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Investigating Entrepreneurial Intensity and Capability among South African Exporting Firms

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ABSTRACT

Given the increasing interest in international entrepreneurship and an increasing reliance of emerging economies on exporting to reach global markets, an investigation into internationalising firms in emerging economies is vital. Not only do these firms face pressures arising from the liability of smallness, foreignness, and resource limitations, but they also need compensating advantages in order to viably compete on the international stage.

This study contributes to the international entrepreneurship literature by analysing the relationship between entrepreneurial intensity and capability, taken as independent variables, and their effect on international performance, taken as a multi-item dependent variable. The study uses a sample of 117 South African exporting firms of any size, industry, and/or age. Furthermore foreign environmental conditions within which these firms operate are measured in terms of their impact/moderation on the relationship between the independent variables and international performance. The study examines entrepreneurial intensity, which is a measure of the level of entrepreneurship in a firm that looks at both the degree and frequency of events with respect to innovativeness, proactiveness and risk-taking. The study also examines three entrepreneurial capabilities – namely social capital, human capital, and technology - that can enhance a firm's international performance. Performance consists of two dimensions – namely economic performance and export intensity. Export intensity is a proxy of international intensity, measured as a ratio of foreign sales as a percentage of total sales.

In this study, the dimensions of social capital that are measured are social interaction, relationship quality and network ties. Social capital is analysed in relationships among firms and their foreign actors/contacts. Social capital is also analysed as a multidimensional asset inside the business relationships comprising of both strong and weak ties, and implemented by the firms with their international partners or contacts. Social interaction and relationship quality corresponds to inter-organisational strong ties whereas network ties correspond to weak ties.

Human capital consists of three dimensions – namely foreign institutional knowledge, foreign business knowledge, and internationalisation knowledge – based on the conception of foreign market knowledge.

The two aspects of technology that are measured are technology distinctiveness and technology acquisition.

The study also offers insights into key firm-level factors that influence international performance under foreign environmental conditions characterised by hostility and dynamism.

Hypotheses were put forward to be tested in order to facilitate the study. To test the hypothesised bivariate relationship between entrepreneurial intensity and performance, correlation analysis was performed to examine the relationship between the predictors and the performance variables. Similarly, the tests were performed to examine the hypothesised bivariate relationship between entrepreneurial capabilities and performance variables. To test the impact of the environmental moderators on the efficacy of entrepreneurial intensity (EI) and entrepreneurial capability (EC), multiple regression analysis was performed.

Overall the results show that EI and EC had a significant effect on both performance measures, with EC predicting stronger than EI.

The results showed that different aspects of EI were associated with performance depending on the performance outcomes desired. Frequency of entrepreneurship was related to economic performance whereas entrepreneurial orientation (EO) was related to export intensity. Furthermore EI had a weakening impact under moderating conditions of increasing hostility on both performance measures. Dynamism did not moderate the relationship between EI and performance.

EC had a positive impact under all moderating conditions on both performance measures.

Social capital played an important role in hostile foreign environments whereas human capital was more important in dynamic foreign environments. In hostile foreign

business environments, strongly embedded relationships did not provide benefits for advancing business whereas weak ties did. In dynamic foreign environments, internationalisation knowledge (prior internationalisation experience) was associated with both performance variables whereas foreign institutional knowledge (FIK) and foreign business knowledge (FBK) were not found to be important.

The overall comparison revealed that in the foreign market environment, entrepreneurial capabilities were more important predictors of performance than entrepreneurial intensity. This suggests that entrepreneurial firms must possess compensating advantages in order to compete viably in unfamiliar markets abroad if they are not strong on innovation, proactiveness, and taking risks. Knowledge-based factors encourage initiative and flexibility among managers to gain influence over vital resources. However the challenge remains for the firms in emerging economies to adopt technology and act entrepreneurially.

The results suggest that exporting firms in emerging market countries should pursue an entrepreneurial posture in order to achieve higher export intensity and engage in frequent product, process, and service enhancement activities if the objective is to achieve economic performance.

Furthermore, the study found that entrepreneurial capability among South African exporting firms is positively related to performance. The study found that in order to improve their export intensity, human capital and social capital are among the most essential capabilities for organisational perfomance, whereas technology was not.

The purpose of this research was to perform an empirical investigation on three main constructs - namely: entrepreneurial intensity, entrepreneurial capabilities, and the environmental dimensions - among South African exporting firms and the relationship of these factors with international performance.

This study integrates the role of entrepreneurial intensity and capability in international entrepreneurship and their effects on performance of exporting firms within an emerging market context.

In line with theoretical studies in international entrepreneurship, this study reinforces the strategic role of entrepreneurial capabilities such as social capital and human capital in enhancing international performance. The role of EO and technology acquisition is also acknowledged.

DECLARATION

I, Mpho Raymond Sefalafala, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

MPHO RAYMOND SEFALAFALA

Signed at ……

On the …….. day of …… 2012

DEDICATION

“An apple never falls far from the tree,” English proverb.

This research report is dedicated to my dear parents, Mr Rector Matome Sefalafala and Mrs Rachel Moremadi Sefalafala, without whose vision and greatness I would not have followed this path.

ACKNOWLEDGEMENTS

"It is said that an artist must pause occasionally from the task of painting a great masterpiece and take a sometimes difficult step back from the canvas in order to view the work in progress from a more objective, less involved perspective. It is, after all, only by stepping back that the artist is better able to identify any flaws to correct or strokes of brilliance from which renewed inspiration may be drawn to complete the magnum opus. Indeed, it may be ironically prudent to pull back in order to move forward more wisely and more purposefully than before, whether it be in art or other fields of endeavour. It is thus where one finds oneself after a year of frantic and furious search: taking pause, breath and stock of what has been in order to better plot out what is to be, " Wolfgang Welsch.

While this work has been an iterative and reflective process of self-pursuit and realisation, I wish to acknowledge those who provided assistance and support through and through to its completion.

I would like to express my sincere gratitude to:

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CHAPTER 1: INTRODUCTION

1.1 Purpose of the study

Studies have confirmed that entrepreneurship and the ability to enterprise enables firms to perform better than competitors. In recent times, characterised by globalisation of the world economy, firms are advised to consider internationalisation of their operations in order to remain competitive (Zahra and Bogner, 2000; Oviatt and McDougall, 2005). Internationalisation as an activity opens new markets and therefore is essentially entrepreneurial in nature. The increase in globalisation of trade and internationalisation of businesses compels firms to consider what firm characteristics and capabilities contribute to international success.

The purpose of this research was to perform an empirical investigation on three main constructs – namely: entrepreneurial intensity, entrepreneurial capabilities, and the environment - among South African exporting firms and the relationship of these factors with international performance. A literature review was conducted to provide a theoretical review of the extant theory that relates to the problem under study and context of the research project. Through scientific empirical methods, the characteristics and relationships between the constructs are tested to derive conclusions.

In this study, **entrepreneurial intensity** (EI) is conceptualised as a measure of the level of entrepreneurship within a firm and comprises of both degree and frequency of entrepreneurship activities. The degree of entrepreneurship, also known as **entrepreneurial oriantation** (EO), is a multi-dimensional construct comprising of three sub-dimensions, namely: innovativeness, proactiveness, and risk-taking, whereas frequency of entrepreneurship refers to the number of such events.

Based on literature reviews, **entrepreneurial capabilities** (EC) are viewed as a broader range of abilities or competencies needed to initiate appropriate action in specific

organisational situations. This study focuses on the following entrepreneurial capabilities: social capital, human capital, and technology.

The study purports that the extent to which each of these dimensions (of entrepreneurial intensity and capabilities) is useful for predicting the international success of the firm may be contingent on the characteristics of the foreign business environment within which the firm operates. Consistent with prior research, the present study looks at the moderating effect of the environment on the IE-performance and EC-performance relationship and relies on two environmental dimensions, namely dynamism and hostility.

1.2 Context of the study

Globalisation of the world economy has encouraged companies to leverage their resources and skills by expanding into existing or new foreign markets (Zahra and Garvis, 2000). Globalisation refers to the process of worldwide venture activities. Internationalisation is an important route through which new and small ventures can realise their growth potential (Pangarkar, 2008) and this is particularly vital for the continued growth and development of new and small ventures in emerging economies (Manolova, Manev and Gyoshev, 2010). To this end, the development of export activity is viewed as an attractive mode of venturing into foreign market opportunities (Haahti, Madupu, Yavas and Babakus, 2005) and is indeed an entrepreneurial act, consisting of identifying and exploiting new business opportunities in a new environment (Ripollés-Meliá, Menguzzato-Boulard and Sánchez-Peinado, 2007).

International entrepreneurship refers to the process of discovering and creatively exploiting opportunities that exist outside a firm's national borders in order to obtain competitive advantage (Zahra, Cloninger, Yu and Choi, 2004). The internationalisation of activities is becoming the growth method most commonly used by small and medium-sized enterprises. In particular, the export of products represents the predominant mode of international expansion with these type of firms versus mechanisms such as investments abroad or international alliances (Acedo and Casillas, 2007). In general, exporting symbolises one of the main forms of internationalisation.

The rapid globalisation of world markets has encouraged companies of all sizes and national origins to expand internationally (Zahra, Hayton, Marcel and O'Neill, 2001). Much of the empirical work in export and international entrepreneurship is based primarily on firms in advanced economies (Singh, 2009). Limited research has been conducted in the context of developing countries, including South Africa (Scheepers, Hough and Bloom, 2007). While the majority of research has employed samples drawn from the United States, Canada, Israel, Sweden, etc., the importance of international entrepreneurship has been recognised and there is a growing interest on the importance of exporting among emerging economies (Haahti et al., 2005; Singh, 2009; Javalgi and Todd, 2010) such as India and China.

Emerging markets are characterised by relatively small firms serving small domestic markets. Singh (2009) suggests that small and medium-sized enterprises (SMEs) avoid undertaking risky activities like exporting as they have severe resource constraints such as financial, technological and human, to divulge in exporting activity. Faced with rising competition in their domestic markets and attracted to opportunities in foreign markets, SMEs are increasingly looking towards internationalisation as a means of creating and sustaining competitive advantage (Zahra, Ucbasaran and Newey, 2009). Firms in many emerging economies are increasingly relying on exports for venturing into foreign markets.

