ANTECEDENTS OF DYNAMIC CAPABILITIES: THE ROLE OF ENTREPRENEURIAL ORIENTATION AND INTELLECTUAL CAPITAL

by

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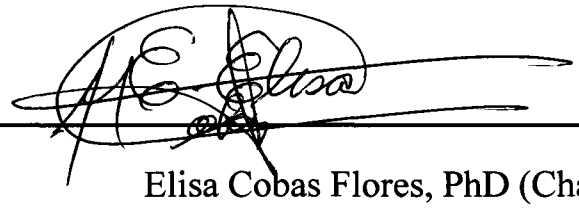

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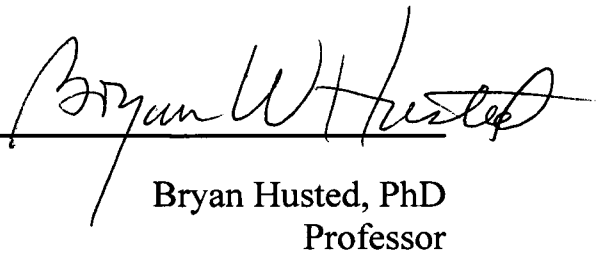

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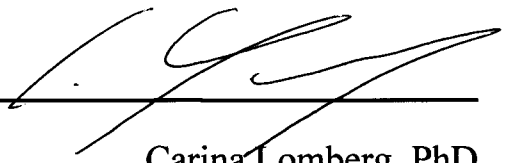

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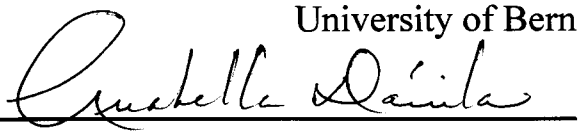

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SUMMARY

This dissertation attempts to contribute to our understanding of the antecedents of dynamic capabilities that are entrepreneurial in nature by exploring the interaction of entrepreneurial orientation and intellectual capital.

Chapter 1 of this dissertation serves to introduce and synthesize major themes, objectives and contributions. In Chapter 2, I review the literature derived from the resource based view of the firm and dynamic capabilities. The first theoretical perspective is succinctly addressed to argue the importance of resources in the development of dynamic capabilities. The second one is thoroughly examined in order to summarize the purpose and usage of dynamic capabilities. Besides, a detailed categorization of dynamic capabilities' antecedents considering different levels of analysis is presented.

Chapter 3 has two parts. In the first part I focus on the dimensions of the constructs under study. The dimensions of intellectual capital are: human capital, social capital and organizational capital; meanwhile, the dimensions of entrepreneurial orientation are: innovativeness, proactiveness and risk-taking. In addition, integrative capabilities – a particular type of dynamic capabilities – are called so since they integrate the processes of perceiving and capitalizing an opportunity. In the second part, I develop the rationale for each hypothesis included in the conceptual framework. The first hypothesis argues a positive relationship between intellectual capital and integrative capabilities. Also, positive relationships are stated between human capital, social capital, organizational capital and integrative capabilities respectively. The last hypothesis refers to the moderating effect that entrepreneurial orientation has on the intellectual capital-integrative capabilities relationship.

In Chapter 4 I address methodological issues. This dissertation is framed under the quantitative paradigm and data for statistics are collected through surveys carried on in small, medium and large enterprises in Mexico and Ecuador. The final sample has 92 enterprises from Ecuador and 108 enterprises from Mexico. Furthermore, 80% of the total sample has two responses; one belongs to the CEO and the other one to a second level manager.

Chapter 5 presents the empirical results using two approaches. The first approach relies on regressions using SPSS while the second approach relies on Structural Equation Modeling (SEM) using AMOS. Results using both statistical techniques are consistent and show robustness. All hypotheses, except the one that argues for a positive effect of human capital on integrative capabilities, are supported as predicted. Finally, this dissertation concludes with Chapter 6 that discusses the main findings, outlines implications for managers and policy makers, details some limitations of the study and provides some new avenues for future research.

To Ecuador, my country, the land that I love and

I want to see prosperous…

To all young Ecuadorians, as a testimony that discipline and

courage can reach the highest goals…

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CHAPTER 1

INTRODUCTION AND RESEARCH OBJECTIVES

1.1 Introduction

Dynamic capabilities contribute to building new competences, respond to environmental changes and enhance competitive advantage (Teece, Pisano and Shuen, 1997). Furthermore, according to Teece (2007) if an organization pursues strong dynamic capabilities it should be intensely entrepreneurial. Being entrepreneurial refers to the field of entrepreneurship that pursues the understanding of opportunities' emergence (Venkatarman, 1997). A recent bibliographic study reveals that entrepreneurship has been rarely considered in the dynamic capabilities research (Di Stefano, Peteraf and Verona, 2010). Besides, little empirical investigation deals with specific antecedents or the microfoundations that develop particular dynamic capabilities (Teece, 2007; Winter, in press).

In that sense, research regarding dynamic capabilities that considers entrepreneurship and also indentifies capabilities' antecedents becomes critical. On one hand, entrepreneurship is relevant since dynamic capabilities affect firm evolution through endogenous entrepreneurship (Newey and Zahra, 2009). Moreover, strong dynamic capabilities that leverage on the entrepreneurial view can achieve supernormal returns (Katkalo, Pitelis and Teece, 2010: 1178; Teece 2007). On the other hand, dynamic capabilities' antecedents need to be examined to undercover their evolutionary fitness (Helfat et al., 2007), and also as an emerging concept becomes important to incorporate its antecedents (Wang and Ahmed, 2007). Furthermore, the relevance of taking into account the antecedents also contributes to aid in theory construction (Corbett, Neck and Laverty, 2011).

Derived from the entrepreneurship field, this research addresses entrepreneurial orientation since it is a construct which has gained legitimacy and became a key in the entrepreneurship literature (George, 2011), or a central component of entrepreneurship (Slevin and Terjesen, 2011). In regard to specific antecedents, organizational resources have been established as one of the common antecedents in seminal papers' underlying logic (Helfat and Peteraf, 2009). In consequence, this investigation leverages on intellectual capital as particular intangible resources that might develop dynamic capabilities (Kim and Mahoney, 2010). Thus, this dissertation attempts to shed light on the dynamic capabilities development examining empirically the role of entrepreneurial orientation and leveraging on intellectual capital as a crucial organizational antecedent.

Scholars have argued that dynamic capabilities' outcomes are related to performance (Drnevich and Kriauciunas, 2011; Teece et al., 1997; Zollo and Winter, 2002), economic returns (Chatain, 2011) and economic profits (Makadok, 2001). Additionally, recent research mentions that for deploying value creation strategies the implementation of capabilities is required (Ambrosini, Bowman and Schoenberg, 2011). As a result, the relevance of dynamic capabilities has been acknowledged and triggered the fundamental question of how such capabilities emerge or what are its antecedents. Hence, this issue is important to further understand the processes through which firms create competitive advantage. Accordingly, the literature has dealt with this questions and two debates currently refer to the effect that entrepreneurship has upon dynamic capabilities (Zahra, Sapienza and Davidsson, 2006) and the central role that resources play to develop dynamic capabilities (Eisenhardt and Martin, 2000; Zahra and George, 2002), and consequently should be identified and acquired for this purpose.

This study propones that intellectual capital is a specific organizational resource that may contribute to the development of a concrete type of dynamic capabilities such as integrative capabilities (Liao, Kickul and Ma, 2009) which emphasizes the opportunity sensing and seizing characteristics of a dynamic capability (Teece, 2007). This argument attempts to answer the concern that little is known about the black box role of explicit resources affecting particular dynamic capabilities (Sirmon, Hitt and Ireland, 2007). In addition, it is argued that the effect of entrepreneurial orientation understood as a "general or lasting direction of thought, inclination, or interest pertaining to entrepreneurship" (Covin and Lumpkin, 2011: 857) has been understudied. Therefore, this investigation proposes a theoretical model formed by three constructs: integrative capabilities as the criterion variable and intellectual capital and entrepreneurial orientation as predictor variables.

External and internal integrative capabilities are a representation of dynamic capabilities and their aim is to put specific resources and capabilities into a productive use through the combination of opportunity-recognizing and opportunity-capitalizing processes (Liao et al., 2009). In other words, when referring to external integrative capabilities the emphasis is on opportunity recognition; whereas, when referring to internal integrative capabilities the emphasis is on how such opportunity is capitalized in the organization (Liao et al., 2009). Furthermore, these capabilities are called integrative because they integrate the process of perceiving an opportunity and the process of taking a course of action that brings opportunities into use which is also in line with Teece's (2007) argument that dynamic capabilities should sense and seize opportunities.

According to Grant (1996) knowledge is the most important and significant resource of an organization. Moreover, prior knowledge contributes in an important manner to discover

opportunities (Venkatarman, 1997) or entrepreneurial opportunities (Shane, 2000). Since integrative capabilities deal with recognizing and capitalizing opportunities, intellectual capital may be a key antecedent of such capabilities since it refers to knowledge from different perspectives (Subramaniam and Yound, 2005; Youndt, Subramaniam and Snell, 2004) and also considers additional core resources due to its composition of social, human and organizational capital.

On the other hand, researchers have noted that firms that pursue dynamic capabilities are guided by an entrepreneurial logic (Newey and Zahra, 2009). Furthermore, dynamic capabilities may be developed if firms are intensely entrepreneurial or undertake entrepreneurial activities in first place (Teece, 2007: 1319; Zahra et al., 2006). As a result, since entrepreneurship is an intrinsic characteristic of developed dynamic capabilities, it is argued that an organization's orientation towards entrepreneurship must exist beforehand. Thus, what will lead an organization to develop such capabilities is a mindset that may put the organization in the path to do so. In other words, previous to the achievement of any action, a vision toward the yearned goal, must take place.

Following the previous argument, entrepreneurial orientation reflects the organizational mindset of future entrepreneurial firms and helps to previously define what it means to be entrepreneurial (Lumpkin, 2011). Furthermore, entrepreneurial orientation is understood as a firm's strategic orientation that captures entrepreneurial aspects that guides decision makers to enact a purpose, sustain a vision and lead to change (Lumpkin and Dess, 1996; Rauch, Wiklund, Lumpkin and Frese, 2009; Voss, Voss and Moorman, 2005). Thus, firms that pursue dynamic capabilities should have an entrepreneurial vision and judgment in advance (Rumelt, 1987).

In sum, this dissertation has several contributions. First, it attempts to empirically add to our understanding about antecedents that develop dynamic capabilities in an emerging context. Second, determine specific resources that have a positive effect on particular dynamic capabilities (intellectual capital and integrative capabilities respectively). Third, provide empirical evidence for the theorized intellectual capital – dynamic capabilities relationship. Fourth, offer a theoretical and empirical contribution by linking the entrepreneurial orientation construct to a current theory of strategic management answering Miller's (2011) call. Furthermore, this dissertation also sheds light expanding the natural relationship between the fields of entrepreneurship and strategic management providing a joint added value (Schendel and Hitt, 2007). Finally, this study provides evidence on the dynamic capabilities area leveraging on information mostly from small and medium enterprises since most research on this topic have been done in large corporations (Zahra et al., 2006).

1.2 Research Objectives

This dissertation proposes a general objective, main objectives and enterprise oriented objectives outlines as follows:

General Objective

Identify antecedents that contribute to the development of dynamic capabilities.

Main objectives

Determine the influence of entrepreneurial orientation as antecedent of dynamic capabilities and establish whether entrepreneurial orientation increases or decreases the development of dynamic capabilities.

Determine the role and impact of intellectual's capital dimensions for developing dynamic capabilities.

Enterprise oriented objectives

Identify the dimensions of intellectual capital that contribute the most in developing dynamic capabilities so that enterprises may create or strengthen them in first place.

Understand the role played by an entrepreneurial orientation in the process of developing dynamic capabilities so that enterprises may put emphasis on its elements to build such organizational mindset.

CHAPTER 2

LITERATURE REVIEW

2.1 The Dynamic Capabilities View and the Resource Based View

This chapter mainly addresses the dynamic capabilities view which is the core theoretical framework that this research builds upon. Dynamic capabilities sometimes has not been acknowledged as a theory (Helfat and Peteraf, 2009) but as a view, perspective or concept; whereas, other authors recognize dynamic capabilities as a theory (e.g. Danneels, 2008; 2010). However, there is no doubt that the dynamic capabilities construct was conceived due to a shortcoming of the resource based theory (RBV) that in pertaining to explain performance difference between firms (Barney, 1991; Peteraf, 1993; Peteraf and Barney, 2003) the theory does not address the aspect of rapidly changing environments which constitutes a central aspect in dynamic capabilities (Teece et al., 1997).

In that sense, for the sake of a better comprehension of the dynamic capabilities view, since it is closely linked (Barney, 2001) or rooted (Helfat and Peteraf, 2009) in the resource based theory, the following paragraphs address in a succinct manner the antecedents, central aspects and particularities of the resource based theory before explaining thoroughly the dynamic capabilities view.

2.2 Antecedents of the Resource Based Theory

Even though Penrose in *The Theory of the Growth of the Firm* is considered the starting point of what developed into the RBV, some years later, Hoskisson, Hitt, Wan and Yiu (1999) mention other relevant work as antecedents and related to this theory. For example, Philip

Selznick's (1957) insight that an organization is a "distinctive competence" is related to the resource theory. Moreover, Alfred Chandler's (1962) argument that "structure follows strategy" leads to identify distinctive competences. In addition, Igor Ansoff's (1965) definition of synergy as "one internally generated by a combination of capabilities and competences" is also linked to RBV.

To date, the RBV is one of the most influential and cited theories in management aspiring to explain how internal resources enhance sustained competitive advantage. Furthermore, this theory is an efficiency-based explanation of how some firms achieve performance (Barney, 1991) which is also a central aspect of the dynamic capabilities view (Augier and Teece, 2009; Griffith and Harvey, 2001; Wang and Ahmed, 2007). The RBV objective, as already mentioned, is to achieve competitive advantage which is derived from the so-called VRIN(O) type of resources or capabilities that, in turn, dynamic capabilities attempt to reconfigure (Teece et al., 1997; Eisenhardt and Martin, 2000). Therefore, the next paragraphs address these characteristics.

2.3 Resources and VRIN/O characteristics

Edith Penrose's definition of resources refers to "the physical things a firm buys, leases, or produces for its own use, and the people hired on terms that make them effectively part of the firm" (Penrose, 1959: 67). Years later, Barney (1986; 1991) and Wernerfelt (1984) categorized resources in physical (e.g., equipment, location, physical technology, materials), human (e.g., expertise, experience, relationships), and organizational (e.g., sales force, structure, planning, coordinating systems). However, a refined and wider definition for resources was coined by Barney (1991:101) mentioning that they "include all assets, capabilities, organizational processes, firm attributes, information, and knowledge"

Penrose (1959) argued that firms are a collection of productive resources and emphasized that a result of the resources' heterogeneity gives an organization a unique and particular character. Regarding the heterogeneity[1] aspect, Peteraf (1993) relates this approach to neoclassical economics in order to propose a model for competitive advantage. This model argues that such advantage is related to the combination of *ex-ante* and *ex-post* factors resulting in a difference among organizations based on the resources and capabilities they possess. Furthermore, the concept of imperfect mobility as the notion that such resources and capabilities are not available to all firms in the same circumstances contributes to explaining the aforementioned difference among firms usually expressed in terms of profitability. This theory also assumes that firms are profit-maximizing with boundedly rational managers and accepts that information about resources' value is asymmetrically distributed (Kraaijenbrink, Spender and Groen, 2010).

Valuable Resources: A resource is known as valuable if when it enables the organization to conceive of and implement strategies that improve its efficiency and effectiveness. The main goal, as already mentioned, is firm performance that can be achieved when a strategy exploits opportunities or neutralize threats (Barney, 1991). In other words, a valuable resource creates value for customers or its benefit through better outcomes at the same cost or equal benefit at lower cost (Bensanko, Dranove, Shanley and Schaefer, 2008).

[1] Heterogeneity for Barney (1991, 2001) is a basic assumption in his model for SCA. His definition for heterogeneity is broad and signifies that "strategic resources are distributed unevenly across firms, or that different firms possess different bundles of strategically relevant resources" (Peteraf and Barney, 2003: 317). However, heterogeneity in Peteraf's (1993) framework has a more central position as one of the four cornerstones of SCA and is also a source of rents. In other words, heterogeneity for Peteraf implies that some firms have resources that generate more value than others and "implies that firms of varying capabilities are able to compete in the market place and, at least, breakeven" (Peteraf, 2003: 180). In sum, competitive advantage is a result of Peteraf's nuanced conception of heterogeneity and equally to the product of Barney's notion of more valuable resources among a heterogeneous set (Peteraf and Barney, 2003).

Rare Resources: Since the possession of only valuable resources does not assure competitive advantage because other organization would be able to imitate them, the second step is to assure that such resources are in less than a number of firms needed to generate perfect competition dynamics (Barney, 1991). In other words, rare resources have to be scarce and only in hands of few firms to control it so the competition may be reduced enabling the earning of Ricardians and Schumpeterian rents (Peteraf and Barney, 2003).

Imperfectly Imitable Resources: Barney (1991) indicates that valuable and rare resources give sustainable competitive advantage (SCA) as long as other firms do not have access to such resources. Thus, a further characteristic for resources is that of being imperfectly imitable which means to have three one or a combination of the following reasons. First, unique historical conditions, refers to the ability to acquire and exploit some resources according to their place in time and space. Second, causal ambiguity, when it is not clear that the resources described are the same as those generating a sustained competitive advantage. Third, social complexity, if resources may be very complex social phenomena that takes firms beyond the ability to systematically manage and influence.

Substitutability: If there are strategically equivalent firm resources it implies that other organizations with similar bundle of resources may be able to undertake the same strategies in a different way (Barney, 1991). Strategic substitutability or resources is always a matter of degree and in simple terms this final requirement of VRIN is when a resource is difficult to substitute or trade otherwise other firms will acquire them and offer the same value.

As any other theory, the RBV has criticisms that have been thoroughly explained (c.f. Kraaijenbrink et al., 2010). However, some relevant aspects are that RBV was never intended to

provide managerial implications (Barney, 2005) and that the concern regarding that sustained competitive advantage is not achievable, the insight is that such advantage can be sustained only at the dynamic level which refer to dynamic capabilities.

Finally, the RBV has also been the root for analysis addressing core competences (Hamel and Prahalad, 1994), the knowledge-based view of the firm (Grant, 1996), a wide range of phenomena such as information systems and organizational networks (Kraaijenbrink, et al., 2010) and the dynamic capabilities view (Teece et al. 1997) which is of specific concern in this research and is addressed in the next section.

2.4 Dynamic Capabilities View

The RBV was conceived as a theory that explains differences in performance among firms without considering major environmental changes that failure to consider them can have a negative impact on performance (Audia, Locke and Smith, 2000). In other words, RBV has not adequately explained how and why some organizations achieved competitive advantage in situations of rapid and unpredictable change (Eisenhardt and Martin, 2000). Thus, the dynamic capabilities view is conceived and considered for some scholars as an extension of the RBV in order to understand strategic change (Teece et al., 1997) by looking at how capabilities are influenced by market dynamism (Eisenhardt and Martin, 2000) or increasingly demanding environments (Teece et al., 1997). In simple words, the dynamic capabilities view attempts to overcome the essentially static nature of that RBV and its derived shortcomings in appropriately explaining organization's competitive advantage in changing markets (Priem and Butler, 2001).

The dynamic capabilities approach since its seminal paper written by Teece and colleagues in 1997 has had an active and increasing interest in researchers. The growing

literature around this framework has provided a vast number of definitions for dynamic capabilities that it has even produced some confusion that may hinder an effective progress in the field (Barreto, 2010). However, as Williamson states (1999: 1094) "big ideas often take a long time to take on a definition" brings up a challenge for future research.

This investigation has acknowledged the importance of developing dynamic capabilities in firms but aims to better understand the factors that bring about such capabilities. That is, one of the central points is to address the antecedents of dynamic capabilities in order to gain a deeper comprehension in regard to the factors that influence the dynamic capabilities' origins. As a first attempt to tackle this goal, Table 1 summarizes a select group of definitions granted to dynamic capabilities by several researchers in order to further analyze from the definition stand point what antecedents could be derived.

Author	*Definition of Dynamic Capabilities*
Teece and Pisano, 1994	Dynamic capabilities are the subset of the competences/capabilities which allow the firm to create new products and processes, and respond to changing market circumstances. *Core argument in relation to path, processes and position.*
Teece, Pisano and Shuen, 1997*	The firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments.
Eisenhardt and Martin, 2000	The firm's processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match or even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resources configurations as market emerge, collide, split, evolve and die.
Teece, 2000	The ability to sense and then seize opportunities quickly and proficiently
Griffith and Harvey, 2001	A global dynamic capability is the creation of difficult-to-imitate combinations of resources, including effective coordination of inter- organizational relationships, on a global basis that can provide a firm a competitive advantage.
Lee, Lee and Rho, 2002	A newer source of competitive advantage in conceptualizing how firms are able to cope with environmental changes.
Rindova and Taylor, 2002	Dynamic capabilities evolve at two levels: a micro-evolution through 'upgrading the management capabilities of the firm' and a macro-evolution associated with 'reconfiguring market competencies'.
Zahra and George, 2002	Dynamic capabilities are essentially change-oriented capabilities that help firms redeploy and reconfigure their resource base to meet evolving customer demands and competitor strategies.
Zollo and Winter, 2002	A dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness.
Winter, 2003	Those that operate to extend, modify or create ordinary (substantive) capabilities.
Zahra, Sapienza and Davidsoon, 2006	The abilities to reconfigure a firm's resources and routines in the manner envisioned and deemed appropriate by its principal decision-maker(s).
Helfat et al., 2007	A dynamic capability is the capacity of an organization to purposefully create, extend, or modify its resource base
Teece, 2007	The microfoundations of dynamic capabilities are —the distinct skills, processes, procedures, organizational structures, decision rules, and disciplines— Dynamic capabilities can be disaggregated into the capacity (a) to sense and shape opportunities and threats, (b) to seize opportunities, and (c) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets.
Wang and Ahmed, 2007	We define dynamic capabilities as a firm's behavioral orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage.
Augier and Teece 2007; 2009	The ability to sense and then seize new opportunities, and to reconfigure and protect knowledge assets, competencies, and complementary assets with the aim of achieving a sustained competitive advantage.
Mulders, Berends, and Romme, 2010	Dynamic capability is a capability that conveys deliberate knowledge, invoked on a repeated basis, on how to question purpose and effectiveness of routines; this deliberate knowledge serves to generate and modify these operating routines and processes to address changing environments and/or create market change
Barreto, 2010	A dynamic capability is the firm's potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base.

*Seminal Definition

Table 1. Definitions of Dynamic Capabilities

Leveraging on the core definitions of dynamic capabilities, Table 2 highlights what dynamic capabilities do and what dynamic capabilities are for. The purpose of this table is to further emphasize and also summarize two aspects that give relevance and become fundamental reasons for doing research in this domain. Furthermore, from the practitioners' perspective this summary attempts to trigger interest in managers in regard to the importance of developing dynamic capabilities in order to achieve sustained competitive advantage.

What do dynamic capabilities do?	*What are dynamic capabilities for?*
• Create new products and processes	• Respond to changing market circumstances / dynamic markets
• Reconfigure competences	• Cope with environmental change
• Sense and seize opportunities/threats	• Match and create market change
• Create difficult to imitate resources	• Achieve new resources
• Redeploy the resource-base	• Competitive advantage
• Generates and modify routines and processes	• Meet customer demands and competitors strategies
• Extend, create or modify ordinary capabilities	• Improved effectiveness
• Reconfigure tangible or intangible resources and routines	• Maintain competitiveness
• Upgrade and reconstruct core capabilities	• Sustained competitive advantage
• Conveys knowledge	• Make market-oriented decisions
• Solve problems	

Table 2. What Dynamic Capabilities do and What they are for

In Table 3, core antecedents that contribute in the development of dynamic capabilities are remarked. The following antecedents are drawn from main definitions of this construct and each one of them may contribute to the development of dynamic capabilities.

Antecedents of Dynamic Capabilities
• Resources (tangible and intangible)
• Competences
• Opportunities
• Positions
• Paths
• Organizational processes
• Routines
• Ordinary capabilities

Table 3. Antecedents of Dynamic Capabilities According to main Definitions

2.5 Dynamic Capabilities Antecedents

A summary of some cornerstone antecedents inferred from the main conceptualizations of dynamic capabilities are presented in Table 3. However, over the years, more detailed research has mentioned other aspects as potential antecedents that are classified taking into account the environmental, organizational and individual levels due to the multilevel nature of dynamic capabilities formation (Zahra et al., 2006). Relevant antecedents from the three level of analysis are presented as follows in order to better complement the range of antecedents for developing dynamic capabilities.

According to Wand and Ahmed (2007) within environmental antecedents the role of market dynamism becomes significant while Sapienza (2006) accounts for internationalization as an origin of dynamic capabilities. Furthermore, Dunning and Lundan (2010) mention that the development of dynamic capabilities is institutionally contingent where new routines may influence the structure of industries and future capabilities.

Focusing from the organizational level Zollo and Winter (2002) proposed certain learning mechanisms (such as organizational routines related to experience accumulation, knowledge articulation and knowledge codification) and deliberative investments in organizational structure

and systems as antecedents of dynamic capabilities. Eisenhardt and Martin (2000) argued that loosely structured organizations benefit as antecedents as well as a decentralized organization (Teece et al., 1997; Teece, 2007). Social capital has also been theorized as a necessary but not sufficient component since it enables dynamic capabilities (Blyler and Coff, 2003). Furthermore, Winter (2003) implicitly states routinization of work as a condition for establishing dynamic capabilities; whereas, Wheeler (2002) leverages on the former argument and additions a communication processes as a main constituent in the development of dynamic capabilities. In addition, organizational design characteristics also influence on the formation of dynamic capabilities (McInerney, 2011)

Regarding the individual level, it is important to bring to mind that capabilities leverage on individual skills (Abell, Felin and Foss, 2008; Felin and Foss; 2009) or superior matching of employees skills (Kor and Mahoney, 2005). According to Zollo and Winter (2002) cognitive processes act as antecedents of dynamic capabilities. In that vein, three distinct cognitive scripts are the foundation for dynamic managerial capabilities (Corbett, Neck and Laverty, 2011) while (Zamora-Matute, 2011) also argued that arrangement, willingness and ability scripts are antecedents of dynamic capabilities in conjunction the organization's social capital. Furthermore, Bingham, Eisenhardt and Furr (2007) showed that organizational heuristics are at the heart of high performing organizational processes which are central to firm capabilities as well as managerial cognition (Danneels, 2010; Tripsas and Gavetti, 2000). On the other hand, Arthurs and Busenitz (2005) point the venture capitalist as a catalyst in bringing about dynamic capabilities beyond the capital they may provide. In sum, as Felin and Hesterly (2007) mentioned, dynamic capabilities requires the analysis of the individual as the fundamental component of every firm.

Table 4 shows more antecedents of dynamic capabilities considering different level of analysis as follows:

Environmental	***Organizational***	***Individual***
Internationalization	Organizational design	Cognitive processes
Institutionally contingent	Communication processes	Cognitive scripts
Market dynamism	Social capital	Heuristics
	Decentralized organization	Venture capitalists
	Investment (structure and systems)	
	Learning mechanisms	

Table 4. Antecedents of Dynamic Capabilities Considering Levels of Analysis

2.6 Dynamic Capabilities in General Perspective

Dynamic capabilities reflect the organization‘s capacity to achieve new and innovative forms of competitive advantage. These capabilities are the ―firm‘s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments‖ (Teece et al., 1997: 516). Besides the seminal definition, two relevant approaches that define dynamic capabilities consider perspectives that impact aspects both outside and inside the organization. According to Eisenhardt and Martin (2000) dynamic capabilities use the reconfiguration of resources to match and even create market change (outside perspective); meanwhile, Zollo and Winter (2002) argue that dynamic capabilities aim at generating and modifying the organization‘s operating routines (staff and line activities) to seek improved effectiveness (inside perspective).

Dynamic capabilities are made of knowledge absorption (Verona & Ravasi, 2003), manifested through the leveraging of external networks (Eisenhardt & Martin, 2000; Teece et al., 1997) and facilitates its ability to adapt to change through innovation (Hill & Rothaermel, 2003). Besides, dynamic capabilities deal with mechanisms for change (Easterby-Smith, Lyles and Peteraf, 2009) which are necessary to innovate as exemplified by Danneels (2002) in the process

of product innovation. Additionally, dynamic capabilities have been analyzed to the point of trying to reveal its micro foundations –disaggregating them into components- in the quest for sustainable performance for the organization (Teece, 2007).

