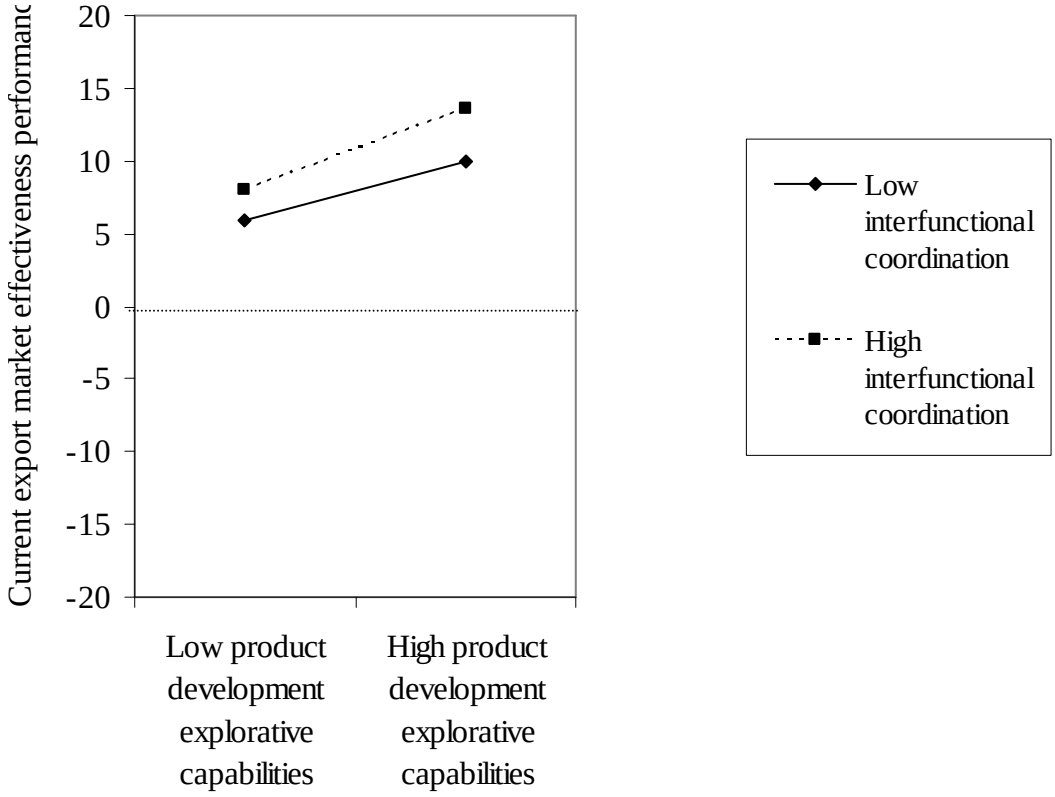
Figure 45: Moderation of Interfunctional Coordination in the Market-related Explorative Capabilities–Current Export Profit Performance Relationship



H_{10biii} stated that *interfunctional coordination moderates* – by strengthening – the relationship between *product development explorative capabilities and current export market effectiveness* performance. The estimate of the relationship is positive and significant ($\beta = 0.30$, $p < 0.01$). Therefore, H_{10biii} is supported.

The plot in figure 46 shows that the positive link between product development explorative capabilities and current export market effectiveness performance is stronger when interfunctional coordination is high. So, the coordination of firm's managerial functions increases the strength of the positive effect of product development explorative capabilities on current export market effectiveness performance.

Figure 46: Moderation of Interfunctional Coordination in the Product Development Explorative Capabilities–Current Export Market Effectiveness Performance Relationship



H_{10biv} stated that *interfunctional coordination moderates* – by strengthening – the relationship between *market-related explorative capabilities and current export market effectiveness* performance. The estimate of this relationship is not significant ($\beta = 0.06$, n.s.). Therefore, H_{10biv} is not supported.

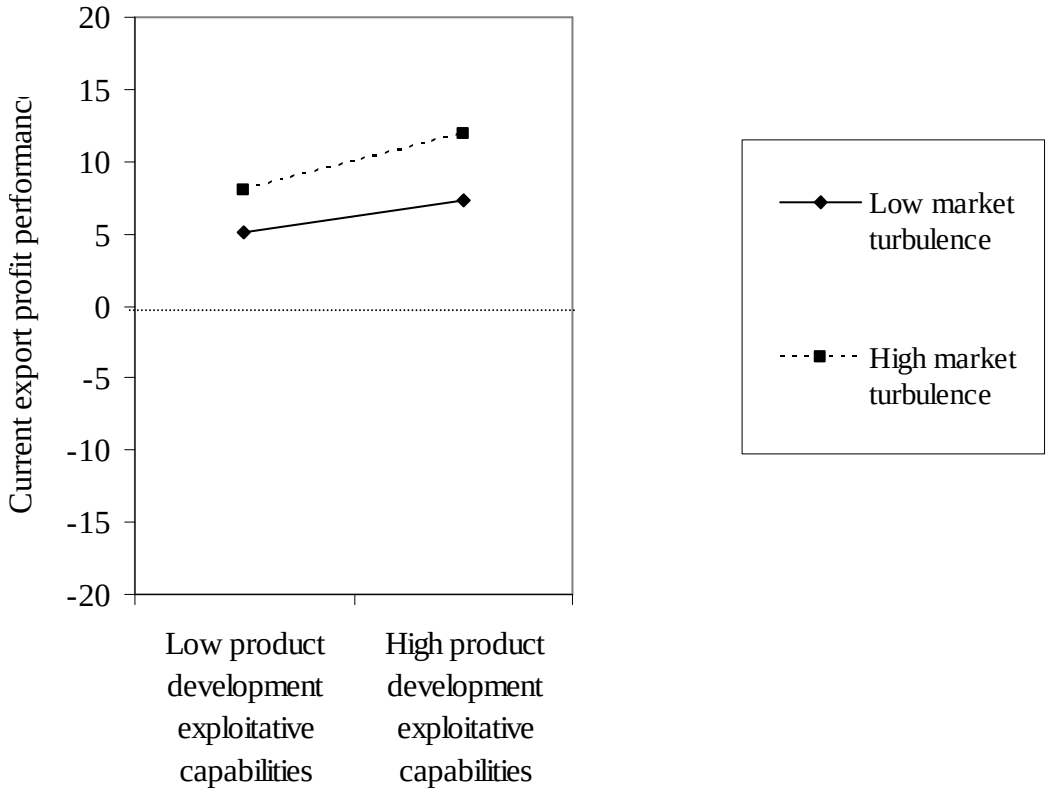
5.3.2.2 Environmental Turbulence

H_{11} was tested for two types of environmental turbulence. H_{11ai} stated that *environmental turbulence moderates* – by weakening – the *product development exploitative capabilities–current export profit performance* relationship. With respect to *market* turbulence, the

estimate of the moderation is positive and significant (β = 0.33, $p < 0.01$). Thus, H_{11ai} is not supported for market turbulence, as it behaves in the opposite direction as that hypothesized.

The plot in figure 47 shows that, unlike the hypothesis, the positive link between product development exploitative capabilities and current export profit performance is stronger under high levels of market turbulence. Capabilities that involve current product improvements are valued in markets characterized by high market turbulence.

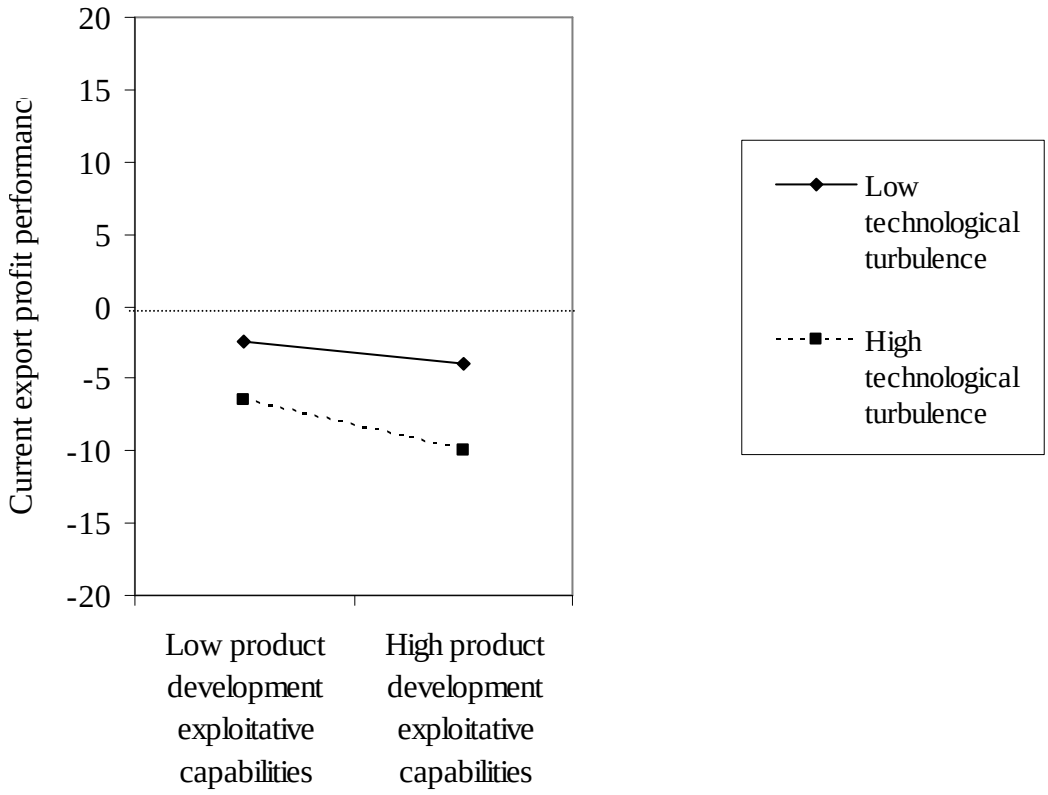
Figure 47: Moderation of Market Turbulence in the Product Development Exploitative Capabilities–Current Export Profit Performance Relationship



With respect to *technological* turbulence, the estimate of that relationship is negative and significant (β = –0.39, $p < 0.001$), Hence, H_{11ai} is supported for technological turbulence.

The plot in figure 48 shows that the positive link between product development exploitative capabilities and current export profit performance is undermined in high levels of technological turbulence. In technological turbulent markets, capabilities that entail the adjustment and minor alterations of existing products and technology are less valued.

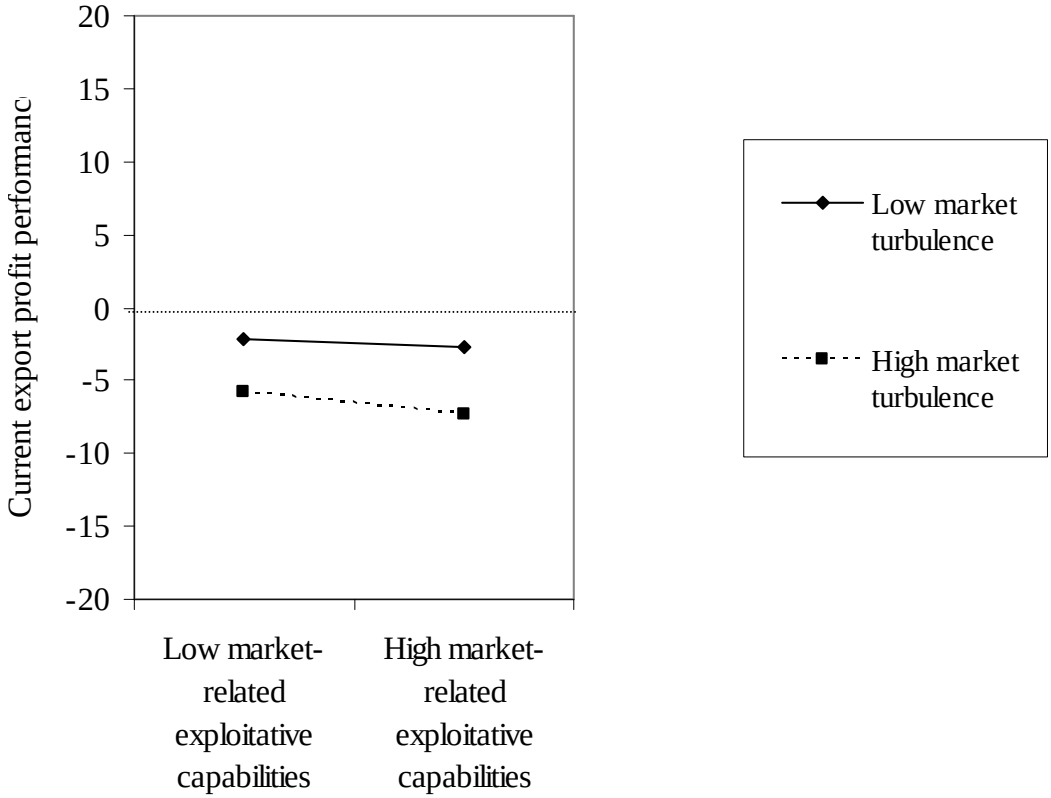
Figure 48: Moderation of Technological Turbulence in the Product Development Exploitative Capabilities–Current Export Profit Performance Relationship



H_{11aii} stated that *environmental turbulence moderates* – by weakening – the *market-related exploitative capabilities–current export profit performance* relationship. Regarding *market* turbulence, the estimate of the moderation is negative and significant ($\beta = -0.18$, $p < 0.05$). Therefore, H_{11aii} is supported for market turbulence.

The plot in figure 49 shows that the market-related exploitative capabilities–current export profit performance positive link is weaker when market turbulence is high. So, deepening the presence and relationships in current export markets is less valued in turbulent markets.

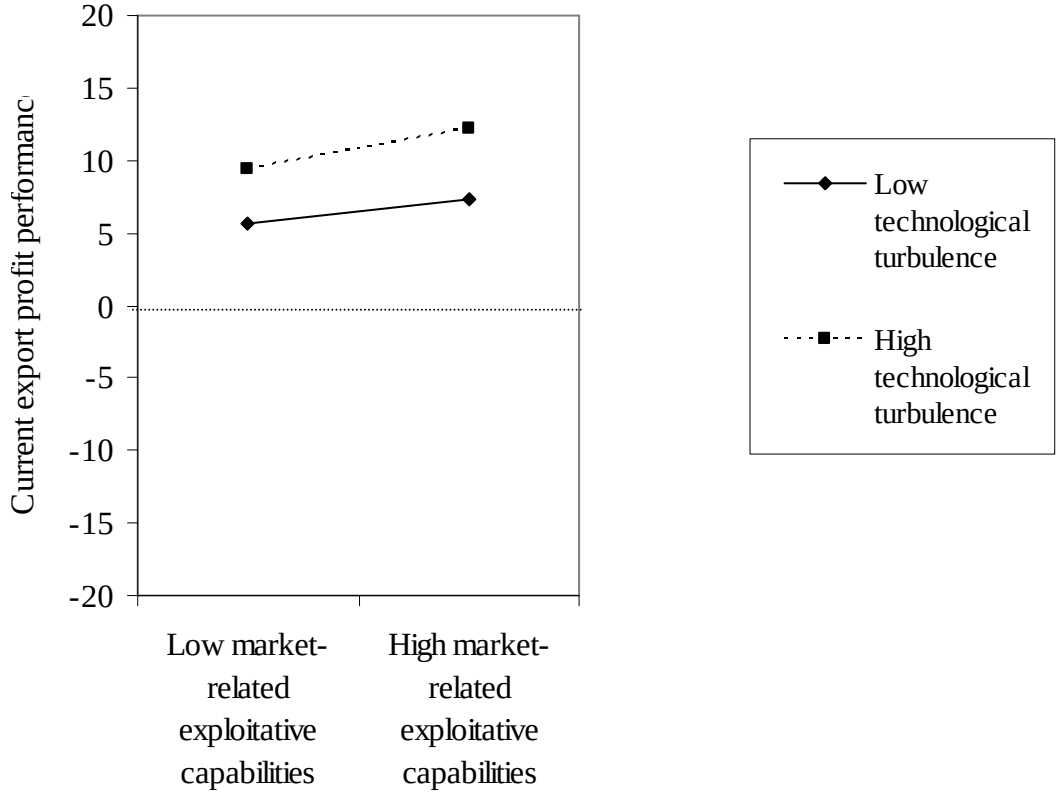
Figure 49: Moderation of Market Turbulence in the Market-related Exploitative Capabilities–Current Export Profit Performance Relationship



Regarding *technological* turbulence the estimate of the moderation is positive and significant ($\beta = 0.20$, $p < 0.05$). Therefore, H_{11aii} is not supported for technological turbulence, as it behaves in the opposite direction as expected.

The plot in figure 50 shows that, unlike the hypothesis, the positive link between market-related exploitative capabilities and current export profit performance is stronger under high levels of technological turbulence. In technological turbulent markets, the reinforcement of the firm's presence and existing relationships with customers and distributors is valued.

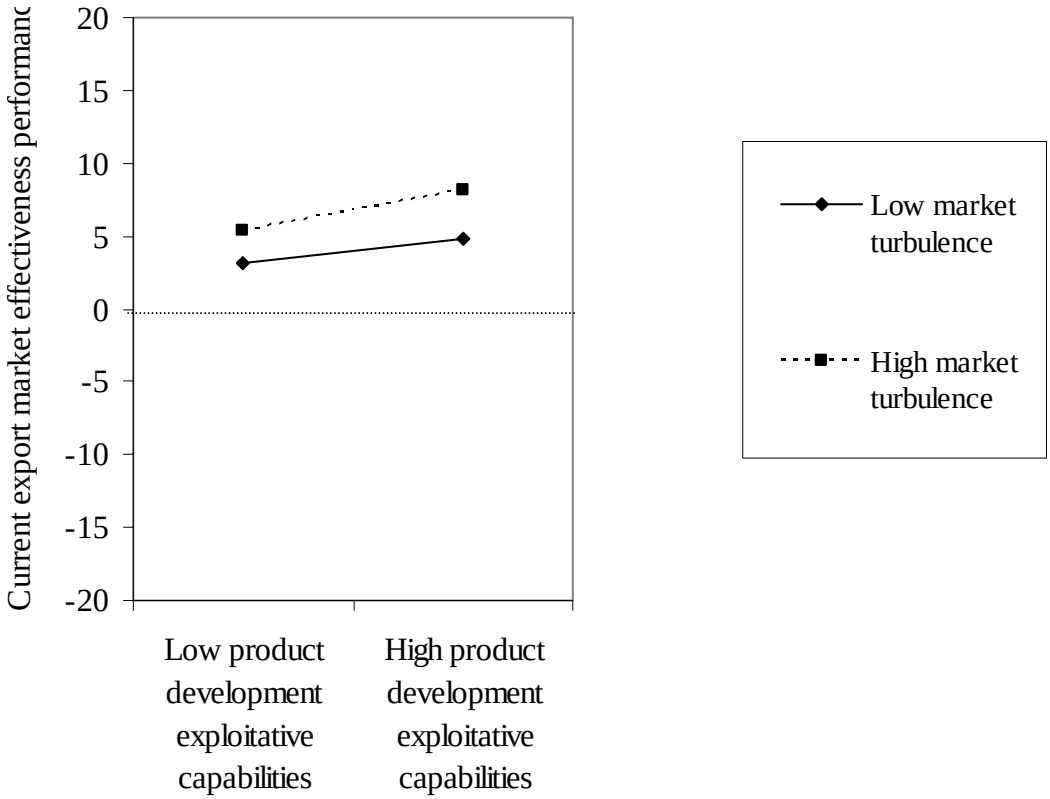
Figure 50: Moderation of Technological Turbulence in the Market-related Exploitative Capabilities–Current Export Profit Performance Relationship



H_{11aiii} stated that *environmental turbulence moderates* – by weakening – the *product development exploitative capabilities–current export market effectiveness performance* relationship. Concerning *market* turbulence, the estimate of the moderation is positive and significant ($\beta = 0.26$, $p < 0.05$). Therefore, H_{11aiii} is not supported for market turbulence, as it behaves in an opposite direction as expected.

Figure 51 shows that the positive link between product development exploitative capabilities and current export market effectiveness performance is stronger under high levels of market turbulence. This positive moderation occurs in both dimensions of current performance.

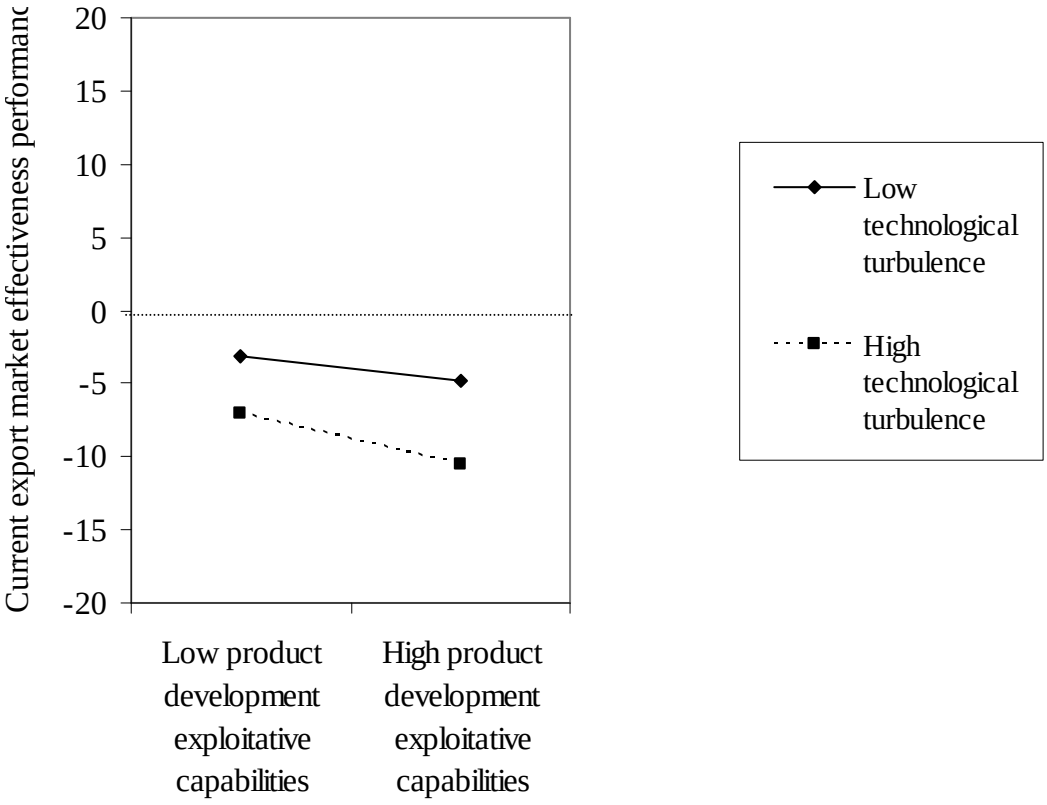
Figure 51: Moderation of Market Turbulence in the Product Development Exploitative Capabilities–Current Export Market Effectiveness Performance Relationship



Concerning *technological* turbulence, the estimate of this relationship is negative and significant ($\beta = -0.36$, $p < 0.01$). So, H_{11aiii} is supported for technological turbulence.

The plot in figure 52 shows that the positive link between product development exploitative capabilities and current export market effectiveness performance is weaker with high levels of technological turbulence. In markets characterized by high technological turbulence, the capabilities that reflect the introduction improvements to existing products are not as valued.