Following this view, export is an effective way towards internationalisation, but it requires organisational capabilities. Success in global entrepreneurship requires resourcefulness and entrepreneurial risk-taking. Based on Oviatt and McDougall (1994), Jones and Coviello (2005) emphasise that internationalisation is firm-level behaviour and that certain conditions within the firm and environmental factors are necessary and sufficient to explain internationalisation. Entrepreneurial behaviour and unique entrepreneurial capabilities enable internationalising firms to make a leap into the international arena (Zhou, 2007).

Entrepreneurial behaviour is defined as the sum of a company's efforts aimed at innovation, proactiveness, and risk-taking. These efforts offer an important means of revitalizing and renewing companies and improving performance (Zahra and Garvis, 2000). In order to benefit from their international expansion, companies need to foster entrepreneurship throughout their operations (Zahra et al., 2001). An organisation's performance from the perspective of entrepreneurship at a point in time can be shown by its entrepreneurial intensity score (Ireland, Kuratko and Morris, 2006). In this study we use the concept of **entrepreneurial intensity** to empirically assess the level of entrepreneurship among internationalising firms and its relationship to performance in their attempt to exploit opportunities in foreign markets.

Entrepreneurial capabilities are viewed as a broader range of abilities needed to initiate appropriate action in specific organisational situations and reflect the capacity to initiate and sustain an entrepreneurial dynamism throughout the organisation

(Obrecht, 2004). The core competencies represent collective learning in the organisation. Possession of a wide range of distinct competencies is a catalyst for entrepreneurial intensity. Obrecht (2004) declared that human capital and social capital are among the most essential capabilities for organisational perfomance. In addition, Zahra et al. (2000) suggested that the firm's technological capability is critical to successful internationalisation. Similarly, other researchers in the literature of international entrepreneurship have asserted that knowledge-based, social-based, and technological capabilities are important for successful international expansion (Autio, Sapienza and Almeida, 2000; Deeds, 2001; Zhou, 2007). This paper contends that firms should hold a portfolio of entrepreneurial capabilities in their attempt to promote entrepreneurship in the international arena characterised by competitiveness and uncertainty. Based on literature, three entrepreneurial capabilities were identified and investigated: Social capital, human capital, and technology.

Zahra and Bogner (2000) states that foreign opportunities, however, are tempered by the constraints imposed by the competitive forces that exist in international environments, such as aggressive government intervention, technological changes, and fierce local rivalries all contributing to hostile international environment. The benefits derived by SMEs from internationalisation may depend on the characteristics of the international business environment (Pangarkar, 2008). Lumpkin and Dess (1996) premised that firm behaviour and firm characteristics may vary, contingent on influences external to the firm. This study therefore examines the moderation effect of the environment in the relationship between entrepreneurial intensity and firm performance, as well as entrepreneurial capabilities and firm performance. The two aspects of the environment under study are: environmental hostility and dynamism.

The model in Figure 1 shows the context of this study.

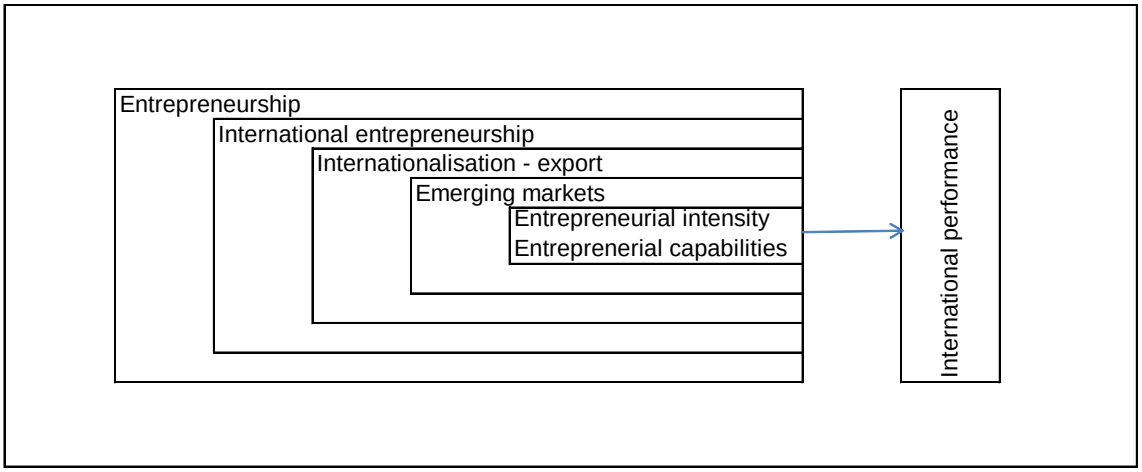


Figure 1: The contextual model of the study

1.2.1 *South African exports*

Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services (Worldbank, 2012). South Africa imports mainly machinery, foodstuffs, equipment, chemicals, petroleum products and scientific instruments. The country reported a trade deficit equivalent to R8.04 billion in November of 2011, thereby showing that the amount of imports exceeds exports.

South Africa is the world's major exporter of gold, platinum, coal and diamonds. Its major trading partners are: European Union (U.K. Germany, Italy, and Belgium), The United States, China, and Japan (Tradingeconomics, 2012). South Africa's share of world export has averaged 0.50% over the past five years, with 0.54% in 2010. South Africa's exports were worth $86.12 billion in 2010, with an average growth of 11% since 2006. However, export growth in South Africa has lagged behind the rest of Africa and the world. South African exports constituted 20.2% of GDP in 2010, down from 26.6% in 2006 (Eurostat, 2012). Exporting is a crucial business activity for South Africa's economic health as it significantly contributes to employment, trade balance, economic growth and development.

1.3 Problem statement

1.3.1 *Main problem*

The main problem of this study is to examine the effect of entrepreneurial intensity and capabilities on international performance among South African exporting firms. The moderating effect of environmental characteristics on the relationships is also examined. The two aspects of the environment under study are environmental hostility and dynamism.

1.3.2 *Sub-problems*

The first sub-problem is to examine the relationship between entrepreneurial **intensity** and international performance as well as the moderating effect of environmental hostility and dynamism on the relationship.

The second sub-problem is to examine the relationship between entrepreneurial **capabilities** and international performance as well as the moderating effect of environmental hostility and dynamism on the relationship.

1.4 Significance of the study

Entrepreneurship scholars have empirically linked entrepreneurial behaviour to high performance among firms (Zahra and Garvis, 2000; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005). While the popular view held among scholars is that the level of entrepreneurship in a firm can be measured in terms of degree of entrepreneurship or entrepreneurial orientation, several other authors (Morris and Sexton, 1996; Kuratko, Hornsby and Goldsby, 2007; Scheepers et al., 2007) have since followed Morris and Sexton's extended conceptualisation, which not only looks at the degree of entrepreneurship but also the frequency of entrepreneurship, and hence the concept of entrepreneurial intensity.

However, none of the studies on entrepreneurial intensity has been conducted within an international entrepreneurship context. It is acknowledged that while variations exist in how the entrepreneurship constructs has been studied (and particularly the entrepreneurial orientation construct), most of these studies were conducted within

the field of corporate entrepreneurship (Zahra and Garvis, 2000; Scheepers et al., 2007; Urban, 2010) and in developed economies (Scheepers et al., 2007; Singh, 2009). Of those studies conducted within developing countries, the focus was on entrepreneurial orientation rather than intensity (Ibeh, 2003; Javalgi and Todd, 2010; Urban, 2010).This research will build on our understanding of entrepreneurial intensity in organisations, which is still in its infancy (Morris, Kuratko and Covin, 2008).

Furthermore, theoretical studies in international entrepreneurship have acknowledged the role of entrepreneurial capabilities such as social capital, human capital, and technology in international entrepreneurship, and examined the relationship between these constructs and international performance.

Tentative evidence shows that social capital positively contributes to international performance (Hoang and Antoncic, 2003; Presutti, Boari and Fratocchi, 2007; Pangarkar, 2008). On the other hand, the extant literature shows that firms can leverage human capital to positively influence their international success (Samiee and Walters, 1999; Yli-Renko, Autio and Sapienza, 2001; McDougall, Oviatt and Sharader, 2003; Ibrahim, 2004; Oviatt and McDougall, 2005; Zhou, 2007; Casillas, Moreno, Acedo, Gallego and Ramos, 2009; Javalgi and Todd, 2010). Obrecht (2004) concluded that human capital and social capital are among the most essential capabilities for firm perfomance. Zahra and Bogner (2000) suggested that the firm's technological capability is critical to successful internationalisation. Similarly, other researchers in the literature of international entrepreneurship have asserted that knowledge-based, social-based, and technological-based capabilities are important for successful international expansion (Autio et al., 2000; Deeds, 2001; Zhou, 2007; Brennan and Garvey, 2009). While studies in international entrepreneurship have acknowledged the role of entrepreneurial capabilities, none of the studies have studied these concepts together in a single integrative study.

Following the call to explore the **moderating effect** of factors external to the firm on the relationship between entrepreneurship and performance, a number of studies emerged (Wiklund and Shepherd, 2005; Li, Huang and Tsai, 2009). Urban (2010) observed significant correlations between entrepreneurial orientation (EO) and

environmental hostility and dynamism among Johannesburg-based firms. Ibeh (2003) found an association between EO and export performance among small Nigerian firms operating in hostile environments. Ibeh (2003) suggested that this orientation is associated with certain decision-maker characteristics such as international orientation, contacts and previous business experience, as well as firm-level competencies; although no evidence to this effect was provided. Zahra and Garvis (2000) investigated the moderating effect of environmental hostility on the relationship between international corporate entrepreneurship and financial performance. Despite the increasing number of studies focusing on the contingent relationship between entrepreneurial behaviour and firm performance, none of the studies focused on the entrepreneurial intensity construct. Furthermore none of the contingency-based studies (contingent on the environment) focused on entrepreneurial capabilities. This shows the incompleteness of studies in this field.