In short, dynamic capabilities are those processes that reconfigure the resource base of the venture to attain competitive advantage. These capabilities are developed and built from organizational routines that support experience accumulation, knowledge articulation, and knowledge codification (Macher and Mowery, 2009).

CHAPTER 3

THEORETICAL MODEL

This chapter will first address the main definition and dimensions (if applicable) of the three main constructs that this thesis deals with. Secondly, the theoretical model development regarding the relationships among constructs in order to derive the hypotheses.

3.1 Entrepreneurial Orientation

Entrepreneurial orientation refers to a firm's strategic orientation, capturing specific entrepreneurial aspects of decision-making styles, methods, and practices (Lumpkin and Dess, 1996). According to Rauch et al. (2009) entrepreneurial orientation is the entrepreneurial strategy-making processes that key decision makers use to enact their firm's organizational purpose, sustain its vision, and create competitive advantage. Furthermore, drawing from the dimensions given to entrepreneurial orientation, this construct consists of processes, structures, and/or behaviors that can be described as aggressive, innovative, proactive, risk taking, or autonomy seeking (Lyon, Lumpkin and Dess, 2000).

In this research, three seminal dimensions of entrepreneurial orientation (innovativeness, risk-taking and proactivenness) are addressed. This decision is made based on the meta-analysis results by Rauch et al. (2009) where the most commonly employed measure is the Miller/Covin and Slevin (1989) scale such scale only considers the three aforementioned dimensions. Furthermore, the scale has also gone under careful scrutiny in several empirical investigations (c.f. Covin and Wales, 2011). The argument to exclude two dimensions of entrepreneurial orientation (not considering the five dimensions proposed by Lumpkin and Dess) such as competitive aggressiveness and autonomy is due to the concern that these two particular

dimensions "may be less valid in certain cultural contexts" (Rauch et al., 2009; 779). Further concerns regarding aggressiveness is that this dimensions deals more with start-ups (this research will consider SMEs) and autonomy refers more to the individual or team level of analysis; whereas, the three main dimensions address the firm level (Frishammar and Horte, 2007) which is the level of analysis of this research.

Another important issue to take into account is that entrepreneurial orientation has been conceptualized as a reflective second order model or as a formative second order model. This research will draw from the reflective paradigm following the argument that even though the measurement model employed in various studies refers to the scale as a formative measure it is not (Covin and Wales, 2011: 2; George and Marino 2011). A reflective model implies that the structural paths go from entrepreneurial orientation to the dimensions implying that meaning emanates from entrepreneurial orientation to the dimensions and that variations in such dimensions are the result of variation in entrepreneurial orientation (c.f. George, 2011). In the next paragraphs, the dimensions of entrepreneurial orientation are explained.

3.1.1 Dimensions of Entrepreneurial Orientation

Innovativeness: Refers to attempts to embrace creativity, experimentation, novelty, technological leadership in both products and processes. It is a tendency to support new ideas and departs from established practices and technologies (Wiklund and Shepherd, 2003).

Proactiveness: Relates to forward-looking and first mover advantage-seeking efforts to shape the environment ahead of the competition. It is a posture of anticipating and acting on future wants and needs in the marketplace (Wiklund and Shepherd, 2003).

Risk-taking: Relates to the willingness to commit large amount of resources. In other words, it consists of activities such as borrowing heavily or committing a high percentage of resources to projects with uncertain outcomes, and entering unknown markets (Wiklund and Shepherd, 2003).

3.2 Intellectual Capital

Intellectual capital in a broad sense was defined by Nahapiet and Ghoshal (1998) to the knowledge and knowing capability of a social collectivity, such as an organization, intellectual community or professional practice. However, Youndt, Subramaniam and Snell (2004) conceptualized this construct as knowledge resources that an organization uses in order to achieve competitive advantage. In that vein, intellectual capital started to be analyzed from different perspectives such as on organization's ability to utilize its knowledge resources (Subramaniam and Youndt, 2005: 450), or in simple words as the firm's current knowledge stocks (Kang and Snell, 2009).

3.2.1 Dimensions of Intellectual Capital

Intellectual capital is also composed of three sub-dimensions including human, organizational, and social capital (Subramaniam and Youndt, 2005), which are defined as follows.

Human capital: Refers to the employee's knowledge, skills, and abilities residing with and utilized by them (Becker, 1964; Schultz, 1961; Youndt et al., 2004).

S*ocial Capital*: Resides neither at the individual nor the organizational level. Social capital should be understood as an intermediary form of intellectual capital consisting of knowledge in groups and networks of people (Nahapiet and Ghoshal, 1998). Furthermore, Burt (1992) argues that social capital is the knowledge resources embedded in a network of relationships which are not necessarily limited to internal knowledge exchanges. This can be founded among employees mainly but not to discard linkages with external actor as customers, suppliers, among others (Yount et al., 2004).

Organizational capital: Represents institutionalized knowledge and codifies experience stored in databases, routines, patents, manuals and structures (Hall, 1992; Walsh and Ungson, 1991). In essence, organizational capital is said to be the knowledge, skills, and information that stays for the organization when its employees leave temporarily or permanently the firm (Youndt et al., 2004).

3.3 Integrative Capabilities

External and internal integrative capabilities are a representation of dynamic capabilities (Liao et al., 2009). These capabilities are integrative because they focus on scanning the external environment in order to recognize opportunities and also focus on the internal endowment of organizational resources in order to align and match them with the recognized opportunities. According to Liao et al. (2009) when referring to external integrative capabilities the emphasis is on opportunity recognition; whereas, when referring to internal integrative capabilities the emphasis is on how such opportunity is capitalized in the organization. In other words, these capabilities are called integrative because they integrate the process of perceiving an opportunity

and the process of taking a course of action that brings opportunities into use which is also in line with Teece's (2007) argument that dynamic capabilities should sense and seize opportunities.

3.4 Theoretical Model Development

Dynamic capabilities reflect a capacity to orchestrate activities and resources (Katkalo et al. 2010) and also involve the deployment of such resources (Ethiraj, Kale, Krishnan and Singh, 2005). Furthermore, the dynamic capabilities approach considers organizational processes in which the firm brings together resources (Kim and Mahoney, 2010). However, a question that remains under researched relates to what kind of resources is needed for developing particular dynamic capabilities?

As already mentioned, a representation of dynamic capabilities is integrative capabilities because the latter integrate the processes of recognizing opportunities and the process of taking a course of action to capitalize those opportunities (Liao et al., 2009). In the opportunity recognition phase, elements such as prior knowledge (Shane, 2000), alertness or creativity (Kirzner, 1999), personality traits and social networks (Ardichvili, Cardozo and Ray, 2003) and transaction costs and property rights (Foss and Foss, 2008) have been acknowledged to enhance this process. Hence, out of these and other possibilities, this dissertation will follow the line of logic derived from the knowledge based view (KBV) that highlights the role of knowledge. In other words, the central argument in order to pursue the recognizing and also the capitalizing of opportunities may be carried on best if the processes are founded and rely on knowledge. In addition, this reasoning is followed since the resource based view constitutes a main theoretical perspective in this research where KBV is considered a branch of RBV.

More in detail, this approach contributes to tackle the lately raised question looking at a perspective that emphasizes the relevance of knowledge -and to what is founded in it- as a critical resource. In that sense, Penrose (1959) argued that firms are a repository of knowledge and learning is central for firm growth while Grant (1996) highlights knowledge as the most significant resource in an organization. Additionally, some scholars have recently favored the idea of firms as knowledge-creating entities where a firm endogenously generates its opportunity set (Augier and Teece, 2009). Therefore, leveraging on knowledge and the way it is applied, becomes crucial in recognizing opportunities (Yu, 2001).

To develop integrative capabilities knowledge becomes paramount since opportunities are discovered only if these are related to someone's prior knowledge (Venkatarman, 1997), and firms may produce important results if the capitalization is on knowledge assets as evidenced at a telecommunication industry leader (Massey, Montoya-Weiss and O'Driscoll, 2002). Consequently, an organization that leverages intellectual capital, where knowledge is a central axis of its dimensions (Youndt, Subramaniam and Snell, 2004) a sustained relationship among intellectual capital and integrative capabilities may take place. In a similar vein, Kim and Mahoney (2010) mention that capabilities might be developed when implementing intangible resources such as intellectual capital in an organization.

In sum, Figure 1 shows the general concept of how dynamic capabilities are anteceded by resources and how this paper argues for a concrete kind of resources (intellectual capital) in order to develop a particular type of dynamic capabilities (integrative capabilities).

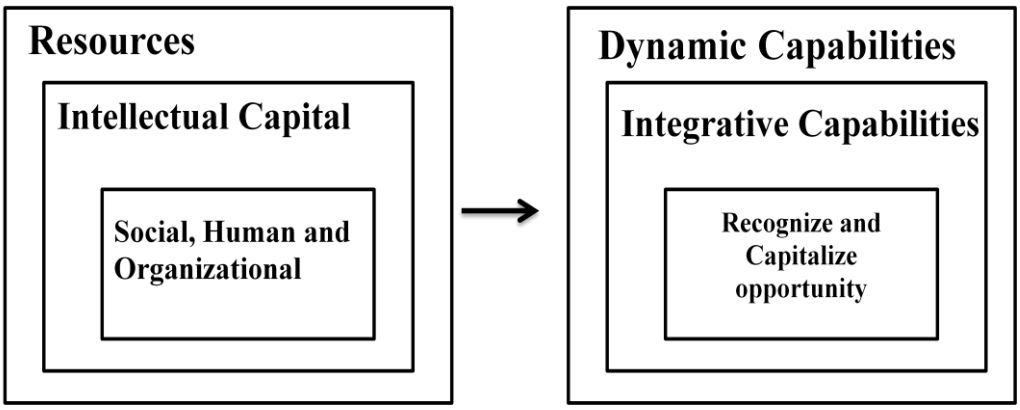

Figure 1. Disaggregated Resources – Dynamic Capabilities Relationship

Therefore, the hypothesis that is drawn from the aforementioned arguments is presented as follows:

> *Hypothesis 1: Intellectual capital has a positive influence on the development of integrative capabilities.*

In the next paragraphs, the arguments of how each intellectual capital's dimensions (human capital, social capital and organizational capital) influence the development of integrative capabilities are addressed.

Human Capital

Coff and Kryscynsky (2011) state that there is little doubt that human capital is critical for developing capabilities. If an organization pursues capabilities to make a difference with its competence, it sounds logical that this resource becomes relevant since human capital is the most difficult category of resources to imitate in firms (Fung and Chen, 2010).

Human capital deals with employee's knowledge, skills and abilities. Dimov and Shepherd (2005) point out the influence of human capital on opportunity recognition which is a characteristic of an integrative capability that is entrepreneurial in nature. Moreover, from the individual perspective, the entrepreneur's human capital conduces to identify a greater number of opportunities (Ucbasaran, Westhead and Wright, 2008). Also, human capital may allow to screen opportunities and select those that should be pursued and reject those less viable (Ucbasaran et al., 2008). In addition, human capital may contribute to face less uncertainty in regard of the value gained from exploiting an opportunity (Shane and Khurana, 2003).

Knowledge is a characteristic of human capital. Thus, in order to develop integrative capabilities whose first stage pursues the recognition of an opportunity, this attribute is argued as fundamental (Helfat, 1997; Denrell, Fang and Winter, 2003). In that sense, McMullen and Shepherd (2006) proposed that opportunity identification requires the consideration of knowledge which is related to the different stocks of information (Shane, 2000). Furthermore, if knowledge is pushed forward and the firm tries to understand, for instance, knowledge in regard of a customer's problem –and not only employee's knowledge-, this situation leads to identify even more opportunities with an innovative feature (Shepherd and DeTienne, 2005).

On the other hand, the subjectivist theory of entrepreneurship argues that experience and prior knowledge also affect the perceptions of opportunities (Kor, Mahoney and Michael, 2007). For example, a context with more knowledge will generate more entrepreneurial opportunities (Audretsch, Lehmann and Warning, 2005) and vice versa (Audretsch and Keilbach, 2007). It is due to the acquaintance and understanding of a particular subject and its complementary areas of interest that together may trigger several possibilities such as: see new businesses, define

improvement areas, and address different approaches; which constitute an opportunity in all cases.

This derives in another process of integrative capabilities which is the capitalization of opportunities. As a matter of fact, Rosseau (2010) found that joint acquisitions –combination of different sources of knowledge- may allow the parties to complement each other and capitalize on acquisition opportunities that by themselves would not have pursued each party alone. Besides, an important task in an organization is to find a way to help itself to capitalize on their inherent knowledge (Hansen and von Oetinger, 2001).

In the process of creating dynamic capabilities Kor and Mahoney (2005) found that a superior matching of someone's knowledge and skills (characteristics of human capital) to R&D projects and teams are important. Further, knowledge and learning are closely linked and the latter is another important parameter for establishing dynamic capabilities (Wu, Lin and Hsu, 2007; Zollo and Winter, 2002). In that sense, double-loop learning fosters the organization's sensing of opportunities within its environment (Argyris and Schon, 1996). As a result, abilities also play an important role to enhance deeper learning which in turn contributes in the developing process of integrative capabilities.

From another perspective of human capital, the firm's paths to develop new capabilities are highly dependent on the personnel's cognitive endowments (Narayanan, Colwell and Douglas, 2009), and exploring the cognitive antecedents of capability development contributes to dynamic managerial capabilities (Corbett et al., 2011) and dynamic capabilities (Zamora-Matute, 2011). In addition, superior human capital bears greater cognitive ability to be alert to

opportunities and knowledge to look for opportunities and know how they "look like" (Ucbasaran et al., 2008).

In consequence, human capital may play an important role in developing integrative capabilities hypothesized as follows:

> *Hypothesis 1a: Human capital has a positive influence on the development of integrative capabilities.*

Social Capital

Helfat et al. (2007) explain that dynamic capabilities can be developed internally in an organization; however, they can also be sourced from outside the firm (Ambrosini et al., 2009). Social capital is comprised of internal and external networks that constitute a path to develop new capabilities (Narayanan et al., 2009) since it consists of knowledge in groups and networks of people (Nahapiet and Ghoshal, 1998). Moreover, Blyler and Coff (2003) theorized that social capital, among others, is necessary to develop dynamic capabilities. Therefore, networks become relevant to fulfill the opportunity recognition phase of integrative capabilities concerning the sense of opportunities since entrepreneurial networks provide distinct opportunity horizons (Ellis, 2010).

Social capital – likewise human capital that leverages on knowledge - allows a broad access to information and permits, for example, "…to learn of more opportunities, see them faster and assess their value more broadly" (Moran, 2005: 1133). Furthermore, social capital facilitates access to information which is a critical part of entrepreneurial opportunities (Shane and Venkataraman, 2000), and contributes to enhance the timing, relevance and quality of such information (Adler and Kwon, 2002). In addition, prior research also suggests that social capital

may develop dynamic capabilities (Subramaniam and Youndt, 2005). In that sense, this insight may hold true since social capital could facilitate the acquisition, integration and release of resources. Consequently, social capital may be a crucial source of dynamic capabilities since it also enables resource management (Blyler and Coff, 2003).

A deeper analysis of social capital includes a closer look into ties (networks), trust and solidarity (Kemper, Engelen and Brettel, 2011). Ties benefit access to both information and resources where the former, as argued, enables to identify opportunities (Bhagavatula, Elfrin, van Tiburg and van de Bunt, 2010; Ellis, 2010; Sheng, Zhou and Li, 2011). A tie that is strong or weak (Granovetter, 1983) is useful to reach other people or organization's contacts that could provide novel or complementary information drawn from the environment or within that company. These ties work as "bridges" in order to reach other actors. Thus, if a network increases, the number of contacts augments and they may become a better source of facts or data appropriate to "match the dots" and see new business opportunities or define new ways of taking advantage of an opportunity. In other words, diversity of ties among networks stimulates the creation of structural holes for entrepreneurial opportunities (De Carolis and Saparito, 2006). It has been argued that through networks and ties, external knowledge could be enhanced and it may contribute to either sense or seize opportunities. To exemplify this situation, one aspect of analysis could be seen on outside consultants as key actors while implementing new business models, reward systems and organizational structures (Ko, Kirsch and King, 2005).

As for the phase of capitalizing an opportunity of an integrative capability, social capital could play a main role as well. For example, a key benefit of trust –an element of social capital- is that it gives an environment "in which people feel secure and psychologically safe to make mistakes and offer and receive criticism" Atuahene-Gima and Murray (2007: 7) which

strengthens exploitation of opportunities. Additionally, trust can motive individuals to seek opportunities and later on to act upon them (DeCarolis and Saparito, 2006). When action is undertaken the process of capitalizing an opportunity takes place.

Generally, in regard to strong business networks –an element of social capital- firms may be able to comprehend potential benefits of business partners, discover more opportunities and then enhance entrepreneurial actions (Dess, Pinkham and Yang, 2011). Solidarity, another component of social capital, can be reflected in several cases as collaborative processes. Thus, an opportunity can be exploited –capitalized- once the opportunity is realized through such collaboration processes comprised of investments, assets, systems and actions (Foss and Klein, 2012).

In sum, since dynamic capabilities extend and modify the resource base, social capital can facilitate the acquisition of resources by assuring a flow of information from different sources (Blyler and Coff, 2003). Additionally, complementary resources may also be accessed externally –through social capital's networks- and configured with current resources (Danneels, 2010). As a result, social capital as a dimension of intellectual capital may also have an effect on integrative capabilities development. The hypothesis is argued as follows:

Hypothesis 1b: Social capital has a positive influence on the development of integrative capabilities.

Organizational Capital

Organizational capital refers to institutionalized knowledge usually stored in databases, routines, manuals and routines. Organizational capital can also be seen as formalization

processes that have a positive influence in the dynamic capability formation (MacInerney, 2011; Zollo and Winter, 2002). For example, since organizational capital pursues to codify knowledge, Nayaranan et al. (2009) show evidence of the benefits through an initiative coined as "book of knowledge". This book captures the organization's experiences, problems and solutions which contributed to develop capabilities in the implementation of chemical biology pilot platforms. In other words, institutionalized knowledge can help in capability development since best practices and processes when properly documented may be a foundation to replicate similar or innovated dynamic capabilities in the future. To reproduce a capability such preserved knowledge and mechanisms can be used recurrently (Subramaniam and Youndt, 2005) and it could result appropriate for large enterprises where capabilities need to be replicated in different business areas or geographical locations. On the other hand, for developing new capabilities the referred foundational and codified knowledge results of great value to leverage upon mechanisms or processes that have yielded important outcomes. This situation may become a platform to trigger new combinations for better results reflected in new dynamic capabilities. A further example could be the approach for creating and utilizing keyword-based patents maps (another hallmark of organizational capital) in order to use them in new technology creations (Lee, Yong and Park, 2009). The aforementioned creations are similar to express new innovations into markets which constitute a market disruptiveness dynamic capability (McKelvie and Davidsson, 2009). Thus, the following hypothesis is stated.

> *Hypothesis 1c: Organizational capital has a positive influence on the development of integrative capabilities.*

Entrepreneurial Orientation Moderation Effect

Seminal papers in dynamic capabilities have indicated that resources are necessary for developing dynamic capabilities (Eisenhardt and Martin, 2000; Teece et al., 1997, Teece, 2007). Moreover, organizational resources are a common antecedent in the underlying logic for the development of such capabilities (Helfat and Peteraf, 2009). Hence, this study argues that the first step to develop dynamic capabilities is to define and leverage on specific resources. That is the case of knowledge based resources since they are the most important assets in an organization (Grant, 1996). As a matter of fact, Youndt et al. (2004) mentions that intellectual capital has knowledge as a central axis; therefore, this resource becomes the starting point in the process of developing dynamic capabilities.

On the other hand, nowadays organizations ought to pursue strong dynamic capabilities whose main characteristic is to be intensely entrepreneurial (Teece, 2007). Furthermore, Zahra et al. (2006) argue the importance for dynamic capabilities to undertake entrepreneurial activities and be guided by a proactive entrepreneurial logic (Newey and Zahra, 2009). Thus, entrepreneurship seems to be an intrinsic component for enhancing dynamic capabilities that could become entrepreneurial in nature where frameworks that include entrepreneurship and dynamic capabilities should be pursued (Augier and Teece, 2009). For instance, the aforementioned entrepreneurial characteristic becomes paramount for avoiding a fall behind competitors' capabilities (Wales, Monsen and McKelvie, 2011).

In consequence, this study states that a particular type of dynamic capabilities whose characteristic is to be entrepreneurial is represented by integrative capabilities due to its capacity to integrate the processes of sensing and seizing opportunities (Barreto, 2010; Liao et al., 2009;

Teece, 2000; Teece, 2007). That is, if intellectual capital contributes in the development of dynamic capabilities but organizations strive for the entrepreneurial view reflected on integrative capabilities, entrepreneurial orientation should be considered throughout the process.

Entrepreneurial orientation is argued to have a crucial role in developing integrative capabilities since it may provide the endogenous entrepreneurship needed to become entrepreneurial. Moreover, entrepreneurial orientation can play such role since this construct is closely linked to entrepreneurship, has gained legitimacy in the field (George, 2011), and is also central in the process of how firms operate in order to be entrepreneurial (Wiklund and Shepherd, 2003).

Entrepreneurial orientation has been defined as a firm's strategic orientation (Lumpkin and Dess, 1996) and the process that enacts the organizations' purpose and sustains its vision (Lumpkin, Wales and Ensley, 2007; Rauch et al., 2009). In addition, this construct has been conceptualized as a general or lasting direction of thought, an inclination or interest pertaining to entrepreneurship and a vision that leads to change (Lumpkin, 2011; Covin and Lumpkin, 2011). Furthermore, entrepreneurial orientation is meant to "reflect how a firm operates" (Wiklund and Shepherd, 2005:74) and provides direction for firm behavior. In more detail, some examples of how entrepreneurial orientation interacts with knowledge based resources follow.

Intellectual capital as knowledge-based resources can generate products with new and optimal designs in order to improve functionality, cost and reliability (Rosenberg, 1994). Such outcome can be capitalized on opportunities related to new business models. However, organizations may obtain better results leveraging entrepreneurial orientation's characteristics of committing further resources to projects with unknown outcomes and the capacity to break away

from tried-and-true procedures (Dess and Lumpkin, 1996). Furthermore, organizations with higher levels of entrepreneurial orientation have the capacity to enhance forward looking perspectives and focus on premium market segments (Zahra and Covin, 1995) that can support stronger advantages founded on initial products' improvements. Thus, opportunities capitalized on new developments supported by a particular firm behavior derived from entrepreneurial orientation can strengthen novel business models opportunities that benefit firms in the short and medium term.

From a different angle, an organization that acquires knowledge-based resources can also become aware of customer problems in comparison to their competitors (Wiklund and Shepherd, 2003). This situation can lead to capitalize opportunities to respond with appropriate solutions to different needs. Entrepreneurial orientation can also interact to enhance better results due to its characteristics of leading firms to anticipate future wants and commit to projects with high cost of failure (Dess and Lumpkin, 1996). In other words, once a problem is detected and an opportunity to provide a solution is raised; entrepreneurial orientation plays a role since firms develop a mindset to act objectively on future needs and being prone to calculated risk that may lead to appropriate solutions for clients.

Another outcome of knowledge-based resources is the assertiveness to respond quickly when competitors make advances (Cohen and Levinthal, 1990). This situation can push forward organizations to capitalize on opportunities related to new development cycles for products or services. Firms leveraging on entrepreneurial orientation can obtain increased positive results due to the capacity of new experimentation and ability for creative processes derived from this entrepreneurial behavior. Moreover, entrepreneurial orientation contributes to shorten cycles of

products (Hamel, 2000) and enhance proactiveness to (re)take advantage of first mover advantage when threatened by competitors.

In addition, relying on empirical research, Danneels (2012) found that a lack of second-order capabilities (dynamic capabilities) is a result of failure in the organization's vision which is by definition a characteristic of entrepreneurial orientation. Furthermore, if an organization possesses knowledge related resources but lacks entrepreneurial orientation it may fail to embrace creativity contributing to a situation of difficulty to capture opportunities (Bingham et al., 2007).

Entrepreneurial orientation from the resource based view of the firm helps to comprehend how organizations are structured and prone to discover and exploit opportunities which can be compared to the processes of sensing and seizing opportunities inherent to integrative capabilities. Besides, entrepreneurial orientation also facilitates access to more resources in organizations (Winklund and Shepherd, 2005).

As explained, the development of integrative capabilities is first founded on intellectual capital. That is, the requisite of access to relevant resources through the successful implementation of entrepreneurial orientation as a strategic orientation (Covin and Slevin, 1991) is acknowledged. On the other hand, unless a firm is willing to grasp and pursue opportunities that could be enhanced through innovativeness, proactiveness and risk-taking (entrepreneurial orientation's dimensions), knowledge-based resources are likely to be underutilized (Winklund and Shepherd, 2003). There I propose the following hypothesis:

> *Hypothesis 2: Entrepreneurial orientation will moderate the relationship between intellectual capital and integrative capabilities.*

In sum, this dissertation presents a framework in Figure 2 that show the theoretical relationships proposed and further empirically analyzed. The dependent variable is integrative capabilities which are a concrete representation of dynamic capabilities (Liao et al., 2009), that if it were to be entrepreneurial, it does not spring spontaneously or mechanically; rather, it occurs through thoughts and actions of people (Shane, 2012). Thus, perceiving and capitalizing an opportunity (integrative capabilities) is in line with thoughts and actions that represent what entrepreneurial means. The independent variable is intellectual capital understood as a bundle of resources that refers to knowledge from different perspectives (Youndt et al., 2004). Intellectual capital, in turn, is formed by three sub dimensions: social capital, human capital and organizational capital. The moderator variable is entrepreneurial orientation that reflects an organization mindset for an entrepreneurial firm that sustains a vision and leads to change (Lumpkin, 2011; Lumpkin and Dess, 1996). This construct is formed by three sub dimensions: innovativeness, risk taking and proactivenness and is address as a reflective construct (Covin and Wales, 2011; George and Marino 2011) and not formative (c.f. George, 2011). The independent variable and moderator variable are argued to be antecedents for the appropriate development of dynamic capabilities.

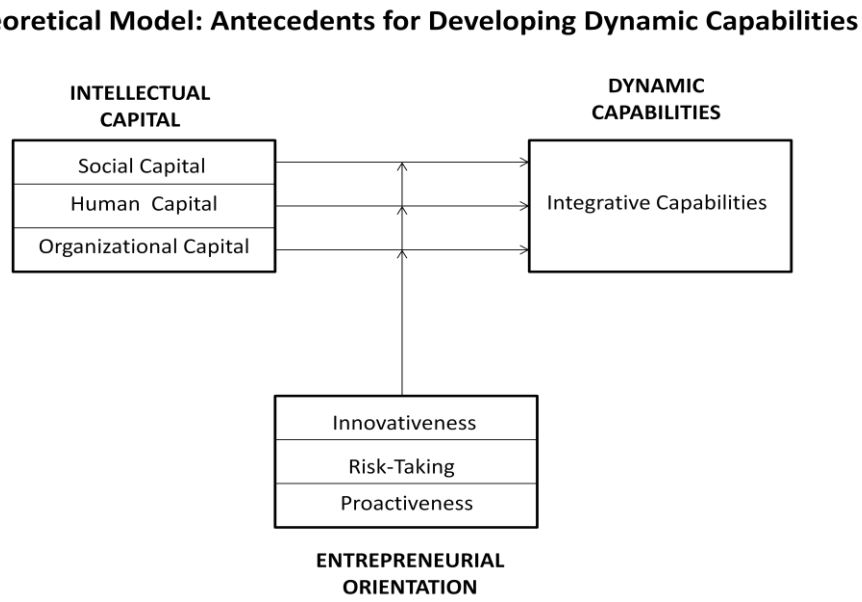

Figure 2. Theoretical Model: Antecedents for Developing Dynamic Capabilities

3.4.1 Hypotheses

A summary of the proposed hypotheses previously developed are detailed as follows:

Hypothesis 1: Intellectual capital has a positive influence on the development of integrative capabilities.

Hypothesis 1a: Human capital has a positive influence on the development of integrative capabilities.

Hypothesis 1b: Social capital has a positive influence on the development of integrative capabilities.

Hypothesis 1c: Organizational capital has a positive influence on the development of integrative capabilities.

Hypothesis 2: Entrepreneurial orientation will moderate the relationship between intellectual capital and integrative capabilities.

CHAPTER 4

METHOD

4.1 Introduction

According to Mingers (2003) methodology refers to a structured set of methods or techniques to assist people in research. In practical terms, it reflects the researcher's view of the world and how he or she attempts to study a specific problem. It is important to explicitly express how the researcher develops its work since the paradigm stance will directly affect the methodology and the methods to collect and analyze data (Clarke and Dawson, 1999). Research can be undertaken from three different perspectives: quantitative, qualitative and mixed. This dissertation is framed within the quantitative perspective. The criterion for choosing a quantitative approach in this dissertation is the following:

The problem that this research deals with regards to identifying factors that influence an outcome or the attempt to understand its best predictors. More specifically, the factors that may influence or allow a better understating of the outcome (integrative capabilities as a concrete representation of dynamic capabilities) are entrepreneurial orientation and intellectual capital. As a result, due to the aforementioned characteristics of the problem under study a quantitative approach is recommended (Creswell, 2003).