Figure 52: Moderation of Technological Turbulence in the Product Development Exploitative Capabilities–Current Export Market Effectiveness Performance Relationship

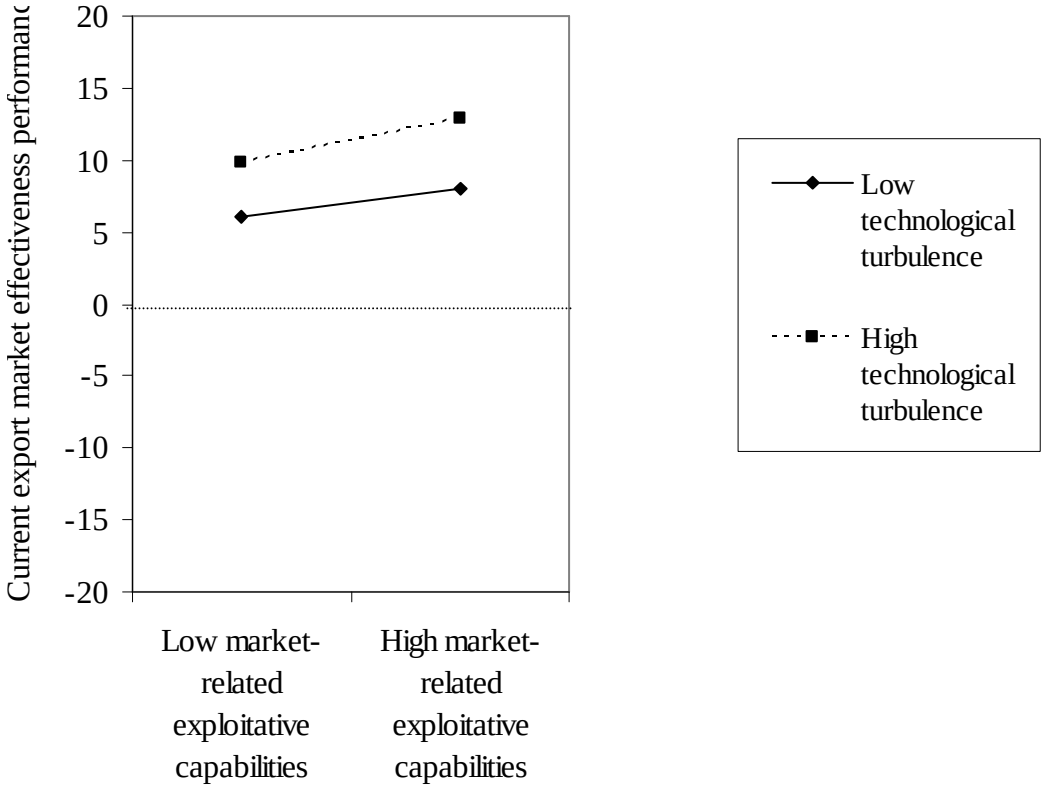


H_{11aiv} stated that *environmental turbulence moderates* – by weakening – the *market-related exploitative capabilities–current export market effectiveness performance* relationship. Regarding *market* turbulence, the estimate of the moderation is not significant ($\beta = -0.11$, n.s.). Therefore, H_{11aiv} is not supported for market turbulence.

Regarding *technological* turbulence the estimate of the moderation is positive and significant ($\beta = 0.22$, $p < 0.01$). Because the expected behaviour was the opposite, H_{11aiv} is not supported for technological turbulence.

Figure 53 shows that, contrary to expectations, the positive link between market-related exploitative capabilities and current export market effectiveness performance is stronger under high levels of technological turbulence. So, this positive moderation occurs in both dimensions of current export performance.

Figure 53: Moderation of Technological Turbulence in the Market-related Exploitative Capabilities–Current Export Market Effectiveness Performance Relationship

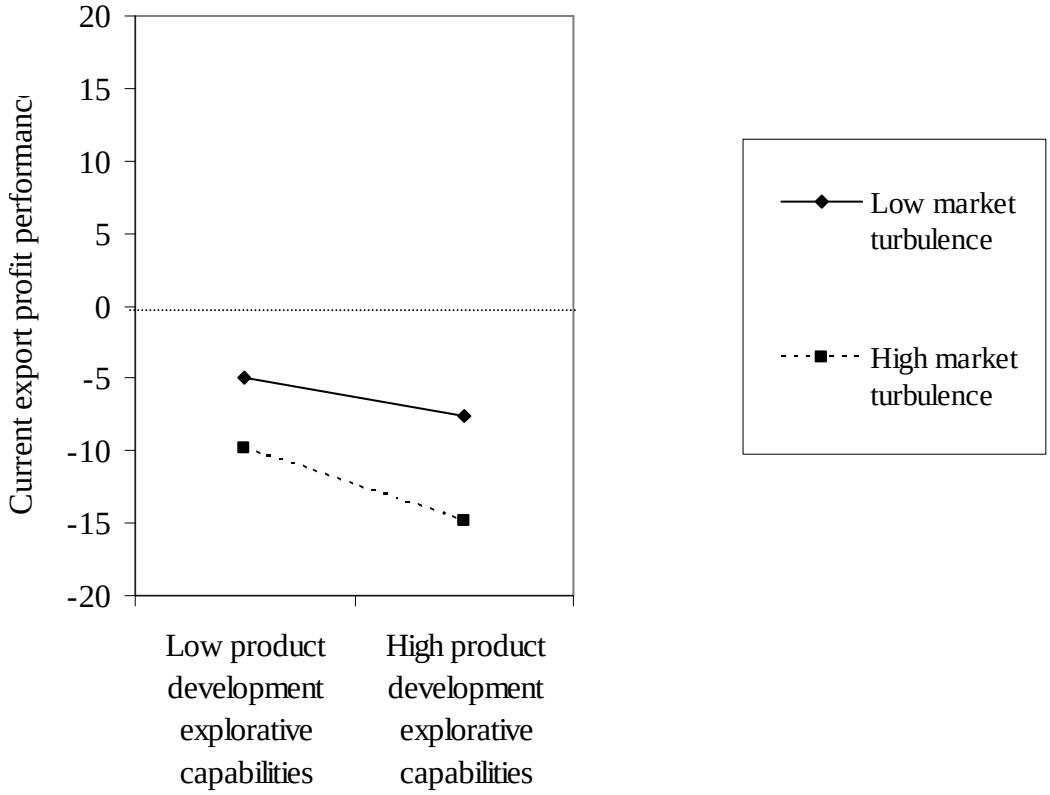


H_{11bi} stated that *environmental turbulence moderates* – by strengthening – the *product development explorative capabilities–current export profit performance* relationship. Concerning *market* turbulence, the estimate of the moderation is negative and significant (β = –0.33, $p < 0.001$). Therefore, H_{11bi} is not supported for market turbulence.

Figure 54 shows that the moderation is contrary to expectations. The positive link between product development explorative capabilities and current export profit performance is weakened in the presence of market turbulence. In markets characterized by constant change

of customers' preferences and competitors' strategies, investment in capabilities that require the development of completely new products and use of new technology does not pay off.

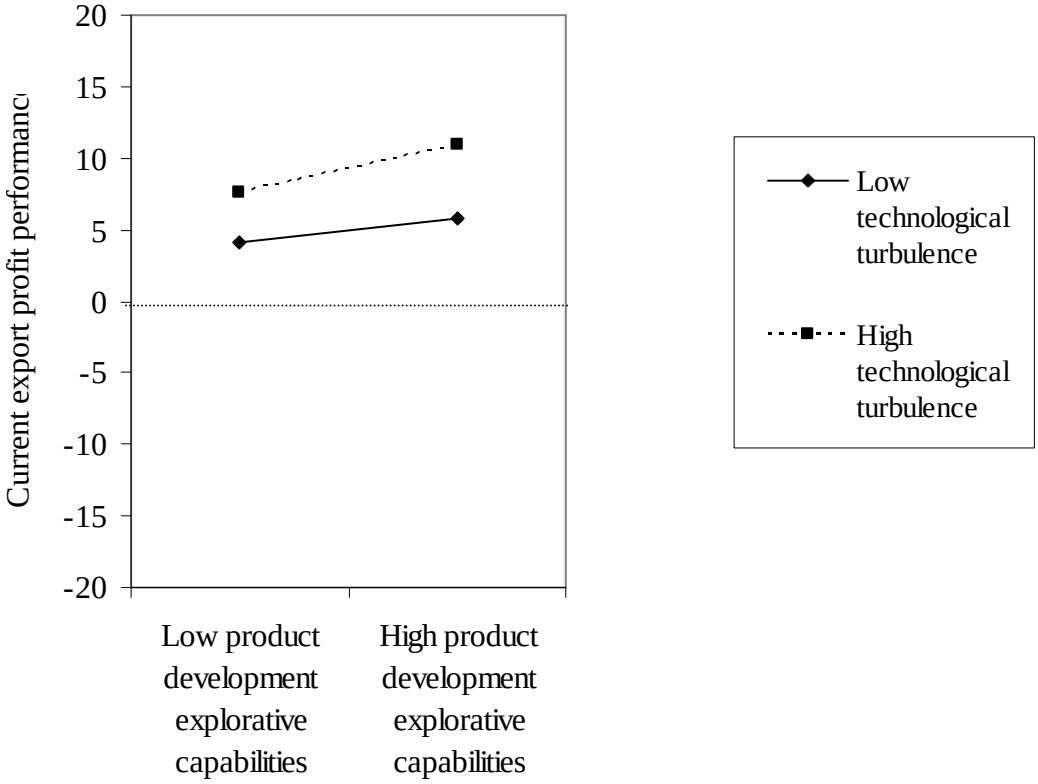
Figure 54: Moderation of Market Turbulence in the Product Development Explorative Capabilities–Current Export Profit Performance Relationship



Concerning *technological* turbulence, the estimate of the moderation is positive and significant ($\beta = 0.22$, $p < 0.01$). Therefore, H_{11bi} is supported for technological turbulence.

Figure 55 shows that the positive link between product development explorative capabilities and current export profit performance is stronger when technological turbulence is high. In technological turbulent markets, the capabilities associated with the development of completely new products and investment in new technology are valued.

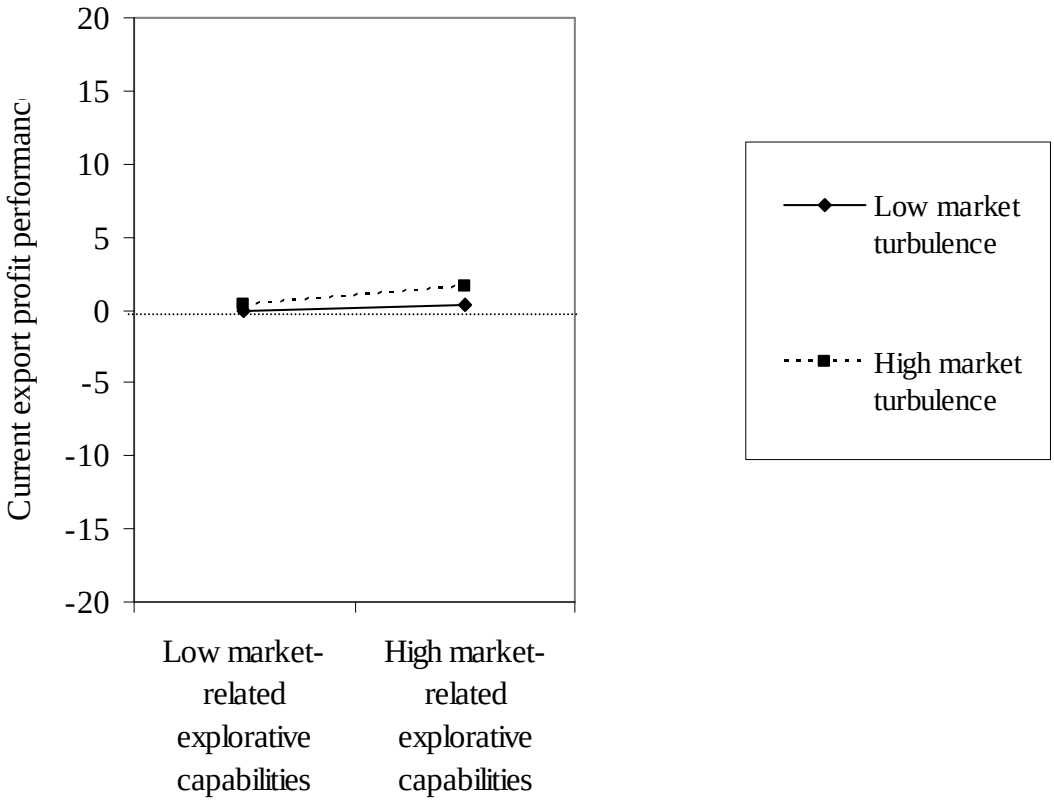
Figure 55: Moderation of Technological Turbulence in the Product Development Explorative Capabilities–Current Export Profit Performance Relationship



H_{11bii} stated that *environmental turbulence moderates* – by strengthening – the *market-related explorative capabilities–current export profit performance* relationship. With respect to *market* turbulence, the estimate of the moderation is positive and significant ($\beta = 0.14$, $p < 0.01$). Considering the negative direct effect of market-related explorative capabilities on current export profit performance, H_{11bii} is not supported for market turbulence.

Figure 56 shows that the negative link between market-related explorative capabilities and current export profit performance is enhanced in with market turbulence. So, in turbulent markets, dispersing efforts to search for new markets and to develop new relationships has an enhanced negative effect on current export profit performance.

Figure 56: Moderation of Market Turbulence in the Market-related Explorative Capabilities–Current Export Profit Performance Relationship

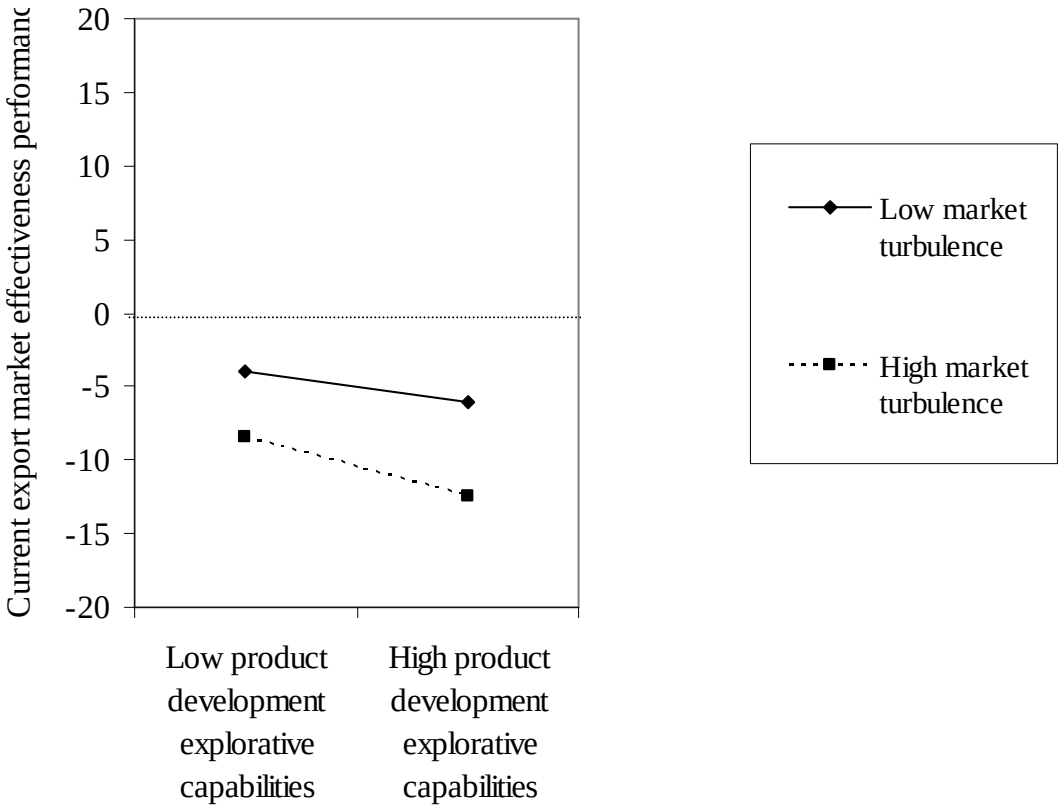


With respect to *technological* turbulence the estimate of the moderation is not significant (β = –0.14, n.s.). Therefore, H_{11bii} is not supported for technological turbulence.

H_{11biii} stated that *environmental turbulence moderates* – by strengthening – the *product development explorative capabilities–current export market effectiveness performance* relationship. With respect to *market* turbulence the estimate of the moderation is negative and significant (β = –0.29, $p < 0.01$). Being the moderation contrary to the expected, H_{11biii} is not supported for market turbulence.

The plot in figure 57 shows that, contrary to expectations, the positive link between product development explorative capabilities and current export market effectiveness performance is weaker in the presence of market turbulence. This moderation occurs in both dimensions of current export performance.

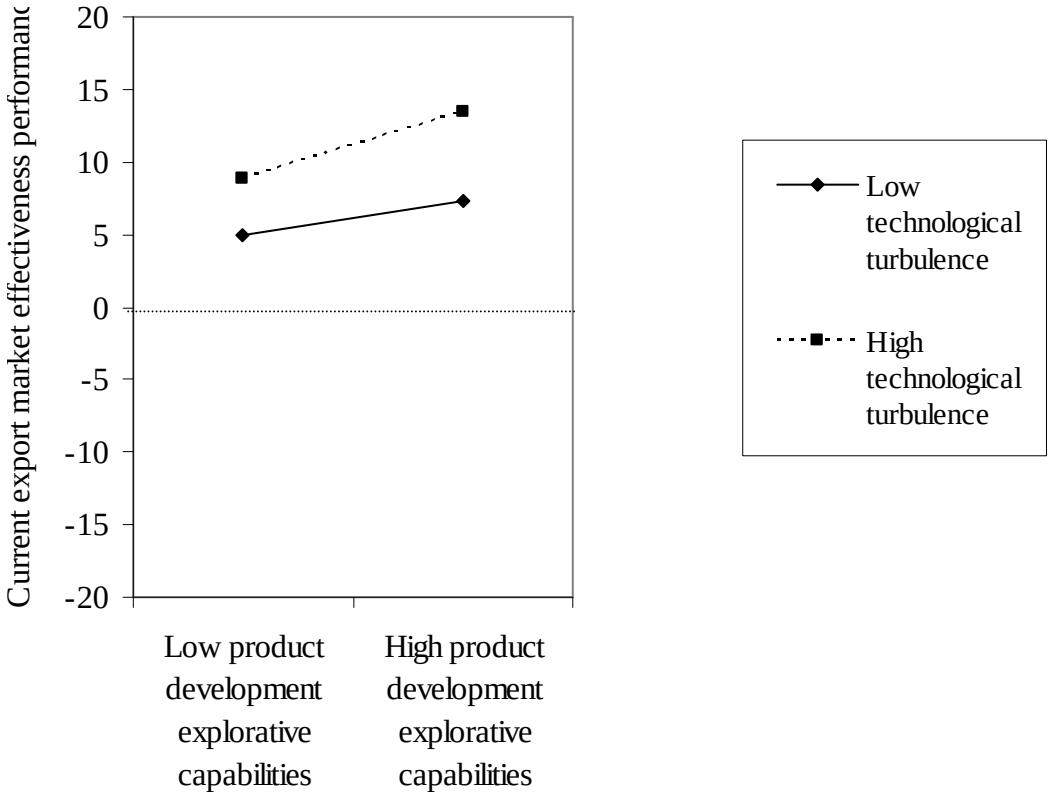
Figure 57: Moderation of Market Turbulence in the Product Development Explorative Capabilities–Current Export Market Effectiveness Performance Relationship



With respect to *technological* turbulence, the estimate of the moderation is positive and significant ($\beta = 0.29$, $p < 0.01$). Hence, H_{11biii} is supported for technological turbulence.

Figure 58 shows that the product development explorative capabilities–current export market effectiveness performance positive link is stronger when technological turbulence is high. As predicted, in technological turbulent markets, the experimentation of new technologies and investment in the development of completely new products is valued.

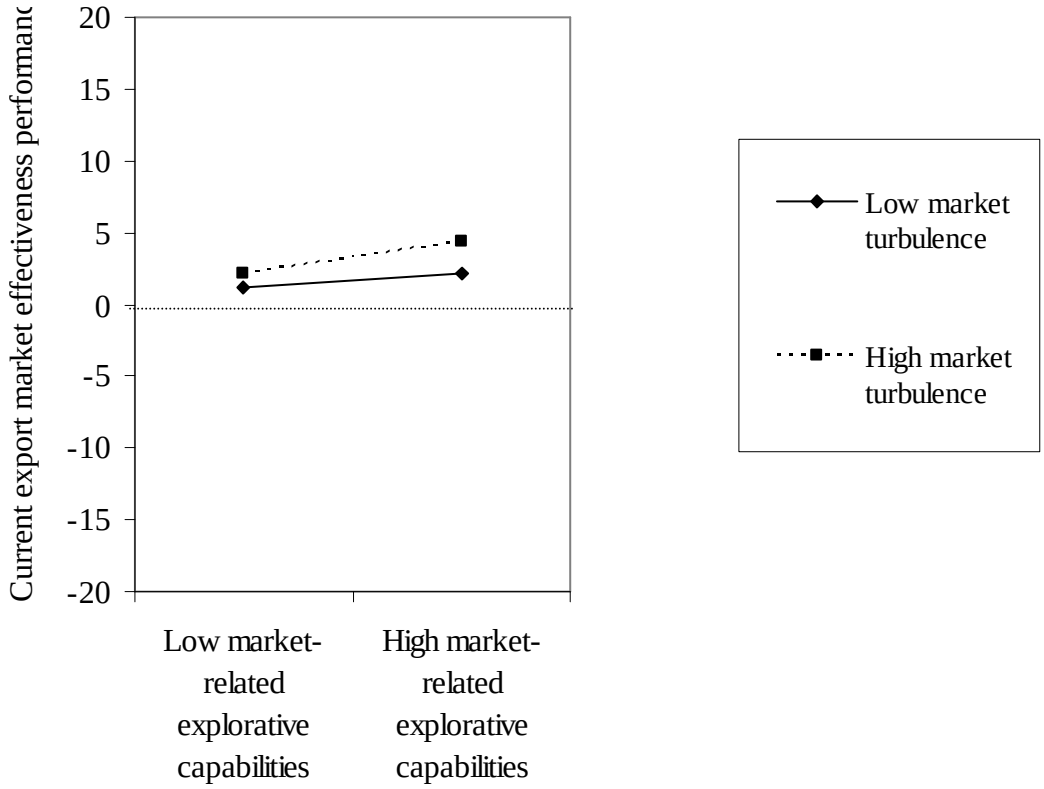
Figure 58: Moderation of Technological Turbulence in the Product Development Explorative Capabilities–Current Export Market Effectiveness Performance Relationship



H_{11biv} stated that *environmental turbulence moderates* – by strengthening – the *market-related explorative capabilities – current export market effectiveness performance* relationship. With respect to *market* turbulence, the estimate of the moderation is positive and significant (β = 0.19, $p < 0.05$). Because the moderation is contrary to expectations, H_{11biv} is not supported for market turbulence.

Figure 59 shows that, contrary to expectations, the negative link between market-related explorative capabilities and current export market effectiveness performance is stronger in markets characterized by high market turbulence. This moderation occurs in both dimensions of current export performance.

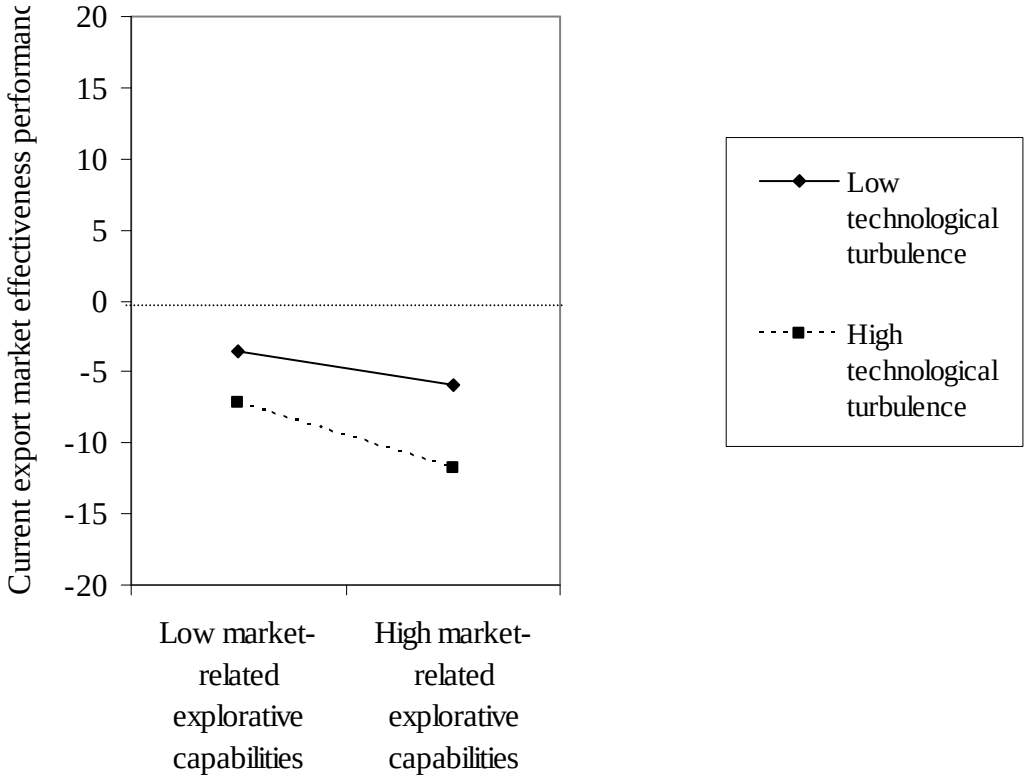
Figure 59: Moderation of Market Turbulence in the Market-related Explorative Capabilities–Current Export Market Effectiveness Performance Relationship



With respect to *technological* turbulence the estimate of the moderation is negative and significant ($\beta = -0.36$, $p < 0.001$). Therefore, H_{11biv} is supported for technological turbulence.