Theory development and testing are central to the advancement of entrepreneurship as a scholarly field (Zahra, 2007). In response to the widespread calls for greater rigour and relevance in future studies (Ibeh, 2003; Oviatt and McDougall, 2005; Zahra, 2007; Seno-Alday, 2010), this study integrates concepts from entrepreneurship, strategy, and international entrepreneurship. This thereby depicts the complex nature of the field. Specifically, this study fills the knowledge gap in that it looks at international entrepreneurship through the prism of such dimensions as entrepreneurial orientation, frequency of entrepreneurship, social capital, human capital and technology within an emerging market. The attention paid to the moderating effects of the environment on performance in this investigation enriches its relevance particularly in an emerging market context. Furthermore, this study looks at performance as a multi-item construct versus a single construct in most studies.

In emerging economies such as South Africa where growth is often the primary goal of organisations, entrepreneurship is expected to be the fuel of economic development. In the midst of globalisation, countries such as South Africa need to improve their international competitiveness which underpins the survival and growth of firms in the international markets.

Lack of pertinent entrepreneurial competencies such as human and social capital and technology expertise have been touted as one of the reasons associated with entrepreneurial failure. The global entrepreneurship monitor reports that South Africa's total entrepreneurial activity (TEA) ranks lower than its peers in the low to middle income countries and is dominated by 'necessity entrepreneurs' with low expectations of growth and job creation (GEM, 2009). The South African government has been injecting risk capital in institutional assistance and promotional programs in an attempt to promote export growth. However the exports-to-GDP ratio has declined from 2006 to 2010.

Since a firm's entrepreneurial posture and capabilities may be critical to the long-term survival of a firm, they have an impact on job creation and social development. There is tentative evidence in support of the constructs on international performance that policy makers in business, government and educational institutions could put more emphasis on programs that foster the development of these constructs among executive leadership of firms so as to avert the flow of risk capital towards low quality entrepreneurship. It is therefore of paramount importance to facilitate the empirical study of these constructs.

Given the dynamic nature of global trade, and increasing reliance of emerging economies on exporting to reach global markets, it is vital to conduct an investigation of internationalising firms in emerging economies, taking into account their unique characteristics and the external environment in theoretical development. Ultimately, this study aims to elicit more interest in these concepts so as to promote further research in the South African context.

Figure 2 provides an overview of the conceptual model showing the high-level constructs guiding the study. The main constructs in the model are entrepreneurial intensity, entrepreneurial capabilities, the environment, and international performance relationship as covered by the literature.

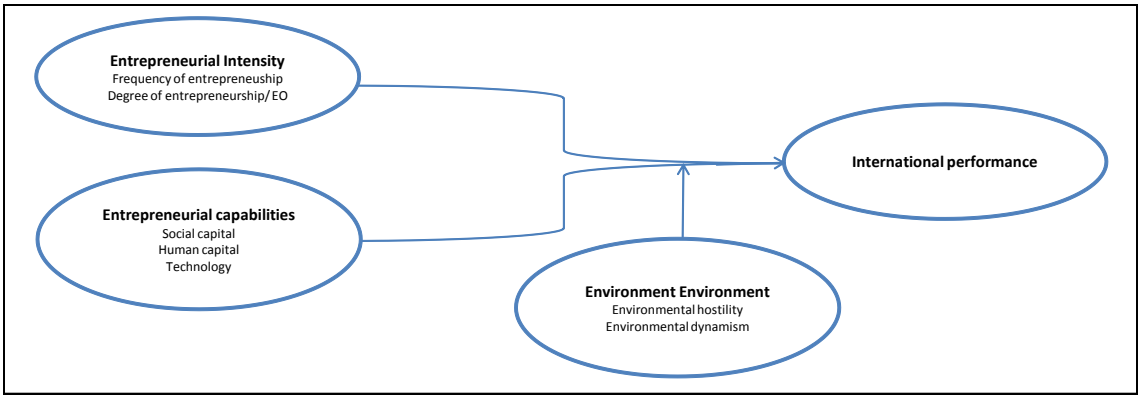


Figure 2: High-level conceptual model of constructs

1.5 Delimitations of the study

The scope/sample of this study is limited to South African firms:

- of any size
- in any industry
- across all geographical areas
- Involved in the export of goods and services.

However, the scope of the literature reviewed is not limited to South Africa only.

1.6 Definition of terms

Below are the definitions that the reader needs to understand in order to make sense of the report:

Competitive advantage is defined as the ability of a firm or industry to achieve a better performance than its competitors in terms of profitability.

Corporate entrepreneurship (CE) refers to the development of new business ideas and opportunities within large, established corporations (Scheepers et al., 2007)**.**

Domestic new venture (DNVs) are new ventures that operate entirely in the domestic markets; i.e. they have no international revenues (McDougall et al., 2003).

Entrepreneurial behaviour is defined as the sum of a company's efforts aimed at innovation, proactiveness, and risk-taking.

Entrepreneurial capabilities (EC) are viewed as a broader range of abilities or competencies needed to initiate appropriate action in specific organisational situations.

Entrepreneurial intensity (EI) is a measure of the level of entrepreneurship within a firm and comprises of both degree and frequency of entrepreneurship activities.

Entrepreneurial firm can be described in terms of aggressive strategic postures, innovativeness, and risk-taking (Covin and Slevin, 1990).

***Entrepreneurial firm** can also be described in terms of its inclination to take on business-related risks, to favour change and innovation, and to assume an aggressive competitive posture vis-à-vis its competitors (Leiblein and Reuer, 2004).

***Entrepreneurial firm** – another definition of an entrepreneurial firm is a start-up firm which is usually characterised by resource constraints such as lack of tangible assets.

* Either of the definitions is applicable depending on the context used.

Entrepreneurship within organisations is a fundamental posture, instrumentally important to strategic innovation, particularly under shifting external environmental conditions (Urban, 2010).

International entrepreneurship means the process of discovering and creatively exploiting opportunities that exist outside a firm's national borders in order to obtain competitive advantage (Zahra et al., 2004).

International entrepreneurship is the discovery, enactment, evaluation and exploitation of opportunities across national borders to create future goods and services (Oviatt and McDougall, 2005).

Internationalisation (of a firm) is its involvement in cross-border business activity to derive revenues.

International firm is a firm that operates across its national borders. The research consider firms to be internationalised when their foreign sales represent more than10% of total sales (Zhou, 2007) or number of countries where the firm operates is greater than five.

International new ventures (INVs) or **Born-global firms** are businesses that, from inception, seek to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries (McDougall et al., 2003).

Resource based theories – resource based theories hypothesise that the firm's strategic decisions (e.g. Internationalisation) rests on the availability of resources such finance and infrastructure or lack of them.

Top Management Teams (TMTs) refers to the upper management within an organisation, which sets and directs corporate policy and strategic formulation within an organisation.

Traditional theories of internationalisation that depicted internationalisation as an incremental process and occurring at a later stage of the firm's growth process (Ibrahim, 2004). These theories were also referred as the **sequential** or **process** or **stages** or **Uppsala theories of internationalisation.**

1.7 Assumptions

This section states any assumptions that could influence the outcome of the research. The following assumptions were made in this study:

- All the companies that responded are registered South African companies and are actively involved in exports. The survey was targeted at South African firms, and the questions asked in the questionnaire are only applicable to exporting firms
- The convenient sample used in the study represents the population of South African exporting firms across all industries in all geographical areas and therefore the results can be generalised
- The respondents have enough knowledge of export practices within their firms, and that their responses are truthful and representative of views of their firms
- Each of the respondents uniquely represents a firm and there is only one respondent per firm. In cases where the respondents were from the same holding company, they were in different business units with their own management and export practices, and therefore can be treated as different companies.

CHAPTER 2: LITERATURE REVIEW

According to Cooper (1984), a literature review provides a theoretical review of the extant theory that relates to the problem under study (Creswell, 2008).It provides a meaningful context of the research project and locates it within the universe of research that already exists. In a quantitative study a literature review can be used deductively as a basis for advancing research questions or hypothesis (Creswell, 2008).

2.1. Introduction

This section presents a literature study developed to provide a theoretical lens and perspective on the constructs discussed in the main problem and sub-problems of this study. The literature review begins by defining internationalisation and measures of international performance. Then the main constructs are rigorously discussed as a basis for the development of hypothesis. Finally follows the conclusion of the literature review, culminating in the summarization of hypotheses. The section concludes with the presentation of a theoretical framework for the study.

2.2. Definition of topic or background discussion

2.2.1. Internationalisation

International entrepreneurship is an increasingly a popular academic concern which is strongly influenced by the conceptual integration of the disciplines of international business, entrepreneurship and strategic management. The process of inquiry into the internationalisation of business includes grappling with existential questions about the phenomenon: what is it, why does it exist, and what makes it tick (Seno-Alday, 2010)?.

International entrepreneurship is positioned at the nexus of internationalisation and entrepreneurship where entrepreneurial behaviour involves cross-border business activity. According to Zahra and George (2002), international entrepreneurship means the process of discovering and creatively exploiting opportunities that exist outside a firm's national borders in order to obtain competitive advantage (Zahra et al., 2004). Oviatt and McDougall (2005) defined international entrepreneurship as the discovery,

enactment, evaluation and exploitation of opportunities across national borders to create future goods and services. According to Oviatt et al. (2005) international entrepreneurship entails a combination of innovative, proactive, and risk-seeking behaviour that crosses national borders and is intended to create value in organisations.

From these definitional perspectives it is clear that international entrepreneurship has a common heritage with entrepreneurship, with international entrepreneurship focusing on new foreign markets. This exposure to new cultures and languages, and different ways of doing business amounts to increased risk-taking (Welch, 2004). The process of preparing for entry may include foreign market visits, foreign market research, and government export services, and experimentation with the market to gain experiential knowledge. A number of external environmental factors such as technological, cultural, geographical, demographic, as well as the government can provide motive to go international. According to **resource based theories** entrepreneurial firms venture into foreign markets in search of critical resources; entrepreneurial firms with more resources have more likelihood to engage in international activities (Ibrahim, 2004).

The Schumpeterian definition of entrepreneurship emphasised breaking new ground, in such areas as entering new markets, introducing new products, applying new production methods, and developing new supply sources. The internationalisation of activities is becoming the growth method most commonly used by small and medium-sized enterprises. Exporting symbolises one of the main forms of firm internationalisation as opposed to other mechanisms such as investments abroad or international alliances. Exporting as an activity opens new markets and is essentially entrepreneurial in nature.