A quantitative approach is undertaken since some scholars have stated that empirical work on dynamic capabilities is still in its infancy (Newbert, 2007) while others have questioned research on this topic for a weak empirical support (Arend and Bromiley, 2009). Furthermore, it has also been argued a lack of sufficient empirical testing (Drnevich and Kriauciunas, 2011) and calls for a better dynamic capabilities understanding through empirical papers (Barrales-Molina, Benitez-Amado and Perez-Arostegui, 2010). Finally, there have been relatively few empirical

studies regarding the process by which such capabilities are developed (Shamsie, Martin and Miller, 2009) which is in line with the core argument of this dissertation.

In this research, the use of hypotheses is of special emphasis since they represent predictions that the researcher will hold in regard of a relationship among variables. Alternative hypotheses will be used since they concur with a prediction about the expected outcome for the population of the study. In short, this dissertation will rely on a quantitative approach using as a philosophical assumption the post-positivist knowledge claim. Surveys are employed as a strategy of inquiry and the methods rely on closed-ended questions that provide data for running regressions in order to test hypotheses.

Finally, the aforementioned approach concurs with the goals of this dissertation that methodologically pursues to test hypotheses and the theory developed in order to shed light on the antecedents of the development of dynamic capabilities.

4.2 Research Design and Data Collection

Since this dissertation is framed under a quantitative paradigm the design is carried on to obtain data for statistics. Surveys are a well known tool to produce statistics allowing the researcher to collect data by asking selected questions to specific individuals in an organization, where such answers constitute the data to be analyzed (Fowler, 2002).

Surveys are conducted in Spanish. Thus, a language certified translator will help in the translation process and another one for back translation to assure that the content of the questions semantically prevails. Moreover, recent practices to avoid exclusively relying on back translation in isolation, leverages on a detailed examination of the instrument considering a collaborative and iterative approach (Douglas and Craig, 2007). In that sense, a group of 6

people including professors, practitioners/consultants and the researcher analyzed if the translated questions are optimal and ambiguity is minimized. In addition, special care was undertaken since an important aspect is not only to translate word by word but to maintain the same stimulus of the original question (Harkess et al., 2010).

The questionnaire went under a pilot test considering for this matter 3 enterprise founders, 3 academics and 3 consultants. After incorporating recommendations for better understanding of the questions and redacting cover letters explaining the purpose of the study to trigger interest in respondents, questionnaires were printed out and also put online using Qualtrics, software designed for only surveys and used at EGADE Business School. Since this study was undertaken in Ecuador and Mexico for the former country most of the surveys were printed while for the latter most of the surveys were sent online.

The survey instruments for this study have been already published in high impact journals and no modifications were be made. However, I followed best practices for paper-based survey questionnaire (Fanning, 2005), and suggestions by Dillman, Smyth and Christian (2009) and Dillman, Tortora and Bowker (1999) for better format purposes when the instrument is online.

The data required to test hypotheses came from self-administered questionnaires and in a cross-sectional (collected at one point in time) format. However, this research used a repeated sample which means that the same study was undertaken in two emerging economies. In regard to the self-administered questionnaires, this approach was used due to the following advantages remarked by Babbie (1990) and Cooper and Schindler (2008).

a) Cost: self-administered typically cost less than other kind of surveys.

b) Sample accessibility: using this kind of surveys the researcher can contact participants who might otherwise be inaccessible such as this case that respondents are Founders/CEOs. Additionally, the computer-delivered survey (besides paper-based) can be routed to the appropriate participant in a fast manner.
c) Time constraints: usually a rapid turnaround in data collection is obtained.
d) Confidentiality/Anonymity: these surveys are perceived as more impersonal and respondents provide real data due to anonymity or assured confidentiality in managing data.

Salant and Dillman's (1994) suggestions regarding the administration process of mailed surveys were adapted. First, the researcher called in advance to most of the members of the sample to inform that they will receive a questionnaire sent by the Technology-based Enterprises Research Chair that belongs to EGADE Business School, Tecnológico de Monterrey. Second, the survey or link was sent after the telephone contact was accomplished relying on the preferred approach the respondent wanted to collaborate. Third, a follow-up phone call to some members of the sample was made after the first week the initial questionnaire either paper of web-based format took place. Three reminders through email were also sent for the web-based format. If respondents already answered the survey I took the opportunity to thank them for their support, and if not I encouraged them to do so explaining the importance of this research and how their company may take advantage of the results that will be sent to all participants if requested while filling out the questionnaire. Fourth, a personalized cover letter with a handwritten signature was sent to all non-respondents in order to reach a higher level of respondent rate. The collection data procedure took place during December 2011 and February 2012.

The surveys were sent out to the main responsible of the firm considered in the sample. Prior research considers that CEOs and founders are "the single most knowledgeable and valid information sources" (Lenchner, Dowling and Welpe, 2006: 525). Therefore, questionnaires were addressed directly to the founders relying on a key-informant approach. Despite potential errors that may cause position bias, several results support this approach (e.g., Delmar and Shane; 2003; Gruber, 2007; McKelvie and Davidsson, 2009; Zahra and Covin, 1993). Even though this approach has been used the potential of common method variance (CMV) could have serious effects on research findings. In that sense, in the following paragraphs the manner to cope with this problem is thoroughly addressed.

CMV results from the "fact that the predictor and criterion variables are obtained from the same source or rater, whereas others are produced by the measurement items themselves, the context of the items with in the measurement instrument, and/or the context in which the measures are obtained" (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003: 881).

The best way to avoid CMV is to collect the measures of variables from different sources. However, in general, data collection on emerging economies presents significant obstacles (Hoskisson, Eden, Lau and Wright, 2000). For instance, in the Latin American region, Rivera (2002) mentioned the extreme difficulty in gathering survey data in Central America as well as Husted and Allen (2006) concluded similarly for the Mexican case. Furthermore, Malik and Kotabe (2009) noted for their case that access to secondary data is also complex.

The difficulties that researches have to deal with in order to advance the scant research on emerging economies despite its importance (Bruton, Alshtrom and Puky, 2009) is even more challenging if the focus is on small and medium enterprises (SMEs). The aforementioned

problems emerge even when the sample considered large, multinational and publicly held enterprises (e.g., Husted and Allen, 2006; Khanna and Rivkin, 2006; Siegel, 2009; Tan and Peng, 2003; Zhongfeng, Yuan and Lin, 2010).

This research aims to mainly collect data from Ecuadorian and Mexican SMEs since most of the research on dynamic capabilities has been addressed mainly in large corporations (Zahra et al., 2006). In that sense, the following suggestions related to the design of the study's procedures and statistical controls (Podsakoff et al., 2003) are followed in order to minimize CMV.

Procedural Remedies or Ex-ante Alternatives

The first attempt to cope with CMV is that this research collected data for all variables from the CEO and the dependent variable will be the average data coming from at least another responding source. This procedure has been carried on in previous research likewise getting data from two high-ranking respondents such as manufacturing managers and senior executives (Kathuria, Porth, Kathuria and Kohli, 2010, Danneels, 2012). In a similar manner, Acquaah (2007) also collected information on the independent variable from CEOs while the dependent variable was collected from the head of the finance function.

Second, another remedy for potential CMV is to separate the measurement of the predictor and criterion variable through temporal separation, psychological separation and methodologically separate the measures (Podsakoff et al., 2003: 887). This design implemented a psychological separation by using a cover story –in the presentation to respondents- to make it appear that the measurement of the predictor variable is not connected with or related to the measurement of the criterion variable. This procedure has been followed in previous research as well (McDermott and Corredoira, 2010). In addition, to separate the measures different response

formats were used. For instance, the independent variables leveraged on a semantic differential format and a 7-point Likert scale. On the other hand, the dependent variable was measured using a 5-point Likert scale.

Third, this study ensured and protected respondent confidentiality explicitly mentioning that there is no right or wrong answers and encouraging the rater to be as honest as possible. This approach should reduce people's evaluation apprehension and make them less likely to edit their responses to be more socially desirable and consistent with how they think the researcher wants them to respond (Podsakoff et al., 2003: 888).

Fourth, several recommendations for improving scale items were also considered. For example, reduce ambiguity, avoid vague questions, and keep questions in a simple format as well as specific and concise.

Statistical Remedies or Ex-post Alternatives

First, the Harman's single-factor test is one of the most widely used techniques used by researchers in order to address the issue of common method variance (Podsakoff and Organ, 1986). This technique "loads all the variables into an exploratory factor analysis and examines the unrotated factor solution to determine the number of factors that are necessary to account for the variance in the variables. A substantial amount of CMV is present either if a single factor will emerge from the factor analysis or one general factor accounts for the majority of the covariance among the measures" (Podsakoff et al., 2003: 889). However, this remedy is necessary but not sufficient, and as a result the following statistical procedure was also undertaken.

Second, the statistical procedure that controls for the effects of a single unmeasured latent method factor fits the characteristics of this research to further statistically control for CMV (Podsakoff et al., 2003; Richardson, Simmering and Sturman, 2009). This model has been used in several previous studies and "does not require the researcher to identify and measure the specific factor responsible for the method effects. This technique models the effect of the method factor on the measure rather than on the latent construct they represent and does not require the effects of the method factor on each measure to be equal" (Posdakoff et al., 2003: 894).

4.3 Sample

The empirical analysis is manly based on survey data collected from small and medium enterprises (SMEs)[2] located in Mexico and Ecuador. These two countries are selected in a similar way as Malik and Kotabe (2009) did for their dynamic capabilities research in two emerging economies in Asia.[3] The following criteria are taken into account for selection purposes. First, mainly manufacturing firms (not excluding service enterprises) and legally registered enterprises are chosen in their home country. Second, enterprises that belong to Technology Parks, Business Accelerators or firms that participated in relevant Congresses organized by the EGADE Business School are considered. In other words, for the Mexican case firms invited to participate have had some previous relationship with the Academia. On the

[2] I use the classification for small and medium enterprises according to CEPAL (Economic Commission for Latin America and the Caribbean). CEPAL considers a small enterprise if the enterprise has between 5 and 49 employees meanwhile a medium enterprise between 50 and 250 employees.

[3] Malik and Kotabe (2009) chose two emerging economies in Asia such as India and Pakistan taking into account that the former has a larger economy and the latter has a relative smaller economy. Additionally, this combination is argued that provides a diverse and illustrative sample for understanding dynamic capabilities development; in consequence, this research proposes the Mexican and Ecuadorian economies which resemble similar characteristics of a larger and smaller economy but in Latin America for studying dynamic capabilities research.

contrary, for the Ecuadorian case firms invited to participate are those registered as part of the Parque Industrial de Cuenca-Ecuador (Industrial Park), and those registered in the Cámara de la Pequeña Industria del Azuay – CAPIA (Chamber of the Small Industry of Azuay). Third, the enterprises are not restricted by a particular industry or sector since the main interest is to understand the antecedents of dynamic capabilities that can be developed in any type of enterprise and industry. In consequence, a broad group of firms and industries will be sought for this study in order to maximize the variation of variables and increase the generalizability of findings (Simsek and Heavey, 2011).

The selection sample is a nonrandom sample strictly following the definition of randomness. However, the lists of enterprises coming from Technology Parks, Business Accelerators and Industry Chambers provide a stratified sampling from population of firms of interest.

4.4 Scale Development

This dissertation measures three constructs: Intellectual capital, entrepreneurial orientation and integrative capabilities. The survey instruments have been already developed by other researchers and published in leading journals in the management field. Creswell's (2003) suggests that when an existing instrument is to be considered, the established validity and reliability[4] of scores obtained from past use of such instrument should be raised to awareness. Therefore, I mention all statistical parameters as follows.

[4] Reliability: Refers to the extent to which a scale produces identical results if a particular construct is measured repeatedly. Reliability is the proportion of variance attributable to the true score of the latent variable. Alpha is defined as the proportion of a scale's total variance that is attributable to a common source, presumably the true score of the latent variable underlying the items (DeVellis, 2003). The greater the reliability of a scale, the smaller the likelihood of measurement errors (Peterson, 2000: 79-80). Vadility: Refers to the extent to which a scale measures what it is designed to measure. Whereas reliability concerns how much a variable influences a set of items validity concerns whether the variable is the underlying cause of item covariation.

The instrument to measure intellectual capital was proposed by Youndt, Subramaniam and Snell (2004) were its sub dimensions of human capital, social capital and organizational capital were originally conceived. Furthermore, the constructs exhibited convergent and discriminant validity while the reliability assessed by calculating the Cronbach's alpha was above the suggested value of 0.70 (Subramaniam and Youndt , 2005: 456). Thus, the instrument that will be utilized is valid and internally consistent. However, recent research has built upon these seminal authors and proposed an enriched instrument reporting acceptable measurement validity and reliability as well. Simsek and Heavey (2011) report for human capital: Cronbach's alpha of 0.88 and measurement validity at the individual of CFI[5]=0.98; IFI=0.98 and RMSEA=0.09. For social capital: Cronbach's alpha of 0.89 and CFI=0.98; IFI=0.94 and RMSEA=0.08. Finally, for organizational capital: Cronbach's alpha of 0.77 and CFI=0.99; IFI=0.99 and RMSEA=0.05. Simsek and Heavey (2011: 89) indicate that the first item reflecting knowledge embodied and protected by intellectual property did not load significantly on the organizational capital construct and therefore was eliminated. See Appendix 1 for the complete instrument proposed by Smisek and Heavy (2011) but built upon Youndt et al's original instrument.

See Appendix 2 for complete scale

Entrepreneurial orientation is a central construct in the entrepreneurship literature that has been measured using different survey instruments. Examples of instruments utilized have been developed by Miller (1983) and Covin and Slevin (1989) proposing three dimensions to the construct (innovativeness, risk-taking and proactiveness). Hughes and Morgan (2007) also

[5] Comparative fit index (CFI), Incremental fit index (IFI), Tucker-Lewis index (TLI) are expected to have valued of 1.0. Root-mean-square error of approximation (RMSEA) a value of 0.0. Although, standards for such indices are difficult to establish, a value of 0.90 or higher for TLI, CFI and IFI, and of 0.08 or lower for the RMSEA are usually suggested as having adequate fit (Hu and Bentler, 1998).

developed an entrepreneurial orientation scale but considering two additional dimensions (competitive aggressiveness and autonomy) based on Lumpkin and Dess (1996; 2001).

I mainly draw on the seminal and most used instrument to measure entrepreneurial orientation proposed by Covin and Slevin. This instrument consists of a nine-item scale where items underwent a factor analysis in order to assess the factorial validity which is a form of construct validity. All of the items loaded above 0.5 on a single-factor and reported a reliability of 0.87 (Covin and Slevin, 1989: 79).

However, I rely on Lumpkin and Dess' (2001) suggestion to improve this instrument. In other words, these authors pointed out that asking whether a firm prefers to "undo competitiors" or to "live and let live" measures competitive aggressiveness instead of proactiveness as originally proposed. In that sense, that question was changed by "has a strong tendency to follow the leader" or to "be ahead of other competitors". This slightly modified instrument has already been used and assessed by other researches supporting its validity and reporting a Cronbach's alpha of 0.84 (Stam and Elfing, 2008: 103). See Appendix 2 for the complete instrument.

See Appendix 1 for complete scale.

Integrative capabilities are formed by external opportunity-recognizing capabilities and internal opportunity-capitalizing capabilities. Liao, Kickul and Ma (2009) combined two instruments developed by Hill, Lumpkin and Singh (1997) and Simons, Pelled and Smith (1999) that measures the recognition and the capitalization of opportunities respectively. Liao et al used these instruments reporting a Cronbach's alpha of 0.90 and 0.78 respectively. The application of perceptual measures to operationalize capabilities has been accepted in organizational and

managerial research (e.g. Capron and Mitchell, 2009; Danneels, 2008; Jansen, Van Den Bosch and Volberda, 2006; Lichtenthaler, 2009).

See Appendix 3 for the complete instrument.

The appendixes 1, 2 and 3 show the complete instruments which can be summarized as follows. The entrepreneurial orientation scale has nine items and all of them are employed in a seven-point semantic differential scale with a neutral midpoint. The scale to measure intellectual capital uses a 7-point Likert scale while the scales to measure integrative capabilities use a 5-point Likert scale.

Control Variables (Covariates)

Empirical research should control for other factors that might influence the dependent variable of interest. Relying on previous research the following control variables or covariates are considered.

a) Firm size: Organizations with more employees could be favored regarding opportunity recognition as more knowledge base is available (Lichtenthaler, 2009). This variable is measured as the number of full-time employees. Due to the distribution that usually departs from a normal distribution a log-transformed number will be used.
b) Firm age: Prior knowledge and experience is seen as a precondition for opportunity recognition (Shane, 2000) which could influence capability sensing as well as learning and reconfiguration. It refers to the number of years since the firm was founded. Similar to the firm size case and for the same reason it required a log-transformed number.
c) Industry effects: a list of industries is provided. Each industry will be coded with a number or a name that groups similar industries.

d) Slack resources: slack human resources could provide availability for employees from their daily activities in order to engage in capability development activities (Danneels, 2008). This control variable is measured leveraging on three items adopted from Danneels' (2008) scale. See Appendix 4 for complete set of items.

4.5 Data Analysis

In the data analysis phase I will point out several aspects using the Statistical Package for Social Sciences (SPSS) version 19.

I will report in a table format the information of the respondents who did and did not answer the survey. Afterwards, I will address the non-response bias (Armstrong and Overton, 1977) which means that if non-respondents had responded, their responses would have substantially changed the general result of the survey. This is based on the assumptions that respondents who return surveys in the final period (this case February 2012) are nearly non-respondents. In other words, if responses begin to change, a response bias may exist. For this issue, I will set up as a parameter of comparison the time before and after the final follow-up phone call which will be done by mid February 2012.

Common method variance will statistical remedies will be carried on as already explained. Furthermore, there will be a report of possible multicollinearity problems since it may create a lack of discriminant validity and, in turn, bias the data. To complement, an analysis of variance inflation factor (VIF) will be also undertaken for this problem. There will also be a report after a CFA: chi-squared, CFI, IFI, TLI and RMSEA as measures of goodness of fit and the coefficient of determination R^2 which is the proportion of variability in a data set that is accounted for the

statistical model. In addition, a correlation matrix with descriptive statistics for both dependent and independent variables indicating means and standard deviations will be presented.

After relying on the fidelity of the measures, an Ordinary Least Square (OLS) regression is consider to test the hypothesized relationships. The control variables will be entered in step 1 and independent variables in step 2. In step 3, is the turn to incorporate the moderator variable. Afterwards, the final results for each hypotheses and its report the significance indicating if the relationship hypothesized are supported or not will be addressed.

4.6 Ethical considerations

Since in this research I contact people ethical issues must be addressed. I clearly stated that the participation of the respondent is on a voluntary base and they can support this research or choose not to do it. It was explained in general terms what the study is about and that the data will be managed with confidentiality. No enterprises' data or name will be disclosed and it will remain at all times in the researcher's hands.

Furthermore, caution is taken regarding ethical standards such as avoiding, changing data or creating false data to meet a desired objective, changing data presentations or interpretations, interpreting data from a biased perspective and voluntarily omitting sections of data analysis and conclusions (Cooper and Schindler, 2008).

CHAPTER 5

EMPIRICAL RESULTS

5.1 Sample's General Characteristics

The total sample used to test hypotheses is of 200 enterprises. The data collected belong to enterprises located in Ecuador and Mexico. In general, enterprises belong to a wide range of industries that have been categorized under the following labels: Wood and Cork, Textiles and Leather, Mineral and Jewelry, Paper and Cardboard and Graphics, Chemical and Plastics, Metalworking, Food and Beverages, Services, Wholesalers and retailers, Construction and Ceramics. The Ecuadorian sample consists of enterprises that come from an important industrial region of the country while the Mexican sample consists of enterprises that come from different industrial regions of the country. After the collecting data process the total sample is comprised of:

- Ecuador's total sample: 92 enterprises.
- Mexico's total sample: 108 enterprises.

In the following sections more characteristics and details of the sample considering each country separately and conjointly are presented. In the same sense, details of time response and categorizations per size and age are shown.

5.1.1 Ecuador's Sample

In Table 5 the percentage of firms per industry category is presented. In addition, the total number of firms that answered and those that did not answer the questionnaire are outlined.

Total: Firms that belong to the Industrial Park are 115, while firms affiliated to CAPIA (Cámara de la Pequeña Industria del Azuay – Chamber of the Small and Medium Industry of Azuay) are 139. This means that the total universe of firms is of 254. After data collection process the researcher received 92 valid and complete questionnaires. All enterprises returned the first respondent and second respondent's questionnaire as required.

Industry	Respondent	Non Respondent	Total	% Respondents
Wood/Cork	5	15	20	25%
Textile/Leather	8	16	24	33.33%
Minerals/Jewelry	1	10	11	9.09%
Graphic Industry/Paper/Cardboard	7	12	19	36.84%
Chemical/Adhesives/Plastics/Oil	6	19	25	24%
Metalworking	7	19	26	26.92%
Food/Beverages/Farming	11	27	38	28.95%
Services(consumer/technological)	22	20	42	52.38%
Commerce (export and import)	13	14	27	48.15%
Construction/Ceramic	12	10	22	54.55%
Total	**92**	**162**	**254**	**36.22%**

Table 5. Ecuador's Enterprises (Respondents and Non-Respondents per Industry)

For the Ecuadorian case, as mentioned, the sample is comprised of enterprises in the official list of the Industrial Park and CAPIA. All enterprises received an invitation letter to be part of this research with questionnaires enclosed. Both formats paper-based and web-based formats were used. At the first stage, 146 answers were registered; however, the final sample is of 92 enterprises. This is due to quite a few web-based registrations indicated that respondents only accessed the link but they partially answered and most of the time did not answer the survey at all. The number of paper-based questionnaires that were not responded or incomplete was around 10. This gives a respond rate of 36.22% for the Ecuador's sample. As Table 5 indicates,

six industry categories have around 30% respondents, three categories have around 50% and only one reached 10%.

5.1.2 Mexico's sample

For the Mexican sample, enterprises that currently have or have had a relationship with Tecnológico de Monterrey and EGADE Business School were contacted and asked to be part of this study. In general terms, the enterprises in this sample participate or have participated with the EGADE's Business Accelerator, Technology Parks or attended to training programs, conferences or forums organized by EGADE Business School. Table 6 shows the participating enterprises that answer questionnaires and their precedence. The enterprises under the "started category" means that the survey link was accessed but partial or no answers were recorded.

Mexican Sample	**Total Sent**	**Started**	**Finished**
Technology Parks	140	41	33
Business Accelerator	103	50	34
Forums, Conferences	529	82	41
Total	**772**	**173**	**108**

Table 6. Mexico's Sample of Sent and Received On-line Surveys

Table 6 indicates that 108 complete web-based questionnaires were available at the first stage. This means a response rate of 14%. After receiving the first respondent's answer and the contact (name and email) for the second respondent, the questionnaire for these raters were sent on-line as well. For this case, 68 second answers were received after 3 email reminders and telephone calls to follow up.

This research relies on the average of both first and second respondent's answers after analyzing intraclass correlation (correlation and agreement of answers explained later on). For the case of those enterprises that lacked a second respondent's answer (40 out of 108 for the

Mexican case), the first respondent's input was used as the "average" as suggested and done by Danneels (2012). In sum, for the Ecuadorian case there are 92 questionnaires with first and second respondents and for the Mexican case 108 where 40 cases lack of second respondent. In other words, 80% of the total sample includes first and second respondent's answers.

5.1.3 Total Sample (Mexico and Ecuador)

In Table 7, the total sample of 200 enterprises from both countries is classified in accordance with industry categories and the respective percentages. As a result, the Mexican firms constitute 54% of the sample while the Ecuadorian firms 46%.

Table 8 and Table 9 indicate how the firms are classified according to their size and their age respectively. In sum, these analyses of the complete sample provide a more detailed image of the type of enterprises and other characteristics this research considers in order to test the theoretical model proposed.

The reasons to pool together the Ecuadorian and Mexican samples are the following:

The Levene's test for equality of variance was also performed using the categorical variable (Ecuador and Mexico) and analyzed in every variable of the model. These results are: Entrepreneurial orientation (F: .833; *pvalue:* .363), Intellectual Capital (F: 1.832; *pvalue:* .177); Integrative Capabilities (F: 3.843; *pvalue:* .051). Thus, since the significance value is above 0.05 there is no significant difference in the variation of such variables measured in Mexico and Ecuador. Furthermore, another technique to test for differences between two independent groups on a continuous measure comparing medians is the Mann-Whitney U test. The results for the variables are: Entrepreneurial orientation (Z: -1.682; *pvalue:* .093), Intellectual Capital (Z: -3.703; *pvalue:* .000); and Integrative Capabilities (Z: -0.093; *pvalue:* .926). There are no

statistically significant differences when the significance value is above 0.05. In sum, relying on the Levene's test and the Mann-Whitney U test results on each variable, all except one variable in one test, indicate that there is no significant differences in the data gathered in Mexico and Ecuador. Thus, the sample is pooled together.

In addition, there are not significant differences between these samples in their means and standard deviations performed for each variable and both are normally distributed. This information is detailed in Tables 8a, 8b, 9a and 9b.

Similarities at the macro level found that Ecuador an Mexico face similar characteristics since oil is their first source of income, both nations are mega diverse and rich in natural resources and face high levels of corruption.

At the micro level, according to CEPAL and Secretaría de Desarrollo Económico, SMEs fails to survive in great percentage. For example, only 2 out of 10 SMEs survive after the second year of business.

Finally, both samples are pooled together since the practice of doing so is quite normal and also encouraged. For cases of samples from two or more countries and that also relate to similar topics of this study refer to Shinkle and Kriauciunas (2012), Malik and Kotabe (2009), Bruton, Ahlstrom and Puky (2009), Patel and Terjesen (2011).

Industry	Ecuadorian Firms	% Ecuadorian	Mexican Firms	% Mexican	% Total	Total Enterprises
Wood/Cork	5	2.5%	6	3%	5.5	11
Textile/Leather	8	4%	0	0%	4	8
Minerals/Jewelry	1	0.5%	1	0.5%	1	2
Graphic Industry/Paper/Cardboard	7	3.5%	3	1.5%	5	10
Chemical/Adhesives/Plastics/Oil	6	3%	9	4.5%	7.5	15
Metalworking	7	3.5%	4	2%	5.5	11
Food/Beverages/Farming	11	5.5%	9	4.5%	10	20
Services(consumer/enterprises/technological)	22	11%	60	30%	41	82
Commerce (export and import)	13	6.5%	12	6%	12.5	25
Construction/Ceramic	12	6%	4	2%	8	16
Total	**92**	**46%**	**108**	**54%**	**100%**	**200**

Table 7. Total Sample Characteristics by Industry Type

In Tables 8 (a, b) and Tables 9(a, b); the total sample is categorized by size and age. In addition, the numbers are presented in a disaggregated manner for each country (Ecuador and Mexico).

Category by Size Total Sample Ecuador and Mexico	Enterprises	% Enterprises
Small (1 to 49 employees)	130	65%
Medium (50 to 250 employees)	40	20%
Large (more than 251 employees)	30	15%
Total	**200**	**100%**

Table 8. Total Sample Categorized by Size

Category by Size – Ecuadorian Sample	Enterprises	% Enterprises
Small (1 to 49 employees)	61	66.3%
Medium (50 to 250 employees)	19	20.6%
Large (more than 251 employees)	12	13.1%
Total	**92**	**100%**

Table 8a. Ecuador's Sample Categorized by Size

Category by Size – Mexican Sample	Enterprises	% Enterprises
Small (1 to 49 employees)	69	63.88%
Medium (50 to 250 employees)	21	19.44%
Large (more than 251 employees)	18	16.88%
Total	**108**	**100%**

Table 8b. Mexico's Sample Categorized by Size

Data regarding categorization according to enterprises' age follows:

Category by Age – Total Sample Ecuador and Mexico	Enterprises	% Enterprises
Up to 5 years	48	24%
6 to 10 years	34	17%
11 to 20 years	46	23%
21 to 40 years	44	22%
More than 41 years	28	14%
Total	**200**	**100%**

Table 9. Total Sample Categorized by Age

Category by Age – Ecuadorian Sample	Enterprises	% Enterprises
Up to 5 years	20	21.73%
6 to 10 years	13	14.13%
11 to 20 years	21	22.82%
21 to 40 years	22	23.91%
More than 41 years	16	17.41%
Total	**92**	**100%**

Table 9a. Ecuador's Sample Categorized by Age

Category by Age – Mexican Sample	Enterprises	% Enterprises
Up to 5 years	28	25.92%
6 to 10 years	21	19.44%
11 to 20 years	25	23.14%
21 to 40 years	22	20.37%
More than 41 years	12	11.13%
Total	**108**	**100%**

Table 9b. Mexico's Sample Categorized by Age

Table 10 and 11 show an overview of the time enterprises took to answer paper or web-based surveys in Ecuador and Mexico. This considers only the first response from the each enterprise that participated. The time second respondents took to answer is not considered in these tables.