Figure 60 shows that the negative link between market-related explorative capabilities and current export market effectiveness performance is weaker in markets characterized by high technological turbulence. Hence, technological turbulence mitigates the negative effect that the search for new markets and the development of new relationships would have on current export market effectiveness performance.

Figure 60: Moderation of Technological Turbulence in the Market-related Explorative Capabilities–Current Export Market Effectiveness Performance Relationship



SECTION 6. DISCUSSION AND CONCLUSION

6.1. MAIN FINDINGS

In this study, our fundamental premise was to obtain a greater understanding of exploitative and explorative capabilities. We were particularly interested in verifying their impact on export performance. We were also interested in understanding if export market orientation had any role in endorsing dynamic capabilities in an international context. The results demonstrate that, in international markets, export market orientation plays a role in promoting dynamic capabilities. Further, results revealed that different dimensions of export market orientation (customer orientation and competitor orientation) have distinct effects on the dynamic capabilities. Findings also demonstrated beyond any doubt that dynamic capabilities affect export performance. What is more, the different domains – product development and market – of dynamic capabilities have different impacts on current and future export performance. Finally, with respect to potential moderator effects of the relationship between dynamic capabilities and export performance, interfunctional coordination, market turbulence and technological turbulence play a moderating role. In conclusion, our main findings are the following:

1. Export customer orientation and export competitor orientation have distinct effects on dynamic capabilities. Particularly, competitor orientation is significant only to exploitative capabilities.
2. Exploitative capabilities of both domains – product development and market – are foundations of explorative capabilities.
3. The influence of the two domains of explorative capabilities on current performance is clearly different, as product development capabilities show a positive impact and market-related capabilities a negative impact.
4. Unlike the initially hypothesized, exploitative capabilities – specifically market-related capabilities – may be positively related to future performance.
5. Interfunctional coordination has a moderating role between dynamic capabilities and current performance but only regarding explorative capabilities.
6. There is an obvious distinction in the moderating role of technological turbulence and market turbulence. Whereas technological turbulence acts as an enhancer of development and taking advantage of new opportunities, market turbulence destabilizes firm's operations.

6.2. POST-DATA COLLECTION INTERVIEWS

After the data collection and the model testing, we performed ten additional in-depth interviews with questionnaire respondents for additional insights into dynamic capabilities in an international context. The interviews, which lasted between 60 and 120 minutes, allowed us to get a deeper understanding of our results. The interviews were also transcript and their data analyzed. The interview guide is on appendix 8.11..

6.3. FINDINGS

6.3.1. Antecedents of Dynamic Capabilities

Adding to previous literature, this study evidenced two different domains of dynamic capabilities – product development and market. Product development capabilities entail the improvement (exploitative capabilities) or the search for and experimentation with new (explorative capabilities) technology and products. Market-related capabilities refer to the reinforcement of the firm's presence and existent relationships in current export markets (exploitative capabilities) or the search for and development of relationships in new markets (explorative capabilities). Whereas the product development domain has been demonstrated to be crucial to dynamic capabilities and their influence on performance and innovation (e.g. Atuahene-Gima, 2005), when expanding the dynamic capabilities concept to a new context – exporting – other domains appear to be as important as the product development one. In this understudied context – in what reference to dynamic capabilities – market-related capabilities are equally seen as *the* competitive skills to take into account (e.g. Morgan *et al*., 2004; Piercy *et al*., 1998).

The findings of this study indicate that the customer and competitor dimensions of export market orientation have distinct effects on product development and market-related exploitative and explorative capabilities. Export market orientation aims to generate and disseminate external markets knowledge to create customer value and, hence, improve the firm's likelihood of success. Building on existent literature of dynamic capabilities, we have

focused on the customer and competitor dimensions of market orientation. We studied the generation and dissemination of information about current and future export customers and competitors as an antecedent of dynamic capabilities. Whilst *export customer orientation* influences all dynamic capabilities, export *competitor* orientation only has a positive influence on exploitative capabilities. A possible explanation for the findings related to competitor orientation is provided in the work by Cadogan and colleagues (e.g. Cadogan *et al*., 1999). They state that, whereas the nature of the market orientation concept and construct is not changed when considered in a new setting, such as exporting, there are manifest problems regarding the "*availability, accessibility and quality of export information*" (Cadogan *et al*., 1999: 690).

The export *customer* orientation role in *product development* capabilities was highly supported in our interviews, which underlined the customer-driven nature of their innovations – even the more novel ones. Export customer orientation reflects the firm's pursue of extant information and understanding of their customers to adapt to their needs and create superior value. *Product development exploitative* capabilities reflect existing product modifications. It appears that firms base their decision on which modifications and improvements to make mainly on the customer information they obtain. The firms' deeper understanding of current export market conditions, particularly customers, provides firms with the foundation to cultivate existing processes and resources. This is consistent with previous literature that has stated that the market – and especially the customer – has a crucial role in new product development and ultimately in firm's performance and success (e.g. Yli-Renko and Janakiraman, 2008; Knudsen, 2007; Faems *et al*., 2005; Bonner and Walker, 2004; Ernst, 2002; Cristiano *et al*., 2000; Souder *et al*., 1997).

Market-related exploitative capabilities represent the reinforcement of the firm's position and relationships in existing markets. As expected, firms with an export customer orientation have more knowledge basis to reinforce their presence and relationships in such markets. firms use their greater understanding of export customers as a foundation to deepen their relationships and to penetrate its current markets more deeply. Thus, the role of customer orientation as a foundation of exploitative capabilities was confirmed for the product developed domain and tested – and established – for the market domain. Furthermore, such an antecedent role was

maintained even in a new context – exporting – which brings external validity to previous work (e.g. Atuahene-Gima, 2005) and opens up interesting research paths.

An export *competitor* orientation reflects attention to competitors' strengths and weaknesses, as well as capabilities and strategies. Our findings show that this understanding of competitors is related to the development of *exploitative* capabilities. Firms take into account information about export competitors to improve existing products (*product development exploitative* capabilities), and may make some product modifications on the basis of what competitors are currently doing or are planning to do. Similarly, the presence in current markets and the reinforcement of existing relationships in those markets (*market-related exploitative* capabilities) is also affected by what the firm knows about its competitors. Firms use their understanding of export competitors to manage, or deepen their current market positions. With that knowledge, the firm can assess its competitive position in comparison to that of competitors and thus more appropriately manage its presence in export markets. In conclusion, the role of export competitor orientation as an antecedent was verified for product development exploitative capabilities and validated for market-related exploitative capabilities.

With respect to the relative importance of the influence of export *customer* and *competitor* orientation on *exploitative* capabilities, the export *customer* dimension has a greater effect than the export *competitor* dimension on *product development* exploitative capabilities, whereas the export *competitor* orientation accounts for more than the export *customer* orientation in the development of *market-related* exploitative capabilities. The former is consistent with the perception of customer orientation as the most essential part of a market orientation, as it echoes the classic tenets of *staying close to the customer* and *putting the customer at the top of the organizational chart* (Theoharakis and Hooley, 2008; Zhou *et al*., 2007). The latter suggests that while exploiting current markets, firms should prioritize competition information. This does not imply that firms do not take into account customers. In fact, from both the findings and the preliminary and post–data collection interviews, there was a clear orientation towards export customers. In their day-to-day management or in reinforcing their current market positions firms try to be competitor oriented. They use knowledge about competitors' strengths and weaknesses and firms' relative positions to those competitors to better adapt to existing markets. In addition, firms' awareness of competitors'

strategic moves allows them to keep pace with competition or be ahead of it in current markets.

With respect to explorative capabilities antecedents, we found evidence only for the influence of export *customer* orientation. Information gathered about current and potential customers can open up opportunities for product innovations and to new, unexplored export markets. Customer and competitor orientations (at a domestic level) have been previously studied and confirmed as antecedents of product development exploitative and explorative capabilities (Atuahene-Gima, 2005). The role of export *customer* orientation in enhancing the development of *product development explorative* capabilities was highly supported in our interviews. One senior export manager from the mould industry, with twenty years of experience and a reputation as one of the best in business, stated, "*Our technological developments* [at the product and process levels], are *either an idea that emerged internally or, what occurs most of the times, is in response to a customer need. Important customers that have a long term relationship with us or reflect a significant part of our production often come to us saying they need a technological solution for a specific problem and we try to develop that solution. We can say that 80% of our products* [improvements or completely new ones] *are 'customer-driven'"*. Hence, even in a highly innovative industry (e.g. Vieira and Romero, 2005), customers often trigger innovations.

In accordance with this, another senior manager of a plastics supplier for the automobile industry explained that *"The idea comes from the customer and then we can develop some technical solutions way of doing, way of getting an effect. In terms of new product/process knowledge sources, either the customer defies us to do something or we do it internally, inferring from another application or type of product. We always look for the hard/difficult customers and the hardest projects. We may not currently have the knowledge to do but that we have the basis capabilities and will look for and try to find the solution*". Despite being anecdotal evidence rooted in idiosyncratic experiences, the "customer as initiator" pattern became clear.

Another CEO of a supplier to firms such as Krups, Rowenta and Moulinex stated, "*Usually the customer brings the product idea; it can specify completely the product or simply say it wants a product or a specific function and our firm has to see how to do it*". This manager

continued: "*We learn with customers: a demanding customer always represents a learning opportunity and we are eager to learn*". In the interviews performed, managers agreed on the importance attributed to the customer, above all, to market elements. It was clear that customers were vital in initializing the process of innovation and development – not in providing the solution but in instigating the search. Thus, after being set off by customers, firms develop dynamic capabilities and learn in that process.

The antecedent role of export *customer* orientation on *market-related explorative* capabilities was likewise confirmed. The capture and dissemination of current and potential export customers' information allows firms to discover new markets and new opportunities. The importance of entering new markets was particularly highlighted in the time period of our data. The data were collected during a time of particular instability in which firms were facing a global economic and financial crisis. Already during the presurvey interviews (end of 2008) managers revealed that they were at risk prospecting in new markets, such as Russia or even Algeria, because of two coinciding situations: a sales drop in existing markets and the sales potential of emerging markets. The sales decrease in current markets is related to (1) the customers' business volume decreasing for technological or globalization reasons, (2) the worldwide financial crisis and (3) the emerging threat and increasing quality of offerings from Chinese manufacturers. One mould manager with substantial export experience explained that, "*In the old days, Chinese products were of lower quality and in moulds they promised deadlines that were impossible to accomplish, so customers tried to trade with those firms but came back (…) Nowadays, even our long term customers are moving their orders East, because Chinese firms have learned to do good quality products and have Government subsidies to export*". Another export manager of a firm that produces plastics for the automobile industry summed it up: "*Right now the trend is 'go Asia'"*. The other route considered are emerging markets, markets that firms previously did not consider because of their less developed status, social and economical instability or cultural closeness. Some trade associations have organized and supported prospector missions to such countries.

Another export manager, from the equipment building industry, mentioned, "*Ten years ago ICEP* [a government agency] *organized a mission in Algeria and only our firm and a couple of others were interested (…) Now we have hundreds of firms trying to go there*". Nevertheless, customers are the main concern of firms in market-discovery activities. When searching for new markets or market opportunities, firms seem to provide full attention to

information and knowledge about customers. In conclusion, the study confirmed the previously observed antecedent role of firm's customer orientation on product development explorative capabilities and has pioneered the validation of the relationship between export customer orientation and market-related explorative capabilities.

Previous studies findings have revealed that a *competitor* orientation had a significant relationship with *explorative* capabilities (e.g. Atuahene-Gima, 2005), although its impact was consistently lower than customer orientation. Interestingly, in our study, competitor orientation was not related to explorative capabilities. A plausible line of explanation for this finding may be related to the exporting context of the study. What we have found is that when current products or current markets are taken into account, managers identify their main competitors and use the information gathered about them to expand the firm's internal capabilities. Yet, when entering unknown territories, it becomes more difficult to gather and use that information, mainly because of the difficulty in identifying the exact competitors. This problem is particularly evident in an international setting, which is inherently more complex and dynamic. This situation is consistent with the alerts presented in previous export research (e.g. Cadogan *et al*., 1999). In fact, in the interviews we developed after the survey, export managers disclosed that, in their international activities, they often were not well aware of who their competitors were. This was especially true for the development of completely new products, in which firms enter new technological areas and in the discovery and move to new markets, which firms were largely ignorant about. For instance, whereas interviewed managers mentioned that Chinese manufacturers were gaining ground, they were not able to specify individual competitor firms. Hence, even though our hypothesized relationship was not supported, there are arguments in the international marketing and business literature that elucidate why this occurs.

In developing completely new products or in searching for new markets and innovative opportunities, managers have to detach themselves from competitors' information. This is to say not that they should ignore information about competition but that other sources of information may be more valuable. Existent literature has suggested that firms be aware of the export environment evolution (e.g. technology, regulation, politics, economy) (e.g. Cadogan *et al*., 1999), be innovation oriented (e.g. Simpson *et al*., 2006) or collaborate with universities and research institutes (e.g. Knudsen, 2007; Faems *et al*., 2005). For instance, one export manager in the plastic industry said, "*We are now developing a completely new*

product with the technological assistance of our suppliers and a research institute. The original instigator was an alteration in the French regulation prohibiting glass cups in bars".

In conclusion, this study sheds a new light on the antecedents of dynamic capabilities in international markets. An understanding of current and potential customers not only can result in the development of improved products – in fact, many innovations are customer driven – and strengthen a firm's presence in its current markets but also can uncover opportunities in technology, products and markets. An export competitor orientation only enhances the development of exploitative capabilities. It seems that the difficult identification of export competitors limits its influence on the search for and application of new technologies and the development of completely new products, as well as on the search for and development of relationships in new markets.

6.3.2. Outcomes of Dynamic Capabilities

The results not only corroborate the link between product development exploitative and explorative capabilities (Yalcinkaya *et al*. 2007) but also extend it to the market domain. The foundational role of exploitative capabilities in explorative capabilities is confirmed. Just like the accumulation of knowledge about existing technologies helps firms deal with new technology-specific knowledge, and a firm's knowledge about its existing export markets enhances its ability to learn and deploy knowledge to new markets. Exploitative capabilities provide the accumulation of knowledge that serves as basis for leaping into new areas such as new product functionalities, new product development or new markets and for achieving long-term viability.

Existing firm competencies provide the necessary absorptive capacity for developing new competencies (Danneels, 2002). Therefore, current competencies are leverage points for adding new competencies. What the firm learns by operating existent technologies and by accumulating such knowledge will help it deal with new technology-specific knowledge. Moreover, if the firm has invested in trying to understand its current products and how to improve them or introduce new features or functions, then it will be more open to new

product-related knowledge. By analogy, people who had previously worked with and experienced telephones had accumulated knowledge that made it easier for them to accept mobile phones. Similarly, the firm's presence and accumulated knowledge about current markets and the reinforcement of its current relationships can help in considering new markets.

Working with a market can enhance the firm's capacity to learn and to deploy the skills and knowledge learned from that market to new markets. The knowledge of market specificities, such as cultural factors or accepted business practices, can be used as a basis for exploring new but similar markets. In the interviews, an export manager stated that he was "*studying expanding to other Central America countries*" because he had good experience with businesses in the Dominican Republic. Another export manager said the firm was searching for "*new groups of customers but with similar needs in which we can apply the products and the knowledge we already have*". Even when planning to explore dissimilar markets, firms can use the knowledge obtained from current markets to understand how to introduce themselves and adapt to new markets. In support of this, another export manager said the firm was taking advantage of its technical knowledge "*from our current customers' industry* [automobile] *and try to apply it to new segments and industries, namely pharmaceuticals*".

Exploitative capabilities provide a regular capital inflow (Garcia *et al*., 2003), which is crucial to for the high investments required both to develop completely new products and to move into new markets and industries. Incremental modifications in existing products and ongoing management of current technologies save both time and money. They do not require substantial reserves and allow making the most of the firm's existing investments. Regarding market-related exploitative capabilities, it is much easier and cost-effective to reinforce an existent relationship or presence in a current market than to build new relationships or markets (Heskett, Sasser and Schlesinger, 2002). Cross-selling to existing markets and clients requires less time and effort, which can free up attention, time and capital to search for new markets. These findings provide new insights into the relationship between exploitation and exploration capabilities.

In addition, disentangling the effects of exploitative and explorative capabilities on current and future export performance is another fresh finding in the field. To our knowledge, this is

the first empirical study to test those effects. Even though March (1991) theoretically discussed the potential distinct effects of exploitation and exploration on different periods of performance (current or short-term versus a posterior period or long-term), those effects had not yet been empirically tested. We examined three performance outcomes of dynamic capabilities: the current export profit performance, the current export market effectiveness performance and the future export performance. The current performance outcomes represented the firm's export profitability and export operations growth, respectively, whereas the future performance outcome captured managers' expected future results. We found unique outcomes for each capability. Exploitative capabilities have a positive impact on current export profit performance, and market-related exploitative capabilities have a positive impact on current export market effectiveness performance and future export performance. Product development explorative capabilities have a positive impact on current export market effectiveness performance and future export performance, whereas market-related explorative capabilities have a negative impact on current export performance.

The influence of both domains – product development and market – of exploitative capabilities on *current export profit performance*, that is, a positive impact, was as expected, because the exploitation is related to refinement and improvement (March, 2006, 1996, 1991), and to control and conformance to specifications (Juran and Gryna, 1988; Deming, 1981). Product development exploitative capabilities require lower investments because of their inherently small modifications. Market-related exploitative capabilities, that is, the deepening of information acquisition and the reinforcement of existing relationships, need only slight nourishing to allow for capitalization. The firm benefits from the contact it already has with the market and its knowledge of market specificities. In conclusion, the exploitative capabilities' positive, immediate and foreseeable returns explain the positive effect on current profit performance. With respect to the effectiveness dimension of current export performance, market-related exploitative capabilities' positive influence was also as expected. Because of the previous contact between the firm and the market, the effort required to enhance market performance is much less relative to the returns expected. Hence, the previously theoretically stated relationship between exploitation and current performance has been empirically tested and established. Specifically, and in accordance with recent studies, market-related capabilities have a direct relationship with performance (Morgan *et al.*, 2009a; Morgan *et al.*, 2009b; Ramaswami *et al.*, 2009).

One surprising finding from our study was that of the positive influence of market-related exploitative capabilities on *future export performance*. Previous literature has posited a potential negative effect of exploitative capabilities on a firm's future export performance (e.g. March, 1991). The positive effect of market-related exploitative capabilities on anticipated performance was, hence, an unexpected finding. In our in-depth interviews with international managers, we found a possible explanation for this finding. Their insights allowed us to consider an analogy between market-related exploitative capabilities and relationship marketing as a way to explain that a strengthened presence or relationship improves future performance. Market-related exploitative capabilities are, according to our conceptualization, the reinforcement of a firm's presence in existing markets and current relationships. Relationship marketing concerns the building, maintaining and deepening of relationships with other firms, which is expected to have long-term effects (e.g. Palmatier, Dant, Grewal and Evans, 2006). The research result, then, is consistent with the idea that firms strengthen existing relationships (and deepen their presence in current markets) to obtain constant positive effects. Thus, contrary to existent beliefs, exploitative capabilities may have a positive influence on future performance.

The positive impact of product development explorative capabilities in current export market effectiveness performance is explained by the firm's innovative and creative activities (Yalcinkaya *et al*., 2007) and the subsequent renewal of its product advantage. Previous studies have stated that exploration might be effective (e.g. Auh and Menguc, 2005). In changing environments such as the international one, firms should develop new products to adapt to new opportunities (Karim and Mitchell, 2000; Levitt and March, 1988). In doing so, firms avoid technological obsolescence and obtain performance benefits (Lewin *et al*., 1999). The negative impact of market-related explorative capabilities in both dimensions – profit and market effectiveness – with respect to current export performance is in consonance with explorative capabilities' need for high investments with uncertain returns (e.g. Teece, 2007). If the firm opts to look for new markets and develop new relationships with channel members, it needs to develop extensive efforts to do so. The famous phrase *it costs about five times more to attract a new customer than to retain an existing one* (Heskett *et al*., 2002) is a clear indication of this.

The positive impact of product development explorative capabilities' on future performance is in conformity with previous theoretical work (e.g. March, 1991). March (1991) noted that long-run market intelligence depends on sustaining a reasonable level of exploration. The continuous development of a firm's existing offering drives the firm to expand into new areas. It pushes the firm to pursue learning and development and to avoid focusing only on the near future. Explorative capabilities are associated with issues such as risk taking, radical innovation or disinnovation and discovery. These events typically address the needs of emerging customers and offer substantial new benefits to customers (Chandy and Tellis, 1998). As a consequence, they open up new business opportunities for the firm and contribute to a firm's future viability. In fact, examining a cross-section of firms, firms that emphasize exploration exhibit greater performance dispersion than do firms that prioritize exploitation (Özsomer and Genctürk, 2003).

6.3.3. The Roles of Interfunctional Coordination and Environmental Turbulence

Interfunctional coordination and environmental turbulence (technological and market) were tested as moderators of the relationship between dynamic capabilities and performance. Interfunctional coordination is an internal factor, whereas environmental turbulence – both technological and market – is an external factor.

The importance of *internal coordination* mechanisms as enablers of the conversion of dynamic capabilities into performance was evidenced in only one situation: the translation of the explorative capabilities into performance. Our findings reveal that interfunctional coordination moderator has a nonsignificant effect on exploitative capabilities. This probably is related to the easiness of understanding and communication of the small changes related to exploitative capabilities. Since the deviation of knowledge from current knowledge is not substantial, functional units already are commonly understood; therefore, fewer conflicts and misunderstandings will arise. As such, there is no need to make a deliberate effort toward interfunctional coordination. It is expected to happen naturally.

Interfunctional coordination appears to strengthen the relationship between product development explorative capabilities and current export *profit performance*, as well as the

relationship between product development explorative capabilities and export *market effectiveness performance*. Product development explorative capabilities are related to new technology, the development of new products and dealing with new knowledge. Hence, explorative capabilities drive the firm off of its current product and technological path. It appears that the success of this deviation, at least in the short run, is dependent on the firm's ability to coordinate its functions. Because these risk-taking, experimental capabilities generate new, unsettled knowledge, it is essential to have a good coordination mechanism to ensure their capture and transformation into value-increasing outcomes that affect performance. These capabilities are associated with pathbreaking improvisation, autonomy and chaos, and with emerging technologies. So as to benefit from this increased flexibility and novelty, the firm must ensure efficient coordination of distinct functional units.

In our findings, there is also support for the moderation of interfunctional coordination on the relationship between market-related explorative capabilities and current export profit performance. In the influence on current export profit performance, the moderation weakens a negative relationship. That is, even though market-related explorative capabilities negatively influence current export profit performance, that influence is mitigated if the firm has a knowledge integration mechanism, such as interfunctional coordination. The disorientation that may arise in the exploration of new markets can be alleviated with the efficient combination of the distinct functional insights. Even though there may be a tendency toward dispersion and confusion in considering unknown markets, the coordination will reduce possible conflicts and promote trust and commitment among the functional units.

Our study evidenced the role of *environmental turbulence* as a moderator of the dynamic capabilities–performance relationship. However, there were substantial differences between market and technological turbulence. As recent research has suggested, market uncertainty "*may hinder firms' ability to forecast customer demand*", and technological turbulence "*may offer opportunities to develop and commercialize next-generation products with superior benefits*" (Harmancioglu *et al*., 2010: 41).