Historically, multinational enterprises (MNEs) are developed from large, mature, domestic firms and the study of the international entrepreneurship focused on large, mature corporations (Welch, 2004). This distinction was preserved by government-imposed barriers, segregated and protected domestic markets (Dana and Wright, 2004).This implied that international economic activity was controlled and constrained

within the boundaries of the 'nation-state'. The dominant international model employed by the MNEs was that of market expansion through creation of autonomous subsidiaries in foreign nations, which distributed products from the 'parent nation' (Oviatt et al., 2005). Regulatory and environmental barriers, and resource constraints shielded SMEs from competing directly with MNEs in the same market (Dana and Wright, 2004).

Today, advances in communication technology, manufacturing technology and transportation as well as trade liberalisation have allowed small and large companies alike to compete in international markets. Geographical locations are no longer significant barriers to internationalisation. The traditional theories of MNE internationalisation, which emphasised organisational scale as an important competitive advantage in the international arena, are no longer adequate to explain the internationalisation of smaller firms.

The **traditional theories of internationalisation** depicted internationalisation as an incremental process and occur at a later stage of the firm's growth process (Ibrahim, 2004). These theories were referred to as the sequential or process or stages or Uppsala theories of internationalisation. At the early stage of firm's growth process, the firm's horizon is limited to domestic market; as it grows it expands and invests in foreign markets to exploit windows of opportunity (Ibrahim, 2004). The knowledge gained at one stage can profoundly influence future internationalisation as firms experiment, take risk, and learn. International venturing can broaden a firms knowledge base through learning about new markets, customers, cultures, technologies, and innovation systems, which can enhance a firm's performance (Zahra and Garvis, 2000). The major assumption is that internationalisation is a time-based process as a result of domestic-based growth and gradual accumulation of knowledge as the management team gains experience and knowledge of foreign markets.

International business research through the years seems to have acknowledged that other forms of international business exist outside the monolithic multinational enterprise (Seno-Alday, 2010). The recent phenomenal growth of early internationalising firms cannot be explained by the process theory. These firms initiate

international activities during the venture creation process or in the early stage of venture growth with resources constrained by their young age and smallness. They internationalise rapidly despite resource constraints across the value chain and other administrative challenges that accompany international expansion. The emergence of **international new ventures** (INVs) presents a unique challenge to stages theory (Autio et al., 2000; McDougall et al., 2003; Ibrahim, 2004; Oviatt and McDougall, 2005). Other researchers have used terms such as global start-ups or born-globals. INVs are businesses that, from inception, seek to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries (McDougall et al., 2003).

Diverse criterion for defining firm age is observable among researchers. Coviello and Jones (2004) and McDougall et al. (2003) suggest that six years appears to be the cut-off used to define international new ventures while other researchers have examined firms as old as ten (Li et al., 2009) or twelve years.

Smaller entrepreneurial firms have ingenuous techniques to overcome their initial conditions of lack of resources in order to exploit the international market. They can focus on a set of capabilities, competencies, knowledge, and skills needed by the world markets. Internal factors such as superior or unmatched technology may provide a firm with an absolute advantage. According to Autio (2005) research on INVs has mostly emphasised explanation of how early and rapid internationalisation is possible. Oviatt and McDougall (2005) describe a framework of four basic elements for sustainable existence of international new ventures: organisational formation through internalisation of some transactions, strong reliance on alternative governance structures to access resources, establishment of foreign location advantages, and control over unique resources. The framework incorporates ideas from entrepreneurship scholars about how ventures gain influence over vital resources without owning them to develop a competitive advantage.

In their study comparing what distinguishes INVs from domestic new ventures (DNVs), McDougall et al. (2003) found them to be significantly different on the basis of their entrepreneurial team experience, strategy, and industry structure. More specifically,

entrepreneurial teams of INVs exhibited higher levels of international and industry experience, employed more aggressive strategies, operated in more channels, and competed on the basis of differentiation, placing more emphasis on innovation. They were also more likely to operate in industries characterised by a higher degree of global integration. The emphasis on the dimension of entrepreneurial teams rather than the individual entrepreneur implies entrepreneurship works well in teams, drawing on the diversity, and complementarities of knowledge, skills, and networks. The top management team can access and mobilise resources through their cross-border knowledge networks, or their international social capital. Such factors as lack of human capital, social capital, innovation and technological capabilities have been stated as obstacles hampering international development among SMEs (Camisón and Villar-López, 2010).

McDougall et al. (2003) describes globally integrated industries as those in which many firms within the industry coordinates their activities and competitive strategies across a variety of countries through the use of knowledge and technology. However, the hypothesis of global integration remains to be verified empirically, owing to lack of archival data on firm internationalisation in different industry sectors (Autio, 2005).

Conventional wisdom suggests that superior technological advantages and innovation can give the firm a competitive advantage over local competitors in the foreign market. Technological intensiveness is found to be consistently related to the propensity to export according to various studies (Serra, Pointon and Abdou, 2011). In attempt to shed some light on international growth in entrepreneurial firms using international growth of high-technology firms, Autio et al. (2000) focused on knowledge intensity and imitability of its core technologies. Imitability is defined as the ease with which a firm's technology can be learned or replicated by outsiders. It is expected that when a firm's key resources are imitable, the firm cannot realise its full rent-generating potential. Contrary to expectation, Autio et al. (2000) found that although greater knowledge intensity was associated with faster international growth, firms with more imitable technologies grew faster. A possible reason to the question of imitability is found in Oviatt and McDougall (2005)’s assertion that new ventures confronted with such circumstances must internationalise from inception or else be at

a disadvantage to other organisations that may attempt to uncover the secret or to produce alternative knowledge. Knowledge, being at least to some degree a public good, may not remain unique for long, and its easy dissemination threatens a firm's rent-earning opportunity.

McDougall (2005) states that although imitation may be prevented by means such as patents, copyrights, or trade secrets, to keep it proprietary, patents and copyrights are ignored in some countries. Furthermore, the release of patented knowledge into a market may advance competitors' production of alternative or even improved technology. In a dynamic environment, copyrights and other means of intellectual property protection appear to speed up the diffusion of knowledge to rivals and therefore may not enhance venture performance (Zahra and Bogner, 2000).

McDougall et al. (2003) suggested that early internationalisation may be not only an opportunity but also a necessity to ensure chances for growth, because opportunity windows are short in dynamic sectors. Industries with rapid changes in technology and shorter product life cycles may naturally lead firms to internationalisation.

Fan and Phan (2007) reported result of a comparative study highlighting the similarities between international new ventures and traditional, staged internationalising firms. This study found little difference in product uniqueness, technological sophistication, and degree of customization or pricing advantages between these two groups. These similarities between the supposedly distinct breeds of firms raised the question why some firms delayed their internationalisation when they could easily have gone international at birth (Fan and Phan, 2007)?. Fan and Phan (2007) found that apart from specific technological advantage, the decision for a new venture to internationalise at inception is influenced by the size of its home market and by its production capacity. Other studies have pointed to the management commitment to exporting as an indicator (Javalgi and Todd, 2010; Serra et al., 2011) ; in line with entrepreneurial studies affirming intention as a strong predictor of planned behaviour.

Resource based theories espouse that the availability of resources, or lack of them, can attribute to a firm's decision to go international. The resource based theory advanced two views as motives for internationalisation: firstly, that entrepreneurs venture into foreign markets in search of critical resources and secondly that the more resources an entrepreneurial firm has the more likely it will engage in international activities (Ibrahim et al., 2004).

Other models such as the network approach emphasised the development of strategic alliances to spread costs and reduce risk and uncertainty in the international market (Ibrahim, 2004). Firms engage in a range of international networks and internationalisation processes, including internationalisation of markets, research collaboration, labour recruitment, and knowledge transfer. One way that international trade can help in the process of economic growth is by transferring the benefits of technology across borders (Mastromarco and Ghosh, 2009).

It becomes clear from the literature that internationalisation process calls for a different set of capabilities that not all firms may possess (Seno-Alday, 2010). Furthermore, traditional theoretical approaches do not adequately explain certain aspects related to the international orientation of SMEs of recent (McDougall et al., 2003; Oviatt and McDougall, 2005). Hence research must tackle questions about what such a basket of unique capabilities and international advantages should entail.

2.2.2. Measurement of international performance

The literature has suggested an empirical link between entrepreneurial behaviour, the role of entrepreneurial capabilities, and international performance among firms. Performance is the single more important dimension of business venture's overall operations without which the firm will not survive, whether that is described as sustainable, satisfactory, or profitable, etc. The questions to be asked are: What is a suitable measurement of international performance of a firm? And what are the criteria used in arriving at that choice of the suitability of a measurement?

Researchers have stated that the entrepreneurial success construct has two distinct dimensions, namely economic success and the entrepreneur's satisfaction (Urban,

Vuuren and Barreira, 2008). Knight (2001) measured international performance in terms of traditional measures of the money-making activities of the firm, including market share, sales growth, and return on investment (Knight, 2001). SiImilarly Camisón and Villar-López (2010) measured this construct interms of economic performance, comprising these observable items: return on assets, sales growth, and increase in market share.

These traditional accounting measures are necessary but not sufficient to capture overall firm international performance. It has been suggested that non-financial measures may offer more comprehensive evaluation (Li et al., 2009). Wiklund and Shepherd (2005) argued that growth as a measure of performance may be more accurate and accessible than accounting measures of financial performance.

Ripollés-Meliá et al. (2007) argued for the importance of analyzing internationalisation from the entrepreneurship perspective in order to advance in the study of firm internationalisation. They proposed widening the scope of theoretical approaches and measured internationalisation in terms of **international intensity** comprising of the following dimensions – namely: degree of internationalisation, scope of internationalisation, and speed of internationalisation.

In terms of the measure of degree of internationalisation, a firm is considered to be internationalized when their foreign sales represents at-least 25% of total sales (Ripollés-Meliá et al., 2007; Javalgi and Todd, 2010). Others have used 20% (foreign sales) as the benchmark point (Zhou, 2007). Other researchers in export studies have referred to this measure as export intensity.