Mexico	1 week	2 week	3 week	4 week	5 week	6 week	7 week
	31.37%	23.52%	12.74%	13.72%	13.72%	2.94%	1.96%

Table 10. Time Response Mexican Sample

Ecuador	1 week	2 week	3 week	4 week	5 week	6 week
	20.79%	51.48%	14.85%	6.93%	2.97%	2.97%

Table 11. Time Response Ecuadorian Sample

5.2 Assumptions for Multiple Regression Analysis

Since this is a quantitative study and the methodology section stipulated that multiple regression analysis is undertaken to test hypotheses, the following pages addresses the no violation of the assumptions for a regression analysis. The assumptions next analyzed are: sample size, multicollinearity, singularity, normality, linearity, homoscedasticity and independence of errors.

5.2.1 Sample Size

According to different authors the suggested sample size should be:

a. In Tabachnick and Fidell (2007: 117) N > 50+8m (m=number of independent variables). Testing multiple correlations.
    i. N > 50+8(5) = 90 observations.
b. The formula N> 104 + m. For testing individual predictors.
    i. N > 104 + 5 = 109 observations.
c. In Hair et al. (2006: 197). The minimum ratio of observations to variables is 5:1.
    i. The total items in the models are distributed as follows: Human Capital (5 items), Social Capital (8 items), Organizational Capital (5 items), Entrepreneurial Orientation (9 items), Integrative Capabilities (7 items), Slack Resources (3 items).

Total items in the model: 37. Thus, following the rule of thumb it is obtained that 37 x 5 = 185 observations required.

Considering any of these parameters, the current research's sample is above the minimal suggestions since it reaches 200 observations. Thus, this requirement is fulfilled.

5.2.2 Multicollinearity

This problem occurs if the IVs (independent variables) are highly correlated (i.e.: r = 0.9 or above), or because interaction among IVs or powers of IVs is included in the analysis. The correlation among IVs (Entrepreneurial Orientation and Intellectual Capital) does not show high correlation (r = 0.44, $p < 0.01$). In addition, the Variance Inflated Factor (VIF) in all regression models was also checked and the highest value is 1.978 (for the complete model 7) which is well below the threshold of 10 as rule of thumb (Hair et al, 2006). Thus, this assumption is not violated. To check individual VIF values of the complete model see Appendix 11.

5.2.3 Singularity

It is a problem when the variables are redundant; in other words, when one of the variables is a combination of two or more of the other variables. If that were the case, it is not a good idea to include redundant variables in the same regression analysis since they inflate the size of error terms (Tabachnick and Fidell, 2007: 89). Singularity can be checked at looking at tolerance values where a default tolerance levels range between 0.01 and 0.0001 (Tabachnick and Fidell, 2007: 90). In the final model (7), tolerance values are all above 0.5. Therefore, this assumption is not violated. To check individual tolerance values see Appendix 11.

5.2.4 Normality

Normality requires that the residuals after the model is run should be normally distributed about the predicted DV (dependent variable) scores. In large samples, it is suggested to look at the shape of the distribution instead of using formal inferences tests since the errors for both skewness and kurtosis decrease with larger N, and the null hypothesis is likely to be rejected when the is only minor deviations from normality (Tachbanick and Fidell, 2001). In fact, the results of the Kolmogorov-Smirnov test for normality shows that data for the entrepreneurial orientation construct does not violate this assumption (Significance: 0.09) while the data for the intellectual capital and integrative capabilities according to this test would violate this assumption (Significances: 0.003 and 0.000 respectively). In other words, this rejection could be evident when only minor deviations from normality occur as shown in Figure 3. The plots are presented in the following order for the variables: Entrepreneurial Orientation, Intellectual Capital and Integrative Capabilities.

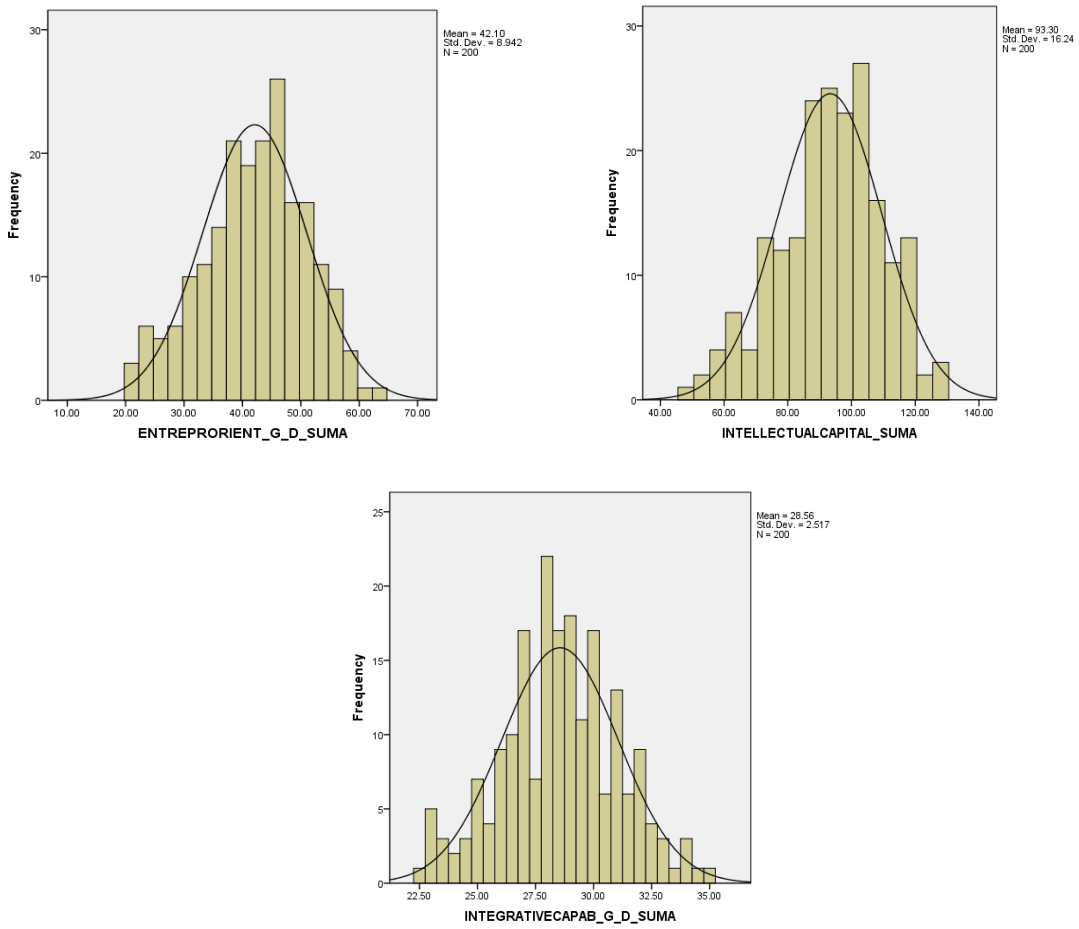

Figure 3. Plots for Assessing Normality in Entrepreneurial Orientation, Intellectual Capital and Integrative Capabilities constructs

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Furthermore, in order to test the normality, linearity and homoscedasticity assumptions; it is recommend to check the scatter plots of the final (complete) model tested in the regression through an analysis of residuals (Tabachnick and Fidell, 2007: 125). For instance, in the final model (7) where the relationship of intellectual capital-integrative capabilities is moderated by entrepreneurial orientation the following scatter plots are analyzed in Figure 4.

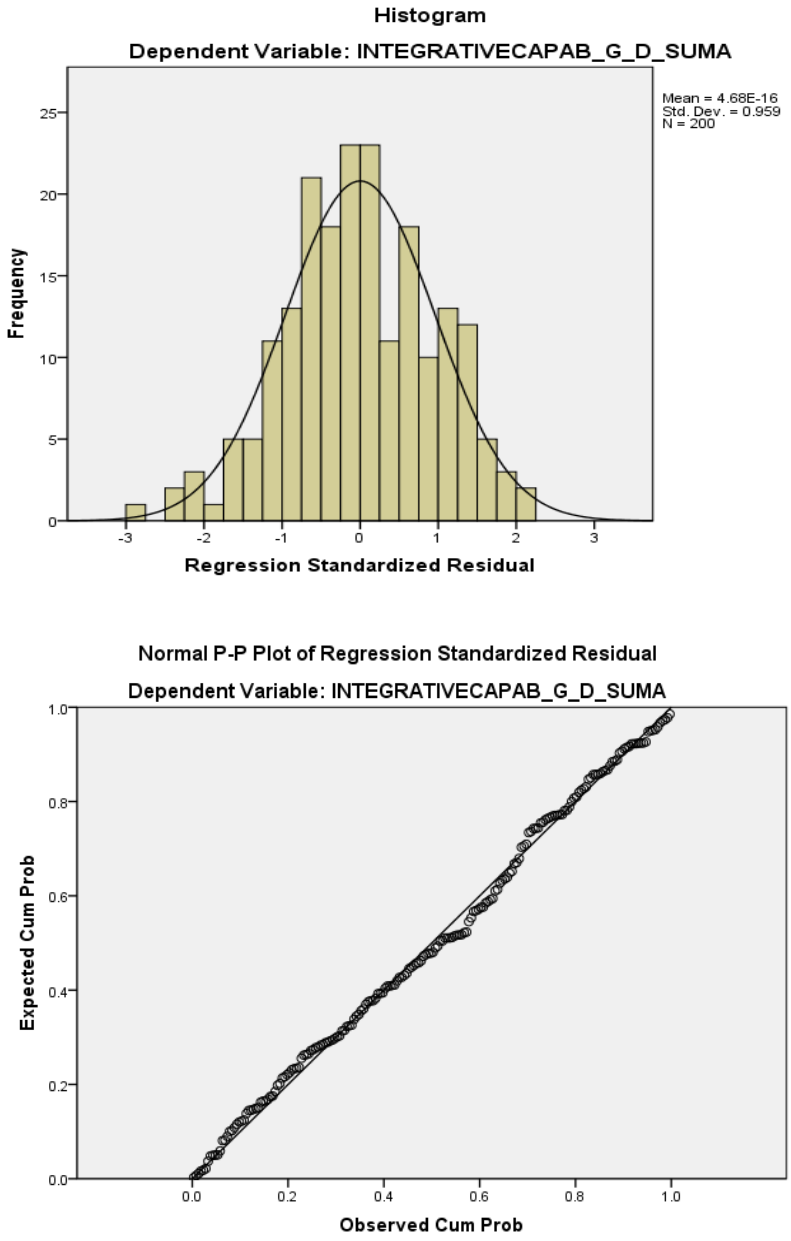

Figure 4. Plots to test Normality, Linearity and Homoscedasticity (final model)

The histogram shows further evidence that the distribution of data fits reasonably well under the normality curve. Additionally, the Normal Probability plot shows that most of the observations lie on the straight line drew from bottom left to upper right. This also indicates that the normality assumption is not violated.

In general terms, according to Tabachnick and Fidell (2007: 127), if all assumptions are met, the residuals will be nearly rectangular distributed with a concentration of scores along the center. In Figure 5 this situation can be observed.

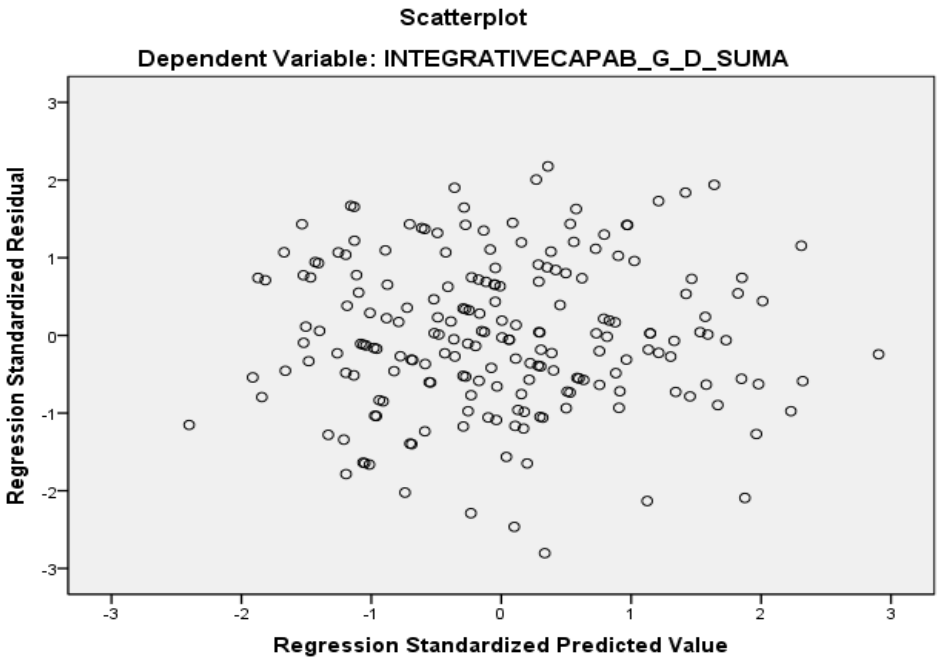

Figure 5. Plot to check if regression assumptions are met (final model)

5.2.5 Linearity

Relying on the last scatter plots, if nonlinearity were present, the overall shape in the plot was curved instead of nearly rectangular. Thus, the linearity assumption is not violated. It is important to note that if failure of linearity of residuals in the regression, it does not automatically invalidate an analysis so much as weaken it (Tabachnick and Fidell, 2007: 127).

5.2.6 Homoscedasticity

Again, relying on the last scatter plot, proof that homoscedasticity exists can be seen in the band enclosing the residuals. It should be approximately equal in width at all values of the predicted DV scores. Typical heteroscedasticity (what is not expected), is a case in which the band becomes wider at larger predicted values. Thus, in this case it can be observed that the width of the band goes from -2 to 2 and observations are consistently distributed in the range of -2 to 2 of the standardized predicted value. There is no visual evidence that the width of the band increases, but it tends to be consistent. As a result, homoscedasticity assumption is not violated. As in the case of linearity, the presence of homoscedasticity does not automatically invalidate an analysis so much as weaken it (Tabachnick and Fidell, 2007: 127).

5.2.7 Independence of errors

This assumption is that errors of prediction are independent of one another. In other words, it detects the presence of autocorrelation in the residuals of a regression. For this matter, the Durbin-Watson test is performed. The values of this test can take values between 0 and 4. The value of two (2) signifies no correlation. Values approaching 0 indicate positive autocorrelation and those approaching 4 mean negative autocorrelation. Thus, the value obtained for the final model (7) in the regression for the Durbin-Watson test is 1.947 (See the following chart in bold), indicating that the assumption of independence of errors is not violated.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					**Durbin-Watson**
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.377	.142	.082	2.41162	.142	2.369	13	186	.006	
2	.466	.217	.154	2.31571	.075	8.863	2	184	.000	
3	.480	.230	.163	2.30341	.012	2.970	1	183	.086	**1.947**

As a final result, the assumptions for using multiple regressions such as sample size, multicollinearity, normality, singularity, linearity, homoscedasticity and independence of errors have been checked and demonstrated that they are not violated.

5.3 Reliability of Scales

In order to perform reliability and confirmatory factor analysis, the practice of using the first respondent's answers and the sample before any depuration (outliers or suggested deleted items) is followed as in Danneels (2012). The Cronbach's Alpha for the different scales is summarized in Table 10.

Scale	Cronbach's Alpha (α)
Entrepreneurial Orientation	.830
Human Capital	.890
Social Capital	.887
Organizational Capital	.880
Intellectual Capital	.922
Integrative Capabilities	.642

Table 12. Reliability Analysis of Scales (Cronbach's Alpha)

All scales are above 0.80 except one that is 0.642. However, all scales exceed the rule of thumb of 0.60 (Nunnally, 1978; Peterson, 1994 as mentioned in Siren, Kohtamaki and Kuckertz, 2012) showing good reliability. In other words, there is optimum internal consistency among the items or the scale produces identical results of a particular construct if it is measured repeatedly. As a result, the assessment of the degree of consistency between multiple measurements of a variable is adequate. For complete charts of reliability analysis refer to Appendix 5.

5.3.1 Convergent Validity

Reliability is also an indicator of convergent validity (Hair et al., 2006: 777). Therefore, convergent validity is attained. This validity will also be supported in the following analysis of

principal components where no substantial cross-loadings in the joint analysis of scales also indicate convergent validity. Another way to further inspect on convergent validity is to look at inter-term correlations that show that in most of the cases there is high correlation among items that belong to the same construct and low correlation among items that belong to different constructs.

5.4 Confirmatory Factor Analysis (CFA) – Construct Validity

CFA statistics tells how well the specification of the factors matches reality (the actual data) and allows checking construct validity. Construct validity is the extent to which a set of measures items actually reflects the theoretical latent construct those items are designed to measure. Evidence of construct validity provides confidence that item measure taken from a sample represent the actual true score that exists in the population (Hair et al., 2006: 776). In other words, validity is the extent to which a scale or set of measures accurately represents the concept of interest.

Scales were assessed using the responses of the main informant. Principal component analyses with Varimax rotation were carried on separately and jointly. The separate analyses are summarized as follows in Table 13.

Scale	Loadings	Suggested deleted items	KMO test > 0.6* for good factor analysis	Barlett's Test p <0.01*
Entrepreneurial Orientation	As expected	EOI1_G	0.80	0.000
Human Capital	As expected	None	0.86	0.000
Social Capital	As expected	None	0.85	0.000
Organizational Capital	As expected	None	0.80	0.000
Intellectual Capital	As expected	None	0.89	0.000
Integrative Capabilities	As expected	PO2_G	0.69	0.000

*Tabachnick and Fidell (2001)

Table 13. Results of Principal Components with Varimax Rotation

The factor analysis on each scale shows the following eigenvalues:

Entrepreneurial Orientation questionnaire is formed by innovativeness, proactiveness and risk taking and reports three eigenvalues (3.901; 1.133; 1.082) which is consistent with the subscales. The first item (EOI_1) is suggested to be deleted at this point. Though, when the CFA is run constraining to load on just one factor, all values are well above the limit of 0.3 (Pallant, 2004). Values below this limit (0.3) and a Cronbach's alpha were below 0.6-0.7 are subject to analysis and deleted; however, this is not the case.

The Human Capital has a single eigenvalue greater than 1 which is 3.534.

Social Capital has two eigenvalues greater than 1 (4.523; 1.411). This situation is due to the addition of three items that according to Simsek and Havey (2011) would strengthen the measurement of the construct. These last three items loaded on a separate factor. However, when the CFA is run constraining for just one factor all items load appropriately at levels above 0.6 which is greater than the limit of 0.3 as an indication that such item is measuring something different from the scale as a whole (Pallant, 2004: 92). Thus, all eight items are considered.

Organizational Capital has a single eigenvalue greater than 1 which is 3.397.

Intellectual Capital: when the CFA is run constraining to load on just one factor, all values are well above the limit of 0.3 (Pallant, 2004). Therefore, all 18 items are considered (5 from human capital, 8 from social capital and 5 from organizational capital).

Integrative capabilities questionnaire is formed of perceived opportunities and capitalized opportunities and has three eigenvalues greater than 1 (2.251; 1.060; 1.047). One item (the second question –PO2-) is loading on a separate factor which is suggested to be deleted. The same situation is seen when the CFA is run constraining to one factor where all values except the

second are above 0.3. Therefore, when such situation occurs and the Cronbach's alpha is below 0.6 the item should be analyzed and deleted. For this case, since the two criteria are not met, the item is not considered for deletion. However, the other option is to simply delete this item where the Cronbach's Alpha of the integrative capabilities construct reaches 0.70. The results if the item is deleted are presented in the empirical findings section.

As a result, the validity of the instruments has been analyzed and provides the confidence to proceed with more analyses of this research. For complete charts see Appendix 6.

For comparative purposes in Appendix 14 reliability and validity analysis of scales using structural equation modeling can be found.

5.4.1 Discriminant Validity

A further analysis to ensure discriminant validity could be carried out by running principal component analyses with Varimax rotation. The joint factor analysis revealed the anticipated factor structure for each variable. That is, items loaded on the constructs intended to measure and without substantial cross-loadings. The statistical software pointed out 10 factors once all variables' data was included. In Appendix 7, we can see that Entrepreneurial Orientation (Innovativeness) loaded on factor 7, (Proactiveness) loaded on factor 8, (Risk-Taking) loaded on factor 5. Human Capital loaded on factor 1, Social Capital loaded on factor 3 as in the original questionnaire, the additional three items suggested by Simsek and Heavey (2011) arguing an enriched instrument loaded separately on factor 4. However, in the separate scale analysis all items loaded on one factor as already specified. Organization capital loaded on factor 2. Perceived opportunities loaded on factor 9 and capitalization of opportunities loaded on factor 6. Factor number ten, even though the program categorized it, no pair (or more items)

loaded properly on this factor. Again, these results demonstrate that constructs are different from one another with cross-loadings of no major concern. Thus, discriminant validity is supported.

5.5 Common Method Variance (CMV) / Harman Test

In the ex post statistical procedures suggested by Podsakoff et al in order to evaluate CVM, one approach is to do the Harman's single-factor test. For this purpose, in the principal component factor, all 34 items that form the whole model are forced to load on one factor and the no-rotated matrix is analyzed. It resulted that the first factor explains 28.248% of the total variance[6]. Since, this result is below the 50% of the total variance explained; the conclusion derived is that no common method variance is present in the data (Podsakoff and Organ, 1986). For the complete chart see Appendix 8. Following a further statistical procedure that controls for the effects of a single unmeasured latent method factor (Podsakoff et al., 2003) the results show that the common factor explains 7% of the variance. In other words, the results of the CMV test indicate that 7% of the variance in the observed variables may be due to a common factor. This low value for CMV confirms that common method bias is not significantly affecting the results. For the complete results using structural equation modeling and the common factor see Appendix 13.

5.6 Intraclass Correlation

Since this research collected first and second respondent´s answers, the intraclass correlation is undertaken in order to understand not only how correlated the answers are among raters, but if there is also agreement between them. ICC (1) indexes the reliability of individual ratings and ICC (2) represents the reliability of a group average rating (Chen, Bliese, and

[6] Other researchers suggest that the Harman's test should be carried on not forcing to load on one factor and then analyzed the no-rotated matrix. This procedure was also undertaken and the result for the first factor shows that it explains 25.905% of the variance. In sum, both procedures indicate that CMV is not a problem.

Mathieu, 2005). The results are summarized on the following table and each item of the questionnaire that was asked to the raters is analyzed separately. For instance: EOI1-G-D means that the Entrepreneurial Orientation (innovativeness) first question is analyzed in accordance to the answers of the CEO (G) and the second respondent (D). Details in Table 14.

ENTREPRENEURIAL ORIENTATION	**ICC1/ICC2**
EOI1-G-D	0.398***/0.570***
EOI2-G-D	0.433***/0.604***
EOI3-G-D	0.413***/0.584***
EOP1-G-D	0.356***/0.525***
EOP2-G-D	0.486***/0.654***
EOP3-G-D	0.442***/0.613***
EORT1-G-D	0.362***/0.532***
EORT2-G-D	0.376***/0.546***
EORT3-G-D	0.473***/0.642***
INTEGRATIVE CAPABILITIES	
PO1-G-D	0.284***/0.442***
PO2-G-D	0.341***/0.509***
PO3-G-D	0.208***/0.345***
PO4-G-D	0.288***/0.448***
CO1-G-D	0.382***/0.552***
CO2-G-D	0.165***/0.283***
CO3-G-D	0.292***/0.452***

***Correlation is significant at the 0.0005 level (2-tailed)

Table 14. Intraclass Correlations Results (First and Second Respondent)

Other results are similar to the outcomes of this study. For example, in Simsek et al. (2012) is stated "The intraclass correlations suggested acceptable reliability (ICC1 = 0.28; ICC2 = 0.57; $F = 2.337$; $p < 0.001$)" or as in Danneels (2012) "The interrater correlations were 0.397 (0.001) and 0.361 (0.001)". The agreement and correlation of answers of the raters in the sample analyzed in the current research indicate even stronger values than the examples outlined. For complete charts refer to Appendix 9.

5.7 Paper and Web based surveys

An independent sample T-test is conducted considering the variables: Entrepreneurial Orientation, Intellectual Capital and Integrative Capabilities to see if there are significant differences in these variables due to surveys taken on paper or web link. Details in Table 15.

Variable	F	Significance
Entrepreneurial Orientation	0.048	0.826
Intellectual Capital	0.408	0.524
Integrative Capabilities	2.365	0.126

Table 15. Levene's Test for Equality of Variances in Paper and Web-based Surveys

This test means that the variability of scores for each of the groups (this case paper and web) is similar. In other to test this similarity it is expected to find that the test is not significant (significance level greater than 0.05). Thus, considering the results I conclude that No significant differences exists in the data collected on each variable either paper or web based format. In other words, there is similarity in the variability of scores from each group web and paper based. For the complete chart see Appendix 10.

5.8 Early and late respondents

A T-test is conducted considering the variables: Entrepreneurial Orientation, Intellectual Capital and Integrative Capabilities to see if there are significant differences in these variables due to early respondents and late respondents. Details in Table 16.

Variable	F	Significance
Entrepreneurial Orientation	0.842	0.360
Intellectual Capital	0.934	0.335
Integrative Capabilities	0.688	0.408

Table 16. Levene's Test for Equality of Variances in Early and Late Respondents

This test means that the variability of scores for each of the groups (this case paper and web) is similar. In other to test this similarity it is expected to find that the test is not significant (significance level greater than 0.05). Thus, considering the results I conclude that No significant differences exists in the data collected on each variable either answered by early or late respondent. In other words, there is similarity in the variability of scores from each group early and late respondent. For the complete chart see Appendix 10.

5.10 Descriptive Statistics

Table 17 shows the descriptive statistics of the variables Entrepreneurial Orientation, Human Capital, Social Capital, Organizational Capital, Intellectual Capital, Integrative Capabilities, Size (log) and Age (log).