Technological turbulence seems to have an enhanced moderating role in that it gives firms incentives to invest in and evolve with the market. Hence, when considering exploitative capabilities, these will be less valued in high turbulent markets and the effect on performance

will be weakened. Explorative capabilities are more important in highly turbulent markets; therefore, they have a stronger effect on performance. These findings are according to arguments in previous literature that, with intense turbulence, firms will have to adapt by engaging in exploration (e.g. Zahra and Covin, 1995). The frequent changes in product and technological conditions represent higher rates of product obsolescence (Troy *et al*., 2008) and pressure firms to be innovative and explorative (Wang and Li, 2008).

In contrast to our straightforward prediction that market turbulence would evidence the same moderating effect of technological turbulence, the relationships between exploitative capabilities and performance are strengthened and the relationships between explorative capabilities and performance are weakened. In analyzing this striking finding, we found a possible explanation: market turbulence reflects rapid market changes that firms might perceive as hostile and stressful (Atuahene-Gima, 2005). In highly uncertain markets, firms face difficulties in figuring out the market. As a result, customer definition and translation into product specification become more complex and challenging (Carbonell and Rodriguez, 2006). The increased chances of making the wrong decisions diminishes the value of substantial changes (exploration) in performance (Tatikonda and Montoya-Weiss, 2001). Specifically, respondent firms were facing changing market conditions aggravated by the world crisis, which further destabilized them. One exporting manager of the mould industry stated, "*There is a lot of dynamism and volatility now and we are trying to cope with it the best way we can. We are a bit clueless about the market now, because what is true on one day isn't true on the next*".

In the relationship between product development exploitative capabilities and current export performance, market and technological turbulences have distinct moderating effects. Market turbulence enhances the positive effect of product development exploitative capabilities on current export profit performance. Likewise, it enhances the positive effect of product development exploitative capabilities on current export market effectiveness performance. This finding is contrary to our initial supposition, which stated that stable markets would value exploitative capabilities more and turbulent markets would value explorative capabilities more. In a scenario of frequent changes in customers' preferences and habits, firms can still develop incremental improvements to their current products and benefit from this option by lowering the chances of making the wrong choices. In contrast, technological turbulence weakens the positive effect of product development exploitative capabilities on

current export profit performance. There is also a weakening moderating effect in the relationship between product development exploitative capabilities and current export market effectiveness performance. As hypothesized, in technological turbulent markets, technology advances are rapid and there is a need to evolve with the market. The product development exploitative capabilities represent only minor adjustments or modifications to current products and technologies. As a result, competition easily surpasses the firm.

In the relationship between market-related exploitative capabilities and current export profit performance, market turbulence weakens the relationship, whereas technological turbulence enhances it. Technological turbulence also strengthens the positive effect of market-related exploitative capabilities on current export market effectiveness performance. Market-related exploitative capabilities involve reinforcing the firm's current market presence and relationships. If the market is turbulent, customers change their preferences and habits; therefore, it becomes harder for the firm to penetrate deeper and to deepen market relationships. With technological turbulence, there are constant changes in technology. A stronger presence and stronger relationship with current customers may allow firms to more closely keep up with the market and even assist customers.

The presence of market turbulence appears to moderate the relationship between product development explorative capabilities and current export performance. The moderation effect, in this case, is a weakening effect. The existence of market turbulence brings instability into the market and affects the relationship between the capabilities of developing completely new products and performance outcomes. Hence, in turbulent markets, the positive impact of new product development and the use of new technology do not fully convert to market effectiveness. The instability of the market represents an obstacle to the translation of capabilities into firm performance.

Findings support the moderating role of technological turbulence's on the relationship of explorative capabilities with current export performance. In particular, it enhances the importance of explorative capabilities, as expected. The existence of technological turbulence appears to instigate firms to keep up with the market, be aware of the latest technologies and invest in new product development. Technological turbulence promotes constant changes in technology by the firm and strengthens the impact of explorative product development capabilities in both dimensions of current export performance (profit and market

effectiveness). Thus, in technologically turbulent markets, the firm's success relies more on generating new product development knowledge (Özsomer and Genctürk, 2003). The moderator influence is greater in the relationship of explorative capabilities on the effectiveness performance dimension. That is, the intensity of technological volatility significantly increases the positive impact of product development explorative capabilities on the firm's achievement of its performance goals.

The findings show a positive effect of market turbulence on the relationship between market-related explorative capabilities and current export performance. That is, when firms operate in unstable markets, the negative influence of market-related explorative capabilities on firm export performance is enhanced. This is consistent with the argument that market turbulence, rather than creating motivation to evolve with markets, brings in instability that acts as an obstacle to superior performance.

The findings also showed a significant, negative impact of technological turbulence on the relationship between market-related explorative capabilities and current export performance. That is, when firms operate in highly unstable technological markets, the influence of market-related explorative capabilities on firm export performance is weakened. This is particularly interesting in the relationship of market-related explorative capabilities and current export effectiveness, which – though not significant – is negative. This might mean that the possible negative effect of exploring new markets on firm export performance is restrained in technological turbulent environments.

6.4. THEORETICAL IMPLICATIONS

Dynamic capabilities have been presented as crucial for adapting to and dealing with firm's changing marketplaces, especially to firms with international activities. Even though scholars understand dynamic capabilities as particularly relevant to performance and competitive advantage, we are far from fully understanding their role in exporting activities. This study examines the role of both product development and market-related exploitative and explorative capabilities, their export market orientation antecedent and their consequences on current and future export performance.

This study's main theoretical contributions are six. First, our qualitative data and statistical analysis allows us to confirm previous claims that explorative and exploitative capabilities are conceptually different. Adding to previous work (e.g. Yalcinkaya *et al*., 2007), this study confirms the existence of dynamic capabilities and their constitution – exploitative and explorative. Hence, the study contributes to the dynamic capabilities literature and the organizational learning literature.

Second, this study brings an original perspective and fresh approach to research on dynamic capabilities by emphasizing the role of market-related capabilities and product development ones. Previous studies have focused on technology and product development capabilities, disregarding other possible capability domains. Nevertheless, there was a call to consider additional capability domains (Uotila *et al*., 2009). Through the integration of different but intertwined literatures – organizational learning, dynamic capabilities and international marketing and business – we extended previous research and made contributions to these areas by including market-related exploitative and explorative capabilities.

Third, the empirical consideration of two domains – product development and market – of explorative capabilities has been demonstrated to have substantial theoretical implications. Existent literature presented contradictory arguments to the explorative capabilities–performance relationship. The extrication of domains enlightened this discussion, suggesting that different domains of capabilities may have distinct effects on performance. Product development explorative capabilities have a positive relationship with performance, which supports those authors who have underscored the flexibility that exploration provides (e.g. Yalcinkaya *et al*., 2007). In contrast, market-related explorative capabilities have a negative impact, which supports those authors who pointed to the less certain and more remote nature of explorative returns (e.g. Teece, 2007).

Fourth, this is the first study to disentangle the current and future performance outcomes of dynamic capabilities. Moreover, it is the first empirical test of the relationship between dynamic capabilities and future performance. The empirical testing of effects on these distinct periods of time of performance evidenced rich theoretical implications. Specifically, the surprising positive effect of market-related exploitative capabilities on future performance has importance in two research areas: dynamic capabilities and relationship marketing. By widening the included capabilities domains to market, this study was able to shed a fresh light

on relationships between dynamic capabilities and performance outcomes. In contrast to the original theoretical assumptions, exploitative capabilities may have a positive influence on future performance. The also provides support for relationship marketing in a time when some opposing voices are calling attention to the dark side of close relationships (e.g. Anderson and Jap, 2005).

Fifth, because internationalization is among the most vital factors determining firm success today (e.g. Golder, 2000), we tested the research model in the exporting context. Doing so allowed the extension of the consideration of export market orientation as an antecedent of dynamic capabilities and the addition of knowledge to several literatures, such as the dynamic capabilities literature. Even though the antecedent role of export customer orientation was confirmed, that did not happen for export competitor orientation, which failed to significantly influence explorative capabilities. In an international context, the importance of competition as the instigator of firm's development of a explorative capabilities is mitigated. Other environmental elements in such a complex setting may be more significant in motivating than development.

Finally, this study has taken a contingency approach by considering potential internal and external moderators. The moderators' hypotheses offer significant theoretical insights to both organizational learning, dynamic capabilities and international marketing and business literatures. The moderator role of interfunctional coordination had been tested in a domestic environment and in the relationship between product development exploitative and explorative capabilities and product innovation performance. In an exporting environment, coordination is important for translating explorative capabilities to current performance. These capabilities involve more substantial changes, and the potential confusion seems to be mitigated by stronger coordination among functions. Environmental turbulence is often assumed to be a control variable. However, considering dynamic capabilities and their increased importance in dynamic environments, we provide an understudied perspective of turbulence as a potential moderator. Moreover, by including two types of turbulence – technological and market – the insights provide further appeal, as the distinct turbulences have different moderation roles.

6.5. MANAGERIAL IMPLICATIONS

The model presented here may help managers understand the relationships operating in the complex export-marketing phenomenon and enhance their marketing expertise. Particularly, this study has seven implications that provide strategic guidance to management. First, the study highlights the existence of two types of dynamic capabilities – exploitative and explorative – that managers can develop to adapt to evolving markets and to face the international dynamism and complexity. It provides managers with an extended understanding of exploitative capabilities, which represent an incremental evolution of existing capabilities, and explorative capabilities, which involve substantial changes and diversion from the firm's current activities.

Second, this study refers to two important domains of capabilities that are key in international business and marketing. Product development and market-related capabilities are two instruments that managers must take into account when planning and managing export operations. Specifically, managers can cope with dynamic markets in four ways: (1) by implementing modifications in existent products, (2) by reinforcing the firm's presence and relationships in current markets, (3) by applying completely new technology and developing completely new products, and (4) by searching for and developing relationships in new markets.

Third, the results indicate that firms are likely to improve their export performance if they combine exploitative and explorative capabilities. At first glance, it may seem contradictory to simultaneously be exploitative and explorative in, for instance, product development. Nonetheless, dealing with different domains may mitigate the potential tensions of pursuing these capabilities. In fact, our findings suggest that managers, when developing their exporting strategies, should balance product development and export market management. Furthermore, exploitative capabilities are valuable on their own and in providing a foundation for riskier activities, such as explorative capabilities. What the firm learns from developing these capabilities is a foundation to future learning. This means that the knowledge the firm accumulates in managing existent technologies and understanding how to improve current products will help it capture and implement new technological and product-related knowledge. In the same way, the knowledge the firm gain from its presence in current markets and the information gathered in those markets can facilitate its move to new markets.

The firm can either use the knowledge of market specificities to move to new but similar markets, or it can use the knowledge obtained from the market to understand how to introduce itself and adapt to new markets.

Fourth, we have provided a deeper understanding of dynamic capabilities *per se* and have advanced work on how firms build such capabilities. Export managers are encouraged to develop export customer and competitor orientations to obtain knowledge to develop dynamic capabilities. When the firm is planning to develop improvements in its current technology or modifications in its current products, then export managers must bring in customer knowledge. Similarly, when the aim is to exploit current markets, export managers should take into account competition. When the goal is to enter new technological or market territories, managers can count on current and potential customers' knowledge but not on information from competitors. It might be more useful to check information about other international environmental elements, such as politics, economics or regulations.

Fifth, the findings help export managers understand how to develop each type of capability and how their nature can affect the firm's current and future export performance. Particularly, juggling product development and market-related dynamic capabilities is crucial to maintaining current performance without hindering future viability. There is a high motivation for export managers to develop product development and market-related exploitative capabilities to secure current performance, that is, to focus on introducing small changes in current products and technologies to capitalize on the investments made and to reinforce the firm's presence in its current markets. In addition, managers are encouraged to deepen the firm's existing relationships and presence in current markets. Instead of dispersing to different, new and unknown markets, they should pay attention to better understanding their existing markets. This tactic appears to have positive outcomes in the present and for the near future. The investment in developing new products also demonstrated to pledge the future through a positive impact on future performance.

Sixth, we must draw attention to the divergent effects of product development and market-related explorative capabilities on current performance. The study suggests that, when firms feel pressure to invest in more explorative capabilities, product development explorative capabilities are more effective in export performance. In contrast, the search for and entry into new markets as well as the development of new business relationships have a clear negative

impact on present performance. The money and time efforts, along with the elevated risk associated with market-related explorative capabilities, make them less desirable than product development ones. To allow the firm not to miss potentially valuable opportunities and to prevent the firm from becoming obsolete, managers of exporting firms should invest in the development of completely new products and the introduction of new technology. Even though it may seem that it consumes too much of the firm's savings, these novelties have positive effects on the firm's achieving current goals whilst providing for the future.

Finally, this study called managers attention to specific circumstances that may enhance or reduce the effect of dynamic capabilities on current export performance. Managers should invest in interfunctional coordination to better translate explorative capabilities into performance. Similarly, there are implications related to the moderating role of environmental turbulence. These implications are important to managers when developing the firm's strategy in distinct export markets. For instance, if the firm operates in export markets characterized by technological turbulence, managers should dedicate more time and resources to product development explorative capabilities. If the firm's markets are highly turbulent with respect to customer preferences and habits, they should invest in less significant changes so as to minimize the consequences of potential errors.

6.6. MAIN LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Although this study provides new insights into dynamic capabilities that drive export performance, as with prior research, it is subject to limitations. The first limitation of this research is that it was conducted in the context of a specific type of firms, export manufacturers. Therefore, generalization beyond the sample frame cannot be made. Replication of this research in other settings would test the external validity of the present findings. Future research can apply our model to other types of firms. For instance, it can compare the development of dynamic capabilities of exporters in international markets to those of foreign-owned firms, joint ventures, and firms formed with foreign direct investments. In addition, a focus on distributors instead of manufacturers would highlight the importance of market-related capabilities.

In addition, it could be argued that certain institutional or industrial environments call for different capabilities or export performance elements. High-tech markets are characterized by complexity, instability, intensity and uncertainty relative to low-tech markets (Troy *et al*., 2008). More specifically, high-technology firms face higher rates of product obsolescence and more intense competition, and they invest more in R&D than do low-tech firms. In the same way, highly intensive knowledge industries (e.g., biotechnology, pharmaceuticals) may benefit from a slightly greater focus on exploration activities, whereas low-intensity knowledge industries (e.g., publishing, food, travel) may benefit more from a slightly greater focus on exploitation activities (Garcia *et al*., 2003). Product development capabilities may be more important in high-technology industries than in low-technology industries.

Third, the cross-sectional research design employed limits our ability to make causal inferences. Although the results of this study indicate that dynamic capabilities influence export performance, we cannot establish causality. Thus, longitudinal data on the study constructs will offer further insights into the dynamic capabilities–export performance link.

Fourth, a natural extension of this study is to include other relevant variables, in both antecedent, main focus, outcome and moderator roles. We have constrained this study to a single – though bidimensional – antecedent, export market orientation. Other antecedents can be studied. Building on the RBV, specific firm resources, such as human resources or physical resources, can be considered as a basis of capabilities. For instance, limited resources (e.g., burnout, turnover, percentage of young engineers to seasoned employees) (Garcia *et al*., 2003) may affect a firm's choice of developing explorative versus exploitative capabilities. In addition, other strategic orientations can also be included. Innovation orientation, that is, the firm's "*openness to the innovation*" (Zaltman *et al*., 1973: 64) is a relevant strategic orientation to take into account. It involves the implementation of new ideas, products or processes in a firm. Hence, an innovative firm is willing to consider adopting or pursuing innovation (Hurley and Hult, 1998) and value explorative capabilities.

With respect to dynamic capabilities, we considered only two domains, product development and market, in our research. It can be argued that a broader range of domains should be included in the study of export performance. The research can be opened up to other domains, such as process development or marketing capabilities. Such work can probe more deeply into the essence of export performance and produce benefits for theorists and practitioners alike.

Another limitation lies in the outcome chosen to the research. Even though distinct elements of performance, namely current profit, current effectiveness and future performance, were involved, others can be considered. Product innovation performance and success in adaptability are possible research avenues. In addition, anticipated performance is a subjective measure that is used as a *proxy* for future performance. Hence, it reflects managers' perceptions and expectations. Although previous research has demonstrated the acceptability of perceptual performance measures (e.g. Gatignon and Xuereb, 1997), social desirability may be a concern for such perceptual performance measures (the mean is 5.14 to current export profit, 4.91 to current export effectiveness and 4.76 to future export performance out of 7; see Table 6). Performance measures or objective financial data collected some years after may help clarify this situation. Archival performance measures such as financial reports, customer satisfaction tracking studies and industry analysts' reports would be helpful for validating the model.

Even though we followed an antecedent-central variable-outcome framework, our main concern was the development of dynamic capabilities and their translation to performance. So, in including moderating effects, we focused on the relationship dynamic capabilities–export performance. Amongst the variables that were potential moderators, we chose only two, interfunctional coordination and environmental turbulence. Future studies can follow two interesting paths: (1) moderators of the relationship between export market orientation and dynamic capabilities and (2) additional moderators of the relationship between dynamic capabilities and export performance. For the first path, we propose interfunctional coordination and firm's age. Interfunctional coordination is the element of information integration of market orientation. So, information gathered and disseminated through the customer and competitor orientations is of better use to firms if they possess this integration element (Atuahene-Gima, 2005). Firm age may also be a moderator, although the direction of its effect is not clear. Younger firms suffer from the liability of newness. Because they have less knowledge about markets and customers, they may engage in inefficient practices (Ramaswami *et al.*, 2009). Older firms are expected to have an edge on industry-specific knowledge and specialized knowledge of the product or technologies or accumulated goodwill with customers and/or suppliers. In the test of additional moderators of the dynamic capabilities-export performance relationship, competitive intensity may be included to examine its role in moderating product development and market-related dynamic capabilities

and export performance. Interfunctional coordination, an informal knowledge integration mechanism, was used in our study as moderator. Future researchers may compare the relative importance of informal and formal knowledge integration mechanisms (De Luca and Atuahene-Gima, 2007). Besides studying internal coordinating activities, researchers may incorporate cross-border coordination, which has become a top concern for managers of firms involved in international expansion (Zhang *et al*., 2008; Bello and Gilliland, 1997).

6.7. CONCLUSION

Our research aimed to identify the role of export market orientation as an antecedent of different dynamic capabilities in international markets and to identify the impact of dynamic capabilities on distinct elements of firm export performance. We also analyzed two potential moderators of the dynamic capabilities–performance relationship: interfunctional coordination and environmental turbulence. We tested two domains of dynamic capabilities – product development and market – and used a specific context, exporting. The antecedent role of export market orientation was confirmed with an exception: export competitor orientation does not promote explorative capabilities. Furthermore, product development and market-related dynamic capabilities have different impacts on current and future export performance. Exploitative capabilities have a positive impact on current export performance and market-related exploitative capabilities are also positively related to future export performance. Product development explorative capabilities have a positive impact on both current and future export performance. Market-related explorative capabilities have a negative impact on current export performance. The tested moderators confirmed their moderating role. Interfunctional coordination moderates – by strengthening the relationship – the link between explorative capabilities and current export performance. Market and technological turbulence moderate the relationship between dynamic capabilities and current export performance, though in a different direction. Whereas market turbulence enhances the effect of exploitative capabilities and diminishes the effect of explorative capabilities on current export performance, technological turbulence does the opposite. It appears that market turbulence acts as source of instability and uncertainty that threatens firm's operations, but technological turbulence acts as a motivator of progress and investment in new operation paths.

Overall, this study is but the first step toward a better understanding of the impact of product development and market-related exploitative and explorative capabilities on performance under the dynamic capabilities and exporting perspectives. The results of this study provide a strong theoretical and empirical foundation for dynamic capabilities and their distinct current and future performance outcomes. The dynamic capabilities field is still recent, and researchers are striving to broaden and deepen the understanding of the role of dynamic capabilities in international markets. It is hoped that this study will encourage further research on the important issue of dynamic capabilities and performance. Thus, continued theoretical and empirical research along these lines is sorely needed.

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SECTION 8. APPENDICES

8.1. INTERVIEW GUIDE OF INTERVIEWS TO INDUSTRY EXPERTS

1. Explicar a investigação (objectivos)

Bom dia,

Sou uma aluna de doutoramento do ISCTE e encontro-me a desenvolver a minha investigação na área do marketing internacional. O meu estudo procura analisar o desenvolvimento das capacidades dinâmicas e o seu impacto no desempenho do exportador.

Procurei esta entrevista consigo para ganhar compreensão do que quero estudar, por parte de peritos na área. Como trabalha nesta área e lida com empresas exportadoras e tem conhecimento das especificidades das mesmas, é a pessoa indicada para me esclarecer. Tem uma sensibilidade que eu, provavelmente, não tenho.

Gostaria de lhe dizer que não existem respostas certas ou erradas nesta conversa que vamos ter. Apenas procuro que me esclareça, como conhecedor da área, se algumas das variáveis que analisei fazem sentido e são importantes e se existem outras variáveis que considera cruciais e que não estão incluídas.

2. Procurar autorização

Tem alguma dúvida que gostaria de ver esclarecida antes de prosseguirmos? Está disposto a conversar comigo nestes termos?

3. Pôr o respondente à vontade

4. Garantir o anonimato/confidencialidade

Garanto-lhe o anonimato, pelo que ninguém irá saber que foi você a responder. Para além disso, o que vamos conversar será confidencial e apenas servirá para eu apurar o modelo que for usar. Não será, então usado para outros fins ou conhecido por outras pessoas.

5. Gravar/escrever informação

Importa-se que tire algumas notas e grave a reunião, para meu acompanhamento da conversa?

6. Explicar como a entrevista irá processar-se:

Se concordar, penso em fazer-lhe algumas perguntas sobre alguns dos temas que gostaria de ver esclarecidos.

Dimensões	Objectivos específicos	Tópicos para a condução da entrevista
Legitimação e motivação da entrevista	Legitimação da entrevista	Informar dos objectivos do estudo
		Solicitar a colaboração
	Motivação do entrevistado	Garantir a confidencialidade
		Disponibilizar informações do estudo
Caracterização do sector	Identificação de especificidades do sector	Procedimentos específicos do sector
		Predominância de mercado de consumo/industrial
Caracterização das empresas	Identificação do perfil das empresas	Tipo de empresas (micro, pequena, média, grande)
		Idade empresas (< 1 ano, 1-5, 5-10, 10-15, >15 anos)
	Identificação do perfil dos empresários	Idade média
		Nível de estudos
Caracterização das capacidades e seus elementos de base	Identificação das capacidades das empresas	Importância das capacidades
	Identificação do tipo de capacidades	Tipo de capacidades
		A existência de umas impede ou minimiza o desenvolvimento de outras?
	Identificação dos elementos de base	Elementos/condições necessárias para o desenvolvimento
		Diferenças entre o desenvolvimento dos diferentes tipos
Caracterização das influências nas variáveis de desempenho	Identificação de variáveis influenciadoras do desempenho	Variáveis que influenciam o desempenho
		Importância do lucro e aspecto financeiro
		Importância do crescimento no mercado e de vendas
		Preocupação com desempenho futuro
		Importância do tipo de mercado em que se opera
		Condicionantes a ter em atenção
		Diferenças entre empresas que operam num mercado de consumo final ou num industrial

7. **Gostava ainda de lhe pedir se encorajar os seus associados a responder ao questionário que receberem. Será muito importante, para garantir fiabilidade dos resultados. Os resultados a que chegar serão disponibilizados e ambas as partes poderão sair a ganhar com este estudo.**

8. **Agradecer o tempo dispendido, perguntar se os poderemos contactar novamente caso seja necessário**

8.2. INTERVIEW GUIDE OF INTERVIEWS TO EXPORT MANAGERS

1. Explicar a investigação (objectivos)

Bom dia,

Sou uma aluna de doutoramento do ISCTE e encontro-me a desenvolver a minha investigação na área do marketing internacional. O meu estudo procura analisar o desenvolvimento das capacidades dinâmicas e o seu impacto no desempenho do exportador.

Procurei esta entrevista consigo para ganhar compreensão do que quero estudar, por parte dos gestores. Como trabalha nesta área e tem conhecimento prático da mesma é a pessoa indicada para me esclarecer. Tem uma sensibilidade que eu, provavelmente, não tenho.

Gostaria de lhe dizer que não existem respostas certas ou erradas nesta conversa que vamos ter.