International sales as a percentage of total sales is the most commonly used measure to capture the effectiveness of international performance (Yli-Renko et al., 2001; Javalgi and Todd, 2010). This indicator is said to adequately reflect international intensity since the greater the intensity of the firm's international presence, the greater and more irreversible its commitment to its assets for internationalisation (Camisón and Villar-López, 2010). It is also a viable proxy for the degree of

internationalisation (Zhou, 2007). This measure has also been referred to as export intensity, and this is the term adopted in this study.

Rapid growth has been examined in numerous studies of new ventures and has been found to be an important indicator of performance (McDougall et al., 2003). **Foreign sales growth** had been used as an indicator for international performance (Autio et al., 2000; Zhou, 2007). Foreign sales growth indicates how well (or poorly) a firm internationalizes once the process has started (Zhou, 2007). Lumpkin and Dess (1996) however, stated that firms operating in growing industries may perform better regardless of their behaviour.

Scope of internationalisation is measured as the number of countries where firms are operating (Ripollés-Meliá et al., 2007). This variable serves as a proxy of a firm's global geographic diversity. The greater the global scope of a firm's operations, the greater its opportunities to innovate, take risks, learn new skills, and explore new systems. Some of the firm's international operations can benefit from transferring and transforming the experiences gained from some of the ventures, which can further increase entrepreneurship activities (Zahra, 2000). Having a wider international market scope exposes SMEs to a rich network of information that encourages and enhances future product innovation (Zahra et al., 2009). International diversification can also generate the capital necessary to support large-scale projects, spread the risk and provide additional market. Global geographic diversity determines the firm's overall performance (Zahra, 2000).

Internationalisation speed is measured as the number of years elapsed between firm foundation and initial entry into foreign markets (Ripollés-Meliá et al., 2007).The shorter the time to achieve the export benchmark (significant exporter), the faster in its speed internationalisation.

Some studies have used **international experience** measured as the number of years that firms have been operating abroad (Camisón and Villar-López, 2010). This study does not look at this measure under performance as it has been captured as a human capital variable.

Employee growth has been used to (together with other growth variables) to measure growth (Urban et al., 2008; Li et al., 2009). Growth is an important aspect in entrepreneurship; more so is employee growth as job creation is seen as the legitimacy of entrepreneurship in South Africa.

Following this literature discussion, it can be concluded that international performance should be measured as a multi-item measure in terms of economic performance as well as internationalisation intensity. The measurement of international performance adopted in this study is a multi-dimensional composite, comprising of traditional measures of economic performance as well as the additional measures of international intensity proposed by internationalisation theory. Economic performance is operationalised as an index of six commonly used performance measures pertaining to financial performance and growth thereby incorporating different dimensions of performance (Wiklund and Shepherd, 2005). Due to the difficulty in acquiring information from private companies, it was decided to limit the questions to perceptual measures rather than annual reports. International intensity is measured by degree of internationalisation (export intensity), scope of internationalisation, and speed of internationalisation. These measures are summarised as follows:

Economic performance

- **Financial performance**
  - export profitability
  - overall profitability
  - export market share
- **Growth**
  - employee growth
  - foreign sales growth
  - exports market share growth

International intensity

- degree of internationalisation (export intensity)
- scope of internationalisation

- speed of internationalisation

2.3. Entrepreneurial intensity

This section of the report relates to the first sub-problem.

2.3.1 The dimensions of entrepreneurship

Entrepreneurship can be defined as the process of creating value by bringing together a unique combination of resources to exploit an opportunity (Morris et al., 2008). The entrepreneurship phenomenon exists virtually in every organisational context, be it small, or a home-based independent establishment, to a large multinational corporation. For both start-up ventures and existing firms, entrepreneurship carried on in the pursuit of business opportunities spurs business expansion, technological progress, and wealth creation (Lumpkin and Dess, 1996). Undelying entrepreneurial attitudes and behaviours are three key dimensions: innovativeness, risk-taking, and proactiveness (Covin and Slevin, 1990; Wiklund and Shepherd, 2005). To the extent that an undertaking demonstrates some amount of innovativeness, risk-taking, and proactiveness, it can be considered an entrepreneurial event, and the person behind it the entrepreneur (Morris and Sexton, 1996). Prior research has defined an entrepreneurial firm as one that engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch (Wiklund and Shepherd, 2005).

A fundermantal question in entrepreneurship research concerns what it means to describe a particular event as “entrepreneurial” and to establish its underlyning nature. Researchers have made considerable progress in identyfiying the core dimensions that underlie the entrepreneurship construct (Covin and Slevin, 1990; Lumpkin and Dess, 1996; Certo, Moss and Short, 2009). There is unsurmountable concensus in the extant literature that the key dimensions that underlie the entrepreneurship construct are: innovativeness, proactiveness, and risk-taking. Lumpkin and Dess (1996) argue that five dimensions, instead of three, should be used to measure entrepreneurship, namely autonomy, competitive aggressiveness, proactiveness, innovativeness and risk-taking. In line with Scheepers et al. (2007) and

other stated researchers, this study views autonomy as an internal condition that influences the organisational climate. Furthermore, competitive aggressiveness forms part of the proactiveness dimension and does not represent a separate dimension. The three dimensions of what characterises an entrepreneurial organisation are discussed next.

Innovativeness

The innovativeness dimension of entrepreneurship reflects a tendency of a firm to engage in and support new ideas, novelty, experimentation, and creative processes, thereby departing from established practices and technologies, and leading to new products, services, or technological processes (Lumpkin and Dess, 1996). The foundation for this concept can be traced back to the writings of entrepreneurship scholar Joseph Schumpeter who postulated that the entry of innovative new combinations into a marketplace enabled societal progress through economic development. Innovative entry disrupts existing market conditions and stimulates new demand, thereby enacting Schumpeter's process of ''creative destruction'', (Certo et al., 2009). Venkataraman (2004) advocated that several neccessary factors that must accompany risk capital for the Schumpetarian entrepreneurship to flourish – these are access to novel ideas, role models, informal forums, region-specific opportunities, safety nets (against entrepreneurial failure), access to large markets and executive leadership.

Innovations may be incremental or radical, meaning that they may either build off of existing skills to create incremental improvements, or rather require brand new skills to develop new ideas and in the process destroy existing skills and competencies (Certo et al., 2009). Urban et al. (2011) states that enterprises can use technological innovation, defined as the generation of new products and processes or significant technological improvements in current products and processes, to achieve objectives such as maximising profits, gaining market share, creating niche markets or adding value for stakeholders. An examination of revolutionary technological breakthrough innovations since the onset of industrial revolutions revealed that independent inventors and small newly founded ventures contributed more proportions of

fundamentally new innovations than contributions of large firms (Urban, Barreira, Carmichael, Dagada, Duneas, Marcelle et al., 2011). Large firms tend to follow incremental rather than revolutionary ideas.

An innovation orientation may be an effective response by SMEs to overcome the liabilities associated with smallness especially in situations of resource scarcity, market entry and when facing more established and resourceful incumbents (Urban et al., 2011). Much of the pressure to innovate is due to external forces, including the emergence of new and improved technologies, the globalisation of markets, and the fragmentation of markets, governemt deregulation, and dramatic social change. Innovativeness is aimed at developing new products, services, and processes, and firms that are successful in their innovation efforts are said to profit more than their competitors (Certo et al., 2009). The services sector, given their intangible nature and the ease with which service concepts can be replicated, lend themselves to continuous (incremental) innovation and improvement (Morris et al., 2008). Process innovations include innovative production techniques, distribution approaches, selling methods, purchasing programs, and administrative systems (Morris et al., 2008). Highly innovative companies tend to have a systematic and well defined innovation strategy comprising cross functional teams (Morris et al., 2008).

Procativeness

Proactiveness reflects an action orientation and refers to a firm's response to promising market opportunities (Lumpkin and Dess, 1996). Although innovativeness relates to a firm’s orientation toward creating innovative responses, proactiveness is related to anticipating and acting on future wants and needs in the market, which would enable a firm to gain first-mover advantage ahead of the competition (Lumpkin and Dess, 1996). The proactiveness dimension reflects top management orientation to pursuing enhanced competitiveness, and includes initiative, competitive aggressiveness and boldness. Competitive aggressiveness involves the propensity to directly and intensely challenge its competitors (Ibid). A characteristic of a proactive enterprise therefore involves aggressive and unconventional tactics towards rival enterprises in the same market segment (Scheepers, Hough and Bloom, 2008).

Proactive organisations shape their environments by actively seeking and exploiting opportunities. A proactive firm seizes new opportunities and takes pre-emptive action in response to perceived opportunity (Lumpkin and Dess 1996). In essence, proactive firms introduce new products, technologies, administrative techniques to shape their environment and not react to it (Patel and D'Souza, 2009). These are pioneering firms that take first mover advantage to earn higher economic profits through such advantages as technological leadership (Lee et al., 2001; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005). These first mover firms can set the rules of competition by setting product and technological standards, controlling distribution channels, and strengthen their market position. While cautious firms may wait on the sidelines for others to pave the way, aggressive entrants move first.

Proactiveness is concerned with implementation, with taking responsibility and doing whatever is necessary to bring an entrepreneurial concept to fruition. Whereas innovativeness may be an internal response from a firm, seeking opportunities to innovate is a complementary activity. These actions enable firms to acquire market share and outperform competitors (Lumpkin and Dess, 2001).

Risk-taking

Typical elements of risk-taking such as heavy borrowing, committing a large portion of one's assets to a course of action, or action in the face of uncertainty are associated with the risk-return tradeoff. Hornsby et al. (2002) confirmed five distinct internal organisational factors necessary to support entrepreneurship within organisations: rewards/recognition; management support; resources, including time availability; organisational structure; and acceptance of risk (Hornsby, Kuratko and Zahra, 2002).

Risk-taking refers to a firm's tendency to engage in high-risk projects and managerial preferences for bold versus cautious actions in order to achieve firm objectives. Risk-taking involves the willingness to commit significant resources to opportunities with a reasonable chance of costly failure as well as success. Risk-taking orientation indicates a willingness to engage resources in strategies or projects where the outcome may be

highly uncertain (Wiklund and Shepherd, 2005). Risk can be managed by engaging in experiments, testing the markets, acquring knowledge, and the use of networks.