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Entrepreneurial Orientation	200	21.00	62.50	42.0975	8.94198
Human Capital	200	12.00	35.00	26.6100	5.00531
Social Capital	200	14.00	56.00	41.7800	8.50312
Organizational Capital	200	5.00	35.00	24.9100	6.53878
Intellectual Capital	200	48.00	126.00	93.3000	16.24003
Integrative Capabilities	200	22.50	35.00	28.5550	2.51717
Size (log)	200	.00	3.60	1.5259	.75184
Age (log)	200	.00	2.02	1.0910	.46376
Slack Resources	200	3.00	21.00	13.4700	3.82127
Valid N (listwise)	200				

Table 17. Descriptive Statistics

Correlations

		ENTREPRENEURIAL ORIENTATION	INTELLECTUAL CAPITAL	INTEGRATIVE CAPABILITIES	SIZE	AGE	SLACK RESOURCES
ENTREPRENEURIAL ORIENTATION	Pearson Correlation	1	.445**	.285**	0.1	-0.09	0.094
	Sig. (2-tailed)		0	0	0.158	0.206	0.186
	N	200	200	200	200	200	200
INTELLECTUAL CAPITAL	Pearson Correlation	.445**	1	.293**	.160*	0.006	.319**
	Sig. (2-tailed)	0		0	0.024	0.929	0
	N	200	200	200	200	200	200
INTEGRATIVE CAPABILITIES	Pearson Correlation	.285**	.293**	1	0.02	-0.108	.213**
	Sig. (2-tailed)	0	0		0.774	0.126	0.002
	N	200	200	200	200	200	200
SIZE	Pearson Correlation	0.1	.160*	0.02	1	.603**	.256**
	Sig. (2-tailed)	0.158	0.024	0.774		0	0
	N	200	200	200	200	200	200
AGE	Pearson Correlation	-0.09	0.006	-0.108	.603**	1	.296**
	Sig. (2-tailed)	0.206	0.929	0.126	0		0
	N	200	200	200	200	200	200
SLACK RESOURCES	Pearson Correlation	0.094	.319**	.213**	.256**	.296**	1
	Sig. (2-tailed)	0.186	0	0.002	0	0	
	N	200	200	200	200	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 18. Correlation Matrix

Intellectual capital is formed by three subscales. Their correlations are shown as follows:

Correlations

		HUMAN CAPITAL	SOCIAL CAPITAL	ORGANIZATIONAL CAPITAL	ENTREPRENEURIAL ORIENTATION	INTEGRATIVE CAPABILITIES	SIZE	AGE	SLACK RESOURCES
HUMAN CAPITAL	Pearson Correlation	1	.606**	.310**	.324**	.166*	-0.005	-0.078	.254**
	Sig. (2-tailed)		0	0	0	0.019	0.949	0.274	0
	N	200	200	200	200	200	200	200	200
SOCIAL CAPITAL	Pearson Correlation	.606**	1	.466**	.459**	.299**	0.079	-0.066	.213**
	Sig. (2-tailed)	0		0	0	0	0.267	0.35	0.003
	N	200	200	200	200	200	200	200	200
ORGANIZATIONAL CAPITAL	Pearson Correlation	.310**	.466**	1	.261**	.212**	.297**	.162*	.321**
	Sig. (2-tailed)	0	0		0	0.003	0	0.022	0
	N	200	200	200	200	200	200	200	200
ENTREPRENEURIAL ORIENTATION	Pearson Correlation	.324**	.459**	.261**	1	.285**	0.1	-0.09	0.094
	Sig. (2-tailed)	0	0	0		0	0.158	0.206	0.186
	N	200	200	200	200	200	200	200	200
INTEGRATIVE CAPABILITIES	Pearson Correlation	.166*	.299**	.212**	.285**	1	0.02	-0.108	.213**
	Sig. (2-tailed)	0.019	0	0.003	0		0.774	0.126	0.002
	N	200	200	200	200	200	200	200	200
SIZE	Pearson Correlation	-0.005	0.079	.297**	0.1	0.02	1	.603**	.256**
	Sig. (2-tailed)	0.949	0.267	0	0.158	0.774		0	0
	N	200	200	200	200	200	200	200	200
AGE	Pearson Correlation	-0.078	-0.066	.162*	-0.09	-0.108	.603**	1	.296**
	Sig. (2-tailed)	0.274	0.35	0.022	0.206	0.126	0		0
	N	200	200	200	200	200	200	200	200
SLACK RESOURCES	Pearson Correlation	.254**	.213**	.321**	0.094	.213**	.256**	.296**	1
	Sig. (2-tailed)	0	0.003	0	0.186	0.002	0	0	
	N	200	200	200	200	200	200	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 19. Correlation Matrix (Intellectual Capital Disaggregated)

5.11 Hypotheses Test Results: The different models with regressions' results are presented in Table 20.

Regression of Integrative Capabilities					
Variables in the equation	Model 1 Control Variables	Model 2 Human Capital	Model 3 Social Capital	Model 4 Organizational Capital	Model 5 Intellectual Capital
	ß	ß	ß	ß	ß
Control Variables					
Size (log)	.104	.103	.079	.063	.068
Age (log)	-.330*	-.314**	-.282**	-.321**	-.287**
Slack Resources	.267***	.242**	.210**	.225**	.193**
Industry Dummies[a]					
Wood	.135†	.131	.145*	.137*	.137*
Textils	.167*	.167*	.154*	.167*	.161*
Minerals	.110	.098	.085	.091	.077
Paper	-.011	-.018	-.004	.008	-.003
Chemical	.104	.105	.098	.093	.096
Metalworking	.045	.048	.064	.044	.056
Food	.097	.098	.094	.103	.100
Commerce	.008	.015	.012	.007	.016
Construction	.126†	.124†	.099	.137†	.116
Mexico-Ecuador	.025	.013	-.033	-.002	-.029
Independent Variables					
Human Capital		.081			
Social Capital			.242***		
Organizational Capital				.169*	
Intellectual Capital					.230**
Entrepreneurial Orientation					
Interaction Terms					
Intellectual Capital x Entrepreneurial Orientation					
R^2	.142	.148	.191	.164	.184
ΔR^2	.142**	.006	.049***	.022*	.041**
Adjusted R^2	.082	.083	.130	.101	.122
F	2.369**	1.213	11.213***	4.899*	9.398**
[a] Reference category is services					
N=200; ***$p < 0.001$; ** $p < 0.01$; *$p < 0.05$; † $p < 0.10$.					

Table 20. Regression Models Results

Variables in the equation	Model 6	Model 7
	ß	ß
Control Variables		
Size (log)	.038	.043
Age (log)	-.256**	-.270**
Slack Resources	.199**	.183**
Industry Dummies[a]		
Wood	.148*	.132†
Textils	.182*	.191**
Minerals	.080	.085
Paper	-.007	.001
Chemical	.109	.135†
Metalworking	.052	.059
Food	.110	.136†
Commerce	.022	.035
Construction	.100	.118†
Mexico-Ecuador	-.029	-.029
Independent Variables		
Human Capital		
Social Capital		
Organizational Capital		
Intellectual Capital	.138†	.135†
Entrepreneurial Orientation	.212**	.214**
Interaction Terms		
Intellectual Capital x Entrepreneurial Orientation		.120†
R^2	.217	.230
ΔR^2	.075***	.012†
Adjusted R^2	.154	.163
F	8.863***	2.970†

Table 20. Regression Models Results

The results obtained after the analysis using structural equation modeling can be seen in Figure 6. In general, the significance values are better for the main effects of intellectual capital, entrepreneurial orientation and the moderating variable in respect to the results obtained using OLS. The specific values are show in the robustness section while in the next figure an overall picture is presented.

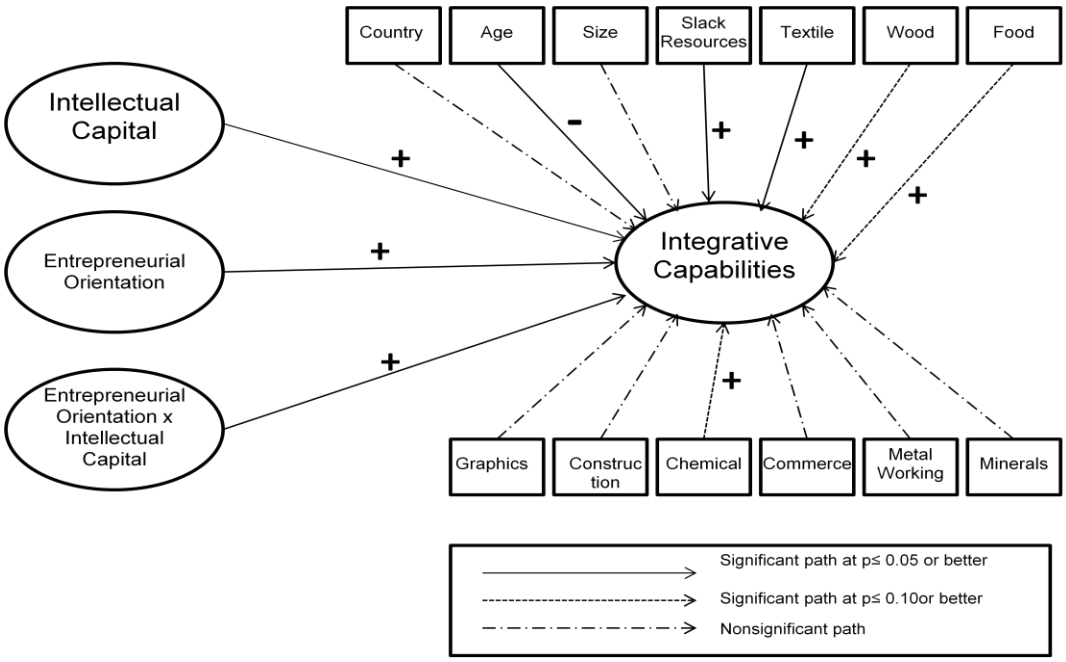

Figure 6. Statistically significant model paths (SEM-AMOS)

5.11.1 Empirical Findings

Table 11 presents descriptive statistics. The average enterprise has been in business for 12 years and has 30 employees. Next, all the assumptions of multiple regressions were analyzed and resulted in a no-violation of such assumptions. Table 12 and 13 present the correlation matrix among all variables. There is significant positive correlations between independent variables ($r = 0.445$, $p < .01$). It thus appears that, on average, firms with entrepreneurial orientation also sustained intellectual capital. Finally, two subscales of intellectual capital

(human capital and social capital) show also a positive and significant correlation (r = 0.6, p <.01), while their correlation with the third subscale (organizational capital) is lower (r = 0.31, p <.01; r = 0.46, p <.01 respectively).

Table 14 reports the results of the regressions. Ordinary Least Square (OLS) regression is used to test the hypotheses. At the first step I entered the control variables where the overall model was significant and it explained a share of the almost half the variance of the full model (model 1: adjusted R^2 = .082; F = 2.369, p <.01; model 7: adjusted R^2 = .163; F = 2.970, p <.10). In particular, in model 1, slack resources (ß =.267, p <.001) was significantly and positively associated with integrative capabilities; meanwhile, age (ß = -.330, p <.05) was significantly negatively associated. These two controls maintain their significance and direction in all regression models. Additionally, dummy variables were created for controlling industry categories and they are compared to the industry dedicated to services. In that regard, two industries (Wood and Textiles) were significant in model 1. Moreover, the dummy variable for the enterprises whose data were collected in Mexico and Ecuador is not significant meaning that the country of origin does not affect results. In the next step, models 2, 3 and 4 tested the effect of each of the intellectual capital's subscales. Interestingly, human capital show no significant direct relationship with integrative capabilities (model 2: ß =.081, n.s); meantime, social capital and organizational capital showed positive and significant relationship with the dependent variable (model 3: ß =.242, p <.001; model 3: ß =.169, p <.05, respectively). Next, in model 5 the intellectual capital variable (as a sum of its 3 subscales) indicated a positive and significant effect on integrative capabilities (model 5: ß =.230, p <.01). The overall results indicate that the importance and explanatory power of social capital due to its contribution to the variance explained (model 3: adjusted R^2 = .130; F = 11.213, p <.001) is superior to those of the organizational social and

human capital. Thus, Hypothesis 1 is supported as well as hypotheses H1b and H1c, while hypothesis H1a received no support.

Afterwards, I entered the main effects of intellectual capital and entrepreneurial orientation along with control variables in model 6. It resulted in positive and significant effects with integrative capabilities (model 6: intellectual capital: ß =.138, p <.10; entrepreneurial orientation: ß =.212, p <.01). For the test of the moderator effects, I followed the procedures suggested by Aiken and West (1991). To minimize multicollinearity among interaction terms and their constituent variables, the independent variables entrepreneurial orientation and intellectual capital were mean centered (Aiken and West, 1991). Then, I entered the two-way interaction term to test the Hypothesis 2. This addition improved the variance explained in the outcome variable (model 7: ΔR^2 = *.012*, p <.10; intellectual capital: ß =.135, p <.10; entrepreneurial orientation: ß =.214, p <.005; intellectual capital x entrepreneurial orientation: ß =.120, p <.10), suggesting that the interaction between intellectual capital and entrepreneurial orientation account for integrative capabilities differences among firms. Thus, Hypothesis 2 is supported.

If the option of deleting the PO2_G item that belongs to the integrative capabilities construct is performed the results are marginally better: (model 7: ΔR^2 = *.013*, p <.10; intellectual capital: ß =.140, p <.10; entrepreneurial orientation: ß =.214, p <.005; intellectual capital x entrepreneurial orientation: ß =.122, p <.10).

Finally, I inspected the variance inflation factor (VIF) among the explanatory variables which indicated the following highest values in the different models: Model 1 = 1.888; Model 2 = 1.935; Model 3 = 1.937; Model 4 = 1.893; Model 5 = 1.934; Model 6 = 1.962 and Model 7 = 1.978. As a result, no problems with multicollinearity are present (Hair et al., 2006). The overall

fit of the data in the different models are optimum as reflected in the ANOVA where the significant values can be observed. In order to see all charts with regressions of the seven models refer to Appendix 11.

To advance further interpretations, I plotted this interaction effects in three levels (high, medium and low) for the moderator variable. Following previous research, for high levels of the moderator effect the calculation is performed at (+1 standard deviation) and for low levels of the moderator effect the calculation is performed at (-1 standard deviation), and for medium level the value is 0.

The equation of the statistically significant model (model 7: $R^2 = 0.23$, $p < .10$) is:

$$Z_{\text{Integrative Capabilities}} = 0.135*Z_{\text{Intellectual Capital}} + 0.214 * Z_{\text{Entrepreneurial Orientation}} + 0.12* Z_{\text{Intellectual Capital}} \text{ x } Z_{\text{Entrepreneurial Orientation}} \quad \text{(Equation1)}$$

where all of the variables are standardized. Of most interest, the interaction term is statistically significant ($ß = .12$, $p < .10$) indicating that entrepreneurial orientation does function as a moderator of the relationship between intellectual capital and integrative capabilities. In order to prepare the plot the substitutions in equation (1) are as already indicated (1=high; 0=medium; -1=low).

Low Entrepreneurial Orientation (EO)

$$Z_{\text{Integrative Capabilities}} = 0.135*Z_{\text{Intellectual Capital}} + 0.214 * (-1) + 0.12* Z_{\text{Intellectual Capital}} \text{ x } (-1) =$$

$$\mathbf{0.015* Z_{Intellectual\ Capital} - 0.214}$$

Medium Entrepreneurial Orientation (EO)

$Z_{Integrative\ Capabilities} = 0.135*Z_{Intellectual\ Capital} + 0.214 * (0) + 0.12* Z_{Intellectual\ Capital}$ x (0) =

$0.135* Z_{Intellectual\ Capital}$

Medium Entrepreneurial Orientation (EO)

$Z_{Integrative\ Capabilities} = 0.135*Z_{Intellectual\ Capital} + 0.214 * (1) + 0.12* Z_{Intellectual\ Capital}$ x (1) =

$0.255* Z_{Intellectual\ Capital} + 0.214$

In order to find two points to draw each equation I substitute values of (1, 0 and -1) in the $Z_{Intellectual\ Capital}$ and obtain the predicted values of $Z_{Integrative\ Capabilities}$.

Low EO, Low IC : $Z_{Integrative\ Capabilities} = 0.015\ (-1) – 0.214 = - 0.229$

Low EO, High IC : $Z_{Integrative\ Capabilities} = 0.015\ (1) – 0.214 = - 0.199$

Medium EO, Low IC: $Z_{Integrative\ Capabilities} = 0.135\ (-1) = - 0.135$

Medium EO, High IC: $Z_{Integrative\ Capabilities} = 0.135\ (1) = 0.135$

High EO, Low IC: $Z_{Integrative\ Capabilities} = 0.255\ (-1) + 0.214 = - 0.041$

High EO, High IC: $Z_{Integrative\ Capabilities} = 0.255\ (1) + 0.214 = 0.469$

Low EO, Medium IC : $Z_{Integrative\ Capabilities} = 0.015\ (0) – 0.214 = - 0.214$

Medium EO, Medium IC : $Z_{Integrative\ Capabilities} = 0.015\ (0) = 0$

High EO, Medium IC : $Z_{Integrative\ Capabilities} = 0.255\ (0) + 0.214 = 0.214$

The following matrix summarized the coordinates of the plot

EO / IC	Low	Med	High
High	-0.041	0.214	0.469
Med	-0.135	0	0.135
Low	-.229	-0.214	-0.199

Using ModGraph, a program to compute cell means for the graphical display of moderational analyses (Jose, 2008), the following graph is obtained.

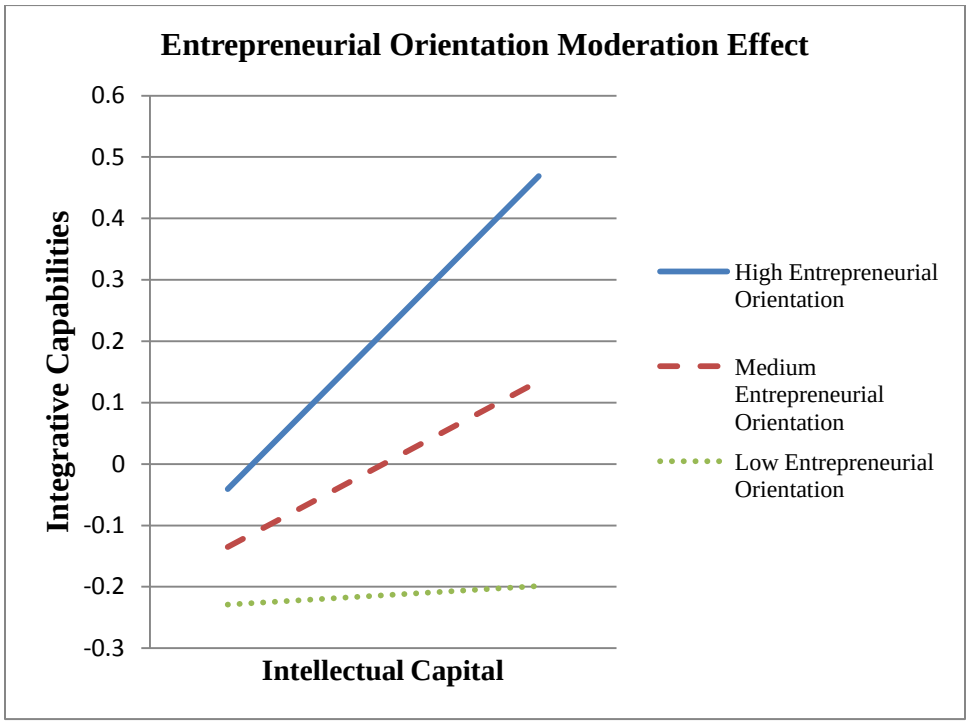

Figure 7. Plot of the Interaction Effect of Entrepreneurial Orientation

From Figure 7, it can be inferred that at low levels of entrepreneurial orientation, the effect on integrative capabilities is marginal; however, with medium levels of entrepreneurial orientation the slope increases and the result on the dependent variable is better. It is also worth noting that at medium level of entrepreneurial orientation the increase in the dependent variable goes from negative to positive terrain. Finally, when levels of entrepreneurial orientation

moderation effect - using one standard deviation above and below the mean to represent high and low levels of such moderating variable- are high, the slope is steeper and shows an increase in comparison to the latter case indicating that it leads to a substantial increment of integrative capabilities. This increase is substantial from negative 0.041 to positive 0.469. This situation is corroborated with the statistical analysis already shown in model 7 where the moderation effect is marginally significant (*pvalue of* 0.08). However, in the next section the result of the moderation effect using SEM is significant (*pvalue of* 0.05). As an additional note, interaction effects that do not cross (as this case) are called "ordinal" interactions. If the slopes of the drawn lines are not parallel in an ordinal interaction, it means that the interaction effect is significant given enough statistical power. In sum, the moderating effect of entrepreneurial orientation on the intellectual capital-integrative capabilities relationship is confirmed supporting Hypothesis 2.

5.12 Robustness Check

As a robustness check of the final model, I tested it using just the information of the first respondent and it shows essentially the same results. For instance, Entrepreneurial Orientation (ß =.131, p <.10); Intellectual Capital (ß =.173, p <.05) and the interaction term entrepreneurial orientation x intellectual capital (ß =.125, p <.10).

Furthermore more, I also check results using Structural Equation Modeling[7] (SEM) using AMOS, software of SPSS. In Table 21, the compared results obtained using multiple regressions and SEM are presented. The 1st column represent variables, 2nd and 3er OLS results, 4th and 5th OLS deleting the PO2_G item, 6th and 7th are SEM results and 8th and 9th are SEM results deleting the PO2_G item. For the complete results and paths see Appendix 12.

[7] SEM is a family of statistical models that seek to explain the relationships among multiple variables. It examines the structure of interrelationships expressed in a series of equations. So far, each multivariate technique has been classified either as an interdependence or dependence technique, SEM is a unique combination of both types of techniques since it lies in factor analysis and multiple regression analysis (c.f. Hair et al., 2006).

Integrative Capabilities	***ß***	**Sig.**	***ß***	**Sig.**	***Estimate***	**Paths**	***Estimate***	**Paths**
Size	.043	.615	.054	.527	.145	.593	.168	.381
Age	-.270	.003	-.308	.001	-1.467	.002	-1.550	.000
Slack Resources	.183	.015	.179	.017	.121	.007	.109	.004
Wood	.132	.062	.116	.098	1.192	.141	1.053	.095
Textile	.191	.009	.152	.035	2.183	.017	1.668	.023
Minerals	.085	.215	.075	.270	1.870	.256	1.610	.265
Graphics	.001	.984	.018	.790	-.246	.768	.004	.923
Chemical	.135	.063	.091	.205	1.026	.158	.672	.218
Metalworking	.059	.398	.064	.358	.385	.632	.515	.413
Food	.136	.062	.118	.104	.876	.187	.777	.104
Commerce	.035	.630	.019	.791	-.263	.612	-.133	.648
Construction	.118	.109	.095	.192	.828	.246	.682	.198
Ecuador_Mexico	-.029	.694	.000	.997	-.145	.673	.001	.997
Intellectual Capital	.135	**.093**	.236	**.081**	.021	**.052**	.020	**.043**
Ent. Orientation	.214	**.005**	.140	**.002**	.060	**.002**	.062	**.000**
IC x EO	.120	**.086**	.122	**.079**	.002	**.050**	.002	**.049**

Table 21. Results - Comparison Multiple Regressions and SEM

It is worth noting that using SEM which is a more robust way of assessing multiple regressions since it relies on correlation and covariance matrixes, the results in general terms remain the same. Nonetheless, the significance of such result improves while using SEM. For instance, the main direct effects have the following chance in their significance (Intellectual Capital: *p value:* from 0.093 to 0.043; Entrepreneurial Orientation: *p value:* from 0.005 to

0.000) and the moderation term (IC x EO: *p value:* from 0.086 to 0.049). The Goodness of fit indicators show appropriate results. Cmin/Df = 2.234 (Optimum < 5); IFI = 0.914 and CFI=0.892 (Optimum 0.90 and above); RMSEA = 0.079 (Optimum < 1: excellent < 0.05).

In regard of the subscales of intellectual capital the results using SEM are the following where a change in a better significance level using this technique is achieved in contrast to multiple regressions:

Human Capital: *p value:* from 0.27 to 0.21; Cmin/Df = 2.505; IFI = 0.936 and CFI=0.903; RMSEA = 0.087.

Social Capital: *p value*: from 0.001 to 0.0001; Cmin/Df = 2.661; IFI = 0.933 and CFI=0.899; RMSEA = 0.09.

Organizational Capital: *p value:* from 0.028 to 0.009; Cmin/Df = 3.895; IFI = 0.886 and CFI=0.831; RMSEA = 0.12.

Intellectual Capital: *p value:* from 0.002 to 0.0001; Cmin/Df = 3.737; IFI = 0.893 and CFI=842; RMSEA = 0.11.

In sum, the theoretical model proposed show that is robust and the hypotheses (except H1a) remain positive and significant using multiple regressions and when using structural equation modeling the results enhance more significant p values in all cases while the indicators of the goodness of fit of the full model meet the appropriate levels.

CHAPTER 6

CONCLUSIONS

6.1 Discussion and Conclusions

This dissertation theorized that enterprises with intellectual capital in conjunction with entrepreneurial orientation increase the development of integrative capabilities, a type of dynamic capability that is entrepreneurial in nature since such capabilities perceive (sense) and capitalize (seize) opportunities (Teece, 2007). Despite the assumed importance of dynamic capabilities to the success of enterprises over time, further theoretical arguments and especially empirical evidence regarding the antecedents or foundations for its development was lacking. Furthermore, the scant empirical research has mainly aimed at explaining how dynamic capabilities contribute to rent generation and performance (for overviews, see Arthurs and Busenitz, 2006; Danneels, 2012; Kor and Mahoney, 2005; Malik and Kotabe, 2009; Zott, 2003), and in a lesser degree has looked at its antecedents (King and Tucci, 2002; Fang and Zou, 2009; McKelvie and Davidsson, 2009). As a result, for further understanding, the present study examined the antecedents for developing integrative capabilities and proofed this theoretical approach in the Latin American context.

The strategy literature argues that resources (or assets) precede the development of dynamic capabilities (Teece et al., 1997; Eisenhardt and Martin, 2000; Teece, 2007). However, I theorized an intervening process in such relationship and empirically tested it by using the firm's entrepreneurial orientation as a moderating variable. Recent theoretical work has called for attention to entrepreneurial orientation and the importance of linking this construct to current theories in strategic management (Miller, 2011). In particular, this study advances knowledge in integrating relevant streams of research from the strategy and entrepreneurship literatures expanding the natural relationship that exists between both fields where a joint value added is

derived from its synergy (Schendel and Hitt, 2007). In other words, this research shortens the existing gap in covering one of the intersections of interest in entrepreneurship and strategic management.

This empirical research found that intellectual capital (a bundle of resources where knowledge is a central axis) affects integrative capabilities, contingent on entrepreneurial orientation. This analysis is based on a survey of enterprises undertaken in 2011 and 2012 that resulted in 92 Ecuadorian and 108 Mexican manufacturing and technological enterprises. 85% of the sample is formed of small and medium enterprises (SMEs or PyMEs)[8] that also contribute to further empirical research on this type or organizations since research on dynamic capabilities has been mainly undertaken in large corporations (Zahra et al, 2006). The enterprises surveyed operate in Mexico and Ecuador where these countries experience similarities which are typical of emerging economies (Wright, Filatotchev, Hoskisson, Peng, 2005). In these contexts firms must strive for scarce resources and an entrepreneurial mindset in order to survive.

Distinct effects of the three components of intellectual capital (human, social and organizational capital) on integrative capabilities were found. In first place, human capital was not significant. This is an unexpected result due to its paramount importance for seizing enormous opportunities in an emerging economy (Javalgi and Todd, 2011), for opportunities' growth in the developed world (Kor and Leblebici, 2005), and for developing dynamic capabilities in general (Branzei and Vertinsky, 2006). However, one approach to understand this result may be in line with the argument of Borensztein's et al. (1998) who argue for the idea of a minimum threshold of human capital required. Similarly, Xu (2000) found that in the absence of adequate human capital spillovers may simply be unfeasible. Furthermore, McKelvie and Davidsson (2009) found that the nature and effect of resources employed to develop capabilities

[8] SMEs: Small and Medium enterprises. PyMEs: Pequeñas y Medianas empresas.

vary greatly such as the access to employee human capital which unexpectedly yielded in negative effects. Besides, Samstad and Pipkin (2005) acknowledged that the degree of human capital development within the firm's workforce is critical. In consequence, the non significant result of human capital could be understood as a possible insufficient level of human capital that the organizations in the sample may have. This situation may trigger research related to optimum thresholds of human capital discussed in the future research section.

As for the case of social capital, it plays a central role in developing integrative capabilities. This finding also strengthens evidence in line with previous research that deals with similar phenomena (Bhagavatula, et al., 2010; DeCarlis and Saparito, 2006). Nevertheless, the relevance that social capital may have in an emerging context becomes of major importance for the role played by structural holes in pursuing entrepreneurial opportunities (Burt, 1992).

Regarding the effect of organizational capital on integrative capabilities the results also show significant and positive association even though its impact is in a lesser degree than social capital. This empirical finding also contributes with evidence for the organizational capital construct effect on capabilities that has been mostly addressed in conceptual frameworks.

Intellectual capital is also positive related and has a significant effect on integrative capabilities. This construct is considered as sum of its subscales since treating the individual components as independent may ignore their potential complementarily where different activities are mutually supportive and reinforcing.

Integrative capabilities are better enhanced if enterprises possess an entrepreneurial orientation considered as a reflective construct (Covin and Wales, 2011; George and Marino, 2011) where structural paths go from entrepreneurial orientation to the dimensions of innovativeness, proactiveness and risk-taking (George, 2011). If intellectual capital is

considered constant, incremental levels of entrepreneurial orientation provoke an increment in the development of integrative capabilities demonstrating the importance of fostering this type of orientation in organizations. In other words, if enterprises possess low, moderate or high levels of intellectual capital the effect of entrepreneurial orientation in developing integrative capabilities becomes stronger as intellectual capital increase. Moreover, the importance and role of entrepreneurial orientation in the resource-dynamic capability relationship is to renew and insert the organization into a spiral of constant change since knowledge that has been legitimized is often resistant to change and is a common source of inertia for firms (Leonard-Barton, 1992).

Another interesting fact is that since the emergence of the dynamic capabilities' concept, theoretically its value is better suited in dynamic environments (Teece et al., 1997; Helfat et al., 2007). This empirical study provides a more nuanced picture where enterprises from a cross-industry sample (where some operate in more dynamic environments than others) also indicate development of dynamic capabilities entrepreneurial in nature or integrative capabilities. This may indicate that dynamic capabilities are not only present and operate better exclusively in highly dynamic environments as theoretically stated but also in less dynamic environments as other empirical research has also started to corroborate this situation (c.f. Danneels, 2012).