Apenas procuro que me esclareça se as das variáveis que analisei fazem sentido e são importantes e se existem outras variáveis que considera cruciais e que não estão incluídas.

2. Procurar autorização

Tem alguma dúvida que gostaria de ver esclarecida antes de prosseguirmos? Está disposto a conversar comigo nestes termos?

3. Pôr o respondente à vontade

4. Garantir o anonimato/confidencialidade

Garanto-lhe o anonimato, pelo que ninguém irá saber que foi você a responder. Para além disso, o que vamos conversar será confidencial e apenas servirá para eu apurar o modelo que for usar. Não será, então usado para outros fins ou conhecido por outras pessoas.

5. Gravar/escrever informação

Importa-se que tire algumas notas e grave a reunião, para meu acompanhamento da conversa?

6. Explicar como a entrevista irá processar-se:

Se concordar, penso em fazer-lhe algumas perguntas sobre alguns dos temas que gostaria de ver esclarecidos.

Posso pedir-lhe para ver as escalas que encontrei para cada uma das variáveis incluídas no modelo e ver se fazem sentido, se as palavras e as frases estão compreensíveis ou, pelo contrário, fazem alguma confusão e se há alguma adaptação a fazer em termos de linguagem?

7. Agradecer o tempo dispendido, perguntar se os poderemos contactar novamente caso seja necessário

Variável	Escala
Orientação para mercado	Com base nas suas operações de exportação, indique o seu grau de concordância com as frases (1-Discordo completamente/7-Concordo completamente) **Clientes** • O nosso empenho para satisfazer as necessidades dos clientes de exportação é constantemente analisado • Os nossos gestores compreendem como os empregados podem contribuir para o valor dos clientes • A nossa vantagem competitiva baseia-se na compreensão das necessidades dos clientes • Os nossos objectivos e estratégias visam a satisfação do cliente • Analisamos frequentemente a satisfação do cliente • Damos especial atenção ao serviço pós venda **Concorrentes** • Na nossa empresa, os nossos vendedores partilham regularmente informações relativas aos concorrentes • Respondemos rapidamente a acções competitivas dos concorrentes • Os nossos gestores discutem regularmente os pontos fracos e fortes dos concorrentes • Definimos como clientes-alvo aqueles em que temos oportunidade de obter uma vantagem competitiva **Coordenação Interfuncional** • Os nossos gerentes de cada função (ex: comercial) visitam os clientes actuais e potenciais com regularidade • A informação relativa a clientes é abertamente comunicada dentro de toda a empresa • As funções empresariais (ex: comercial, produção) são integradas para satisfazer as necessidades do mercado-alvo • As estratégias empresariais são delineadas com o objectivo de aumentar o valor do cliente • As nossas funções partilham recursos dentro da empresa
Disponibilidade de recursos	Indique o seu grau de concordância com as seguintes frases (1-Discordo completamente/7-Concordo completamente) • Temos recursos por usar que podem que ser usados de imediato para financiar iniciativas estratégicas • Neste momento temos uma grande variedade de recursos disponíveis para financiar as nossas iniciativas • Não teremos dificuldades em obter recursos de imediato para apoiar novas iniciativas estratégicas • Temos uma grande variedade de recursos à disposição dos gestores para financiar novas iniciativas
Capacidades exploitativas	Indique até que ponto, nos últimos 3 anos tem a sua empresa desenvolvido as actividades seguintes (1-A nenhum nível/7-A um nível muito elevado) • Melhorado os conhecimentos e competências que tem sobre os actuais produtos • Reforçado as aptidões em tecnologias que melhorem a sua produtividade actual • Melhorado competências nos processos de desenvolvimento de produto nos quais já tinha experiência • Promovido aptidões para solucionar problemas de clientes (cujas soluções são próximas às que já eram conhecidas) • Reforçado o conhecimento e aptidões para projectos que melhoram a eficiência das actividades de inovação que a empresa tem actualmente • Empenhado-se em melhorar a qualidade e em diminuir os custos dos seus processos, produtos e serviços • Melhorado continuadamente a fiabilidade dos seus produtos e serviços • Investido na modernização e automação das suas operações • Ajustado os seus produtos e serviços para manter os clientes satisfeitos • Esforçado para obter economias de escala • Melhorado a sua capacidade de utilização dos equipamentos

(cont.)

Variável	Escala
Capacidades exploratívas	Indique até que ponto, nos últimos 3 anos tem a sua empresa desenvolvido as actividades seguintes (1-A nenhum nível/7-A um nível muito elevado) • Adquirido tecnologia e competências de produção inteiramente novas para a empresa • Aprendido competências e processos de desenvolvimento de produtos totalmente novos à indústria (ex: design de produtos, protótipo de novos produtos) • Adquirido capacidades de gestão totalmente novas e importantes para a inovação (ex: previsão de tendências da tecnologia e dos clientes; identificação de mercados e tecnologias emergentes; coordenação e integração de funções) • Aprendido novas competências para nova tecnologia, investigação e desenvolvimento e engenharia • Fortalecido capacidades de inovação em áreas onde não tinha experiência • Procurado ideias tecnológicas novas por tentar pensar de forma original • Baseado o seu sucesso na sua capacidade para explorar novas tecnologias • Criado produtos ou serviços que são inovadores face aos que a empresa tinha • Procurado formas criativas para satisfazer as necessidades dos clientes • Escolhido abordagens de processos, produtos e serviços diferentes dos que eram usados no passado • Incluído novos aspectos nos seus processos, produtos e serviços, em comparação com estratégias anteriores • Efectuado pesquisa para o desenvolvimento de produtos • Efectuado pesquisa para a inovação de processos • Aumentado a taxa de inovações de produtos
Desempenho	Indique o seu grau de concordância com as seguintes frases. No geral, o seu negócio de exportação (1-Discordo completamente/7-Concordo completamente) • Tem sido muito rentável • Tem gerado um elevado volume de vendas • Tem obtido um crescimento rápido • Tem piorado a nossa competitividade global • Tem fortalecido a nossa posição estratégica • Tem aumentado significativamente a nossa quota de mercado global • Foi insatisfatório face aos objectivos estabelecidos • Não correspondeu inteiramente às nossas expectativas • Tem tido muito sucesso face aos objectivos estabelecidos
Satisfação com o desempenho	Indique o seu grau de satisfação com os resultados no mercado de exportação definido, entre 2007 e 2008 (1- Muito menos satisfeito em 2008 que em 2007/7- Muito mais satisfeito em 2008 que em 2007) • Volume de vendas de exportação • Lucro da exportação • Quota de mercado • Desempenho geral em termos de exportação

(cont.)

Variável	Escala
Previsão do desempenho futuro	Qual a sua previsão comercial para o próximo ano (2009) face a 2008, para a exportação (1-Piorará significativamente/7- Melhorará significativamente) • Volume de vendas de exportação • Lucro da exportação • Obtenção dos objectivos estabelecidos • Satisfação
Comparação com concorrentes	Compare o desempenho do seu negócio de exportação em 2008 face aos principais concorrentes (1-Muito pior /7-Muito melhor que os concorrentes) • Crescimento da quota de exportação • Crescimento da receita das vendas de exportação • Obtenção de novos clientes de exportação • Aumento de vendas a clientes actuais de exportação • Retorno do investimento • Retorno das vendas • Margens de exportação • Obtenção dos objectivos financeiros de exportação
Desempenho	**Indique o valor total de vendas da exportação em 2008** < 40 000 € ☐ 40 001 - 80 000 € ☐ 80 001 - 160 000 € ☐ 160 001 – 500 000 € ☐ 500 001 – 1 600 000 € ☐ 1 600 001 – 11 000 000 € ☐ 11 000 001 – 46 000 000 € ☐ > 46 000 000 € ☐
Turbulência Ambiental	Por favor indique o seu grau de concordância com as seguintes frases: (1-Discordo completamente/7-Concordo completamente) • No nosso tipo de negócio, as preferências dos clientes alteram-se substancialmente ao longo do tempo • Os nossos clientes tendem constantemente a procuram novos produtos • Ás vezes os nossos clientes são sensíveis aos preços mas em outras ocasiões os preços não são tão importantes • Estamos a constatar a procura dos nossos produtos e serviços por parte de clientes que nunca os compraram antes • As necessidades relacionadas com produtos dos novos clientes tendem a ser distintas das dos clientes mais antigos • Continuamos a servir muitos dos mesmos clientes que servíamos no passado • A tecnologia neste mercado de exportação sofre constantes alterações • As alterações tecnológicas contribuem para grandes oportunidades neste mercado de exportação • É muito difícil prever onde estará a tecnologia no nosso mercado de exportação nos próximos 2 ou 3 anos • Um grande número de novas ideias de produto tem sido possível devido aos avanços da tecnologia neste mercado • O desenvolvimento tecnológico neste mercado de exportação é bastante reduzido

8.3. PRE-TESTED QUESTIONNAIRE

Competências dinâmicas da empresa para os mercados de exportação

Caso alguma questão não se aplique seleccione "sem resposta".

Se necessitar de qualquer apoio para completar este questionário, por favor contacte:
Ana Lisboa; Telefone: 309726142; Telemóvel: 919650340; E-mail: alisboa@estg.ipleiria.pt; Skype: anacadimalx

Este questionário foca as competências gerais, a orientação estratégica e o desempenho das operações de exportação da empresa e deve ser preenchida por um responsável geral com estes conhecimentos.

Responda tendo em conta o que a sua empresa faz na realidade e não como gostaria que fizesse. Não existem respostas certas e erradas, procuro apenas a experiência de cada empresa e garanto que todas as respostas são estritamente confidenciais. Por favor responda a TODAS as questões de forma a fornecer validade a este estudo.
No final indique qual ou quais os retornos que pretende.
Obrigada pela sua cooperação,

Ana Lisboa, MBA-Marketing

Carregar Inquérito Não Terminado

Seguinte >>

1. **Quantos empregados a tempo inteiro trabalharam em 2008 na sua empresa?**

< 10 empregados	10-20 empregados	21-50 empregados	51-100 empregados	100-250 empregados	250-500 empregados	>500 empregados
☐	☐	☐	☐	☐	☐	☐

2. **Em que região está sediada a sua empresa**

Norte	Centro	Lisboa	Sul	Madeira	Açores	Estrangeiro
☐	☐	☐	☐	☐	☐	☐

Se respondeu Estrangeiro, qual o País? _____

3. **Há quantos anos é que a sua empresa está envolvida em actividades de exportação?**_____anos

4. **Indique o seu grau de concordância com as afirmações abaixo, tendo em conta a seguinte escala:**

1-Discordo completamente	2-Discordo	3-Discordo parcialmente	4-Neutro	5-Concordo parcialmente	6-Concordo	7-Concordo completamente

	1	2	3	4	5	6	7	Sem resposta
O nosso empenho para satisfazer as necessidades dos clientes de exportação é constantemente analisado……..	☐	☐	☐	☐	☐	☐	☐	☐
Compreendemos como os empregados podem contribuir para o valor dos clientes de exportação.……	☐	☐	☐	☐	☐	☐	☐	☐
A nossa vantagem competitiva de exportação baseia-se na compreensão das necessidades dos clientes estrangeiros	☐	☐	☐	☐	☐	☐	☐	☐
Os nossos objectivos de exportação visam a satisfação do cliente…….....	☐	☐	☐	☐	☐	☐	☐	☐
Analisamos frequentemente a satisfação do cliente de exportação……....	☐	☐	☐	☐	☐	☐	☐	☐
Damos especial atenção ao serviço pós venda nos nossos mercados de exportação…..…….....	☐	☐	☐	☐	☐	☐	☐	☐
Na nossa empresa, partilhamos informações relativas aos concorrentes estrangeiros……..…….....	☐	☐	☐	☐	☐	☐	☐	☐
Respondemos rapidamente a acções competitivas que nos ameaçam nos nossos mercados de exportação……..	☐	☐	☐	☐	☐	☐	☐	☐
Discutimos regularmente os pontos fracos e fortes dos concorrentes estrangeiros…..……..…….....	☐	☐	☐	☐	☐	☐	☐	☐
Definimos como clientes-alvo aqueles em que temos oportunidade de obter uma vantagem competitiva……....	☐	☐	☐	☐	☐	☐	☐	☐
Os nossos gerentes de cada função (ex: comercial) visitam com regularidade os clientes actuais e potenciais……	☐	☐	☐	☐	☐	☐	☐	☐
As nossas funções (ex: comercial) partilham regularmente informação sobre clientes, tecnologias e concorrentes.....	☐	☐	☐	☐	☐	☐	☐	☐
As actividades das funções são coordenadas para assegurar o melhor uso do nosso conhecimento do mercado…….	☐	☐	☐	☐	☐	☐	☐	☐
As estratégias empresariais são delineadas com o objectivo de aumentar o valor do cliente…….....	☐	☐	☐	☐	☐	☐	☐	☐
Partilhamos recursos dentro da empresa……..……..…….....	☐	☐	☐	☐	☐	☐	☐	☐
Há um elevado grau de cooperação e coordenação entre as funções na definição dos objectivos e prioridades da empresa para assegurar uma resposta eficaz às condições do mercado……	☐	☐	☐	☐	☐	☐	☐	☐
A gestão de topo promove a comunicação e cooperação entre a investigação e desenvolvimento, o marketing e a produção na aquisição e uso da informação do mercado……..……..……	☐	☐	☐	☐	☐	☐	☐	☐

5. **Indique até que ponto, nos últimos 3 anos tem a sua empresa desenvolvido as actividades seguintes, com base nesta escala:**

1- A nenhum nível	2-A um nível muito baixo	3- A um nível baixo	4-Neutro	5- A algum nível	6- A um nível alto	7- A um nível muito elevado

A. **Nos últimos 3 anos (2005-2008), até que ponto é que a sua empresa tem:**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Sem resposta**
Melhorado os conhecimentos e competências que tem sobre os actuais produtos exportados……..……..	☐	☐	☐	☐	☐	☐	☐	☐
Reforçado as aptidões em tecnologias que melhorem a sua produtividade actual…….……..	☐	☐	☐	☐	☐	☐	☐	☐
Melhorado competências nos processos de desenvolvimento de produto nos quais já tinha experiência…….	☐	☐	☐	☐	☐	☐	☐	☐
Promovido aptidões para solucionar problemas de clientes, com soluções próximas das que já conhecia……..	☐	☐	☐	☐	☐	☐	☐	☐
Reforçado o conhecimento e aptidões para projectos que melhoram a eficiência das actividades inovativas actuais..	☐	☐	☐	☐	☐	☐	☐	☐
Se empenhado em melhorar a qualidade e em diminuir os custos dos seus processos,produtos e serviços exportados	☐	☐	☐	☐	☐	☐	☐	☐
Melhorado continuadamente a fiabilidade dos seus produtos e serviços exportados..…….……..	☐	☐	☐	☐	☐	☐	☐	☐
Investido na modernização e automação das suas operações…….....	☐	☐	☐	☐	☐	☐	☐	☐
Ajustado os seus produtos e serviços para manter os clientes estrangeiros satisfeitos…..……..…….....	☐	☐	☐	☐	☐	☐	☐	☐
Esforçado para obter economias de escala (produção/compras em quantidade para reduzir o custo unitário do produto).....	☐	☐	☐	☐	☐	☐	☐	☐
Melhorado a sua capacidade de utilização dos equipamentos……..……..…….....	☐	☐	☐	☐	☐	☐	☐	☐
B. **Nos últimos 3 anos (2005-2008), até que ponto é que a sua empresa tem:**	**1**	**2**	**3**	**4**	**5**	**6**	**6**	**Sem resposta**
Adquirido tecnologia e competências de produção inteiramente novas para a empresa……..…….....	☐	☐	☐	☐	☐	☐	☐	☐
Aprendido competências e processos de desenvolvimento de produtos totalmente novos à empresa (ex: design de produtos, protótipo de novos produtos).....	☐	☐	☐	☐	☐	☐	☐	☐
Adquirido capacidades de gestão totalmente novas e importantes para a inovação (ex: previsão de tendências da tecnologia e de clientes;identificação de mercados e tecnologias emergentes;coordenação e integração de funções)	☐	☐	☐	☐	☐	☐	☐	☐
Aprendido novas competências para nova tecnologia, investigação e desenvolvimento e engenharia…….	☐	☐	☐	☐	☐	☐	☐	☐
Fortalecido capacidades de inovação em áreas onde não tinha experiência..……..…….....	☐	☐	☐	☐	☐	☐	☐	☐
Procurado ideias tecnológicas novas por tentar pensar de forma original……...……...……..	☐	☐	☐	☐	☐	☐	☐	☐
Baseado o seu sucesso na sua capacidade para explorar novas tecnologias……..	☐	☐	☐	☐	☐	☐	☐	☐
Criado produtos ou serviços que são inovadores face aos que a empresa tinha……...……...….	☐	☐	☐	☐	☐	☐	☐	☐
Procurado formas criativas para satisfazer as necessidades dos clientes estrangeiros……..……..…….....	☐	☐	☐	☐	☐	☐	☐	☐
Escolhido processos, produtos e serviços exportados diferentes dos que eram usados no passado…….....	☐	☐	☐	☐	☐	☐	☐	☐
Incluído novos aspectos nos seus processos, produtos e serviços exportados em comparação com estratégia anteriores.....	☐	☐	☐	☐	☐	☐	☐	☐
Efectuado gastos na pesquisa para o desenvolvimento de produtos exportados……..	☐	☐	☐	☐	☐	☐	☐	☐
Efectuado gastos na pesquisa para a inovação de processos…….....	☐	☐	☐	☐	☐	☐	☐	☐
Aumentado a taxa de inovações de produtos…….....	☐	☐	☐	☐	☐	☐	☐	☐

6. **Até que ponto a sua empresa alcançou os seguintes objectivos?**

1- Não alcançou de todo	2- Não alcançou	3- Não alcançou parcialmente	4-Neutro	5- Alcançou parcialmente	6- Alcançou	7- Alcançou completamente

	1	2	3	4	5	6	7	Sem resposta
Lucro da exportação	☐	☐	☐	☐	☐	☐	☐	☐
Retorno do investimento da exportação	☐	☐	☐	☐	☐	☐	☐	☐
Retorno das vendas da exportação	☐	☐	☐	☐	☐	☐	☐	☐
Margens de lucro da exportação	☐	☐	☐	☐	☐	☐	☐	☐
Crescimento do volume de vendas de exportação	☐	☐	☐	☐	☐	☐	☐	☐
Crescimento do lucro das vendas de exportação	☐	☐	☐	☐	☐	☐	☐	☐
Crescimento da quota de mercado de exportação em relação aos concorrentes	☐	☐	☐	☐	☐	☐	☐	☐
Obtenção de novos clientes estrangeiros	☐	☐	☐	☐	☐	☐	☐	☐
Aumento de vendas aos clientes de exportação existentes	☐	☐	☐	☐	☐	☐	☐	☐

7. **Como prevê a evolução dos seguintes indicadores nos próximos 3 anos (2009-2011)?**

1- Piorará significativamente	2- Piorará	3- Piorará um pouco	4-Neutro	5- Melhorará um pouco	6- Melhorará	7- Melhorará significativamente

	1	2	3	4	5	6	7	Sem resposta
Volume de vendas de exportação	☐	☐	☐	☐	☐	☐	☐	☐
Lucro da exportação	☐	☐	☐	☐	☐	☐	☐	☐
Obtenção dos objectivos estabelecidos de exportação	☐	☐	☐	☐	☐	☐	☐	☐
Satisfação com o desempenho geral da exportação	☐	☐	☐	☐	☐	☐	☐	☐

8. **Indique o seu grau de concordância com as seguintes afirmações**

1-Discordo completamente	2-Discordo	3-Discordo parcialmente	4-Neutro	5-Concordo parcialmente	6-Concordo	7-Concordo completamente

	1	2	3	4	5	6	7	Sem resposta
O ambiente tecnológico é muito incerto	☐	☐	☐	☐	☐	☐	☐	☐
Os desenvolvimentos tecnológicos são altamente imprevisíveis	☐	☐	☐	☐	☐	☐	☐	☐
É difícil prever os desenvolvimentos tecnológicos na nossa indústria	☐	☐	☐	☐	☐	☐	☐	☐
Em termos tecnológicos, a nossa indústria é um ambiente complexo	☐	☐	☐	☐	☐	☐	☐	☐
As necessidades dos clientes e as preferências dos produtos alteram-se substancialmente ao longo do tempo	☐	☐	☐	☐	☐	☐	☐	☐
As exigências e preferências de produto dos clientes são altamente incertas	☐	☐	☐	☐	☐	☐	☐	☐
É difícil prever mudanças nas necessidades e preferências dos clientes	☐	☐	☐	☐	☐	☐	☐	☐
As condições competitivas do mercado são altamente imprevisíveis	☐	☐	☐	☐	☐	☐	☐	☐
Temos recursos por usar que podem que ser usados de imediato para financiar iniciativas estratégicas	☐	☐	☐	☐	☐	☐	☐	☐
Neste momento temos uma grande variedade de recursos disponíveis para financiar as nossas iniciativas	☐	☐	☐	☐	☐	☐	☐	☐
Não teremos dificuldades em obter recursos de imediato para apoiar novas iniciativas estratégicas	☐	☐	☐	☐	☐	☐	☐	☐
Temos uma grande variedade de recursos à disposição dos gestores para financiar novas iniciativas	☐	☐	☐	☐	☐	☐	☐	☐

CARACTERÍSTICAS DO ENTREVISTADO

1. **Indique por favor o seu grau de conhecimento sobre os assuntos em estudo**

1 – Muito limitado	2- Limitado	3- Um pouco limitado	4 – Neutro	5-Algum	6-Substancial	7 – Muito substancial
☐	☐	☐	☐	☐	☐	☐

2. **Qual o seu cargo na empresa? _____** (ex: Director Geral, Director de Marketing, etc.)

3. **Há quantos anos trabalha nesta empresa? _____** anos

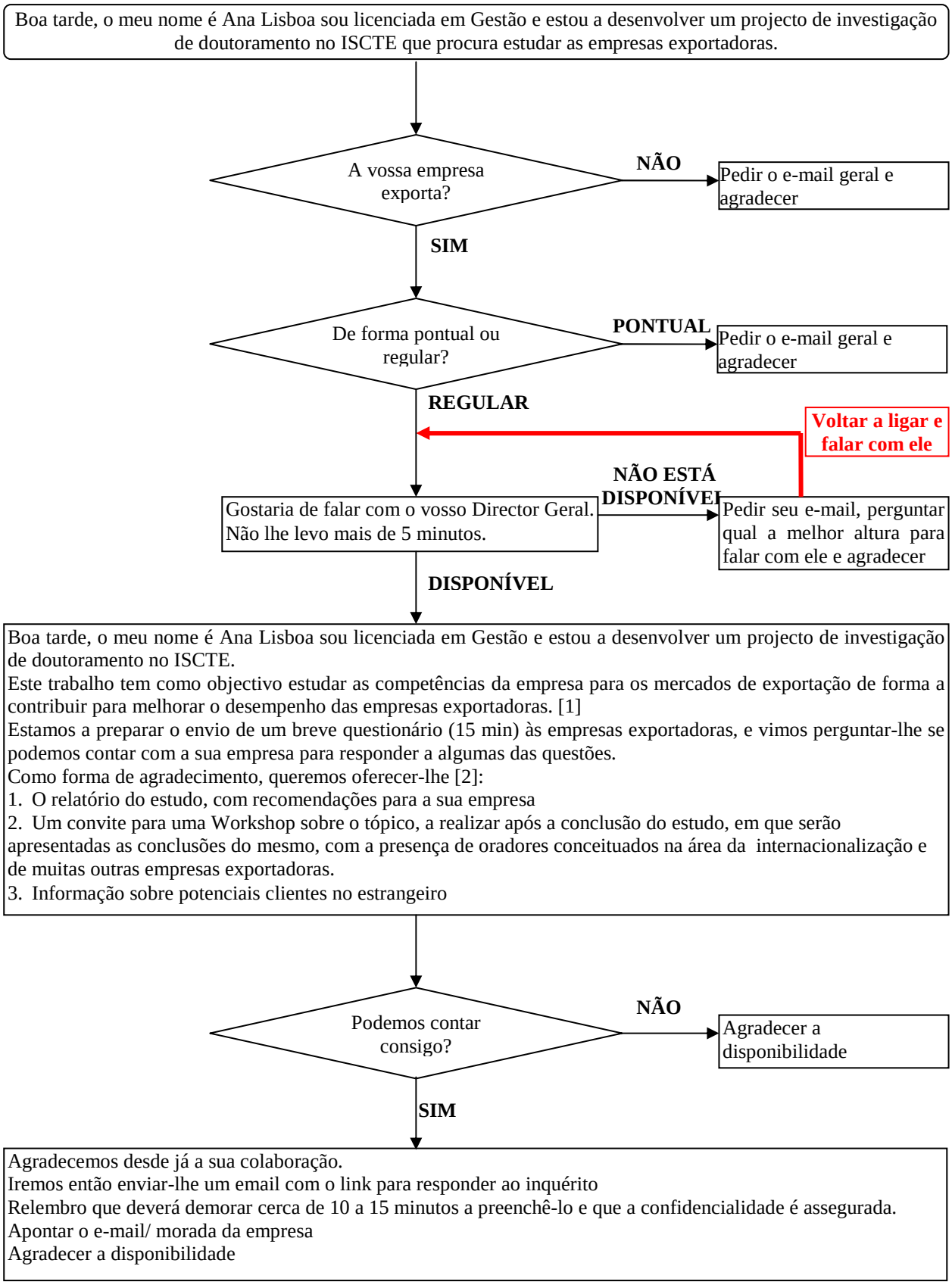
4. **Há quantos anos trabalha no cargo que referiu na questão 1 nesta empresa? _____**anos

5. **Tinha experiência anterior no cargo, em outras empresa (se sim, quantos anos)? _____**anos

MUITO OBRIGADA PELA SUA PARTICIPAÇÃO!