Interestingly, studies have shown that entrepreneurs perceive a business situation to be less risky than non-entrepreneurs. They cognitively categorize business situations more positively. Certo et al. (2009) states that prior research sugests that entrepreneurs themselves do not perceive their actions as risky and dispel the common defining perception of entrepreneurs as chronic risk takers. Entrepreneurship does not entail reckless decision making, but reasonable awareness of the risks involved and these risks can be calculated and managed. When risk and uncertainty are thus differentiated, individuals and firms acting entrepreneurially may be more specifically thought of as effective uncertainty reducers, rather than reckless risk takers (Certo et al., 2009).

Discussions on risk generally focus on what happens when the entreprenuer pursues a concept and it does not work out. It is should however be noted that there are two sides to the risk equation with the other side reflecting lack of innoivation. Risk is high when companies engage in breakthrough innovations that create new markets and industry redefinition (Morris et al., 2008). In the same breath, companies that do not innovate are faced with higher risk of market and technology shifts that are capitalised on by competitors. Kurtoko et al. refers to this as “missing the boat” or the risk in not pursuing a course of action when that would have proven profitable. Although innovativeness can help firms make novel combinations and proactiveness can help identify novel opportunities, risk-taking is also necessary to support both innovativeness and proactiveness (Patel and D’Souza, 2009).

2.3.2 The concept of entrepreneurial intensity

Morris and Sexton (1996) introduced the concept of entrepreneurial intensity (EI) and conceptualised it to capture both the degree of entrepreneurship and frequency of entrepreneurship evidenced within a given organisation. Two variables, frequency and degree of entrepreneurship, constitute entrepreneurial intensity (Heilbrunn, 2008). The degree of entrepreneurship refers to the extent to which events occurring within a firm are innovative, risk-taking, and proactive. The frequency of entrepreneurship refers to the number of such (innovative, risky, and proactive) events (Morris et al., 2008). As stated by Morris and Sexton (1996), a given organisation is capable of producing a number of entrepreneurial events over time, sugesting that entrepreneurship is also associated with multiple events. To assess the level of entrepreneurship in any given organisation, the concepts of degree and frequency must be considered together.

Entrepreneurial intensity is a measure of entrepreneurship in a company that looks at both the degree and frequency of events with respect to innovativeness, risk, and proactiveness. Intensity can be viewed as a firm's placement along a continuum ranging from conservative to entrepreneurial (Covin and Slevin, 1990). This means that an organisation's performance from the perspective of entrepreneurship at a point in time is shown by its entrepreneurial intensity score (Ireland et al., 2006). Figure 3 below illustrates the variable nature of entrepreneurship as illustrated by the concept of entrepreneurial intensity.

Five possible scenarios emerge which the Morris et al. (2008) labelled periodic/incremental, continuous/incremental, periodic/discontinuous, dynamic and revolutionary. Thus, organisations can be placed within the grid: organisations launching many entrepreneurial events which are highly innovative, risky and proactive will fit the revolutionary segment and organisations launching relatively few entrepreneurial events which rate low on innovativeness, risk-taking and proactiveness will fit the periodic/incremental segment (Heilbrunn, 2008).

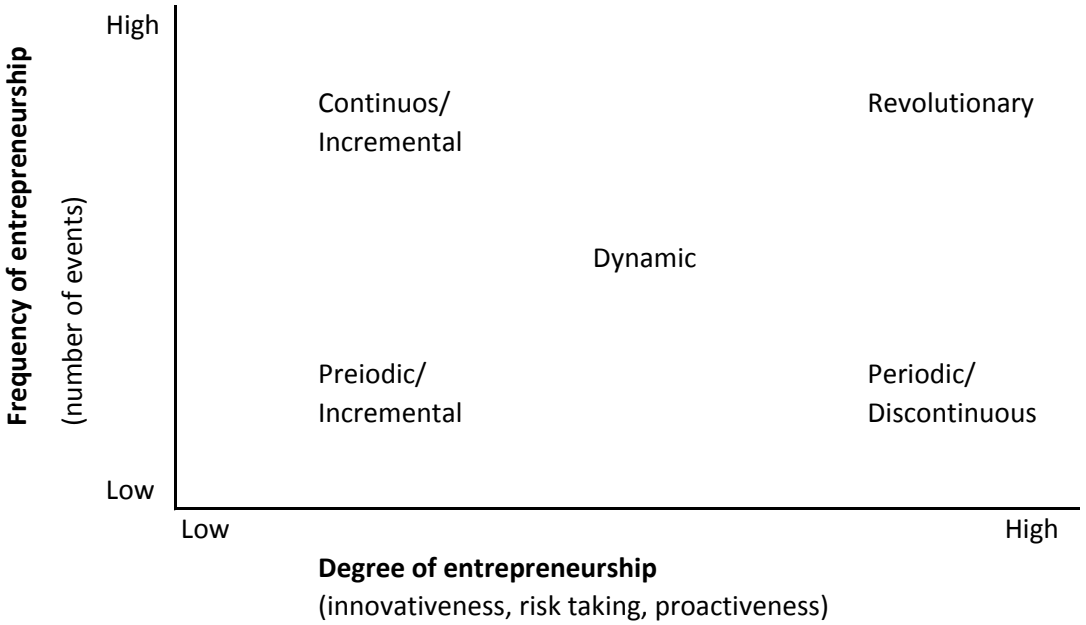


Figure 4 illustrates the five categories of entrepreneurial intensity on the entrepreneurial grid.

According to Morris et al. (2008) there is no best place to be in the entrepreneurial grid, the ideal point is industry, market and time specific. There are norms for entrepreneurial performance in every industry or market and hence more entrepreneurship is not always better. For instance, as firms grow larger, they may begin to stagnate and lose sight of those factors that made them successful in the first place. Oftentimes, established firms tend to develop bureaucratic and control system impediments to innovation and thus lower managerial commitment to innovation and entrepreneurial activities. As such, the position of a firm on the entrepreneurial grid is relative, showing relative levels of entrepreneurship; absolute standards do not exist (Morris et al., 2008). Based on this, it can be argued that the entrepreneurial grid may not be an effective analytical tool for appraising firms of different size and age, operating in different industries and markets with widely varied norms.

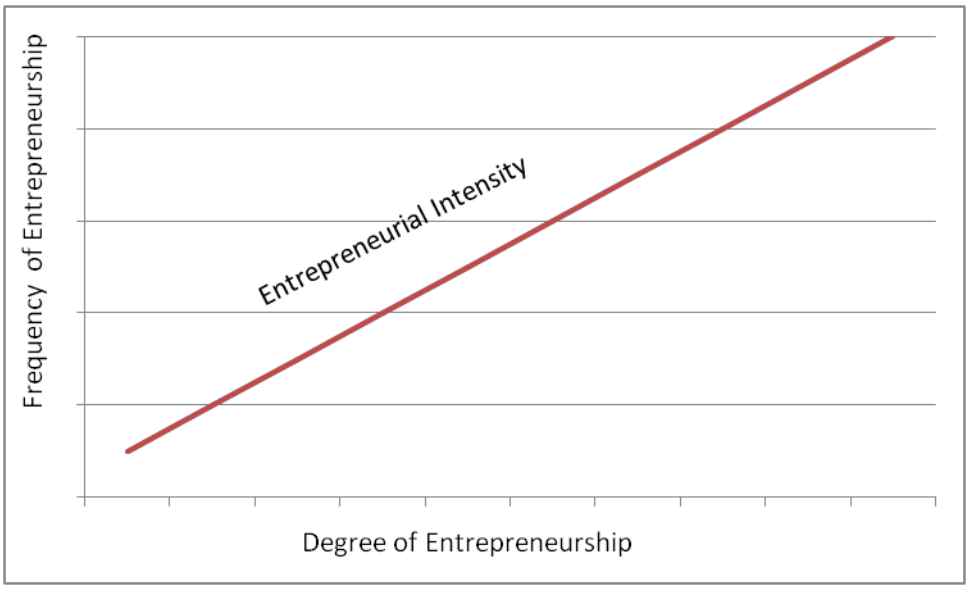


Figure 3: An illustration of entrepreneurial intensity

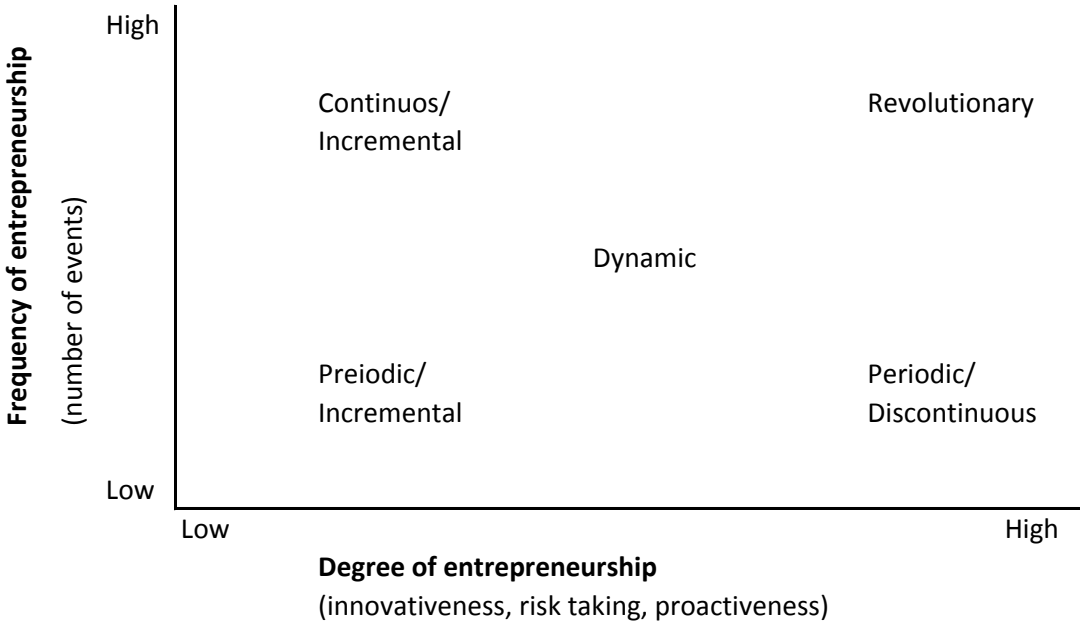


Figure 4: The entrepreneurial grid. Source: Morris et al. (1994)

2.3.3 Entrepreneurial intensity and performance

Scholars have argued that entrepreneurship is an essential feature of high-performing firms (Lumpkin and Dess, 1996). Empirical studies have attempted to explain performance by investigating the relationship between entrepreneurship and firm performance (Covin and Slevin, 1990; Lumpkin and Dess, 1996; Zahra and Garvis, 2000;

Lumpkin and Dess, 2001; Zahra et al., 2001; Wiklund and Shepherd, 2005; Zhou, 2007; Li et al., 2009; Patel and D'Souza, 2009; Frank, Kessler and Fink, 2010; Javalgi and Todd, 2010). These studies found that entrepreneurial behaviour enables firms to perform better than competitors and enhance firm performance (Zahra and Garvis, 2000; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005).