According to these results, firms that better develop integrative capabilities tend to be younger and require more slack resources (financial and human). In that regard, the experience and the literature show that most of the time new enterprises are prone to perceive and capitalize opportunities but they usually struggle with the acquisition of resources; meanwhile, it seems that when firms grow and get a share of the market and acquire a wider stock of resources, the capacity of perceiving and capitalizing opportunities tend to show no major changes. In consequence, to cope with this situation it may be necessary to involve young firms in appropriate programs (i.e.: business accelerators) that help them better benefit of government's

programs such as “Fondo Pyme” or “Mexico Emprende” in Mexico or those run by “Ministerio de la Producción y Competitividad” and “Corporación Financiera Nacional” in Ecuador. However, these programs should make a strong emphasis and take a step forward by managing that the expense of such resources should not only be invested in enterprises’ operations or new technological assets but also importantly in the training of the organization’s workforce at all levels to increase their human capital levels since this may be lacking according to previous results in the study. The combination of these factors may contribute to decrease liability of newness and potentiate enterprises’ growth since early stages of their business.

Another issue of discussion addresses the concern that entrepreneurial orientation is different from a dynamic capability. Kreiser (2011) views entrepreneurial orientation as a dynamic capability. However, if critical characteristics of the definition of entrepreneurial orientation are looked upon, it can be summarized that this construct refers to: a mindset that strives for vision (Lumpkin, 2011); a strategic orientation (Lumpkin and Dess, 1996); a way to sustain a vision (Rauch et al., 2009; Lumpkin et al., 2007) and a direction of thought or inclination (Covin and Lumkin, 2011). On the other hand, seminal definitions of dynamic capabilities argue that such capabilities are a capacity or ability (Teece et al., 1997; Helfat et al., 2007). As a result, a mindset, an orientation, a vision or directions of thought are not the same as a structured and tangible capacity or ability that reflects dynamic capabilities as a process or routine (Nelson and Winter, 1982). Furthermore, the rationale that corporate entrepreneurship is different from entrepreneurial orientation whereas the former equal to a dynamic capability is addressed by Simsek and Heavey (2011). Thus, according to these authors, entrepreneurial orientation is not a dynamic capability. Moreover, other research also indicates that failure to have vision in an organization (that could be enhanced by entrepreneurial orientation), a lack of dynamic capabilities can occur (Danneels, 2010). In sum, the logical arguments of this study are

also in line with the former arguments that state that the constructs of entrepreneurial orientation and dynamic capabilities by definition are different and should not be viewed as equal. This assertion is also supported when the discriminant validity of constructs were addressed.

Finally, results also show that enterprises' size is not significant and therefore it is not a decisive variable in developing integrative capabilities. This particularity indicates that firms that pursue capabilities in order to reconfigure its resource-base in order to achieve competitive advantage (Teece et al., 1997), performance (Drnevich and Kriauciunas, 2011) or supernormal returns (Katkalo et al., 2010) can and need to do so regardless of its size. In the final model regressed, there are five types of industries: wood, textile, chemical, food and construction that showed that better develop integrative capabilities in comparison to the services type of industry which was taken out of the regression model for this purpose. This situation triggers new research questions in regard of possible underlying characteristics of these firms that are addressed in the future research section.

6.2 Implications for managers and policy makers

Firm managers can gain from these results in order to identify, prioritize and foster specific knowledge-based resources that trigger the perception and capitalization of opportunities. Furthermore, managers can adjust, develop and implement appropriate strategies that may lead the organization towards acquiring an entrepreneurial mind set so the workforce may increase their innovativeness, proactiveness and risk-taking. Furthermore, these findings provide additional leverage for those managers at different levels who strive for support in instigating and pursuing entrepreneurial initiatives. Besides, managers can adequate structures and processes for allowing the achievement derived from building the organization's entrepreneurial orientation and intellectual capital.

Policy makers can also use these findings to adjust or create government support mechanisms in line with developing knowledge-based resources in their SMEs program development. Also, current programs that seek to potentiate SMEs can make a stronger emphasis in reinforcing the organization's entrepreneurial orientation so they may be introduced into a spiral that continually seeks for new opportunities and pursues them until capitalization. These policies may avoid the inertia that usually organizations have once they have acquired a share of the market and continue to do their business.

6.3 Limitations

One clear limitation of this study is that its cross-sectional nature implies that conclusions are tentative. In other words, the study is only able to show association rather than causality.

This study can be limited in its generalizability due to some characteristics of the sample. First, enterprises may have an underlying attribute (i.e.: entrepreneurial) since they have voluntarily participated in Business Accelerator's Programs, Technology Parks, Conferences/Forums or sought benefits or support through Industrial or Commerce Chambers. This fact may suggest a difference between enterprises in the sample and those that have not participated or had access to similar trainings or support. In other words, generalizing the findings to firms that have not participated in such programs should be done with care. Second, due to the categorization of firms by size, results may not be fully generalizable to what is considered a large enterprise in other contexts or countries. According to CEPAL, a large enterprise has more than 251 employees; however, other categorizations in other latitudes may consider different cutoffs (For instance; in some European countries a large enterprise has above 500 employees). That is, the claim that the findings of this study can apply to small, medium and large enterprises should also be analyzed with care in regard of what means to be a large enterprises in different regions or countries.

Data collected is from a sample of SMEs in a context where financial data are typically not available, it was not possible to fully compare repondents' and nonrespondents' financial performance to mitigate selection bias concerns that low performing enterprises may be less likely to responder to the survey. This matter counts since dynamic capabilities are closely related to performance where the development of such capabilities may strengthen profits growth. However, the differences of respondents and nonrespondents based on data that measured other variables indicate that there is no significant difference among firms.

Another limitation is that even though enterprises are said to be from Ecuador and Mexico, the sample is comprised of enterprises from a particular, but important, regions of these countries. This problem could be addressed in the future by designing a research where firms from all regions of a country are invited to participate. This study of 200 enterprises from Ecuador and Mexico may not be totally generalizable to other home and host country environment in Latin America.

6.4 Future Research

Future research can extend several aspects of this study. In general terms, longitudinal studies can be undertaken in order to prove causality. Moreover, more countries can be integrated into the sample to have a clearer picture of this phenomenon in Latin America or other emerging economies context.

In regard of the instruments that measure latent constructs that are opportunity related, more research should be carried on in the effort to increase evidence of what items may be deleted, polished or incorporated in order to better measure this paramount construct. Contributing with extensive empirical evidence on this topic may derive in appropriate ways of strengthening such instruments as it has happened with other scales in the literature. The

importance of carrying on a meta-analysis in the future in order to reach a consensus and start using scales widely accepted should be a work of this decade for better research in the upcoming years.

Further studies could also contrast results from developed and emerging countries. Moreover, this study can be carried on focusing only on technology-based enterprises (or high technology) since their characteristics may better represent the theoretical model herein developed. By taking into account this type of enterprises the argument of human capital and its impact on integrative capabilities may be corroborated. In addition, research in terms of the human capital's threshold or minimum required to produce an effect on integrative capabilities in organizations may result in an interesting outcome.

Since Technology Development Institutes that have provided technological support to local firms have contributed to reduce costs and implement technologies (Grossman and Helpman, 2001). In the same sense, a thorough study can be done by analyzing most of the firms that have had a relationship with Business Accelerators or similar. In other words, actions and strategies that business accelerators provide for building knowledge resources and training focused on entrepreneurial characteristics should yield further evidence of positive and stronger results of the model outlined in this study.

Finally, another important future work is to analyze if an organization that has developed entrepreneurial dynamic capabilities (integrative capabilities) show evidence as a direct relationship to enhance performance, economic returns or value creation.

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Appendix 1. Entrepreneurial orientation's instrument

The Miller/Covin and Slevin (1989) EO Scale

Innovativeness items		
In general, the top managers of my firm favor . . .		
A strong emphasis on the marketing of tried-and-true products or services	1 2 3 4 5 6 7	A strong emphasis on R&D, technological leadership, and innovations
How many new lines of products or services has your firm marketed in the past five years (or since its establishment)?		
No new lines of products or services	1 2 3 4 5 6 7	Very many new lines of products or services
Changes in product or service lines have been mostly of a minor nature	1 2 3 4 5 6 7	Changes in product or service lines have usually been quite dramatic
Proactiveness items		
In dealing with its competitors, my firm . . .		
Typically responds to actions which competitors initiate	1 2 3 4 5 6 7	Typically initiates actions to which competitors then respond
Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	1 2 3 4 5 6 7	Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
Typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	1 2 3 4 5 6 7	Typically adopts a very competitive, "undo-the-competitors" posture
Risk-taking items		
In general, the top managers of my firm have . . .		
A strong proclivity for low-risk projects (with normal and certain rates of return)	1 2 3 4 5 6 7	A strong proclivity for high-risk projects (with chances of very high returns)
In general, the top managers of my firm believe that . . .		
Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior	1 2 3 4 5 6 7	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives
When confronted with decision-making situations involving uncertainty, my firm . . .		
Typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions	1 2 3 4 5 6 7	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities

Appendix 2. Intellectual Capital's instrument

The following items had this steam and response format: "To what extend do you agree with the following items describing your organization's intellectual capital? (1= strongly disagree; 7 = strongly agree).

Human Capital

Assess the extent to which employees in your organization are:

Our employees are highly skilled
Our employees are widely considered the best in our industry
Our employees are creative and original
Our employees are experts in their particular jobs and functions
Our employees are a source of new ideas, product, and innovations

Social Capital

Our employees are skilled at collaborating with each other in problem solving
Our employees share information and learn from one another
Our employees interact and exchange ideas with people from different areas within the company
Our employees partner with customer, suppliers, alliance partners to develop solutions
Our employees apply knowledge from one area of the company to problems and opportunities that arise in other areas
We regularly have departmental meetings to discuss market trends and developments
We often convene cross-departmental meetings to discuss market trends and developments
Strategic information spreads quickly throughout all level in this organization.

Organizational Capital

Rate the extent to which the most important knowledge in the firm:

Exists in the know-how of employees
Exists in procedures, policies, and protocols
Is articulated in our value system
Is contained in written form
Is manifested in structures, systems, and processes

Appendix 3. Integrative Capabilities' instrument

External opportunity –recognizing

Using a seven-point Likert scale (1 = not a source; 7 = significant source), respondents are asked to indicate the extent to which ideas for new products/services come from external sources:

Observing customer's needs/problems
Observing competitors
Observing product/service/process problems
Interacting with suppliers or vendors

Internal opportunity-capitalizing

Using a seven-point Likert scale (1 = not a source; 7 = significant source), respondents are asked to assessed how new ideas or opportunities are assessed/evaluated in order to take action on them.

To what extent did the group weigh multiple approaches against each other?
To what extent did the group examine pros and cons of several possible courses of action?
To what extent did the group use multiple criteria for eliminating possible courses of action?

Appendix 4. Slack Resources's instrument

We would now like to ask you about how your company operates; how people interact, make decisions, how people do their job. Remember that there is no right answer, different companies have different ways of doing things. Please indicate how things really are rather than how you wish they were. You may respond in complete candor; your answers are confidential. In my company . . .'

My firm has a reasonable amount of resources in reserve.

We have ample discretionary financial resources.

We can always find the 'manpower' to work on special projects.

Appendix 5. Reliability of Scales

ENTREPRENEURIAL ORIENTATION

Reliability Statistics

Cronbach's Alpha	N of Items
.830	9

Item Statistics

	Mean	Std. Deviation	N
EOI1_G	3.5023	1.98775	221
EOI2_G	5.0814	1.69026	221
EOI3_G	5.3982	1.56809	221
EOP1_G	4.9412	1.73760	221
EOP2_G	4.8416	1.87502	221
EOP3_G	5.3665	1.57727	221
EORT1_G	4.0905	1.78401	221
EORT2_G	4.0860	1.85542	221
EORT3_G	4.0860	1.77529	221

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EOI1_G	37.8914	88.934	.377	.833
EOI2_G	36.3122	88.825	.482	.818
EOI3_G	35.9955	87.586	.579	.809
EOP1_G	36.4525	89.322	.447	.822
EOP2_G	36.5520	82.130	.629	.801
EOP3_G	36.0271	87.690	.571	.809
EORT1_G	37.3032	83.285	.632	.801
EORT2_G	37.3077	84.714	.553	.811
EORT3_G	37.3077	84.796	.584	.807

HUMAN CAPITAL

Reliability Statistics

Cronbach's Alpha	N of Items
.890	5

Item Statistics

	Mean	Std. Deviation	N
HC1	5.3801	1.22488	221
HC2	5.1538	1.28765	221
HC3	5.3258	1.25868	221
HC4	5.4163	1.21674	221
HC5	4.7557	1.57654	221

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
HC1	20.6516	20.992	.693	.875
HC2	20.8778	20.126	.734	.866
HC3	20.7059	19.336	.844	.842
HC4	20.6154	20.429	.760	.862
HC5	21.2760	18.628	.673	.888

SOCIAL CAPITAL

Reliability Statistics

Cronbach's Alpha	N of Items
.887	8

Item Statistics

	Mean	Std. Deviation	N
SC1	5.3665	1.39367	221
SC2	5.4118	1.35434	221
SC3	5.1900	1.53151	221
SC4	5.1719	1.50373	221
SC5	4.9910	1.52551	221
SC6	4.9276	1.65260	221
SC7	4.7466	1.68389	221
SC8	4.9412	1.53184	221

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SC1	35.3801	66.346	.654	.873
SC2	35.3348	66.187	.686	.871
SC3	35.5566	62.893	.737	.865
SC4	35.5747	64.746	.667	.872
SC5	35.7557	63.585	.708	.868
SC6	35.8190	62.958	.666	.872
SC7	36.0000	64.791	.572	.882
SC8	35.8054	65.985	.595	.879

ORGANIZATIONAL CAPITAL

Reliability Statistics

Cronbach's Alpha	N of Items
.880	5

Item Statistics

	Mean	Std. Deviation	N
OC1	5.1041	1.49637	221
OC2	4.7421	1.74291	221
OC3	5.0271	1.52530	221
OC4	4.5294	1.82789	221
OC5	4.9276	1.61364	221

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OC1	19.2262	34.685	.503	.899
OC2	19.5882	28.234	.784	.837
OC3	19.3032	31.339	.710	.856
OC4	19.8009	27.269	.795	.834
OC5	19.4027	29.378	.789	.837

INTELLECTUAL CAPITAL

Reliability Statistics

Cronbach's Alpha	N of Items
.922	18

Item Statistics

	Mean	Std. Deviation	N
HC1	5.3801	1.22488	221
HC2	5.1538	1.28765	221
HC3	5.3258	1.25868	221
HC4	5.4163	1.21674	221
HC5	4.7557	1.57654	221
SC1	5.3665	1.39367	221
SC2	5.4118	1.35434	221
SC3	5.1900	1.53151	221
SC4	5.1719	1.50373	221
SC5	4.9910	1.52551	221
SC6	4.9276	1.65260	221
SC7	4.7466	1.68389	221
SC8	4.9412	1.53184	221
OC1	5.1041	1.49637	221
OC2	4.7421	1.74291	221
OC3	5.0271	1.52530	221
OC4	4.5294	1.82789	221
OC5	4.9276	1.61364	221

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
HC1	85.7285	290.490	.559	.918
HC2	85.9548	290.462	.528	.919
HC3	85.7828	284.407	.691	.916
HC4	85.6923	288.769	.606	.918
HC5	86.3529	278.902	.644	.916
SC1	85.7421	282.774	.653	.916
SC2	85.6968	283.230	.664	.916
SC3	85.9186	276.802	.710	.915
SC4	85.9367	281.641	.622	.917
SC5	86.1176	279.986	.646	.916
SC6	86.1810	278.631	.615	.917
SC7	86.3620	281.159	.555	.919
SC8	86.1674	281.358	.615	.917
OC1	86.0045	286.368	.527	.919
OC2	86.3665	280.215	.549	.919
OC3	86.0814	283.375	.577	.918
OC4	86.5792	279.627	.529	.920
OC5	86.1810	277.731	.650	.916

INTEGRATIVE CAPABILITIES

Reliability Statistics

Cronbach's Alpha	N of Items
.642	7

Item Statistics

	Mean	Std. Deviation	N
PO1_G	4.5249	.68461	221
PO2_G	3.7195	.95966	221
PO3_G	4.1855	.84044	221
PO4_G	3.9276	.95070	221
CO1_G	3.8959	.95491	221
CO2_G	4.1222	.88857	221
CO3_G	4.0860	.83494	221

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PO1_G	23.9367	9.969	.365	.607
PO2_G	24.7421	10.729	.058	.699
PO3_G	24.2760	9.128	.429	.583
PO4_G	24.5339	9.850	.211	.652
CO1_G	24.5656	8.474	.473	.565
CO2_G	24.3394	8.380	.553	.540
CO3_G	24.3756	8.936	.477	.569

Appendix 6. Confirmatory Factor Analysis Scale by Scale

CFA ENTREPRENEURIAL ORIENTATION (Innovativeness, Proactiveness, Risk Taking)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
Bartlett's Test of Sphericity	Approx. Chi-Square	717.198
	df	36
	Sig.	.000

Communalities

	Initial	Extraction
EOI1_G	1.000	.368
EOI2_G	1.000	.810
EOI3_G	1.000	.803
EOP1_G	1.000	.553
EOP2_G	1.000	.728
EOP3_G	1.000	.670
EORT1_G	1.000	.614
EORT2_G	1.000	.781
EORT3_G	1.000	.788

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance
1	3.901	43.340	43.340	3.901	43.340	43.340	2.150	23.885
2	1.133	12.593	55.933	1.133	12.593	55.933	2.112	23.462
3	1.082	12.017	67.950	1.082	12.017	67.950	1.854	20.603
4	.819	9.098	77.048					
5	.666	7.403	84.451					
6	.472	5.249	89.699					
7	.328	3.642	93.342					
8	.308	3.422	96.763					
9	.291	3.237	100.000					

Component Matrixa

	Component		
	1	2	3
EOI1_G	.476	.151	.344
EOI2_G	.615	-.305	-.583
EOI3_G	.698	-.404	-.392
EOP1_G	.555	-.144	.474
EOP2_G	.743	-.326	.264
EOP3_G	.690	-.286	.334
EORT1_G	.739	.249	-.074
EORT2_G	.665	.582	.000
EORT3_G	.696	.495	-.241

Rotated Component Matrixa

	Component		
	1	2	3
EOI1_G	.489	.354	-.066
EOI2_G	.061	.208	.874
EOI3_G	.282	.151	.837
EOP1_G	.728	.148	.038
EOP2_G	.754	.147	.372
EOP3_G	.758	.137	.277
EORT1_G	.318	.648	.306
EORT2_G	.215	.856	.047
EORT3_G	.090	.840	.271

Entrepreneurial Orientation CFA constrained to 1 factor

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
Bartlett's Test of Sphericity	Approx. Chi-Square	717.198
	df	36
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.901	43.340	43.340	3.901	43.340	43.340
2	1.133	12.593	55.933			
3	1.082	12.017	67.950			
4	.819	9.098	77.048			
5	.666	7.403	84.451			
6	.472	5.249	89.699			
7	.328	3.642	93.342			
8	.308	3.422	96.763			
9	.291	3.237	100.000			

Component Matrixa

	Component 1
EOI1_G	.476
EOI2_G	.615
EOI3_G	.698
EOP1_G	.555
EOP2_G	.743
EOP3_G	.690
EORT1_G	.739
EORT2_G	.665
EORT3_G	.696

CFA HUMAN CAPITAL

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	643.749
	df	10
	Sig.	.000

Communalities

	Initial	Extraction
HC1	1.000	.652
HC2	1.000	.701
HC3	1.000	.828
HC4	1.000	.734
HC5	1.000	.619

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.534	70.683	70.683	3.534	70.683	70.683
2	.513	10.259	80.942			
3	.396	7.917	88.859			
4	.352	7.033	95.892			
5	.205	4.108	100.000			

Component Matrixa

	Component 1
HC1	.807
HC2	.837
HC3	.910
HC4	.857
HC5	.787

CFA SOCIAL CAPITAL

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.851
Bartlett's Test of Sphericity	Approx. Chi-Square	1100.536
	df	28
	Sig.	.000

Communalities

	Initial	Extraction
SC1	1.000	.586
SC2	1.000	.625
SC3	1.000	.692
SC4	1.000	.592
SC5	1.000	.649
SC6	1.000	.519
SC7	1.000	.410
SC8	1.000	.450

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.523	56.532	56.532	4.523	56.532	56.532
2	1.411	17.632	74.165			
3	.546	6.824	80.989			
4	.503	6.288	87.277			
5	.335	4.183	91.460			
6	.294	3.672	95.132			
7	.238	2.981	98.114			
8	.151	1.886	100.000			

Component Matrixa

	Component 1
SC1	.765
SC2	.791
SC3	.832
SC4	.770
SC5	.806
SC6	.720
SC7	.640
SC8	.671

CFA ORGANIZATIONAL CAPITAL

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
Bartlett's Test of Sphericity	Approx. Chi-Square	687.265
	df	10
	Sig.	.000

Communalities

	Initial	Extraction
OC1	1.000	.410
OC2	1.000	.764
OC3	1.000	.673
OC4	1.000	.782
OC5	1.000	.768

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.397	67.947	67.947	3.397	67.947	67.947
2	.741	14.811	82.758			
3	.431	8.626	91.383			
4	.301	6.017	97.400			
5	.130	2.600	100.000			

Component Matrixa

	Component 1
OC1	.640
OC2	.874
OC3	.820
OC4	.884
OC5	.877

CFA INTELLECTUAL CAPITAL (Human Capital, Social Capital and Organizational Capital)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.887
Bartlett's Test of Sphericity	Approx. Chi-Square	2804.104
	df	153
	Sig.	.000

Communalities

	Initial	Extraction
HC1	1.000	.630
HC2	1.000	.609
HC3	1.000	.778
HC4	1.000	.688
HC5	1.000	.579
SC1	1.000	.633
SC2	1.000	.603
SC3	1.000	.655
SC4	1.000	.568
SC5	1.000	.601
SC6	1.000	.751
SC7	1.000	.714
SC8	1.000	.565
OC1	1.000	.518
OC2	1.000	.788
OC3	1.000	.659
OC4	1.000	.817
OC5	1.000	.769

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.933	44.073	44.073	7.933	44.073	44.073	5.194	28.858	28.858
2	2.564	14.242	58.316	2.564	14.242	58.316	3.467	19.259	48.118
3	1.428	7.932	66.248	1.428	7.932	66.248	3.263	18.130	66.248
4	1.214	6.744	72.992						
5	.653	3.630	76.622						
6	.600	3.336	79.958						
7	.590	3.278	83.235						
8	.437	2.429	85.665						
9	.409	2.275	87.940						
10	.364	2.022	89.962						
11	.345	1.917	91.878						
12	.315	1.749	93.627						
13	.288	1.597	95.224						
14	.262	1.453	96.677						
15	.201	1.115	97.792						
16	.158	.879	98.672						
17	.135	.752	99.424						
18	.104	.576	100.000						

Component Matrixa

	Component		
	1	2	3
HC1	.647	-.398	.230
HC2	.613	-.353	.329
HC3	.773	-.393	.160
HC4	.691	-.367	.274
HC5	.719	-.246	.024
SC1	.733	-.306	-.041
SC2	.739	-.221	-.089
SC3	.776	-.158	-.166
SC4	.695	-.187	-.225
SC5	.715	-.148	-.263
SC6	.647	.211	-.536
SC7	.580	.332	-.516
SC8	.651	.221	-.304
OC1	.573	.162	.404
OC2	.552	.649	.251
OC3	.590	.491	.263
OC4	.529	.702	.213
OC5	.652	.567	.146

Rotated Component Matrixa

	Component		
	1	2	3
HC1	.784	.095	.081
HC2	.764	.158	-.012
HC3	.849	.125	.206
HC4	.811	.158	.073
HC5	.675	.152	.316
SC1	.701	.083	.368
SC2	.637	.130	.426
SC3	.599	.160	.520
SC4	.540	.075	.521
SC5	.517	.097	.570
SC6	.159	.218	.824
SC7	.042	.290	.792
SC8	.231	.332	.633
OC1	.442	.568	-.008
OC2	.076	.863	.193
OC3	.205	.766	.176
OC4	.014	.876	.222
OC5	.164	.800	.319

CFA INTELLECTUAL CAPITAL CONSTRAINED TO LOAD ON ONE FACTOR

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.887
Bartlett's Test of Sphericity	Approx. Chi-Square	2804.104
	df	153
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.933	44.073	44.073	7.933	44.073	44.073
2	2.564	14.242	58.316			
3	1.428	7.932	66.248			
4	1.214	6.744	72.992			
5	.653	3.630	76.622			
6	.600	3.336	79.958			
7	.590	3.278	83.235			
8	.437	2.429	85.665			
9	.409	2.275	87.940			
10	.364	2.022	89.962			
11	.345	1.917	91.878			
12	.315	1.749	93.627			
13	.288	1.597	95.224			
14	.262	1.453	96.677			
15	.201	1.115	97.792			
16	.158	.879	98.672			
17	.135	.752	99.424			
18	.104	.576	100.000			

Component Matrixa

	Component 1
HC1	.647
HC2	.613
HC3	.773
HC4	.691
HC5	.719
SC1	.733
SC2	.739
SC3	.776
SC4	.695
SC5	.715
SC6	.647
SC7	.580
SC8	.651
OC1	.573
OC2	.552
OC3	.590
OC4	.529
OC5	.652

CFA INTEGRATIVE CAPABILITIES (Perception and Capitalization of opportunities)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.691
Bartlett's Test of Sphericity	Approx. Chi-Square	183.975
	df	21
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.251	32.156	32.156	2.251	32.156	32.156	1.868	26.682	26.682
2	1.195	17.078	49.234	1.195	17.078	49.234	1.579	22.552	49.234
3	1.038	14.825	64.059						
4	.869	12.413	76.472						
5	.624	8.921	85.393						
6	.570	8.139	93.533						
7	.453	6.467	100.000						

Rotated Component Matrixa

	Component	
	1	2
PO1_G	.155	.684
PO2_G	.131	-.055
PO3_G	.125	.807
PO4_G	-.089	.603
CO1_G	.736	.127
CO2_G	.789	.267
CO3_G	.799	.072

CFA INTEGRATIVE CAPABILITIES CONSTRAINED TO LOAD ON ONE FACTOR

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.743
Bartlett's Test of Sphericity	Approx. Chi-Square	256.298
	df	21
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.517	35.961	35.961	2.517	35.961	35.961
2	1.060	15.145	51.106			
3	1.047	14.961	66.067			
4	.827	11.811	77.878			
5	.577	8.238	86.117			
6	.563	8.047	94.164			
7	.409	5.836	100.000			

Component Matrixa

	Component 1
PO1_G	.585
PO2_G	.076
PO3_G	.651
PO4_G	.314
CO1_G	.710
CO2_G	.795
CO3_G	.714

Appendix 7. Conjoint Confirmatory Factor Analysis (All scales at once)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.866
Bartlett's Test of Sphericity	Approx. Chi-Square	4230.075
	df	561
	Sig.	.000

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.604	28.248	28.248	9.604	28.248	28.248	3.951	11.620	11.620
2	3.181	9.357	37.605	3.181	9.357	37.605	3.611	10.621	22.241
3	2.654	7.807	45.412	2.654	7.807	45.412	3.480	10.234	32.475
4	1.973	5.803	51.216	1.973	5.803	51.216	2.424	7.130	39.605
5	1.575	4.632	55.847	1.575	4.632	55.847	2.382	7.006	46.611
6	1.460	4.293	60.140	1.460	4.293	60.140	2.225	6.544	53.155
7	1.148	3.377	63.517	1.148	3.377	63.517	2.148	6.318	59.473
8	1.050	3.089	66.606	1.050	3.089	66.606	1.785	5.250	64.722
9	1.026	3.017	69.623	1.026	3.017	69.623	1.542	4.534	69.256
10	1.007	2.962	72.585	1.007	2.962	72.585	1.132	3.329	72.585
11	.885	2.604	75.189						
12	.824	2.425	77.614						
13	.691	2.033	79.647						
14	.673	1.979	81.626						
15	.574	1.689	83.315						
16	.541	1.592	84.907						
17	.499	1.468	86.375						
18	.470	1.383	87.757						
19	.448	1.318	89.075						
20	.387	1.137	90.212						
21	.353	1.037	91.249						
22	.334	.982	92.230						
23	.327	.960	93.191						
24	.321	.946	94.136						
25	.274	.805	94.941						
26	.263	.775	95.716						
27	.251	.739	96.455						
28	.235	.692	97.148						
29	.228	.670	97.817						
30	.189	.556	98.373						
31	.184	.541	98.915						
32	.150	.441	99.356						
33	.124	.366	99.722						
34	.095	.278	100.000						