Indique o seu contacto se desejar um relatório dos resultados da investigação: _____

8.4. FLOWCHART OF THE CONTACT WITH THE FIRM



Notas

[Gerais]
- Usar sempre o título de Dr ou Eng, caso o mesmo exista, após confirmação com a telefonista
- Apontar resultados de cada telefonema no ficheiro Excel, bem como todas as notas pertinentes

[1] Procuramos analisar o papel relativo das capacidades da empresa no desempenho da empresa

[2] É importante não deixar interromper enquanto não se explicar a forma como compensamos a pessoa pelo tempo dispendido.

8.5. E-MAIL SENT TO PARTICIPATING FIRMS

Caro [Key informant name]

Na sequência da nossa conversa telefónica, envio o questionário do projecto acima referido. É um projecto que estuda as competências dinâmicas da empresa para os mercados de exportação e conta com o apoio do ISCTE, Instituto Politécnico de Leiria, Universidade de Leeds e Fundação para a Ciência e Tecnologia.

Este breve questionário (15 min) refere-se às capacidades gerais e orientação estratégica para os mercados de exportação e deve ser preenchido por um responsável da empresa com conhecimentos gerais.

Responda tendo em conta o que a sua empresa faz na realidade e não como gostaria que fizesse. Não existem respostas certas e erradas, procuro apenas a experiência de cada empresa e garanto que todas as respostas são confidenciais.

Para agradecer-lhe, ofereço (1) um relatório dos resultados do estudo e recomendações estratégicas; (2) um convite para um workshop, com a presença de oradores conceituados na área da internacionalização e outras empresas exportadoras e/ou (3) informação sobre potenciais clientes no estrangeiro.

Link para o questionário

Por favor responda até ao dia ___ de ____.

Estarei disponível via telemóvel, telefone, skype ou e-mail para quaisquer esclarecimentos que pretenda.

Melhores cumprimentos e muito obrigada pela sua disponibilidade. Queremos que o projecto lhe traga um retorno positivo e ajude ao sucesso da sua empresa,

Ana Lisboa, MBA Marketing

Investigadora responsável pelo projecto
Docente no Instituto Politécnico de Leiria/ESTG
Telemóvel +351 91 9650340
Telefone +351 309726142 ou 244 843313
Fax +351 244 832297 ou 244 820310
E-mail: alisboa@estg.ipleiria.pt
Skype: anacadimalx
Site: http://ww2.estg.ipleiria.pt/~alisboa/index.htm

8.6. INTERVIEW GUIDE OF 2ND INTERVIEWS TO EXPORT MANAGERS

1. Explicar a razão da entrevista
Bom dia,
Agradeço ter-me recebido novamente
Estou numa fase do desenvolvimento da investigação em que sinto que é crucial entender aspectos práticos da empresa. Já desenvolvi um questionário com elementos que quero estudar, mas entretanto surgiram-me algumas questões que gostava de ver esclarecidas.
Gostaria de reforçar que não existem respostas certas ou erradas.

2. Procurar autorização
Tem alguma dúvida que gostaria de ver esclarecida antes de prosseguirmos? Está disposto a conversar comigo nestes termos?

3. Pôr o respondente à vontade

4. Garantir o anonimato/confidencialidade
Garanto-lhe o anonimato, pelo que ninguém irá saber que foi você a responder. Para além disso, o que vamos conversar será confidencial e não será usado para outros fins ou conhecido por outras pessoas.

5. Gravar/escrever informação
Importa-se que tire algumas notas e grave a reunião, para meu acompanhamento da conversa?

6. Explicar como a entrevista irá processar-se:
Se concordar, penso em fazer-lhe algumas perguntas sobre alguns dos temas que gostaria de ver esclarecidos.

a. **No meu trabalho procuro estudar capacidades necessárias à empresa para lidar com o dinamismo dos mercados externos. Uma das capacidades que estudamos tem a ver com o desenvolvimento do produto.**
Contudo, do trabalho que já desenvolvi com as empresas, foi evidenciado que haverá outros elementos que são cruciais para o sucesso na exportação.
Nomeadamente, o mercado e a forma como se lida com os clientes.
Gostaria que me falasse um pouco de qual a vossa perspectiva e experiência acerca disto.

Posso pedir-lhe para ver os items das escalas que encontrei para as capacidades e ver se são relevantes e adequado face ao que fazem na empresa, bem como se são compreensíveis?

7. **Agradecer o tempo dispendido, perguntar se os poderemos contactar novamente caso seja necessário.**

Variável	Escala
Tendo em conta as suas actividades de exportação nos últimos 3 anos (2005-2008), até que ponto é que a sua empresa tem (1 - a nenhum nível/7 - a um nível muito elevado):	
Capacidades exploitativas de desenvolvimento de produto	• Melhorado a qualidade e diminuído os custos dos seus processos e produtos e serviços exportados • Melhorado continuadamente a fiabilidade dos seus processos e produtos e serviços exportados • Melhorado os conhecimentos que tem sobre os actuais produtos exportados e tecnologia usada • Reforçado conhecimentos de tecnologias que melhorem a produtividade actual • Melhorado conhecimentos de processos de desenvolvimento de produto (processos em que já tinha experiência) • Promovido conhecimentos para solucionar problemas de clientes (com soluções próximas das que já conhecia) • Reforçado conhecimentos que melhoram a inovação actual
Capacidades exploitativas de mercado	• Reforçado a recolha de informação de mercado importante sobre os mercados de exportação em que já se encontra • Reforçado a obtenção de informação específica do mercado dos mercados de exportação em que já se encontra • Reforçado os seus contactos nos mercados de exportação em que já se encontra • Reforçado a monitorização dos produtos concorrentes nos mercados de exportação em que já se encontra • Aumentado a sua compreensão das necessidades e requerimentos dos seus clientes estrangeiros actuais • Reforçado a relação que tem com os clientes estrangeiros actuais • Reforçado a relação que tem com os actuais fornecedores • Reforçado a relação que tem com os distribuidores estrangeiros actuais
Capacidades explorativas de desenvolvimento de produto	• Fortalecido capacidades de inovação em áreas onde não tinha experiência • Implementado novos tipos de processos de produção • Escolhido processos, produtos e serviços exportados diferentes dos que eram usados no passado • Incluído novos elementos nos seus processos, produtos e serviços exportados, em comparação com estratégias anteriores • Adquirido tecnologia e competências de produção inteiramente novas para a empresa • Aprendido sobre tecnologia que não tinha usado antes • Aprendido competências e processos de desenvolvimento de produtos totalmente novos à empresa (ex: design de produtos, protótipo de novos produtos) • Adquirido capacidades de gestão totalmente novas e importantes para a inovação (ex: previsão de tendências da tecnologia e dos clientes;) • Obtido novos conhecimentos para nova tecnologia, investigação e desenvolvimento e engenharia • Recrutado engenheiros em áreas técnicas nas quais não está familiarizada

(cont.)

Variável	Escala
Tendo em conta as suas actividades de exportação nos últimos 3 anos (2005-2008), até que ponto é que a sua empresa tem (1 - a nenhum nível/7 - a um nível muito elevado):	
Capacidades exploratívas de mercado	• Identificado potenciais clientes estrangeiros • Recolhido informação de mercado importante sobre novos mercados de exportação • Obtido informação específica do mercado de novos mercados de exportação • Analisado o potencial de novos mercados de exportação • Pesquisado novos concorrentes e clientes estrangeiros • Desenvolvido relações em novos mercados de exportação • Desenvolvido relações com novos fornecedores • Desenvolvido relações com novos distribuidores estrangeiros • Aplicado novos canais de distribuição • Esforçado para obter economias de escala (produção/compras em quantidade para reduzir o custo unitário do produto) • Melhorado a sua capacidade de utilização dos equipamentos

8.7. FINAL QUESTIONNAIRE

Competências dinâmicas da empresa para os mercados de exportação

Caso alguma questão não se aplique seleccione "sem resposta".

Se necessitar de qualquer apoio para completar este questionário, por favor contacte:
Ana Lisboa; Telefone: 309726142; Telemóvel: 919650340; E-mail: alisboa@estg.ipleiria.pt; Skype: anacadimalx

Este questionário foca as competências gerais, a orientação estratégica e o desempenho das operações de exportação da empresa e deve ser preenchida por um responsável geral com estes conhecimentos.

Responda tendo em conta o que a sua empresa faz na realidade e não como gostaria que fizesse. Não existem respostas certas e erradas, procuro apenas a experiência de cada empresa e garanto que todas as respostas são estritamente confidenciais. Por favor responda a TODAS as questões de forma a fornecer validade a este estudo.
No final indique qual ou quais os retornos que pretende.
Obrigada pela sua cooperação,

Ana Lisboa, MBA-Marketing

Carregar Inquérito Não Terminado Seguinte >>

Competências dinâmicas da empresa para os mercados de exportação

Caso alguma questão não se aplique seleccione "sem resposta".
Se necessitar de qualquer apoio para completar este questionário, por favor contacte:
Ana Lisboa; Telefone: 309726142; Telemóvel: 919650340; E-mail: alisboa@estg.ipleiria.pt; Skype: anacadimalx

Já completou 0% do questionário.

0% 100%

1. Quantos empregados a tempo inteiro trabalharam na sua empresa em 2008?
Escolha uma das seguintes respostas:

Escolha uma opção...

2. Há quantos anos é que a sua empresa está envolvida em actividades de exportação?

Neste campo só se aceitam números

3. Para quantos países exporta a sua empresa?

Neste campo só se aceitam números

Ex: 2 se exporta para 2 países, 5 se exporta para 5 países

4. Nos últimos 3 anos, qual a percentagem média das vendas totais (em valor) da empresa, que é respeitante à exportação?

Neste campo só se aceitam números

Ex: 15 se a sua facturação de actividades de exportação tiver sido de 15% na média dos últimos 3 anos (2005-2008)

5. Indique até que ponto concorda ou discorda com as seguintes afirmações:
[1 - Discordo completamente 2 - Discordo 3 - Discordo parcialmente 4 - Neutro 5 - Concordo parcialmente 6 - Concordo 7 - Concordo completamente]

	1	2	3	4	5	6	7	Sem resposta
O nosso empenho para satisfazer as necessidades dos clientes de exportação é constantemente analisado	☐	☐	◉	☐	☐	☐	☐	☐
Analisamos frequentemente a satisfação do cliente de exportação	☐	☐	☐	☐	◉	☐	☐	☐
A nossa vantagem competitiva de exportação baseia-se na compreensão das necessidades dos clientes estrangeiros	☐	☐	☐	◉	☐	☐	☐	☐
Os nossos objectivos de exportação visam a satisfação do cliente	☐	☐	☐	☐	☐	◉	☐	☐
Compreendemos como os empregados podem contribuir para o valor dos clientes de exportação	☐	☐	☐	◉	☐	☐	☐	☐
Damos especial atenção ao serviço pós venda nos nossos mercados de exportação	☐	☐	☐	☐	◉	☐	☐	☐
Na nossa empresa, partilhamos informações relativas aos concorrentes estrangeiros	☐	☐	☐	◉	☐	☐	☐	☐
Respondemos rapidamente a acções competitivas que nos ameaçam nos nossos mercados de exportação	☐	☐	☐	☐	◉	☐	☐	☐
Discutimos regularmente os pontos fracos e fortes dos concorrentes estrangeiros	☐	☐	☐	◉	☐	☐	☐	☐
Definimos como clientes-alvo aqueles em que temos oportunidade de obter uma vantagem competitiva	☐	☐	☐	☐	☐	◉	☐	☐
Os nossos gerentes de função (ex: comercial) visitam com regularidade os actuais e potenciais clientes	☐	☐	☐	◉	☐	☐	☐	☐
As nossas funções (ex: comercial, produção) partilham regularmente informação sobre clientes, tecnologias e concorrentes	☐	☐	☐	☐	◉	☐	☐	☐
As actividades das funções são coordenadas para assegurar o melhor uso do nosso conhecimento do mercado	☐	☐	◉	☐	☐	☐	☐	☐
As estratégias empresariais são delineadas com o objectivo de aumentar o valor do cliente	☐	☐	☐	☐	☐	◉	☐	☐
Partilhamos recursos dentro da empresa	☐	☐	☐	☐	◉	☐	☐	☐
Há um elevado grau de cooperação e coordenação entre as funções na definição dos objectivos e prioridades da empresa para assegurar uma resposta eficaz às condições do mercado	☐	☐	◉	☐	☐	☐	☐	☐
A gestão de topo promove a comunicação e cooperação entre a investigação e desenvolvimento, o marketing e a produção na aquisição e uso da informação do mercado	☐	☐	☐	◉	☐	☐	☐	☐

Terminar mais tarde << Anterior Seguinte >>

Competências dinâmicas da empresa para os mercados de exportação

Caso alguma questão não se aplique seleccione "sem resposta".
Se necessitar de qualquer apoio para completar este questionário, por favor contacte:
Ana Lisboa; Telefone: 309726142; Telemóvel: 919650340; E-mail: alisboa@estg.ipleiria.pt; Skype: anacadimalx

Já completou 25% do questionário.

0% 100%

6A. Nos últimos 3 anos (2005-2008), a que nível a sua empresa tem desenvolvido as actividades seguintes:

[1 - A nenhum nível 2 - A um nível muito baixo 3 - A um nível baixo 4 - Neutro 5 - A algum nível 6 - A um nível alto 7 - A um nível muito elevado]

	1	2	3	4	5	6	7	Sem resposta
Melhorado a qualidade dos seus processos, e produtos e serviços exportados	○	○	○	○	○	◉	○	○
Diminuído os custos dos seus processos, e produtos e serviços exportados	○	○	○	○	◉	○	○	○
Melhorado os conhecimentos que tem sobre os actuais produtos exportados e tecnologia usada	○	○	○	○	◉	○	○	○
Reforçado conhecimentos de tecnologias que melhorem a produtividade actual	○	○	○	◉	○	○	○	○
Melhorado conhecimentos de processos de desenvolvimento de produto (processos em que já tinha experiência)	○	○	○	○	◉	○	○	○
Promovido conhecimentos para solucionar problemas de clientes (com soluções próximas das que já conhecia)	○	○	○	○	○	○	◉	○
Reforçado conhecimentos que melhoram a inovação actual	○	○	○	○	○	◉	○	○
Reforçado a recolha de informação importante sobre os mercados de exportação em que já se encontrava	○	○	○	○	◉	○	○	○
Reforçado os seus contactos nos mercados de exportação em que já se encontrava	○	○	○	○	○	◉	○	○
Reforçado a monitorização dos produtos concorrentes nos mercados de exportação em que já se encontrava	○	○	○	○	○	○	◉	○
Aumentado a sua compreensão das necessidades e requerimentos dos seus clientes estrangeiros actuais	○	○	○	○	◉	○	○	○
Reforçado a relação que tem com os clientes estrangeiros actuais	○	○	○	○	◉	○	○	○
Reforçado a relação que tem com os actuais fornecedores	○	○	○	◉	○	○	○	○
Reforçado a relação que tem com os distribuidores estrangeiros actuais	○	○	○	○	◉	○	○	○

Terminar mais tarde << Anterior Seguinte >>

Competências dinâmicas da empresa para os mercados de exportação

Caso alguma questão não se aplique seleccione "sem resposta".
Se necessitar de qualquer apoio para completar este questionário, por favor contacte:
Ana Lisboa; Telefone: 309726142; Telemóvel: 919650340; E-mail: alisboa@estg.ipleiria.pt; Skype: anacadimalx

Já completou 50% do questionário.

0% 100%

6B. Nos últimos 3 anos (2005-2008), a que nível a sua empresa tem desenvolvido as actividades seguintes:

[1 - A nenhum nível 2 - A um nível muito baixo 3 - A um nível baixo 4 - Neutro 5 - A algum nível 6 - A um nível alto 7 - A um nível muito elevado]

	1	2	3	4	5	6	7	Sem resposta
Fortalecido capacidades de inovação em áreas onde não tinha experiência	○	○	○	○	○	◉	○	○
Implementado novos tipos de processos de produção	○	○	○	○	◉	○	○	○
Escolhido processos, e produtos e serviços exportados diferentes dos que eram usados no passado	○	○	○	○	◉	○	○	○
Adquirido tecnologia e competências de produção inteiramente novas para a empresa	○	○	○	◉	○	○	○	○
Aprendido sobre tecnologia que não tinha usado antes	○	○	○	○	◉	○	○	○
Aprendido competências e processos de desenvolvimento de produtos totalmente novos à empresa (ex:design,prototipagem)	○	○	○	○	○	○	◉	○
Adquirido capacidades de gestão totalmente novas e importantes para a inovação (ex: previsão de tendências da tecnologia e clientes; identificação de mercados e tecnologias emergentes; coordenação e integração de funções)	○	○	○	○	○	◉	○	○
Obtido novos conhecimentos para nova tecnologia, investigação e desenvolvimento e engenharia	○	○	○	○	◉	○	○	○
Identificado potenciais clientes estrangeiros	○	○	○	○	○	◉	○	○
Recolhido informação de mercado importante sobre novos mercados de exportação	○	○	○	○	○	○	◉	○
Analisado o potencial de novos mercados de exportação	○	○	○	○	◉	○	○	○
Pesquisado novos concorrentes e clientes estrangeiros	○	○	○	○	◉	○	○	○
Desenvolvido relações em novos mercados de exportação	○	○	○	◉	○	○	○	○
Desenvolvido relações com novos fornecedores	○	○	○	○	◉	○	○	○
Desenvolvido relações com novos distribuidores estrangeiros	○	○	○	○	○	○	◉	○

7. Até que ponto a sua empresa alcançou os seguintes objectivos?

[1 - Não alcançou de todo 2 - Não alcançou 3 - Não alcançou parcialmente 4 - Neutro 5 - Alcançou parcialmente 6 - Alcançou 7 - Alcançou completamente]

	1	2	3	4	5	6	7	Sem resposta
Lucro da exportação	○	○	○	○	○	◉	○	○
Retorno do investimento da exportação	○	○	○	○	◉	○	○	○
Retorno das vendas da exportação	○	○	○	○	◉	○	○	○
Margens de lucro da exportação	○	○	○	◉	○	○	○	○
Crescimento do volume de vendas de exportação	○	○	○	○	◉	○	○	○
Crescimento do lucro das vendas de exportação	○	○	○	○	○	○	◉	○
Crescimento da quota de mercado de exportação em relação aos concorrentes	○	○	○	○	○	◉	○	○
Obtenção de novos clientes estrangeiros	○	○	○	○	◉	○	○	○
Aumento de vendas aos clientes de exportação existentes	○	○	○	○	○	◉	○	○

Terminar mais tarde << Anterior Seguinte >>

Competências dinâmicas da empresa para os mercados de exportação

Caso alguma questão não se aplique seleccione "sem resposta".
Se necessitar de qualquer apoio para completar este questionário, por favor contacte:
Ana Lisboa; Telefone: 309726142; Telemóvel: 919650340; E-mail: alisboa@estg.ipleiria.pt; Skype: anacadimalx

Já completou 75% do questionário.

0% 100%

8. Como prevê a evolução dos seguintes indicadores nos próximos 3 anos (2009-2011)?
[1 - Piorará significativamente 2 - Piorará 3 - Piorará um pouco 4 - Neutro 5 - Melhorará um pouco 6 - Melhorará 7 - Melhorará significativamente]

	1	2	3	4	5	6	7	Sem resposta
Lucro da exportação	○	○	○	○	○	◉	○	○
Volume de vendas de exportação	○	○	○	○	◉	○	○	○
Obtenção dos objectivos estabelecidos de exportação	○	○	○	○	◉	○	○	○
Satisfação com o desempenho geral da exportação	○	○	○	◉	○	○	○	○

9. Indique até que ponto concorda ou discorda com as seguintes afirmações:
[1 - Discordo completamente 2 - Discordo 3 - Discordo parcialmente 4 - Neutro 5 - Concordo parcialmente 6 - Concordo 7 - Concordo completamente]

	1	2	3	4	5	6	7	Sem resposta
É difícil prever os desenvolvimentos tecnológicos na nossa indústria	○	○	○	○	○	◉	○	○
O ambiente tecnológico é muito incerto	○	○	○	○	◉	○	○	○
Os desenvolvimentos tecnológicos são altamente imprevisíveis	○	○	○	○	◉	○	○	○
Em termos tecnológicos, a nossa indústria é um ambiente complexo	○	○	○	◉	○	○	○	○
As necessidades dos clientes e as preferências dos produtos alteram-se substancialmente ao longo do tempo	○	○	○	○	◉	○	○	○
As exigências e preferências de produto dos clientes são altamente incertas	○	○	○	○	○	○	◉	○
É difícil prever mudanças nas necessidades e preferências dos clientes	○	○	○	○	○	◉	○	○
As condições competitivas do mercado são altamente imprevisíveis	○	○	○	○	◉	○	○	○
Temos recursos por usar que podem ser usados de imediato para financiar iniciativas estratégicas	○	○	○	○	○	◉	○	○
Neste momento temos uma grande variedade de recursos disponíveis para financiar as nossas iniciativas	○	○	○	○	○	○	◉	○
Não teremos dificuldades em obter recursos de imediato para apoiar novas iniciativas estratégicas	○	○	○	○	◉	○	○	○
Temos uma grande variedade de recursos à disposição dos gestores para financiar novas iniciativas	○	○	○	○	◉	○	○	○

10. Indique por favor o seu grau de conhecimento sobre as questões apresentadas:
Escolha uma das seguintes respostas:

Escolha uma opção...

11. Qual o seu cargo na empresa?

? Ex: Director Geral, Director Comercial, Director de Marketing, etc.