The popular view held among scholars is that the variable nature of entrepreneurship can be measured in terms of entrepreneurial orientation (EO). **Entrepreneurial orientation** refers to a firm's strategic orientation, acquiring specific entrepreneurial aspects of decision-making styles, practices, and methods (Lumpkin and Dess, 1996; 2001). Entrepreneurial orientation reflects how a firm operates rather than what it does (Lumpkin and Dess, 1996) and can be an important measure of how a firm is organised to discover and exploit market opportunities (Zahra and Garvis, 2000; Wiklund and Shepherd, 2005).

Entrepreneurial orientation consists of three sub-dimensions: innovativeness, risk-taking and proactiveness. Researchers have used other terms such as strategic posture, degree of entrepreneurship, and entrepreneurship level to talk about what is in essence an equivalent concept (Covin and Slevin, 1990; Kuratko et al., 2007; Scheepers et al., 2007; Zhou, 2007). However, Morris and Sexton (1996) regard entrepreneurial orientation as a one-dimensional view of the entrepreneurship phenomenon, and added another dimension, namely frequency of entrepreneurship, and called this phenomenon entrepreneurial intensity (EI) (Scheepers et al., 2007). The argument is that in addition to how much the extend of innovativeness, risk-taking and proactive entrepreneurial events are, the question of how many such events take place is just as important. Several other authors (Kuratko et al., 2007; Scheepers et al., 2007; Morris et al., 2008) have since followed Morris and Sexton's distinct conceptualisation of the two constructs, i.e. entrepreneurial orientation and entrepreneurial intensity. There seem to be consensus that EI is a two-dimensional construct consisting of both degree and frequency of entrepreneurship.

Researchers have demonstrated statistically significant relationships between EI and a number of company performance indicators (Morris and Sexton, 1996; Kuratko et al.,

2007; Scheepers et al., 2007). The relationship is stronger when more weight is placed on degree versus the frequency of entrepreneurship demonstrated by a firm (Morris and Sexton, 1996). It may be that frequency has more of a short-term impact whereas degree is better able to impact long-term outcomes (Morris et al., 2008), however there is no evidence of this hypothesis. As indicated by Morris et al. (2008), our understanding of entrepreneurial intensity is still in its infancy.

It is not clear whether high levels of entrepreneurship intensity are sustainable (Morris et al., 2008). Covin and Slevin (1990) found that companies alternate between dynamic periods of the most strategic postures and periods where innovations are more incremental and lower intensity depending on the industry life cycle. The research suggested that performance is influenced by the fit between strategic posture, organisation structure, and industry life cycle stage (Covin and Slevin, 1990). In addition, Scheepers et al. (2007) indicated that the level of entrepreneurship will vary in intensity, depending on changes in the organisation culture.

2.3.4 Entrepreneurial intensity and internationalisation

In the international context, barely any study conducted on the concept of entrepreneurial intensity (EI) exists, with the existing studies conducted within corporate entrepreneurship and more especially on the EO construct. Thus, the existing literature will form the foundation from which an integrative conceptualisation can be developed for international entrepreneurship.

International entrepreneurship is "...a combination of innovative, proactive and risk-seeking behaviour that crosses national borders and is intended to create value in organisations" (Jones and Coviello, 2005). Research in international entrepreneurship appear to mirror empirical developments in entrepreneurship research and its emergence reflects complementary theoretical interests (Jones and Coviello, 2005). Particular interest has been paid to examining entrepreneurship (at firm level) as a process of behaviour manifesting in entrepreneurial events, and exhibiting entrepreneurial orientations (Zahra and Garvis, 2000; Zhou, 2007; Li et al., 2009; Patel and D'Souza, 2009; Javalgi and Todd, 2010).

Entrepreneurial orientation (EO) is defined as the firm's predisposition to engage in entrepreneurial processes, practices, and decision making, characterised by its organisational culture for innovativeness, risk-taking, and proactiveness (Lumpkin and Dess, 1996). In the context of internationalisation, the term international entrepreneurial orientation is adopted by extending the conceptual domain to the firm-level processes and activities across national borders (Knight, 2001; Zhou, 2007). This study expands EO construct and suggest that such behavioural patterns are associated with multiple events, to operationalise the concept of entrepreneurial intensity.

Empirical studies among internationalised firms confirmed that entrepreneurial orientation is positively related to firm performance (Zhou, 2007; Li et al., 2009; Patel and D'Souza, 2009; Javalgi and Todd, 2010). Accordingly, international entrepreneurial orientation is essential for firms to discover entrepreneurial opportunities in foreign markets. Firms with more aptitude for innovativeness, risk-taking, proactiveness, will gain greater competitive advantage and accomplish higher firm performance.

Researchers suggested that in order to better understand the EO-performance relationship both the direct and indirect effects of the entrepreneurial orientation on firm performance should be studied (Wiklund and Shepherd; 2005; Li et al., 2009). The relationship between entrepreneurial behaviour and firm performance may be a contingent one rather than direct (Lyon, Lumpkin and Dess, 2000). In their investigation among small businesses, Wiklund and Shepherd (2005) found that the analysing only the direct effects provided an incomplete picture of the relationship between EO and performance.

As argued by Lumpkin and Dess (1996), few studies investigating the independent effect of entrepreneurial orientation on firm performance regard the factors that may mediate the strength of the entrepreneurial orientation - firm performance relationship (Wiklund and Shepherd, 2005). In a study among Chinese firms, Zhou (2007) found that international entrepreneurial proclivity had significant effects on the speed of born-global development and performance of early internationalisation through the pathway of foreign market knowledge. In other words, international

entrepreneurial proclivity drives acquisition of foreign market knowledge which leads to early and rapid internationalisation. Similarly, Li et al. (2009) found that entrepreneurial orientation indirectly influences firm performance by influencing knowledge creation process. Autio et al. (2000) found that earlier initiation of internationalisation and greater knowledge intensity induces greater entrepreneurial behaviour and confers a growth advantage. The development of entrepreneurial orientation requires organisational members to engage in intensive knowledge activities (Li et al., 2009).

Interestingly, Zhou (2007) found that the three dimensions of entrepreneurial proclivity did not seem to play an equally important role in facilitating the knowledge effect on born-global internationalisation. The proactiveness dimension appears to be more pronounced, followed by the innovative dimension. But, the risk-taking dimension is less salient. On the contrary, Patel and D'Souza (2009) found that proactivity and risk-taking played a role in enhancing export performance of SMEs. However, their study did not find support for innovation as a factor that enhances export performance.

Covin and Slevin (1989) positioned EO as a multi-faceted construct with its three dimensions working in combination, rather than any one dimension individually, to enable the entrepreneurial behaviour of a firm. Morris and Sexton (1996) argued that EO dimensions may be combined in unique ways that vary from one firm to the next (Morris and Sexton, 1996). According to Lumpkin and Dess (1996) these dimensions are based on firm characteristics that may vary independently of each other, contingent on influences that are both internal and external to a firm. The researcher's view is that whether individually or in combination, these dimensions play an important role in enabling firms to act in an entrepreneurial manner, an underlying theme accepted by both camps (Certo et al., 2009).

Despite broad agreement on the theorized effects of EO, extensive debate has continued regarding its conceptualisation and measurement (Lyon et al., 2000). Hansen et al. (2011) noted from several studies, that researchers have deleted items or have collapsed the scale into two factors based on exploratory factor analysis. In

others, researchers have focused on only one dimension of the construct to the exclusion of the others. The view in this study is that firms can be labelled entrepreneurial only if they are simultaneously innovative, proactive, and risk-taking.

Wiklund and Shepherd (2005) found that the dynamism of the environment is important moderator of the EO-business performance relationship. A high EO enables businesses that face performance constraints in terms of a stable environment to achieve superior performance. This confirmed the proposition made by Lumpkin and Dess (1996) in their conceptual model which suggested that factors internal and external to the firm may moderate the relationship between EO and performance.

The linkage between EI and performance appears to be stronger for firms that operate in increasingly turbulent environments. Zahra and Garvis (2000) found that firms that aggressively pursued entrepreneurship behaviour in international environments with higher levels of hostility experienced higher returns (Zahra and Garvis, 2000). Entrepreneurial intensity is likely to influence the interaction between the firms external environment (Morris et al., 2008).

2.3.5 Summary of literature on entrepreneurial intensity and formulation of hypothesis 1

The concept of entrepreneurial intensity is conceptualised to capture both the degree entrepreneurship and frequency of entrepreneurship within a given organisation. The degree of entrepreneurship refers to the extent to which events occurring within a firm are innovative, risk-taking, and proactive (Morris and Sexton, 1996). The degree of entrepreneurship within a firm is also known as entrepreneurial orientation. The frequency of entrepreneurship refers to the number of such (innovative, risky, and proactive) events (Morris et al., 2008). As stated by (Morris and Sexton, 1996), a given organisation is capable of producing a number of entrepreneurial events over time, sugesting that entrepreneurship is also associated with multiple events.