Rotated Component Matrixa

	Component									
	1	2	3	4	5	6	7	8	9	10
EOI1_G	-.039	.039	.186	.163	.269	.046	-.057	.548	.237	-.254
EOI2_G	.029	-.016	.126	.044	.209	.065	.841	-.041	.040	-.082
EOI3_G	.003	.025	.115	.170	.163	.016	.815	.176	.104	.045
EOP1_G	.290	.119	-.207	.145	.192	-.083	.205	.514	.284	-.050
EOP2_G	.139	.121	-.029	.308	.233	.201	.441	.535	-.066	.134
EOP3_G	.136	.136	-.079	.193	.231	.277	.367	.533	.022	.135
EORT1_G	.035	.032	.137	.085	.641	.017	.321	.247	.092	.010
EORT2_G	.025	.119	.189	.095	.842	.092	.041	.138	-.049	.014
EORT3_G	.130	.078	.036	.070	.839	.009	.230	-.003	.117	-.056
HC1	.734	.077	.324	.029	.052	.048	-.027	.096	-.157	.088
HC2	.848	.094	.041	.067	.073	.085	.056	.124	.035	-.009
HC3	.807	.100	.359	.177	.001	.023	-.006	.019	.089	.009
HC4	.814	.130	.236	.056	.014	.102	.009	-.049	.048	-.010
HC5	.624	.155	.343	.224	.075	-.016	.159	.025	.138	-.149
SC1	.423	.120	.694	.065	.075	.068	.004	.221	.029	.146
SC2	.361	.158	.681	.155	.126	.103	-.115	.112	.134	.113
SC3	.331	.232	.719	.150	.107	.149	.060	-.023	.063	-.125
SC4	.275	.148	.701	.135	.116	.078	.218	-.139	.157	-.070
SC5	.222	.173	.729	.154	.125	.147	.230	.114	-.022	.032
SC6	.183	.200	.263	.807	.108	.108	.140	.066	-.040	.006
SC7	.104	.256	.157	.808	.109	.170	.172	.055	-.067	.047
SC8	.268	.300	.190	.610	.098	.072	.041	-.034	.325	.060
OC1	.346	.570	.204	-.086	.086	.096	-.055	.138	-.031	-.054
OC2	.082	.865	.077	.174	.024	-.041	.041	-.017	.029	.115
OC3	.141	.776	.140	.034	.072	.213	.008	.099	.156	-.056
OC4	.016	.872	.061	.224	.043	.007	.045	-.002	-.030	.082
OC5	.104	.797	.195	.233	.082	.155	.022	-.023	.082	.013
PO1_G	.076	.094	.049	-.006	-.014	.193	.156	.086	.819	.039
PO2_G	-.020	.062	-.206	.305	.040	.091	.031	-.593	.064	.034
PO3_G	-.038	.046	.283	.031	.309	.253	-.069	.059	.588	.255
PO4_G	-.016	.093	.036	.070	-.024	.053	-.009	-.065	.132	.907
CO1_G	.118	.179	.063	-.048	.200	.790	.035	.084	-.005	.091
CO2_G	-.001	.046	.195	.280	-.034	.747	.076	.025	.245	-.024
CO3_G	.085	.069	.096	.100	-.036	.761	.034	-.045	.128	-.004

Appendix 8. Common Method Variance Harman Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.866
Bartlett's Test of Sphericity	Approx. Chi-Square	4230.075
	df	561
	Sig.	.000

Communalities

	Initial	Extraction
EOI1_G	1.000	.116
EOI2_G	1.000	.110
EOI3_G	1.000	.158
EOP1_G	1.000	.125
EOP2_G	1.000	.257
EOP3_G	1.000	.217
EORT1_G	1.000	.186
EORT2_G	1.000	.214
EORT3_G	1.000	.188
HC1	1.000	.323
HC2	1.000	.330
HC3	1.000	.475
HC4	1.000	.375
HC5	1.000	.462
SC1	1.000	.485
SC2	1.000	.492
SC3	1.000	.537
SC4	1.000	.451
SC5	1.000	.516
SC6	1.000	.444
SC7	1.000	.383
SC8	1.000	.434
OC1	1.000	.279
OC2	1.000	.261
OC3	1.000	.347
OC4	1.000	.251
OC5	1.000	.402
PO1_G	1.000	.383
PO2_G	1.000	.434
PO3_G	1.000	.279
PO4_G	1.000	.261
CO1_G	1.000	.347
CO2_G	1.000	.251
CO3_G	1.000	.402

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.604	28.248	28.248	9.604	**28.248**	28.248
2	3.181	9.357	37.605			
3	2.654	7.807	45.412			
4	1.973	5.803	51.216			
5	1.575	4.632	55.847			
6	1.460	4.293	60.140			
7	1.148	3.377	63.517			
8	1.050	3.089	66.606			
9	1.026	3.017	69.623			
10	1.007	2.962	72.585			
11	.885	2.604	75.189			
12	.824	2.425	77.614			
13	.691	2.033	79.647			
14	.673	1.979	81.626			
15	.574	1.689	83.315			
16	.541	1.592	84.907			
17	.499	1.468	86.375			
18	.470	1.383	87.757			
19	.448	1.318	89.075			
20	.387	1.137	90.212			
21	.353	1.037	91.249			
22	.334	.982	92.230			
23	.327	.960	93.191			
24	.321	.946	94.136			
25	.274	.805	94.941			
26	.263	.775	95.716			
27	.251	.739	96.455			
28	.235	.692	97.148			
29	.228	.670	97.817			
30	.189	.556	98.373			
31	.184	.541	98.915			
32	.150	.441	99.356			
33	.124	.366	99.722			
34	.095	.278	100.000			

Component Matrixa

	Component1
EOI1_G	.341
EOI2_G	.331
EOI3_G	.398
EOP1_G	.354
EOP2_G	.507
EOP3_G	.466
EORT1_G	.432
EORT2_G	.463
EORT3_G	.434
HC1	.568
HC2	.575
HC3	.689
HC4	.612
HC5	.680
SC1	.697
SC2	.701
SC3	.733
SC4	.672
SC5	.718
SC6	.666
SC7	.619
SC8	.659
OC1	.528
OC2	.511
OC3	.589
OC4	.501
OC5	.634
PO1_G	.328
PO2_G	-.030
PO3_G	.397
PO4_G	.124
CO1_G	.424
CO2_G	.446
CO3_G	.352

Appendix 9. Intraclass Correlations

Intraclass Correlations - Agreement among raters

EOI1 (Entrepreneurial Orientation - Innovativeness- 1st item)

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.398[b]	0.266	0.516	2.323	174	174	0
Average Measures	.570[c]	0.42	0.68	2.323	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

EOI2

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.433[b]	0.304	0.546	2.526	174	174	0
Average Measures	.604[c]	0.467	0.706	2.526	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

EOI3

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.413[b]	0.282	0.529	2.406	174	174	0
Average Measures	.584[c]	0.44	0.692	2.406	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

EOP1

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.356[b]	0.22	0.479	2.105	174	174	0
Average Measures	.525[c]	0.36	0.647	2.105	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

EOP2

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.486[b]	0.364	0.592	2.892	174	174	0
Average Measures	.654[c]	0.534	0.743	2.892	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

EOP3

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.442[b]	0.315	0.554	2.584	174	174	0
Average Measures	.613[c]	0.479	0.713	2.584	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

EORT1

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.362[b]	0.226	0.484	2.135	174	174	0
Average Measures	.532[c]	0.369	0.652	2.135	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

EORT2

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.376[b]	0.241	0.496	2.204	174	174	0
Average Measures	.546[c]	0.389	0.663	2.204	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

EORT3

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.473[b]	0.349	0.58	2.794	174	174	0
Average Measures	.642[c]	0.518	0.734	2.794	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

PO1

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.284[b]	0.141	0.414	1.791	174	174	0
Average Measures	.442[c]	0.248	0.586	1.791	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

PO2

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.341[b]	0.204	0.466	2.037	174	174	0
Average Measures	.509[c]	0.338	0.636	2.037	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

PO3

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.208[b]	0.062	0.345	1.526	174	174	0.003
Average Measures	.345[c]	0.117	0.514	1.526	174	174	0.003

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

PO4

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.288[b]	0.147	0.419	1.811	174	174	0
Average Measures	.448[c]	0.256	0.59	1.811	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

CO1

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.382[b]	0.248	0.501	2.234	174	174	0
Average Measures	.552[c]	0.397	0.668	2.234	174	174	0

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

CO2

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.165[b]	0.017	0.305	1.395	174	174	0.014
Average Measures	.283[c]	0.034	0.468	1.395	174	174	0.014

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

C03

Intraclass Correlation Coefficient

	Intraclass Correlation[a]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.292[b]	0.15	0.422	1.824	174	174	0
Average Measures	.452[c]	0.261	0.593	1.824	174	174	0

Tw o-w ay mixed effects model w here people effects are random and measures effects are fixed.

a. Type C intraclass correlation coefficients using a consistency definition-the betw een-measure variance is excluded from the denominator variance.

b. The estimator is the same, w hether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherw ise.

Appendix 10. Paper vs. Web Based Surveys and Early vs. Late Respondents

Paper vs. Web Surveys

Group Statistics

	Survey type	N	Mean	Std. Deviation	Std. Error Mean
ENTREPRENEURIAL ORIENTATION	paper	64	40.0000	8.99559	1.12445
	web	136	43.0846	8.77698	.75262
INTELLECTUAL CAPITAL	paper	64	88.6094	16.42841	2.05355
	web	136	95.5074	15.73154	1.34897
INTEGRATIVE CAPABILITIES	paper	64	28.6875	2.68816	.33602
	web	136	28.4926	2.44039	.20926

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ENTREPRENEURIAL ORIENTATION	Equal variances assumed	.048	.826	-2.300	198	.022	-3.08456	1.34109	-5.72921	-.43991
	Equal variances not assumed			-2.280	120.779	.024	-3.08456	1.35308	-5.76338	-.40573
INTELLECTUAL CAPITAL	Equal variances assumed	.408	.524	-2.852	198	.005	-6.89798	2.41877	-11.66784	-2.12811
	Equal variances not assumed			-2.807	118.780	.006	-6.89798	2.45699	-11.76315	-2.03280
INTEGRATIVE CAPABILITIES	Equal variances assumed	2.365	.126	.510	198	.611	.19485	.38228	-.55900	.94871
	Equal variances not assumed			.492	113.385	.624	.19485	.39585	-.58937	.97908

Early vs. Late respondents

Group Statistics

	Respondent type	N	Mean	Std. Deviation	Std. Error Mean
ENTREPRENEURIAL ORIENTATION	early	134	42.3358	8.86761	.76604
	late	66	41.6136	9.14027	1.12509
INTELLECTUAL CAPITAL	early	134	91.3433	16.37994	1.41501
	late	66	97.2727	15.31469	1.88511
INTEGRATIVE CAPABILITIES	early	134	28.1716	2.35728	.20364
	late	66	29.3333	2.66651	.32822

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ENTREPRENEURIAL ORIENTATION	Equal variances assumed	.842	.360	.536	198	.592	.72218	1.34711	-1.93434	3.37871
	Equal variances not assumed			.531	126.002	.597	.72218	1.36112	-1.97143	3.41580
INTELLECTUAL CAPITAL	Equal variances assumed	.934	.335	-2.459	198	.015	-5.92944	2.41180	-10.68556	-1.17333
	Equal variances not assumed			-2.516	137.542	.013	-5.92944	2.35709	-10.59027	-1.26862
INTEGRATIVE CAPABILITIES	Equal variances assumed	.688	.408	-3.136	198	.002	-1.16169	.37040	-1.89212	-.43126
	Equal variances not assumed			-3.008	116.253	.003	-1.16169	.38626	-1.92672	-.39667

Appendix 11. Results using Ordinary Least Squares

Regresions

CONTROL VARIABLES

Descriptive Statistics

	Mean	Std. Deviation	N
INTEGRATIVE CAPABILITIES	28.5550	2.51717	200
SIZE	1.5259	.75184	200
AGE	1.0910	.46376	200
SLACK RESOURCES	13.4700	3.82127	200
Wood	.0550	.22855	200
Textils	.0400	.19645	200
Minerals	.0100	.09975	200
Graphics	.0500	.21849	200
Chemical	.0750	.26405	200
Metalworking	.0550	.22855	200
Food	.1000	.30075	200
Commerce	.1250	.33155	200
Construction	.0800	.27197	200
Ecuador_Mexico	.5400	.49965	200

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.377	.142	.082	2.41162	.142	2.369	13	186	.006

ANOVAb

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	179.137	13	13.780	2.369	.006
	Residual	1081.758	186	5.816		
	Total	1260.895	199			

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	27.067	.735		36.832	.000					
	SIZE	.350	.296	.104	1.180	.239	.020	.086	.080	.589	1.697
	AGE	-1.794	.507	-.330	-3.540	.001	-.108	-.251	-.240	.530	1.888
	SLACK RESOURCES	.176	.048	.267	3.638	.000	.213	.258	.247	.855	1.170
	Wood	1.489	.804	.135	1.853	.065	.038	.135	.126	.866	1.154
	Textils	2.134	.955	.167	2.234	.027	.092	.162	.152	.830	1.205
	Minerals	2.766	1.770	.110	1.563	.120	.068	.114	.106	.938	1.066
	Graphics	-.123	.840	-.011	-.146	.884	-.101	-.011	-.010	.867	1.154
	Chemical	.991	.703	.104	1.410	.160	.062	.103	.096	.848	1.179
	Metalworking	.499	.799	.045	.625	.533	-.001	.046	.042	.876	1.141
	Food	.815	.619	.097	1.316	.190	.059	.096	.089	.842	1.187
	Commerce	.058	.567	.008	.102	.919	-.065	.007	.007	.828	1.208
	Construction	1.167	.699	.126	1.670	.097	.052	.122	.113	.810	1.235
	Ecuador_Mexico	.124	.376	.025	.330	.742	-.002	.024	.022	.827	1.210

HUMAN CAPITAL

Descriptive Statistics

	Mean	Std. Deviation	N
INTEGRATIVE CAPABILITIES	28.5550	2.51717	200
SIZE	1.5259	.75184	200
AGE	1.0910	.46376	200
SLACK RESOURCES	13.4700	3.82127	200
Wood	.0550	.22855	200
Textils	.0400	.19645	200
Minerals	.0100	.09975	200
Graphics	.0500	.21849	200
Chemical	.0750	.26405	200
Metalworking	.0550	.22855	200
Food	.1000	.30075	200
Commerce	.1250	.33155	200
Construction	.0800	.27197	200
Ecuador_Mexico	.5400	.49965	200
Human Capital	26.6100	5.00531	200

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.377	.142	.082	2.41162	.142	2.369	13	186	.006
2	.384	.148	.083	2.41024	.006	1.213	1	185	.272

ANOVAc

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	179.137	13	13.780	2.369	.006
	Residual	1081.758	186	5.816		
	Total	1260.895	199			
2	Regression	186.181	14	13.299	2.289	.007
	Residual	1074.714	185	5.809		
	Total	1260.895	199			

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	27.067	.735		36.832	.000					
	SIZE	.350	.296	.104	1.180	.239	.020	.086	.080	.589	1.697
	AGE	-1.794	.507	-.330	-3.540	.001	-.108	-.251	-.240	.530	1.888
	SLACK RESOURCES	.176	.048	.267	3.638	.000	.213	.258	.247	.855	1.170
	Wood	1.489	.804	.135	1.853	.065	.038	.135	.126	.866	1.154
	Textils	2.134	.955	.167	2.234	.027	.092	.162	.152	.830	1.205
	Minerals	2.766	1.770	.110	1.563	.120	.068	.114	.106	.938	1.066
	Graphics	-.123	.840	-.011	-.146	.884	-.101	-.011	-.010	.867	1.154
	Chemical	.991	.703	.104	1.410	.160	.062	.103	.096	.848	1.179
	Metalworking	.499	.799	.045	.625	.533	-.001	.046	.042	.876	1.141
	Food	.815	.619	.097	1.316	.190	.059	.096	.089	.842	1.187
	Commerce	.058	.567	.008	.102	.919	-.065	.007	.007	.828	1.208
	Construction	1.167	.699	.126	1.670	.097	.052	.122	.113	.810	1.235
	Ecuador_Mexico	.124	.376	.025	.330	.742	-.002	.024	.022	.827	1.210
2	(Constant)	26.155	1.107		23.631	.000					
	SIZE	.343	.296	.103	1.160	.247	.020	.085	.079	.589	1.697
	AGE	-1.706	.513	-.314	-3.328	.001	-.108	-.238	-.226	.517	1.935
	SLACK RESOURCES	.159	.051	.242	3.140	.002	.213	.225	.213	.777	1.287
	Wood	1.442	.804	.131	1.793	.075	.038	.131	.122	.864	1.157
	Textils	2.137	.955	.167	2.238	.026	.092	.162	.152	.830	1.205
	Minerals	2.474	1.788	.098	1.383	.168	.068	.101	.094	.917	1.090
	Graphics	-.206	.843	-.018	-.244	.808	-.101	-.018	-.017	.860	1.163
	Chemical	.997	.703	.105	1.419	.157	.062	.104	.096	.848	1.179
	Metalworking	.525	.799	.048	.658	.512	-.001	.048	.045	.876	1.142
	Food	.821	.619	.098	1.326	.187	.059	.097	.090	.842	1.187
	Commerce	.112	.569	.015	.197	.844	-.065	.014	.013	.821	1.217
	Construction	1.145	.699	.124	1.639	.103	.052	.120	.111	.809	1.236
	Ecuador_Mexico	.065	.380	.013	.172	.864	-.002	.013	.012	.810	1.234
	Human Capital	.041	.037	.081	1.101	.272	.166	.081	.075	.849	1.178

SOCIAL CAPITAL

Descriptive Statistics

	Mean	Std. Deviation	N
INTEGRATIVE CAPABILITIES	28.5550	2.51717	200
SIZE	1.5259	.75184	200
AGE	1.0910	.46376	200
SLACK RESOURCES	13.4700	3.82127	200
Wood	.0550	.22855	200
Textils	.0400	.19645	200
Minerals	.0100	.09975	200
Graphics	.0500	.21849	200
Chemical	.0750	.26405	200
Metalworking	.0550	.22855	200
Food	.1000	.30075	200
Commerce	.1250	.33155	200
Construction	.0800	.27197	200
Ecuador_Mexico	.5400	.49965	200
Social Capital	41.7800	8.50312	200

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.377	.142	.082	2.41162	.142	2.369	13	186	.006
2	.437	.191	.130	2.34802	.049	11.213	1	185	.001

ANOVAc

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	179.137	13	13.780	2.369	.006
	Residual	1081.758	186	5.816		
	Total	1260.895	199			
2	Regression	240.955	14	17.211	3.122	.000
	Residual	1019.940	185	5.513		
	Total	1260.895	199			

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	27.067	.735		36.832	.000					
	SIZE	.350	.296	.104	1.180	.239	.020	.086	.080	.589	1.697
	AGE	-1.794	.507	-.330	-3.540	.001	-.108	-.251	-.240	.530	1.888
	SLACK RESOURCES	.176	.048	.267	3.638	.000	.213	.258	.247	.855	1.170
	Wood	1.489	.804	.135	1.853	.065	.038	.135	.126	.866	1.154
	Textils	2.134	.955	.167	2.234	.027	.092	.162	.152	.830	1.205
	Minerals	2.766	1.770	.110	1.563	.120	.068	.114	.106	.938	1.066
	Graphics	-.123	.840	-.011	-.146	.884	-.101	-.011	-.010	.867	1.154
	Chemical	.991	.703	.104	1.410	.160	.062	.103	.096	.848	1.179
	Metalworking	.499	.799	.045	.625	.533	-.001	.046	.042	.876	1.141
	Food	.815	.619	.097	1.316	.190	.059	.096	.089	.842	1.187
	Commerce	.058	.567	.008	.102	.919	-.065	.007	.007	.828	1.208
	Construction	1.167	.699	.126	1.670	.097	.052	.122	.113	.810	1.235
	Ecuador_Mexico	.124	.376	.025	.330	.742	-.002	.024	.022	.827	1.210
2	(Constant)	24.595	1.028		23.925	.000					
	SIZE	.265	.289	.079	.917	.360	.020	.067	.061	.585	1.710
	AGE	-1.530	.499	-.282	-3.064	.003	-.108	-.220	-.203	.516	1.937
	SLACK RESOURCES	.139	.048	.210	2.862	.005	.213	.206	.189	.809	1.236
	Wood	1.592	.783	.145	2.033	.043	.038	.148	.134	.865	1.156
	Textils	1.976	.931	.154	2.121	.035	.092	.154	.140	.827	1.208
	Minerals	2.143	1.733	.085	1.236	.218	.068	.091	.082	.927	1.079
	Graphics	-.046	.819	-.004	-.056	.955	-.101	-.004	-.004	.866	1.155
	Chemical	.938	.685	.098	1.371	.172	.062	.100	.091	.848	1.180
	Metalworking	.703	.780	.064	.900	.369	-.001	.066	.060	.871	1.148
	Food	.789	.603	.094	1.309	.192	.059	.096	.087	.842	1.187
	Commerce	.094	.552	.012	.170	.865	-.065	.012	.011	.827	1.209
	Construction	.916	.684	.099	1.338	.182	.052	.098	.089	.800	1.250
	Ecuador_Mexico	-.164	.376	-.033	-.435	.664	-.002	-.032	-.029	.783	1.276
	Social Capital	.071	.021	.242	3.349	.001	.299	.239	.221	.840	1.190

ORGANIZATIONAL CAPITAL

Descriptive Statistics

	Mean	Std. Deviation	N
INTEGRATIVE CAPABILITIES	28.5550	2.51717	200
SIZE	1.5259	.75184	200
AGE	1.0910	.46376	200
SLACK RESOURCES	13.4700	3.82127	200
Wood	.0550	.22855	200
Textils	.0400	.19645	200
Minerals	.0100	.09975	200
Graphics	.0500	.21849	200
Chemical	.0750	.26405	200
Metalworking	.0550	.22855	200
Food	.1000	.30075	200
Commerce	.1250	.33155	200
Construction	.0800	.27197	200
Ecuador_Mexico	.5400	.49965	200
Organizational Capital	24.9100	6.53878	200

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.377	.142	.082	2.41162	.142	2.369	13	186	.006
2	.405	.164	.101	2.38673	.022	4.899	1	185	.028

ANOVAc

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	179.137	13	13.780	2.369	.006
	Residual	1081.758	186	5.816		
	Total	1260.895	199			
2	Regression	207.046	14	14.789	2.596	.002
	Residual	1053.849	185	5.696		
	Total	1260.895	199			

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	27.067	.735		36.832	.000					
	SIZE	.350	.296	.104	1.180	.239	.020	.086	.080	.589	1.697
	AGE	-1.794	.507	-.330	-3.540	.001	-.108	-.251	-.240	.530	1.888
	SLACK RESOURCES	.176	.048	.267	3.638	.000	.213	.258	.247	.855	1.170
	Wood	1.489	.804	.135	1.853	.065	.038	.135	.126	.866	1.154
	Textils	2.134	.955	.167	2.234	.027	.092	.162	.152	.830	1.205
	Minerals	2.766	1.770	.110	1.563	.120	.068	.114	.106	.938	1.066
	Graphics	-.123	.840	-.011	-.146	.884	-.101	-.011	-.010	.867	1.154
	Chemical	.991	.703	.104	1.410	.160	.062	.103	.096	.848	1.179
	Metalworking	.499	.799	.045	.625	.533	-.001	.046	.042	.876	1.141
	Food	.815	.619	.097	1.316	.190	.059	.096	.089	.842	1.187
	Commerce	.058	.567	.008	.102	.919	-.065	.007	.007	.828	1.208
	Construction	1.167	.699	.126	1.670	.097	.052	.122	.113	.810	1.235
	Ecuador_Mexico	.124	.376	.025	.330	.742	-.002	.024	.022	.827	1.210
2	(Constant)	26.040	.863		30.185	.000					
	SIZE	.212	.300	.063	.706	.481	.020	.052	.047	.564	1.773
	AGE	-1.742	.502	-.321	-3.471	.001	-.108	-.247	-.233	.528	1.893
	SLACK RESOURCES	.148	.050	.225	2.990	.003	.213	.215	.201	.799	1.252
	Wood	1.511	.795	.137	1.900	.059	.038	.138	.128	.866	1.154
	Textils	2.138	.946	.167	2.261	.025	.092	.164	.152	.830	1.205
	Minerals	2.287	1.765	.091	1.296	.197	.068	.095	.087	.924	1.083
	Graphics	.094	.837	.008	.112	.911	-.101	.008	.008	.855	1.170
	Chemical	.884	.697	.093	1.267	.207	.062	.093	.085	.844	1.185
	Metalworking	.481	.791	.044	.608	.544	-.001	.045	.041	.876	1.141
	Food	.862	.613	.103	1.405	.162	.059	.103	.094	.841	1.188
	Commerce	.052	.561	.007	.093	.926	-.065	.007	.006	.828	1.208
	Construction	1.266	.693	.137	1.828	.069	.052	.133	.123	.806	1.241
	Ecuador_Mexico	-.009	.377	-.002	-.025	.980	-.002	-.002	-.002	.805	1.241
	Organizational Capital	.065	.029	.169	2.213	.028	.212	.161	.149	.775	1.290

INTELLECTUAL CAPITAL

Descriptive Statistics

	Mean	Std. Deviation	N
INTEGRATIVE CAPABILITIES	28.5550	2.51717	200
SIZE	1.5259	.75184	200
AGE	1.0910	.46376	200
SLACK RESOURCES	13.4700	3.82127	200
Wood	.0550	.22855	200
Textils	.0400	.19645	200
Minerals	.0100	.09975	200
Graphics	.0500	.21849	200
Chemical	.0750	.26405	200
Metalworking	.0550	.22855	200
Food	.1000	.30075	200
Commerce	.1250	.33155	200
Construction	.0800	.27197	200
Ecuador_Mexico	.5400	.49965	200
INTELLECTUAL CAPITAL	93.3000	16.24003	200

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.377	.142	.082	2.41162	.142	2.369	13	186	.006
2	.428	.184	.122	2.35895	.041	9.398	1	185	.002

ANOVAc

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	179.137	13	13.780	2.369	.006
	Residual	1081.758	186	5.816		
	Total	1260.895	199			
2	Regression	231.436	14	16.531	2.971	.000
	Residual	1029.459	185	5.565		
	Total	1260.895	199			

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	27.067	.735		36.832	.000					
	SIZE	.350	.296	.104	1.180	.239	.020	.086	.080	.589	1.697
	AGE	-1.794	.507	-.330	-3.540	.001	-.108	-.251	-.240	.530	1.888
	SLACK RESOURCES	.176	.048	.267	3.638	.000	.213	.258	.247	.855	1.170
	Wood	1.489	.804	.135	1.853	.065	.038	.135	.126	.866	1.154
	Textils	2.134	.955	.167	2.234	.027	.092	.162	.152	.830	1.205
	Minerals	2.766	1.770	.110	1.563	.120	.068	.114	.106	.938	1.066
	Graphics	-.123	.840	-.011	-.146	.884	-.101	-.011	-.010	.867	1.154
	Chemical	.991	.703	.104	1.410	.160	.062	.103	.096	.848	1.179
	Metalworking	.499	.799	.045	.625	.533	-.001	.046	.042	.876	1.141
	Food	.815	.619	.097	1.316	.190	.059	.096	.089	.842	1.187
	Commerce	.058	.567	.008	.102	.919	-.065	.007	.007	.828	1.208
	Construction	1.167	.699	.126	1.670	.097	.052	.122	.113	.810	1.235
	Ecuador_Mexico	.124	.376	.025	.330	.742	-.002	.024	.022	.827	1.210
2	(Constant)	24.474	1.110		22.047	.000					
	SIZE	.227	.292	.068	.775	.440	.020	.057	.051	.578	1.729
	AGE	-1.557	.501	-.287	-3.105	.002	-.108	-.223	-.206	.517	1.934
	SLACK RESOURCES	.127	.050	.193	2.550	.012	.213	.184	.169	.768	1.302
	Wood	1.511	.786	.137	1.922	.056	.038	.140	.128	.866	1.154
	Textils	2.060	.935	.161	2.203	.029	.092	.160	.146	.829	1.206
	Minerals	1.938	1.752	.077	1.106	.270	.068	.081	.073	.916	1.092
	Graphics	-.038	.823	-.003	-.046	.963	-.101	-.003	-.003	.866	1.155
	Chemical	.911	.688	.096	1.324	.187	.062	.097	.088	.847	1.181
	Metalworking	.614	.782	.056	.784	.434	-.001	.058	.052	.874	1.144
	Food	.833	.606	.100	1.375	.171	.059	.101	.091	.842	1.187
	Commerce	.120	.555	.016	.216	.829	-.065	.016	.014	.826	1.210
	Construction	1.077	.684	.116	1.575	.117	.052	.115	.105	.808	1.238
	Ecuador_Mexico	-.144	.378	-.029	-.381	.704	-.002	-.028	-.025	.782	1.278
	INTELLECTUAL CAPITAL	.036	.012	.230	3.066	.002	.293	.220	.204	.783	1.277