12. Há quantos anos trabalha nesta empresa?

Neste campo só se aceitam números

13. Há quantos anos trabalha no cargo que referiu (nesta empresa ou em outra empresa)?

Neste campo só se aceitam números

Terminar mais tarde << Anterior Seguinte >>

Muito obrigada pela sua participação! Indique qual ou quais os retornos que pretende obter

Escolha uma ou mais opções

- ☐ Relatório dos resultados e recomendações estratégicas
- ☐ Convite para um workshop sobre o tópico
- ☐ Informação sobre potenciais clientes no estrangeiro

Indique o seu contacto caso deseje algum destes retornos

E-mail

Telefone

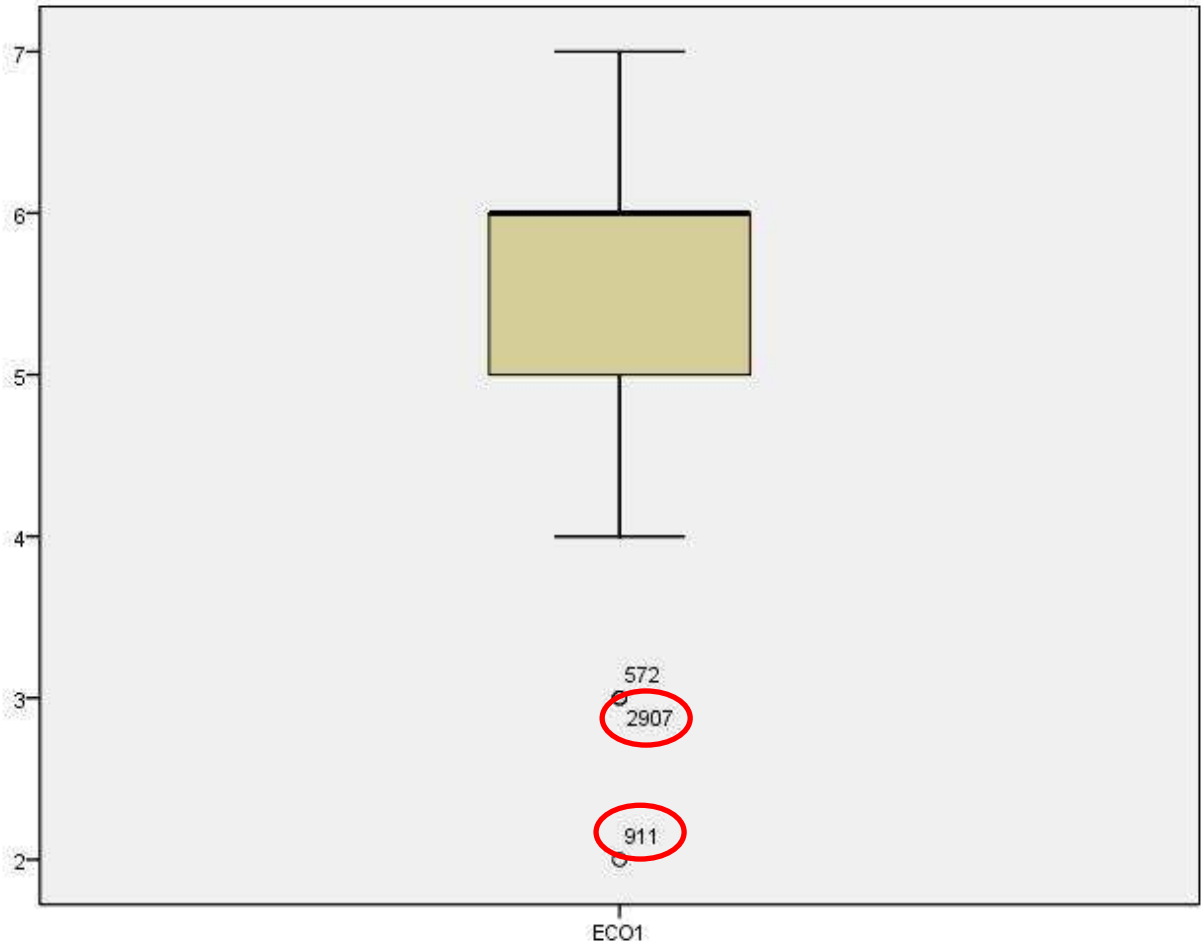
Outro

Terminar mais tarde << Anterior Submeter

8.8. OUTLIERS DETECTION

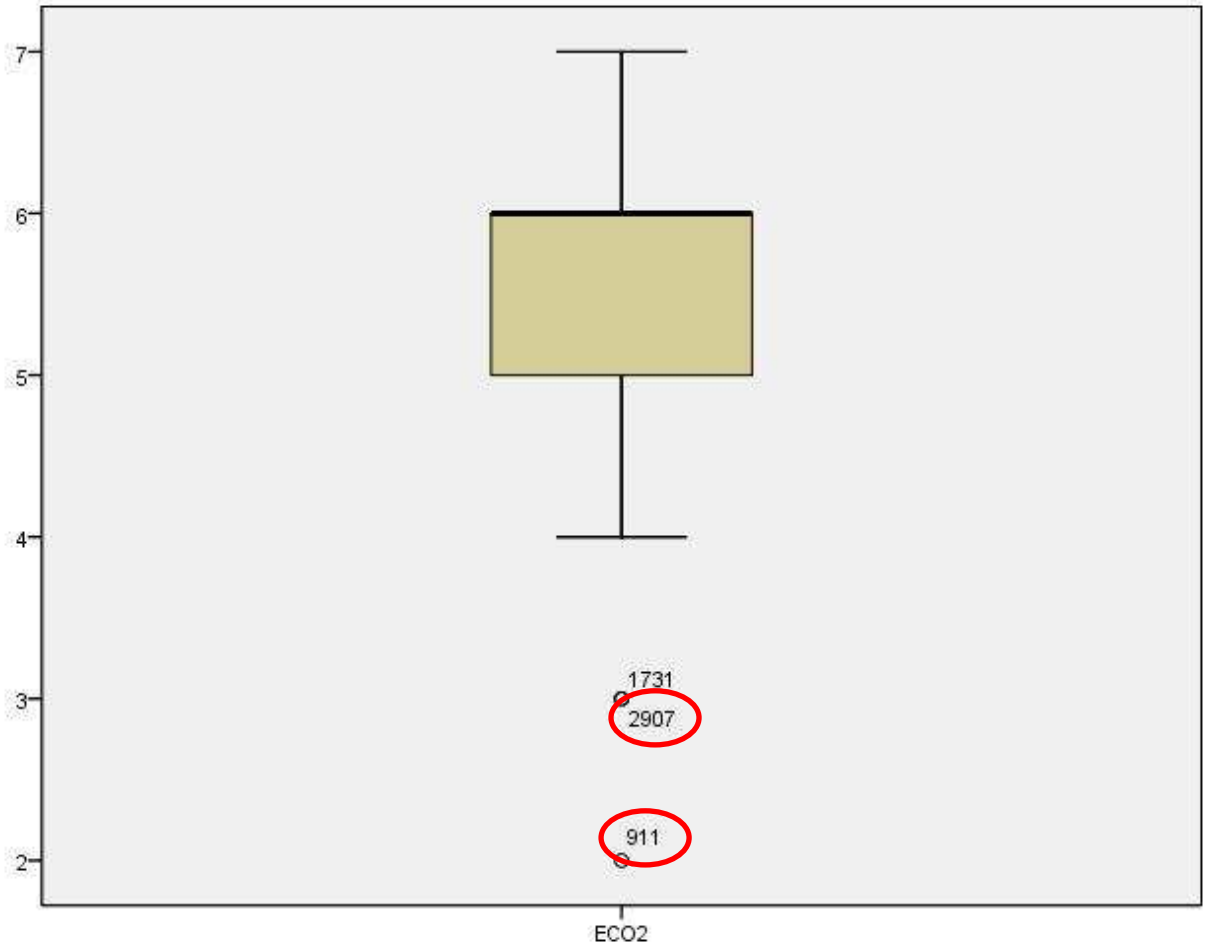
8.8.1. Item ECO1

This item, which stated "we constantly monitor our level of commitment and orientation to serving export customer needs", is one of the items that constitute the construct export customer orientation.



8.8.2. Item ECO2

This item, which stated "we measure export customer satisfaction systematically and regularly", also constitutes the construct export customer orientation.



8.9. NORMALITY ANALYSIS

Items	Skewness	Kurtosis	Kolgomorov-Smirnov
Export customer orientation			
ECO1 We constantly monitor our level of commitment and orientation to serving export customer needs	-1.106	1.824	.282
ECO2 We measure export customer satisfaction systematically and regularly	-1.037	1.661	.277
ECO3 Our export strategy for competitive advantage is based on our understanding of export customer needs	-.913	1.307	.295
ECO4 Our export business objectives are driven primarily by customer satisfaction	-.914	1.177	.253
ECO5 We understand how everyone in our business can contribute to creating value for export customers	-.948	1.473	.297
ECO6 We give close attention to after sales service in our export markets	-.979	1.664	.221
Export competitor orientation			
ECPO1 All information concerning our export competition is shared within this company	-.819	.919	.212
ECPO2 We rapidly respond to competitive actions that threaten us in our export markets	-.798	.831	.227
ECPO3 We regularly discuss export competitors' strengths and weaknesses	-.620	.397	.185
ECPO4 Customers are targeted when we have an opportunity for competitive advantage	-.811	2.130	.198
Product development exploitative capabilities			
ETP1 Improved quality of the firm's export products, services and processes	-.072	-.297	.232
ETP2 Lowered cost of the firm's export products, services and processes	-.372	.299	.220
ETP3 Upgraded current knowledge and skills for familiar technologies and export products and services	-1.182	2.533	.277
ETP4 Invested in enhancing skills in exploiting mature technologies that improve productivity of current innovation operations	-.936	2.504	.225
ETP5 Upgraded skills in product development processes in which the firm already possesses significant experience	-.674	2.505	.231
ETP6 Enhanced competencies in searching for solutions to customer problems that are near to existing solutions rather than completely new solutions	-.343	.157	.252
ETP6 Strengthened our knowledge and skills for projects that improve efficiency of existing innovation activities	-.719	1.718	.217
Market-related exploitative capabilities			
ETM1 Enhanced the capture of important market information of its existing markets	-.519	.882	.211
ETM2 Reinforced its contacts in current export markets	-.241	-.269	.244
ETM3 Reinforced the monitoring of competitive products in current export markets	-.748	1.397	.215
ETM4 Enhanced its understanding of existing overseas customer requirements	-.559	.810	.255
ETM5 Reinforced its relationships with current overseas customers	-.525	.441	.282
ETM6 Reinforced its supplier relationships	-.873	1.213	.249
ETM7 Reinforced its overseas distributor relationships	-1.169	2.319	.201

(cont.)

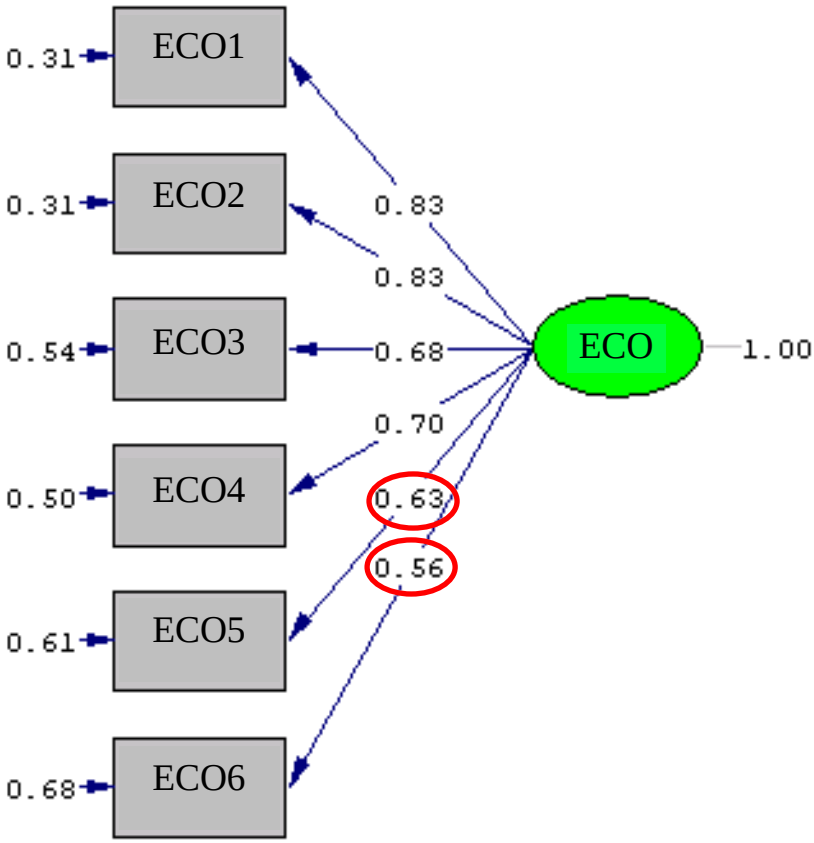
Items	Skewness	Kurtosis	Kolgomorov -Smirnov
Product development explorative capabilities			
ERP1 Acquired manufacturing technology and skills entirely new to the firm	-.793	1.213	.200
ERP2 Learned about technology it has not used before	-.964	1.668	.213
ERP3 Learned product development skills and processes (such as product design, prototyping new products, timing of new product introductions and customizing products for local markets) entirely new to the industry	-.936	1.689	.218
ERP4 Acquired entirely new managerial and organizational skills that are important for innovation (such as forecasting technological and customer trends, identifying emerging markets and technologies, coordinating and integrating R&D, marketing, manufacturing and other functions, managing the product development process)	-.918	1.137	.225
ERP5 Learned new skills in areas such as funding new technology, staffing R&D function, training and development of R&D and engineering personnel for the first time	-.858	1.262	.212
ERP6 Strengthened innovation skills in areas where it had no prior experience	-.793	1.909	.183
ERP7 Implemented new types of production processes	-.594	.568	.186
ERP8 Chose new approaches to export products, services and processes that are different from those used in the past	-.914	1.177	.158
Market-related explorative capabilities			
ERM1 Identified prospective customers	-.864	1.649	.249
ERM2 Acquired export market-related information of new markets	-1.006	2.244	.218
ERM3 Assessed the potential of new markets	-.873	1.563	.225
ERM4 Researched new competitors and new customers	-.540	.509	.212
ERM5 Built relationships in new markets	-1.043	2.418	.225
ERM6 Built new close supplier relationships			.219
ERM7 Built new overseas distributor relationships	-.798	.831	.189
Current export profit performance			
PROF1 Export profit	-.816	1.063	.248
PROF2 Export return on investment	-.912	1.798	.244
PROF3 Export return on sales	-.936	2.138	.243
PROF4 Export market margins	-.834	1.144	.264
Current export market effectiveness performance			
EFFE1 Export market's sales volume growth	-.735	.147	.191
EFFE2 Growth in export market sales revenue	-.723	.314	.206
EFFE3 Export market's market share growth	-.349	-.155	.149
EFFE4 Acquiring new export market customers	-.740	.501	.243
EFFE5 Increasing sales to current export customers	-.757	.253	.194

(cont.)

Items	Skewness	Kurtosis	Kolgomorov -Smirnov
Future export performance			
FUT1 Export operations profitability	-.553	-.251	.220
FUT2 Export sales volume	-.613	-.120	.210
FUT3 Achievement of the objectives	-.597	.082	.205
FUT4 Satisfaction with export operations performance	-.764	.088	.205
Slack resources			
SLK1 We have uncommitted resources that can be used to fund strategic initiatives at short notice	-.205	-.463	.166
SLK2 We have a large amount of resources available in the short run to fund our initiatives	-.039	-.720	.131
SLK3 We will have no problems obtaining resources at short notice to support new strategic initiatives	-.270	-.810	.160
SLK4 We have a large amount of resources at the discretion of management to fund new strategic initiatives	-.131	-.723	.137
Interfunctional coordination			
IFC1 Our top managers from each business function regularly visit our current and prospective export customers	-1.278	2.135	.223
IFC2 Our business functions regularly share market information about export customers, technologies, and competitors	-1.108	2.180	.252
IFC3 The activities of functional units are tightly coordinated to ensure better use of our export market knowledge	-.800	.868	.257
IFC4 Our export business strategies are driven by the goal of increasing export customer value	-1.137	2.530	.278
IFC5 Export staff share programs and resources with other business units	-.989	1.995	.268
IFC6 There is a high level of cooperation and coordination among functional units in setting the goals and priorities for the organization to ensure effective response to export market conditions	-.980	1.503	.253
IFC7 Top management promotes communication and cooperation among R&D, marketing, and manufacturing in export market information acquisition and use	-1.041	1.410	.228
Technological turbulence			
TCT1 It was very difficult to forecast technology developments in our industry	-.330	-.629	.187
TCT2 Technology environment was highly uncertain	-.107	-.701	.145
TCT3 Technological developments were highly unpredictable	-.046	-.715	.125
TCT4 Technologically, our industry was a very complex environment	-.194	-.758	.219
Market turbulence			
MKT1 Customer needs and product preferences changed quite rapidly	-.733	.218	.216
MKT2 Customer product demands and preferences were highly uncertain	-.219	-.765	.180
MKT3 It was difficult to predict changes in customer needs and preferences	-.353	-.329	.190
MKT4 Market competitive conditions were highly unpredictable	-.466	-.356	.172

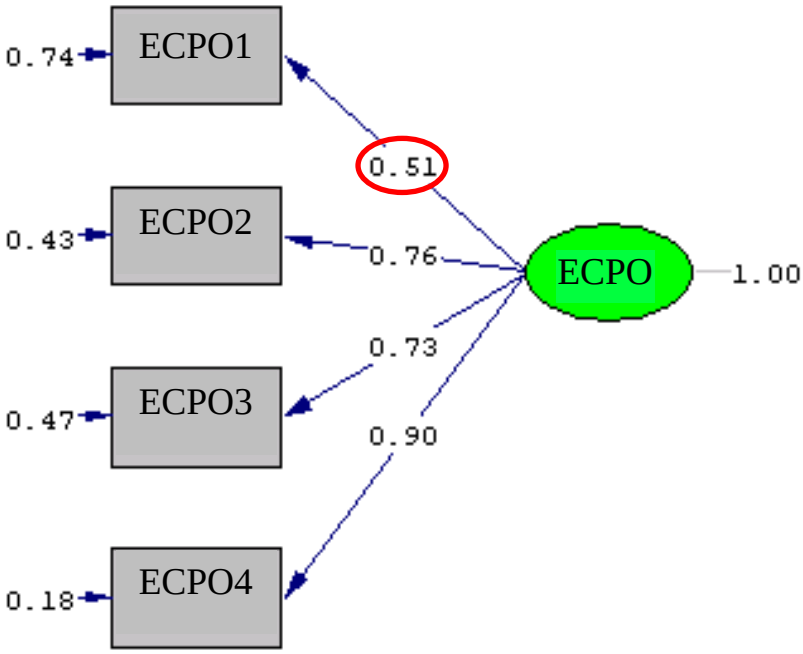
8.10. INDIVIDUAL MEASUREMENT MODELS

8.10.1. Export Customer Orientation



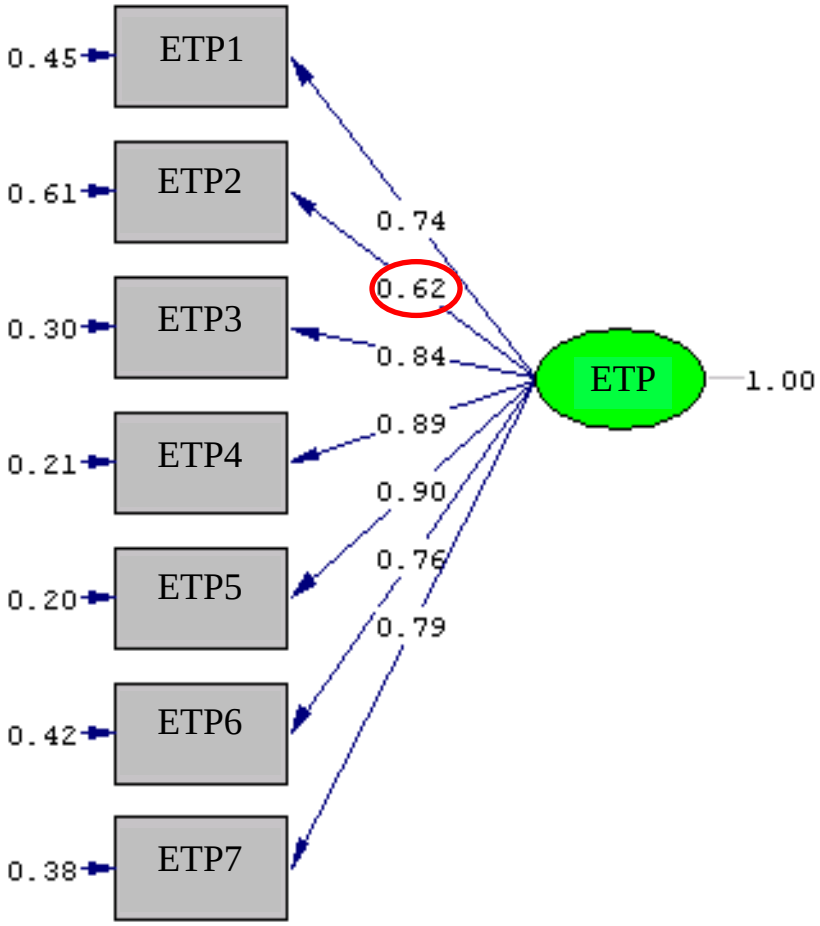
Chi-Square=59.82, df=9, P-value=0.00000, RMSEA=0.147

8.10.2. Export Competitor Orientation



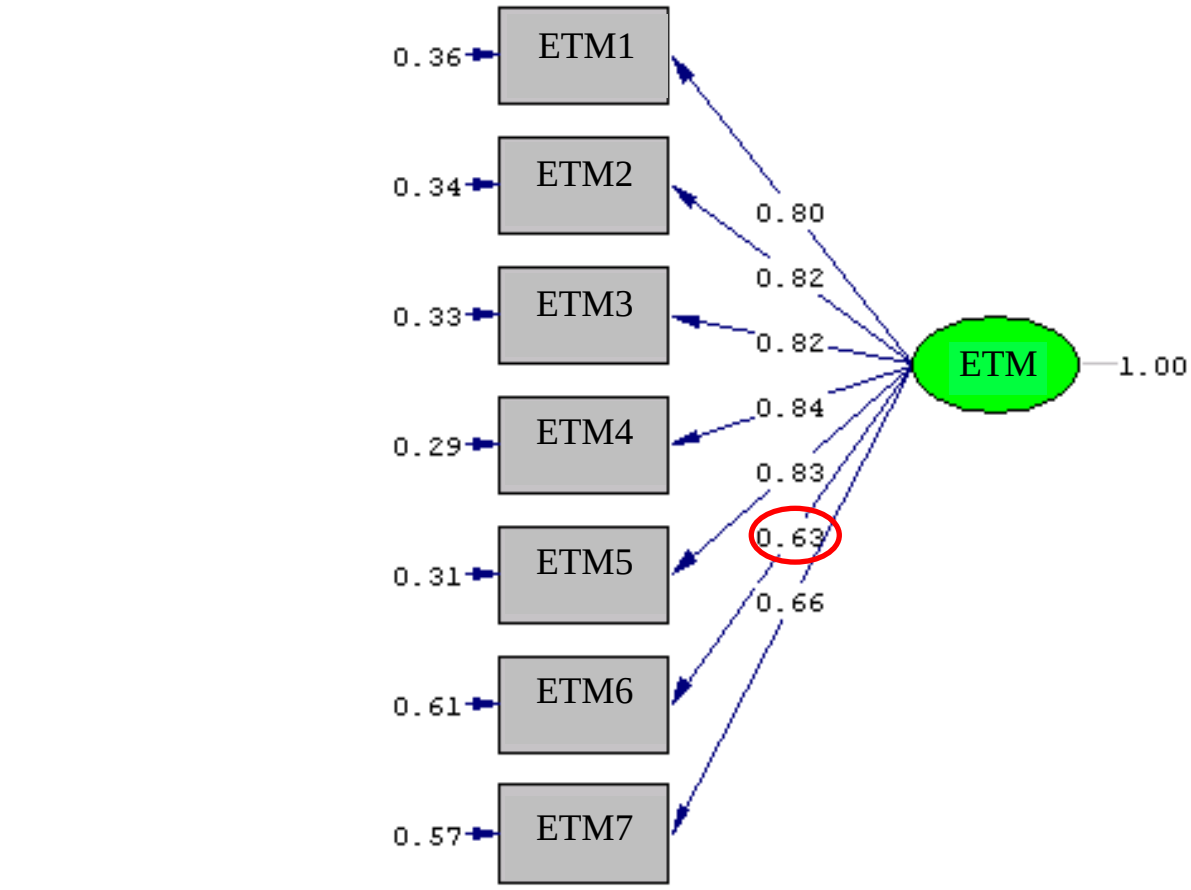
Chi-Square=9.93, df=2, P-value=0.00696, RMSEA=0.124