INTELLECTUAL CAPITAL AND ENTREPRENEURIAL ORIENTATION

Descriptive Statistics

	Mean	Std. Deviation	N
INTEGRATIVE CAPABILITIES	28.5550	2.51717	200
SIZE	1.5259	.75184	200
AGE	1.0910	.46376	200
SLACK RESOURCES	13.4700	3.82127	200
Wood	.0550	.22855	200
Textils	.0400	.19645	200
Minerals	.0100	.09975	200
Graphics	.0500	.21849	200
Chemical	.0750	.26405	200
Metalworking	.0550	.22855	200
Food	.1000	.30075	200
Commerce	.1250	.33155	200
Construction	.0800	.27197	200
Ecuador_Mexico	.5400	.49965	200
INTELLECTUAL CAPITAL	93.3000	16.24003	200
ENTREPRENEURIAL ORIENTATION	42.0975	8.94198	200

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.377	.142	.082	2.41162	.142	2.369	13	186	.006
2	.466	.217	.154	2.31571	.075	8.863	2	184	.000

ANOVAc

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	179.137	13	13.780	2.369	.006
	Residual	1081.758	186	5.816		
	Total	1260.895	199			
2	Regression	274.195	15	18.280	3.409	.000
	Residual	986.700	184	5.363		
	Total	1260.895	199			

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	27.067	.735		36.832	.000					
	SIZE	.350	.296	.104	1.180	.239	.020	.086	.080	.589	1.697
	AGE	-1.794	.507	-.330	-3.540	.001	-.108	-.251	-.240	.530	1.888
	SLACK RESOURCES	.176	.048	.267	3.638	.000	.213	.258	.247	.855	1.170
	Wood	1.489	.804	.135	1.853	.065	.038	.135	.126	.866	1.154
	Textils	2.134	.955	.167	2.234	.027	.092	.162	.152	.830	1.205
	Minerals	2.766	1.770	.110	1.563	.120	.068	.114	.106	.938	1.066
	Graphics	-.123	.840	-.011	-.146	.884	-.101	-.011	-.010	.867	1.154
	Chemical	.991	.703	.104	1.410	.160	.062	.103	.096	.848	1.179
	Metalworking	.499	.799	.045	.625	.533	-.001	.046	.042	.876	1.141
	Food	.815	.619	.097	1.316	.190	.059	.096	.089	.842	1.187
	Commerce	.058	.567	.008	.102	.919	-.065	.007	.007	.828	1.208
	Construction	1.167	.699	.126	1.670	.097	.052	.122	.113	.810	1.235
	Ecuador_Mexico	.124	.376	.025	.330	.742	-.002	.024	.022	.827	1.210
2	(Constant)	23.185	1.181		19.626	.000					
	SIZE	.129	.289	.038	.445	.657	.020	.033	.029	.570	1.754
	AGE	-1.391	.496	-.256	-2.806	.006	-.108	-.203	-.183	.510	1.962
	SLACK RESOURCES	.131	.049	.199	2.674	.008	.213	.193	.174	.767	1.303
	Wood	1.629	.773	.148	2.108	.036	.038	.154	.137	.864	1.158
	Textils	2.331	.923	.182	2.526	.012	.092	.183	.165	.820	1.219
	Minerals	2.016	1.720	.080	1.172	.243	.068	.086	.076	.915	1.093
	Graphics	-.080	.808	-.007	-.098	.922	-.101	-.007	-.006	.866	1.155
	Chemical	1.043	.677	.109	1.540	.125	.062	.113	.100	.843	1.186
	Metalworking	.572	.768	.052	.745	.457	-.001	.055	.049	.874	1.144
	Food	.921	.596	.110	1.546	.124	.059	.113	.101	.840	1.190
	Commerce	.164	.545	.022	.301	.763	-.065	.022	.020	.826	1.211
	Construction	.923	.674	.100	1.370	.172	.052	.100	.089	.803	1.246
	Ecuador_Mexico	-.148	.371	-.029	-.399	.691	-.002	-.029	-.026	.782	1.278
	INTELLECTUAL CAPITAL	.021	.012	.138	1.714	.088	.293	.125	.112	.655	1.526
	ENTREPRENEURIAL ORIENTATION	.060	.021	.212	2.824	.005	.285	.204	.184	.755	1.325

ENTREPRENEURIAL ORIENTATION AS MODERATOR OF INTELLECTUAL CAPITAL AND INTEGRATIVE CAPABILITIES RELATIONSHIP

Descriptive Statistics

	Mean	Std. Deviation	N
INTEGRATIVE CAPABILITIES	28.5550	2.51717	200
SIZE	1.5259	.75184	200
AGE	1.0910	.46376	200
SLACK RESOURCES	13.4700	3.82127	200
Wood	.0550	.22855	200
Textils	.0400	.19645	200
Minerals	.0100	.09975	200
Graphics	.0500	.21849	200
Chemical	.0750	.26405	200
Metalworking	.0550	.22855	200
Food	.1000	.30075	200
Commerce	.1250	.33155	200
Construction	.0800	.27197	200
Ecuador_Mexico	.5400	.49965	200
INTELLECTUAL CAPITAL	93.3000	16.24003	200
ENTREPRENEURIAL ORIENTATION	42.0975	8.94198	200
Intellectual Capital x Entrepreneurial Orientation	64.9114	158.88089	200

Model Summaryd

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.377	.142	.082	2.41162	.142	2.369	13	186	.006
2	.466	.217	.154	2.31571	.075	8.863	2	184	.000
3	.480	.230	.163	2.30341	.012	2.970	1	183	.086

ANOVAd

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	179.137	13	13.780	2.369	.006
	Residual	1081.758	186	5.816		
	Total	1260.895	199			
2	Regression	274.195	15	18.280	3.409	.000
	Residual	986.700	184	5.363		
	Total	1260.895	199			
3	Regression	289.954	16	18.122	3.416	.000
	Residual	970.941	183	5.306		
	Total	1260.895	199			

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	27.067	.735		36.832	.000					
	SIZE	.350	.296	.104	1.180	.239	.020	.086	.080	.589	1.697
	AGE	-1.794	.507	-.330	-3.540	.001	-.108	-.251	-.240	.530	1.888
	SLACK RESOURCES	.176	.048	.267	3.638	.000	.213	.258	.247	.855	1.170
	Wood	1.489	.804	.135	1.853	.065	.038	.135	.126	.866	1.154
	Textils	2.134	.955	.167	2.234	.027	.092	.162	.152	.830	1.205
	Minerals	2.766	1.770	.110	1.563	.120	.068	.114	.106	.938	1.066
	Graphics	-.123	.840	-.011	-.146	.884	-.101	-.011	-.010	.867	1.154
	Chemical	.991	.703	.104	1.410	.160	.062	.103	.096	.848	1.179
	Metalworking	.499	.799	.045	.625	.533	-.001	.046	.042	.876	1.141
	Food	.815	.619	.097	1.316	.190	.059	.096	.089	.842	1.187
	Commerce	.058	.567	.008	.102	.919	-.065	.007	.007	.828	1.208
	Construction	1.167	.699	.126	1.670	.097	.052	.122	.113	.810	1.235
	Ecuador_Mexico	.124	.376	.025	.330	.742	-.002	.024	.022	.827	1.210
2	(Constant)	23.185	1.181		19.626	.000					
	SIZE	.129	.289	.038	.445	.657	.020	.033	.029	.570	1.754
	AGE	-1.391	.496	-.256	-2.806	.006	-.108	-.203	-.183	.510	1.962
	SLACK RESOURCES	.131	.049	.199	2.674	.008	.213	.193	.174	.767	1.303
	Wood	1.629	.773	.148	2.108	.036	.038	.154	.137	.864	1.158
	Textils	2.331	.923	.182	2.526	.012	.092	.183	.165	.820	1.219
	Minerals	2.016	1.720	.080	1.172	.243	.068	.086	.076	.915	1.093
	Graphics	-.080	.808	-.007	-.098	.922	-.101	-.007	-.006	.866	1.155
	Chemical	1.043	.677	.109	1.540	.125	.062	.113	.100	.843	1.186
	Metalworking	.572	.768	.052	.745	.457	-.001	.055	.049	.874	1.144
	Food	.921	.596	.110	1.546	.124	.059	.113	.101	.840	1.190
	Commerce	.164	.545	.022	.301	.763	-.065	.022	.020	.826	1.211
	Construction	.923	.674	.100	1.370	.172	.052	.100	.089	.803	1.246
	Ecuador_Mexico	-.148	.371	-.029	-.399	.691	-.002	-.029	-.026	.782	1.278
	INTELLECTUAL CAPITAL	.021	.012	.138	1.714	.088	.293	.125	.112	.655	1.526
	ENTREPRENEURIAL ORIENTATION	.060	.021	.212	2.824	.005	.285	.204	.184	.755	1.325
3	(Constant)	23.207	1.175		19.747	.000					
	SIZE	.145	.288	.043	.504	.615	.020	.037	.033	.569	1.756
	AGE	-1.467	.495	-.270	-2.963	.003	-.108	-.214	-.192	.506	1.978
	SLACK RESOURCES	.121	.049	.183	2.453	.015	.213	.178	.159	.756	1.324
	Wood	1.455	.775	.132	1.877	.062	.038	.137	.122	.849	1.178
	Textils	2.446	.920	.191	2.658	.009	.092	.193	.172	.816	1.226
	Minerals	2.132	1.712	.085	1.245	.215	.068	.092	.081	.914	1.094
	Graphics	.017	.805	.001	.021	.984	-.101	.002	.001	.861	1.161
	Chemical	1.289	.689	.135	1.873	.063	.062	.137	.121	.806	1.240
	Metalworking	.648	.765	.059	.847	.398	-.001	.062	.055	.871	1.148
	Food	1.139	.606	.136	1.880	.062	.059	.138	.122	.803	1.245
	Commerce	.263	.545	.035	.483	.630	-.065	.036	.031	.817	1.225
	Construction	1.091	.677	.118	1.611	.109	.052	.118	.105	.786	1.272
	Ecuador_Mexico	-.145	.369	-.029	-.393	.694	-.002	-.029	-.026	.782	1.278
	INTELLECTUAL CAPITAL	.021	.012	.135	1.688	.093	.293	.124	.110	.655	1.527
	ENTREPRENEURIAL ORIENTATION	.060	.021	.214	2.865	.005	.285	.207	.186	.754	1.326
	Intellectual Capital x Entrepreneurial Orientation	.002	.001	.120	1.723	.086	.097	.126	.112	.873	1.145

Appendix 12. Results using Structural Equation Modeling (SEM-AMOS)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
INTEGRATIVE_CAPABILITIES	<---	INTELLECTUAL CAPITAL	.021	.011	1.945	.052
INTEGRATIVE_CAPABILITIES	<---	ENTREPRENEURIAL ORIENTATION	.060	.020	3.079	.002
INTEGRATIVE_CAPABILITIES	<---	Intellectual Capital x Entrepreneurial Orientation	.002	.001	1.921	.055
INTEGRATIVE_CAPABILITIES	<---	Food	.876	.665	1.318	.187
INTEGRATIVE_CAPABILITIES	<---	Construction	.828	.714	1.160	.246
INTEGRATIVE_CAPABILITIES	<---	Wood	1.192	.810	1.472	.141
INTEGRATIVE_CAPABILITIES	<---	Chemical	1.026	.728	1.410	.158
INTEGRATIVE_CAPABILITIES	<---	AGE	-1.467	.464	-3.162	.002
INTEGRATIVE_CAPABILITIES	<---	Minerals	1.870	1.647	1.135	.256
INTEGRATIVE_CAPABILITIES	<---	SIZE	.145	.271	.535	.593
INTEGRATIVE_CAPABILITIES	<---	Graphics	-.246	.836	-.295	.768
INTEGRATIVE_CAPABILITIES	<---	Country	-.145	.345	-.422	.673
INTEGRATIVE_CAPABILITIES	<---	Metalworking	.385	.805	.479	.632
INTEGRATIVE_CAPABILITIES	<---	Services	-.263	.519	-.507	.612
INTEGRATIVE_CAPABILITIES	<---	SLACK RESOURCES	.121	.044	2.721	.007
INTEGRATIVE_CAPABILITIES	<---	Textile	2.183	.918	2.378	.017

Goodness of Fit Full Model

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	131	87.135	39	.000	2.234
Saturated model	170	.000	0		
Independence model	17	597.907	153	.000	3.908

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.854	.428	.914	.576	.892
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.079	.056	.101	.019
Independence model	.121	.110	.131	.000

Human Capital (SEM)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
INTEGRATIVE_CAPABILITIES	<---	HUMAN CAPITAL	.041	.033	1.239	.215
INTEGRATIVE_CAPABILITIES	<---	SIZE	.343	.285	1.204	.229
INTEGRATIVE_CAPABILITIES	<---	AGE	-1.706	.488	-3.494	***
INTEGRATIVE_CAPABILITIES	<---	SLACK RESOURCES	.159	.047	3.415	***
INTEGRATIVE_CAPABILITIES	<---	Wood	1.442	.774	1.862	.063
INTEGRATIVE_CAPABILITIES	<---	Textile	2.137	.921	2.321	.020
INTEGRATIVE_CAPABILITIES	<---	Minerals	2.474	1.705	1.451	.147
INTEGRATIVE_CAPABILITIES	<---	Graphics	-.206	.810	-.254	.800
INTEGRATIVE_CAPABILITIES	<---	Chemical	.997	.677	1.472	.141
INTEGRATIVE_CAPABILITIES	<---	Metalworking	.525	.770	.682	.495
INTEGRATIVE_CAPABILITIES	<---	Food	.821	.597	1.375	.169
INTEGRATIVE_CAPABILITIES	<---	Commerce	.112	.546	.205	.838
INTEGRATIVE_CAPABILITIES	<---	Construction	1.145	.673	1.700	.089
INTEGRATIVE_CAPABILITIES	<---	Country	.065	.363	.180	.857

Goodness of fit Human Capital Model

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	122	32.568	13	.002	2.505
Saturated model	135	.000	0		
Independence model	15	320.739	120	.000	2.673

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.898	.063	.936	.100	.903
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.087	.050	.125	.051
Independence model	.091	.079	.104	.000

Social Capital (SEM)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
INTEGRATIVE_CAPABILITIES	<---	SOCIAL CAPITAL	.071	.019	3.788	***
INTEGRATIVE_CAPABILITIES	<---	SIZE	.265	.278	.955	.340
INTEGRATIVE_CAPABILITIES	<---	AGE	-1.530	.476	-3.218	.001
INTEGRATIVE_CAPABILITIES	<---	SLACK RESOURCES	.139	.045	3.051	.002
INTEGRATIVE_CAPABILITIES	<---	Wood	1.592	.754	2.110	.035
INTEGRATIVE_CAPABILITIES	<---	Textile	1.976	.897	2.203	.028
INTEGRATIVE_CAPABILITIES	<---	Minerals	2.143	1.661	1.290	.197
INTEGRATIVE_CAPABILITIES	<---	Graphics	-.046	.789	-.058	.954
INTEGRATIVE_CAPABILITIES	<---	Chemical	.938	.660	1.422	.155
INTEGRATIVE_CAPABILITIES	<---	Metalworking	.703	.750	.937	.349
INTEGRATIVE_CAPABILITIES	<---	Food	.789	.581	1.358	.174
INTEGRATIVE_CAPABILITIES	<---	Commerce	.094	.532	.176	.860
INTEGRATIVE_CAPABILITIES	<---	Construction	.916	.656	1.397	.163
INTEGRATIVE_CAPABILITIES	<---	Country	-.164	.353	-.464	.643

Social Capital Goodness of Fit

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	122	34.593	13	.001	2.661
Saturated model	135	.000	0		
Independence model	15	333.174	120	.000	2.776

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.896	.042	.933	.065	.899
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.091	.055	.129	.033
Independence model	.094	.082	.106	.000

Organizational Capital (SEM)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
INTEGRATIVE_CAPABILITIES	<---	ORGANIZATIONAL CAPITAL	.065	.025	2.607	.009
INTEGRATIVE_CAPABILITIES	<---	SIZE	.212	.283	.749	.454
INTEGRATIVE_CAPABILITIES	<---	AGE	-1.742	.483	-3.604	***
INTEGRATIVE_CAPABILITIES	<---	SLACK RESOURCES	.148	.046	3.207	.001
INTEGRATIVE_CAPABILITIES	<---	Wood	1.511	.767	1.971	.049
INTEGRATIVE_CAPABILITIES	<---	Textile	2.138	.912	2.345	.019
INTEGRATIVE_CAPABILITIES	<---	Minerals	2.287	1.689	1.355	.176
INTEGRATIVE_CAPABILITIES	<---	Graphics	.094	.802	.117	.907
INTEGRATIVE_CAPABILITIES	<---	Chemical	.884	.671	1.317	.188
INTEGRATIVE_CAPABILITIES	<---	Metalworking	.481	.762	.631	.528
INTEGRATIVE_CAPABILITIES	<---	Food	.862	.591	1.458	.145
INTEGRATIVE_CAPABILITIES	<---	Commerce	.052	.541	.096	.923
INTEGRATIVE_CAPABILITIES	<---	Construction	1.266	.667	1.900	.057
INTEGRATIVE_CAPABILITIES	<---	Country	-.009	.359	-.026	.979

Organizational Capital Goodness of Fit

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	122	50.630	13	.000	3.895
Saturated model	135	.000	0		
Independence model	15	342.702	120	.000	2.856

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.852	-.364	.886	-.560	.831
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.120	.086	.156	.001
Independence model	.096	.084	.108	.000

Intellectual Capital (SEM)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
INTEGRATIVE_CAPABILITIES	<---	INTELLECTUAL CAPITAL	.036	.010	3.592	***
INTEGRATIVE_CAPABILITIES	<---	SIZE	.227	.279	.811	.417
INTEGRATIVE_CAPABILITIES	<---	AGE	-1.557	.478	-3.259	.001
INTEGRATIVE_CAPABILITIES	<---	SLACK RESOURCES	.127	.046	2.790	.005
INTEGRATIVE_CAPABILITIES	<---	Wood	1.511	.758	1.994	.046
INTEGRATIVE_CAPABILITIES	<---	Textile	2.060	.901	2.286	.022
INTEGRATIVE_CAPABILITIES	<---	Minerals	1.938	1.669	1.161	.246
INTEGRATIVE_CAPABILITIES	<---	Graphics	-.038	.793	-.048	.962
INTEGRATIVE_CAPABILITIES	<---	Chemical	.911	.663	1.375	.169
INTEGRATIVE_CAPABILITIES	<---	Metalworking	.614	.754	.814	.416
INTEGRATIVE_CAPABILITIES	<---	Food	.833	.584	1.426	.154
INTEGRATIVE_CAPABILITIES	<---	Commerce	.120	.535	.224	.823
INTEGRATIVE_CAPABILITIES	<---	Construction	1.077	.659	1.635	.102
INTEGRATIVE_CAPABILITIES	<---	Country	-.144	.355	-.406	.685

Intellectual Capital Goodness of Fit

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	122	48.586	13	.000	3.737
Saturated model	135	.000	0		
Independence model	15	345.318	120	.000	2.878

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.859	-.299	.893	-.458	.842
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.117	.083	.153	.001
Independence model	.097	.085	.109	.000

Appendix 13. Common Method Variance Test – Common Latent Factor

Constraining all paths from the created common latent factor to all observed variables in the model (34) the following result show. Observe the value of the estimate from the common factor to all observed measures.

			Estimate	S.E.	C.R.	P	Label
SC8	<---	social capital	1.000				
SC7	<---	social capital	1.065	.189	5.636	***	
SC6	<---	social capital	1.235	.196	6.300	***	
SC5	<---	social capital	1.432	.197	7.270	***	
SC4	<---	social capital	1.212	.178	6.811	***	
SC3	<---	social capital	1.487	.198	7.513	***	
SC2	<---	social capital	1.140	.161	7.060	***	
SC1	<---	social capital	1.187	.170	6.968	***	
HC5	<---	human capital	1.000				
HC4	<---	human capital	.772	.077	10.012	***	
HC3	<---	human capital	.948	.083	11.365	***	
HC2	<---	human capital	.758	.084	9.010	***	
HC1	<---	human capital	.703	.075	9.314	***	
OC5	<---	organizational_capital	1.000				
OC4	<---	organizational_capital	1.524	.116	13.136	***	
OC3	<---	organizational_capital	.858	.091	9.392	***	
OC2	<---	organizational_capital	1.407	.109	12.933	***	
OC1	<---	organizational_capital	.561	.093	6.013	***	
EOI1_G	<---	Innovativeness	1.000				
EOI2_G	<---	Innovativeness	2.382	.775	3.073	.002	
EOI3_G	<---	Innovativeness	2.705	.883	3.064	.002	
EOP1_G	<---	Proactiveness	1.000				
EOP2_G	<---	Proactiveness	1.869	.275	6.788	***	
EOP3_G	<---	Proactiveness	1.237	.185	6.684	***	
EORT1_G	<---	risk taking	1.000				
EORT2_G	<---	risk taking	1.311	.148	8.856	***	
EORT3_G	<---	risk taking	1.250	.141	8.889	***	
PO1_G	<---	perceive_opportunities	1.000				
PO2_G	<---	perceive_opportunities	-.346	.420	-.824	.410	
PO3_G	<---	perceive_opportunities	28.806	123.955	.232	.816	
PO4_G	<---	perceive_opportunities	1.119	.477	2.345	.019	
CO1_G	<---	capitalize_opportunities	1.000				
CO2_G	<---	capitalize_opportunities	1.648	.386	4.272	***	

			Estimate	S.E.	C.R.	P	Label
CO3_G	<---	capitalize_opportunities	.983	.214	4.595	***	
HC1	<---	Common_Factor	.272	.033	8.328	***	a
HC2	<---	Common_Factor	.272	.033	8.328	***	a
HC3	<---	Common_Factor	.272	.033	8.328	***	a
HC4	<---	Common_Factor	.272	.033	8.328	***	a
HC5	<---	Common_Factor	.272	.033	8.328	***	a
SC1	<---	Common_Factor	.272	.033	8.328	***	a
SC2	<---	Common_Factor	.272	.033	8.328	***	a
SC3	<---	Common_Factor	.272	.033	8.328	***	a
SC4	<---	Common_Factor	.272	.033	8.328	***	a
SC5	<---	Common_Factor	.272	.033	8.328	***	a
SC6	<---	Common_Factor	.272	.033	8.328	***	a
SC7	<---	Common_Factor	.272	.033	8.328	***	a
SC8	<---	Common_Factor	.272	.033	8.328	***	a
OC1	<---	Common_Factor	.272	.033	8.328	***	a
OC2	<---	Common_Factor	.272	.033	8.328	***	a
OC3	<---	Common_Factor	.272	.033	8.328	***	a
OC4	<---	Common_Factor	.272	.033	8.328	***	a
OC5	<---	Common_Factor	.272	.033	8.328	***	a
EOI1_G	<---	Common_Factor	.272	.033	8.328	***	a
EOI2_G	<---	Common_Factor	.272	.033	8.328	***	a
EOI3_G	<---	Common_Factor	.272	.033	8.328	***	a
EOP1_G	<---	Common_Factor	.272	.033	8.328	***	a
EOP2_G	<---	Common_Factor	.272	.033	8.328	***	a
EOP3_G	<---	Common_Factor	.272	.033	8.328	***	a
EORT2_G	<---	Common_Factor	.272	.033	8.328	***	a
EORT3_G	<---	Common_Factor	.272	.033	8.328	***	a
EORT1_G	<---	Common_Factor	.272	.033	8.328	***	a
PO1_G	<---	Common_Factor	.272	.033	8.328	***	a
PO2_G	<---	Common_Factor	.272	.033	8.328	***	a
PO3_G	<---	Common_Factor	.272	.033	8.328	***	a
PO4_G	<---	Common_Factor	.272	.033	8.328	***	a
CO1_G	<---	Common_Factor	.272	.033	8.328	***	a
CO2_G	<---	Common_Factor	.272	.033	8.328	***	a
CO3_G	<---	Common_Factor	.272	.033	8.328	***	a

The result .272*.272 = 0.074 which means a 7% of the variance explained by a common factor.

Appendix 14. Validity and Reliability of scales using Structural Equation Modeling.

The results as shown as follows and those are consistent to great extent with those results obtained calculating Cronbach's Alpha and Confirmatory Factor Analysis. This technique is used as complementary and for comparison matters between multiple regression and SEM.

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
HC1	<---	Intellectual_Capital	1.000				
HC2	<---	Intellectual_Capital	.980	.122	8.002	***	
HC3	<---	Intellectual_Capital	1.241	.125	9.915	***	
HC4	<---	Intellectual_Capital	1.059	.118	8.961	***	
HC5	<---	Intellectual_Capital	1.426	.154	9.255	***	
SC1	<---	Intellectual_Capital	1.325	.138	9.631	***	
SC2	<---	Intellectual_Capital	1.295	.134	9.677	***	
SC3	<---	Intellectual_Capital	1.527	.153	10.005	***	
SC4	<---	Intellectual_Capital	1.338	.147	9.128	***	
SC5	<---	Intellectual_Capital	1.399	.150	9.354	***	
SC6	<---	Intellectual_Capital	1.251	.157	7.961	***	
SC7	<---	Intellectual_Capital	1.103	.157	7.012	***	
SC8	<---	Intellectual_Capital	1.167	.146	8.007	***	
OC1	<---	Intellectual_Capital	.977	.140	6.988	***	
OC2	<---	Intellectual_Capital	.994	.161	6.184	***	
OC3	<---	Intellectual_Capital	.987	.142	6.935	***	
OC4	<---	Intellectual_Capital	.978	.168	5.830	***	
OC5	<---	Intellectual_Capital	1.148	.152	7.545	***	
EORT3_G	<---	Entrepreneurial_Orientation	1.000				
EORT2_G	<---	Entrepreneurial_Orientation	1.013	.134	7.534	***	
EORT1_G	<---	Entrepreneurial_Orientation	1.096	.133	8.252	***	
EOP3_G	<---	Entrepreneurial_Orientation	.927	.116	7.978	***	
EOP2_G	<---	Entrepreneurial_Orientation	1.187	.141	8.435	***	
EOP1_G	<---	Entrepreneurial_Orientation	.754	.121	6.214	***	
EOI3_G	<---	Entrepreneurial_Orientation	.889	.115	7.763	***	
EOI2_G	<---	Entrepreneurial_Orientation	.825	.120	6.869	***	
EOI1_G	<---	Entrepreneurial_Orientation	.736	.136	5.403	***	
PO1_G	<---	Integrative_Capabilities	1.000				
PO2_G	<---	Integrative_Capabilities	.124	.244	.508	.612	
PO3_G	<---	Integrative_Capabilities	1.435	.295	4.872	***	
PO4_G	<---	Integrative_Capabilities	.606	.256	2.368	.018	
CO1_G	<---	Integrative_Capabilities	2.078	.383	5.433	***	
CO2_G	<---	Integrative_Capabilities	2.312	.405	5.712	***	
CO3_G	<---	Integrative_Capabilities	1.794	.332	5.407	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
HC1	<---	Intellectual_Capital	.643
HC2	<---	Intellectual_Capital	.600
HC3	<---	Intellectual_Capital	.777
HC4	<---	Intellectual_Capital	.686
HC5	<---	Intellectual_Capital	.713
SC1	<---	Intellectual_Capital	.749
SC2	<---	Intellectual_Capital	.754
SC3	<---	Intellectual_Capital	.786
SC4	<---	Intellectual_Capital	.701
SC5	<---	Intellectual_Capital	.723
SC6	<---	Intellectual_Capital	.596
SC7	<---	Intellectual_Capital	.516
SC8	<---	Intellectual_Capital	.600
OC1	<---	Intellectual_Capital	.514
OC2	<---	Intellectual_Capital	.450
OC3	<---	Intellectual_Capital	.510
OC4	<---	Intellectual_Capital	.422
OC5	<---	Intellectual_Capital	.561
EORT3_G	<---	Entrepreneurial_Orientation	.631
EORT2_G	<---	Entrepreneurial_Orientation	.612
EORT1_G	<---	Entrepreneurial_Orientation	.688
EOP3_G	<---	Entrepreneurial_Orientation	.658
EOP2_G	<---	Entrepreneurial_Orientation	.709
EOP1_G	<---	Entrepreneurial_Orientation	.486
EOI3_G	<---	Entrepreneurial_Orientation	.636
EOI2_G	<---	Entrepreneurial_Orientation	.547
EOI1_G	<---	Entrepreneurial_Orientation	.415
PO1_G	<---	Integrative_Capabilities	.436
PO2_G	<---	Integrative_Capabilities	.038
PO3_G	<---	Integrative_Capabilities	.510
PO4_G	<---	Integrative_Capabilities	.190
CO1_G	<---	Integrative_Capabilities	.649
CO2_G	<---	Integrative_Capabilities	.776
CO3_G	<---	Integrative_Capabilities	.641