8.10.3. Product Development Exploitative Capabilities



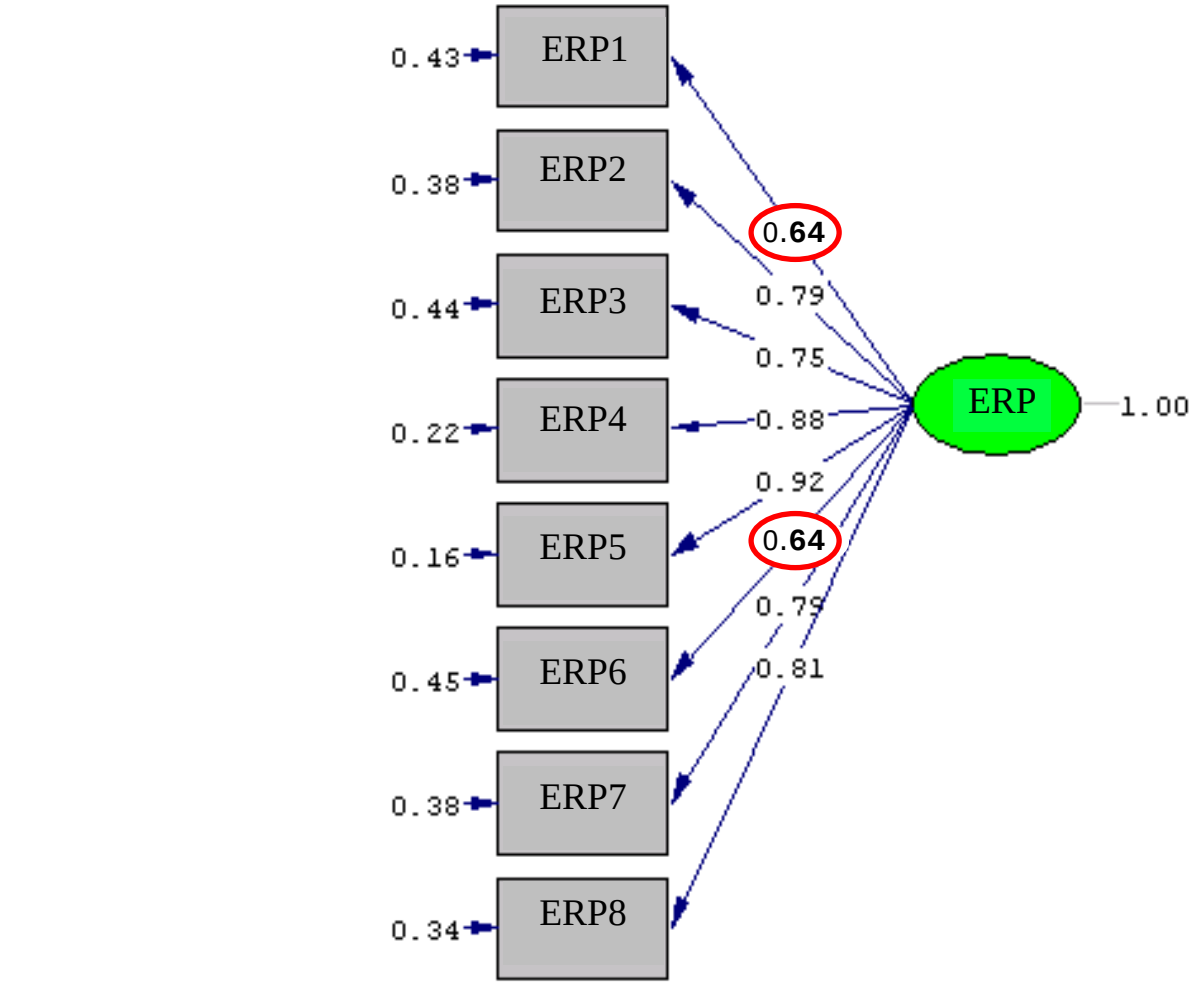
Chi-Square=121.08, df=14, P-value=0.00000, RMSEA=0.172

8.10.4. Market-related Exploitative Capabilities



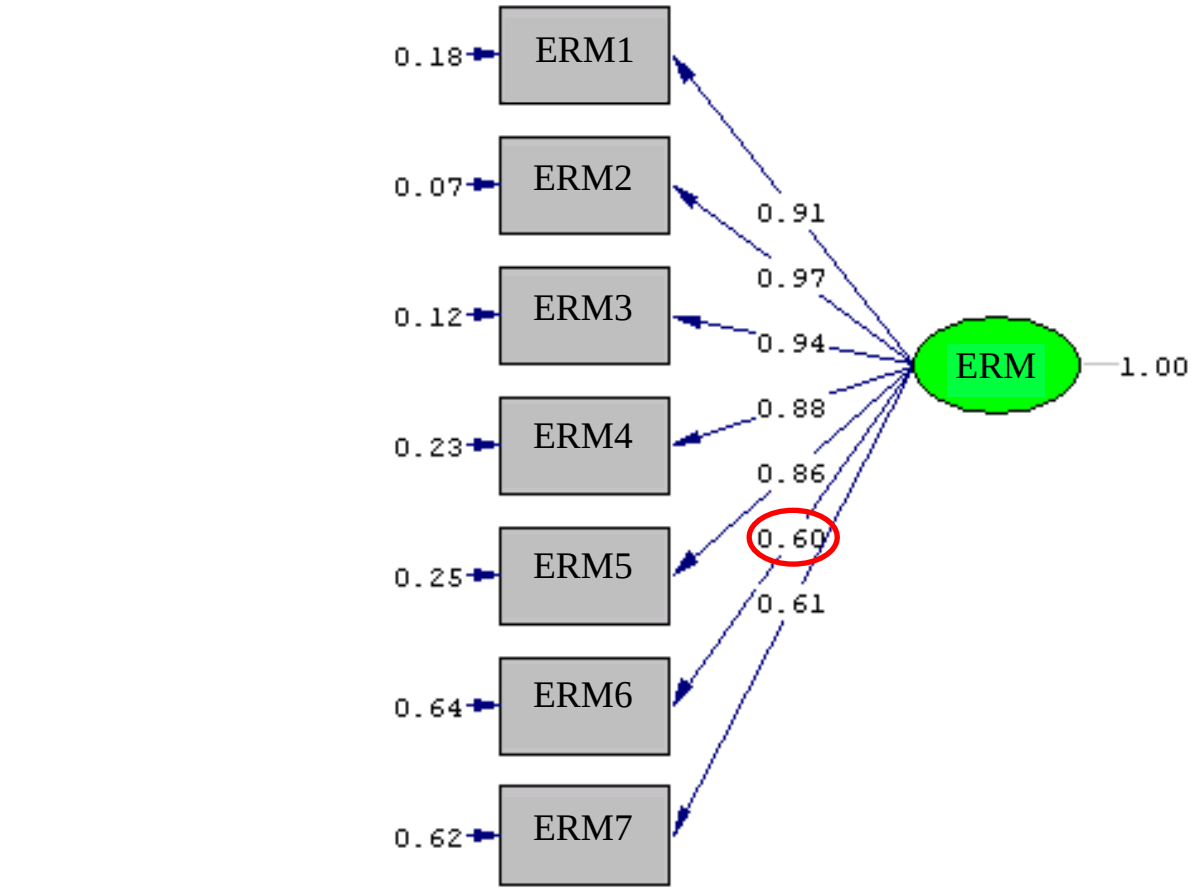
Chi-Square=131.75, df=14, P-value=0.00000, RMSEA=0.180

8.10.5. Product Development Explorative Capabilities



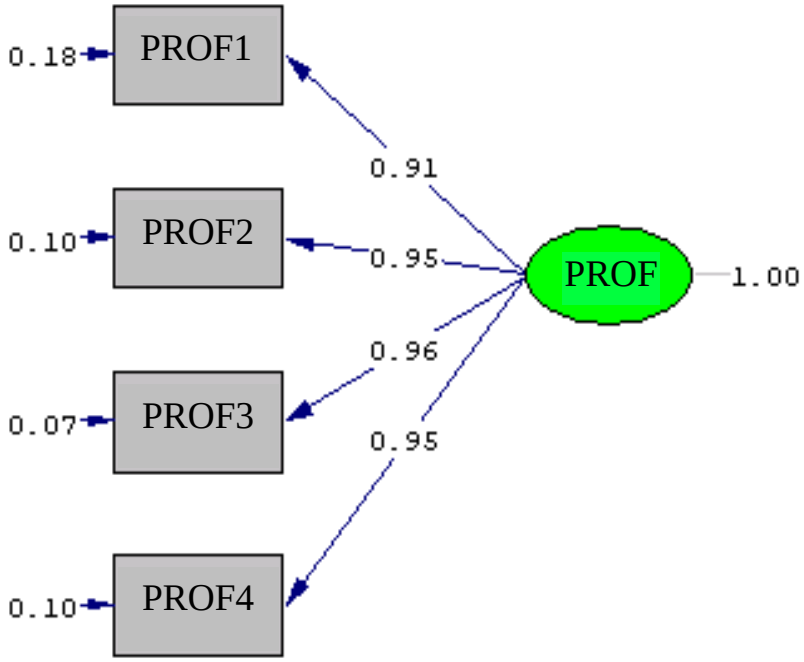
Chi-Square=171.63, df=20, P-value=0.00000, RMSEA=0.171

8.10.6. Market-related Explorative Capabilities



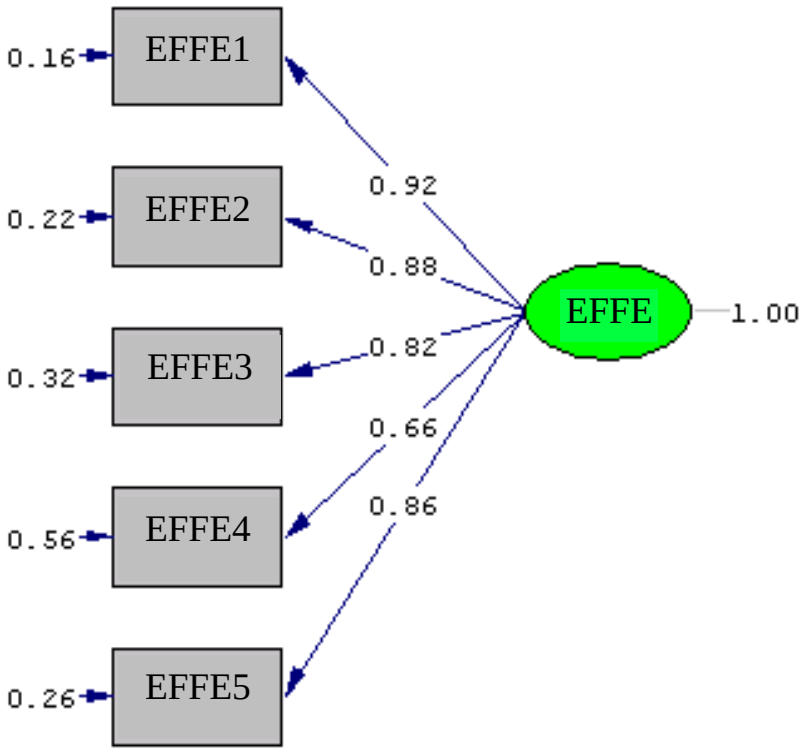
Chi-Square=185.44, df=14, P-value=0.00000, RMSEA=0.217

8.10.7. Current Export Profit Performance



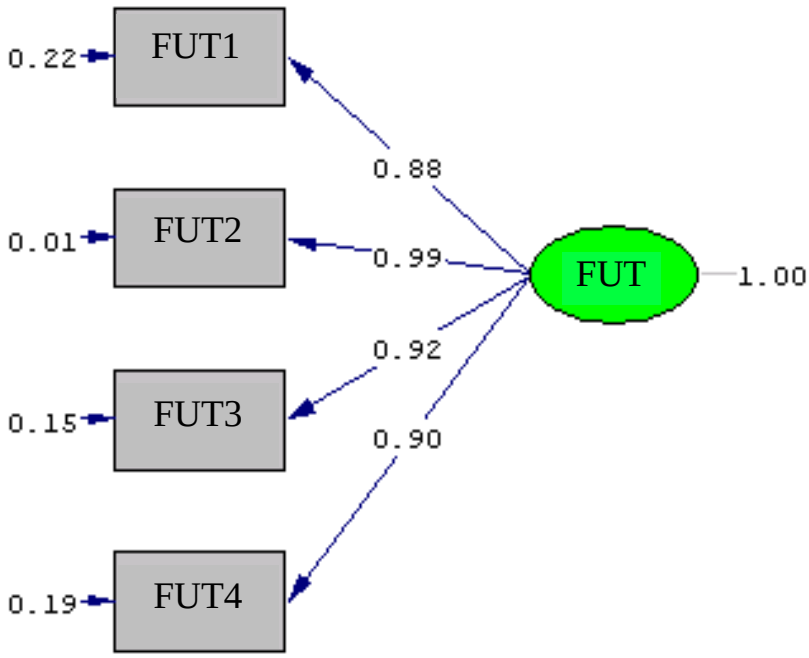
Chi-Square=12.92, df=2, P-value=0.00156, RMSEA=0.145

8.10.8. Current Export Market Effectiveness Performance



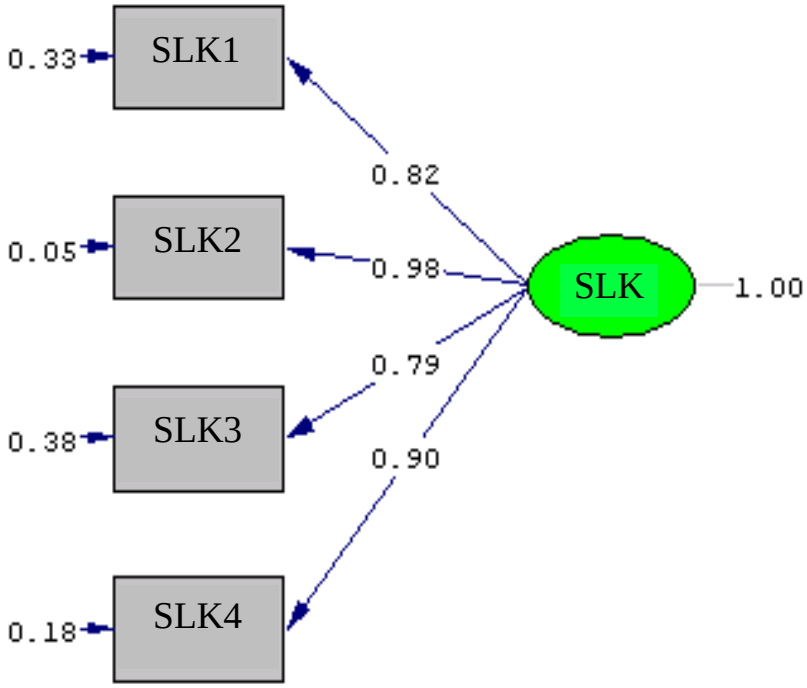
Chi-Square=43.54, df=5, P-value=0.00000, RMSEA=0.172

8.10.9. Future Export Performance



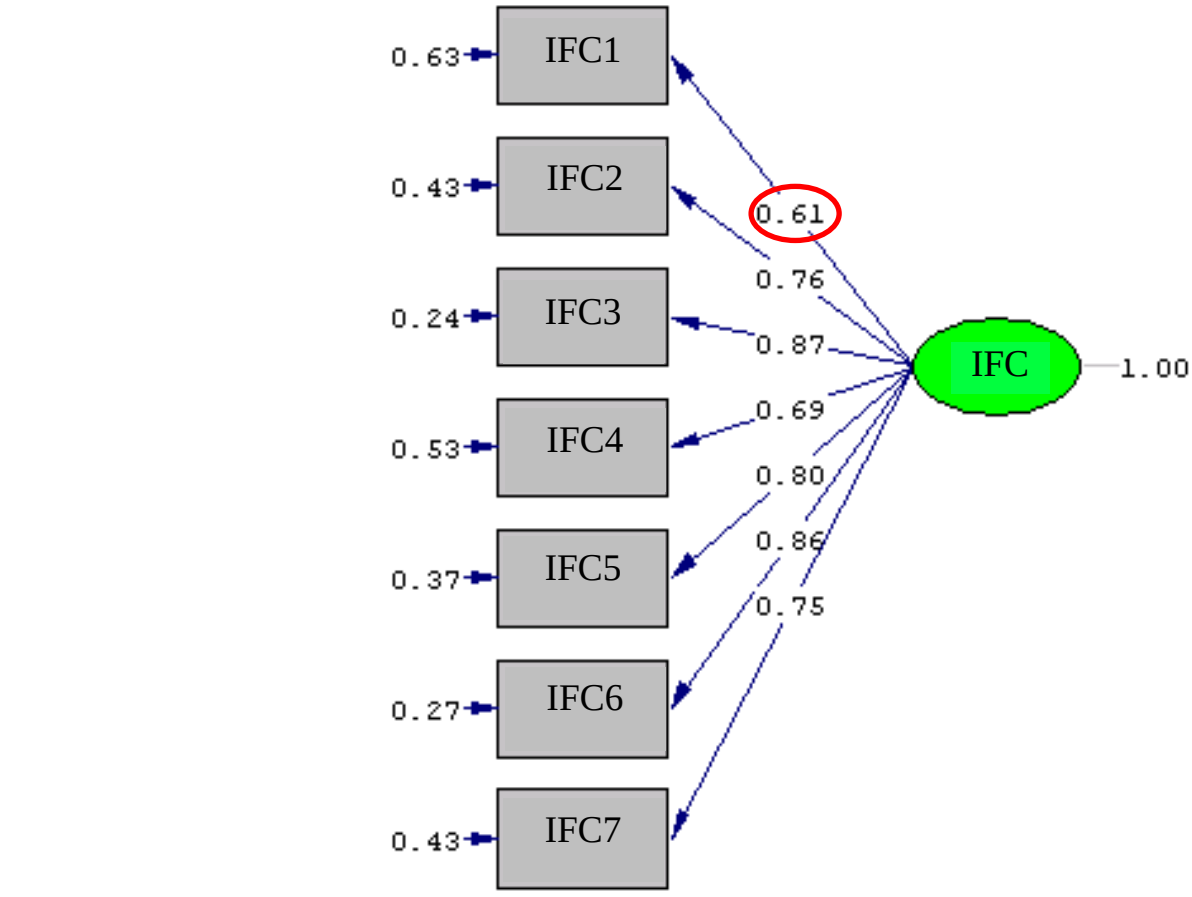
Chi-Square=195.81, df=2, P-value=0.00000, RMSEA=0.610

8.10.10. Slack Resources



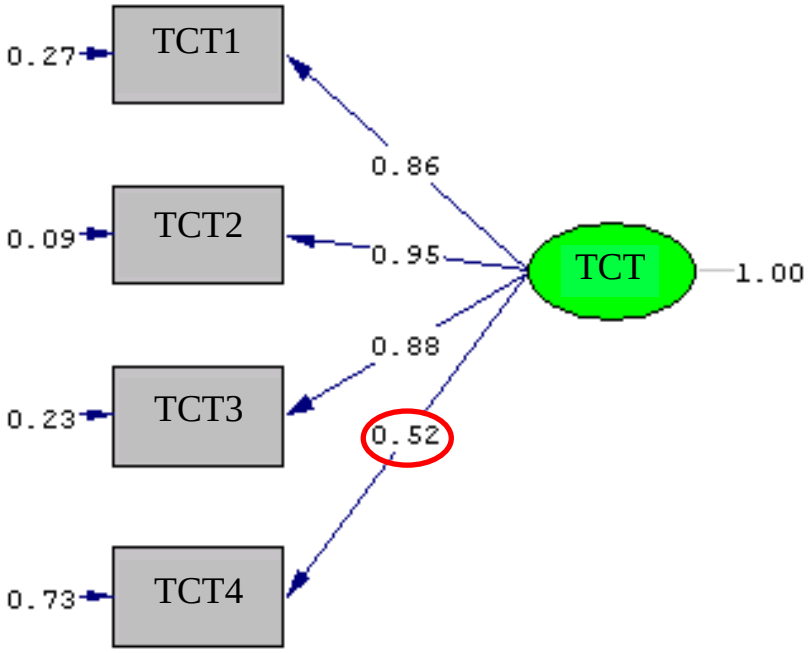
Chi-Square=19.44, df=2, P-value=0.00006, RMSEA=0.183

8.10.11. Interfunctional Coordination



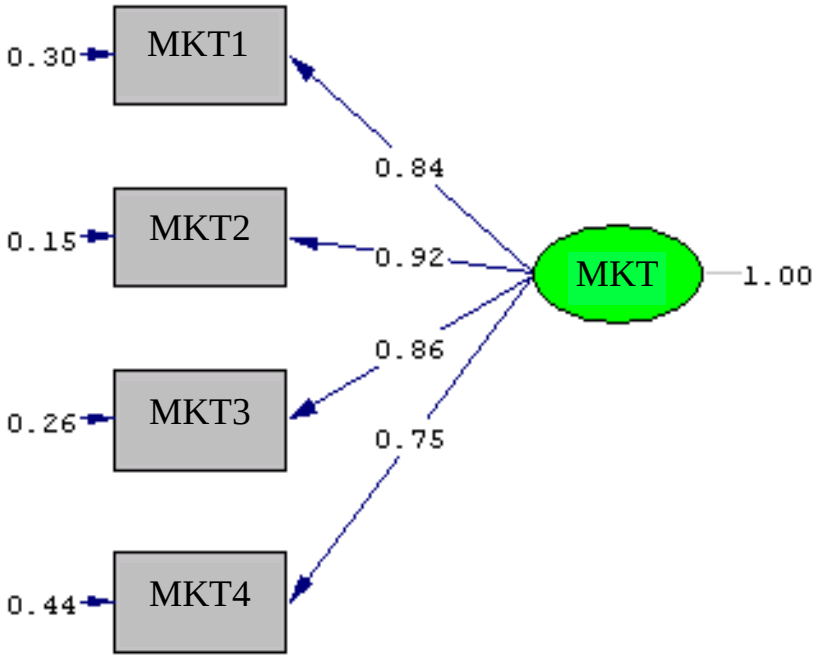
Chi-Square=158.64, df=14, P-value=0.00000, RMSEA=0.199

8.10.12. Technological Turbulence



Chi-Square=9.54, df=2, P-value=0.00848, RMSEA=0.120

8.10.13. Market Turbulence



Chi-Square=20.09, df=2, P-value=0.00004, RMSEA=0.186

8.11. INTERVIEW GUIDE POST DATA COLLECTION INTERVIEWS

1. Explicar a investigação (objectivos)
Bom dia,
Agradeço a sua disponibilidade para esta nova entrevista.
Já apliquei o questionário e procedi à análise de resultados do mesmo. Nesta análise surgiram alguns resultados que gostaria de entender melhor. Julgo que é a pessoa indicada para me ajudar nisto, uma vez que tem conhecimento prático e está mais sensibilizados para estas questões.

2. Procurar autorização
Tem alguma dúvida que gostaria de ver esclarecida antes de prosseguirmos? Está disposto a conversar comigo nestes termos?

3. Pôr o respondente à vontade

4. Garantir o anonimato/confidencialidade
Mais uma vez, garanto-lhe o anonimato, pelo que ninguém irá saber que foi você a responder. O conteúdo da conversa não será usado para outros fins ou conhecido por outras pessoas.

5. Gravar/escrever informação
Importa-se que tire algumas notas e grave a reunião, para meu acompanhamento da conversa?

6. Explicar como a entrevista irá processar-se:
Se concordar, penso em fazer-lhe algumas perguntas. Na análise dos questionários surgiram alguns resultados que gostaria de entender melhor.

a. **Um deles tem a ver com a informação que recolhem e disseminam sobre os actuais e potenciais concorrentes.**
    i. **Esta não parece ser usada para desenvolver as capacidades de desenvolvimento de produtos totalmente novos. Pode falar um pouco sobre porque acha que isso acontece?**
    ii. **Esta não parece ser usada para desenvolver as capacidades para ir para novos mercados e desenvolver relacionamentos com novos clientes e distribuidores. Pode falar um pouco sobre porque acha que isso acontece?**
b. **A ida para mercados totalmente novos parece influenciar de forma negativa o desempenho actual da empresa. Pode falar um pouco sobre porque acha que isso acontece?**
c. **O reforço da presença nos mercados actuais e de relações existentes com clientes e distribuidores parece influenciar de forma positiva o desempenho antecipado (futuro) da empresa. Pode falar um pouco sobre porque acha que isso acontece?**

7. Agradecer o tempo dispendido