Scholars have argued that entrepreneurship is an essential feature of high-performing firms (Lumpkin and Dess, 1996) and several studies have attempted to explain performance by investigating the relationship between entrepreneurship and firm

performance (Covin and Slevin, 1990; Lumpkin and Dess, 1996; Zahra and Garvis, 2000; Lumpkin and Dess, 2001; Zahra et al., 2001; Wiklund and Shepherd, 2005; Zhou, 2007; Li et al., 2009; Patel and D'Souza, 2009; Frank et al., 2010; Javalgi and Todd, 2010).

Although most research on the entrepreneurship construct focused on the entrepreneurial orientation and conducted within the realm of corporate entrepreneurship, no research on the expanded construct of entrepreneurial intensity has been conducted within the context of international entrepreneurship. Given that research in international entrepreneurship tends to mirror empirical developments in entrepreneurship research and its emergence reflects complementary theoretical interests (Jones and Coviello, 2005), it would seem complementary to explore the relationship between entrepreneurship and performance among international firms.

These theoretical underpinnings lead to the following hypothesis:

Hypothesis 1: Entrepreneurial intensity is positively related to international performance.

2.4. Entrepreneurial capabilities

This section of the report relates to the second sub-problem.

2.4.1 Introduction

The concept of entrepreneurial capabilities takes its roots from the resource based view of the firm, which proposes that venture performance is largely determined by its unique resource and capabilities (Deeds, 2001). Resources are primarily tangible assets, including physical and financial assets. Following theoretical literature reviewed, capabilities can be classified into social capital, human capital, and technology (Autio et al., 2000; Deeds, 2001; Obrecht, 2004; Zhou, 2007; Camisón and Villar-López, 2010). Capabilities are a stock of intangible assets or knowledge-based factors associated with individuals who posses them or with the firm as an organisation (Deeds, 2001).

Obrecht (2004) declared that human capital and social capital are among the most essential capabilities for organisational perfomance. Zahra et al. (2000) added that the firm's technological capability is critical to successful internationalisation. Bojica and Fuentes (2011) maintained that market and technological knowledge represent a necessary condition for identification and exploitation of opportunities and therefore play an important role in sustaining entrepreneurial activities. Similarly, other researchers in the literature of international entrepreneurship have asserted that knowledge-based, social-based, and technological capabilities are important for successful international expansion (Autio et al., 2000; Deeds, 2001; Zhou, 2007; Brennan and Garvey, 2009). Entrepreneurial capabilities are viewed as a broader range of abilities needed to initiate appropriate action in specific organisational situations and reflect the capacity to initiate and sustain an entrepreneurial dynamism throughout the organisation (Obrecht, 2004).

Leiblein and Reuer (2004) marked the need for theoretical literature to investigate the specific capabilities that lead to successful internationalisation. Entrepreneurial firms are commonly portrayed in international entrepreneurship literature as lacking in possession tangible assets and capital (Leiblein and Reuer, 2004; Li et al., 2009).

Nonetheless, Camisón and Villar-López (2010) found that financial assets did not appear to be determinants of international intensity. Entrepreneurship literature puts more emphasis on resourcefulness and gaining influence over vital resources rather than owning them. Therefore this study does not look at the dimension of financial assets. This suggests that entrepreneurial firms must possess compensating advantages in order to compete viably in unfamiliar markets abroad.

Intangible assets are a determining factor of economic performance (Camisón and Villar-López, 2010). Entrepreneurial capability is therefore conceptualised as a multi-dimensional construct comprising of three intangible firm assets, namely social capital, human capital, and technology. In this section the three entrepreneurial capabilities that have been identified as distinct competencies purported to be catalytic to entrepreneurial success in the international arena are discussed.

2.4.2 Social capital

2.4.2.1 Social capital theory of entrepreneurship

The assumption that all economic activity is embedded in social relations has been acknowledged and the significance of the social aspects of the entrepreneurial process has been increasingly recognised (Anderson and Miller, 2003; Ulhøi, 2005; Jack, 2010). The formation and development of a firm is related to the entrepreneur's social world, and to all of the subjective configurations associated with this social world (Anderson and Miller, 2003; Ulhøi, 2005; Jack, 2010). In other words, entrepreneurship can be described as a social undertaking and as a consequence is carried out and understood within the context of social systems (Jack, 2010). The view therefore is that entrepreneurship is not an individual act, operating in isolation from social process; and that entrepreneurial activities are results of social interactions and mechanisms.

Social capital is defined as the norms and social relations embedded in the social structures of society that enable people to coordinate action and to achieve desired goals (Molina-Morales and Martínez-Fernández, 2010). Similarly social capital can be defined as resources embedded in a social structure of relationships which are accessed and/or mobilised in purposive actions (Burt, 2000). Social capital is often explained in terms of social exchange. According to Burt (Burt, 1992; Burt, 1997) social capital is broadly defined as an asset that is embedded in social relations and networks.

Anderson and Jack (2002) concluded that social capital comprises both the network and the assets that may be mobilised through that network. Simply put, the nature of social capital both structures and facilitates the operation of networks and their actors (Westerlund and Svahn, 2008).

The network perspective is increasingly being embraced as a mechanism for considering the creation and development of new ventures. Firms make active efforts to build them (Jones and Coviello, 2005). Social capital provides networks that facilitate the discovery of opportunities, as well as the identification, collection and allocation of scarce resources (Davidsson and Honig, 2003) stated in Urban and Shaw

(2010). Arguing from a networking perspective, Walter, Auer and Ritter (2006) states that it is the capability of networking that is essential and not only the existence of a network. Network theory examines how network structure, and the position of individuals in that structure, impacts one's ability to bring about change or produce performance advantages (Burt, 1992).

Networking extends the reach and abilities of the individual to capture resources that are held by others and so improve entrepreneurial effectiveness and themselves (networks) become the mode of being entrepreneurial. For example social capital can contribute to overcome information asymmetries and pave the way to entrepreneurial finance (Bauernschuster, Falck and Heblich, 2010). Networks are a socially constructed ‘‘strategic alliance’’ for operations as well as instituting change, developing growth and thus creating the future Anderson, Dodd and Jack (2010). Using a database of biotechnology firms, research has shown that high technology new firms extensively used strategic alliances (upstream, horizontal, and downstream) to gain access to knowledge, resources and capabilities (Haeussler, Patzelt and Zahra, 2010). Knowledge networks are viewed as the repositories of broad and complex sets of expertise, experience and accumulated knowledge from which both inside and outside members can draw (Etemad and Lee, 2003).

Researchers have acknowledged that social capital created within networks and through social interaction is related to the growth of new and small business ventures (Anderson, Dodd and Jack, 2010). Anderson et al. (2010) argued for the social nature of entrepreneurial growth and the importance of networking in growth.

Anderson and Miller (2003) construed entrepreneurship as a social activity and argued, based on empirical findings from literature, that entrepreneurship can be understood in terms of entrepreneurial social groups and social embeddedness as represented in the relationship between the entrepreneur and context. Urban and Shaw (2010) explained that sources of social capital lie in the social structure within which the actor is located.

The social capital value of a network is a function of both form and content (Burt, 1997) and governance. Social capital is a multifaceted concept distinguished in terms of its relational, cognitive dimensions and structural. These three dimensions of social capital reflect how and with whom people and organisations are connected and interact (Hoang and Antoncic, 2003; Parra-Requena, Molina-Morales and GarcÍA-Villaverde, 2010).

The **cognitive dimension** of social capital manifests the perspectives, narratives, values, language, and goals that the individual members share with each other (Lindstrand, Melén and Nordman, 2011). Other researchers defined the cognitive dimension as the degree to which people and organisations share goals and culture (Parra-Requena et al., 2010). The cognitive dimension refers to resources that provide shared representations, interpretations and systems of meaning among the parties (Westerlund and Svahn, 2008).

The **relational dimension** reflects the quality of relationships and the key elements of the relational dimension are perceived sense trust and proximity, and social interaction between the individuals (Westerlund and Svahn, 2008; Lindstrand et al., 2011). The relational view of the firm suggests that relationship-building capabilities are valuable assets that can lead to better performance. SME's ability to build informal cooperative relationships with other organisations is a critical strategic capability (Haahti et al., 2005). Social capital in a relationship enables the firm to tap into the knowledge resources of its exchange partner. Through close social interaction, firms are able to increase the depth, breadth, and efficiency of mutual knowledge exchange. According to Westerlund and Svahn (2008), the relational dimension results in and reflects the impact of the structural and cognitive dimensions.

The **structural dimension** of social capital highlights the network configuration and what knowledge is available through the structure (Lindstrand et al., 2011). The structural dimension denotes loose and non-embedded ties amongst business actors operating in detached contexts with infrequent or irregular business contacts but resulting in access to a broader set of new useful contacts and links to the marketplace (Pirolo and Presutti, 2010).

Network ties may vary in intensity, strength and length affecting how resources and information flow. Researchers recognise that network ties can be categorized into “strong” or “weak”. The cognitive and relational dimension of social capital are considered as inter-organisational strong ties whereas the structural dimension of social capital is referred to as the inter-organisational weak (Coviello, 2006; Presutti et al., 2007; Bhagavatula, Elfring, van Tilburg and van de Bunt, 2010). Strong ties play a crucial role in transmitting sensitive information in social networks whereas weak ties can disperse extremely valuable information (Ding, Steil, Dixon, Parrish and Brown, 2011). In a study on creation of innovation within firms, Rost (2011) showed that strong and weak ties are not alternatives but complementary. In particular, weak network architectures have no value without strong ties, whereas strong ties have some value without weak network architectures but are leveraged by this type of structure (Rost, 2011).

The relational–cognitive configuration (strong ties) refers to the extent that the business relationship between a firm and its partners is marked by the presence of goodwill trust, expectations of reciprocity, and cognitive identification (Pirolo and Presutti, 2010). Strong ties promote the development of trust and cognitive identification and joint problem solving, which reduce the risk of opportunism between network players through a continuous reinforcement of their business relationship (Uzzi, 1997). Leung, Zhang, Wong and Foo (2006) found network effects, particularly strong ties, can be useful to entrepreneurial firms in the acquisition of human resources (recruitment) with common values and goals.

According to the theory of structural embeddedness, network structure and a firm’s network position are considered to be both opportunities and constraints.

Strong ties can reduce the flow of new information between interrelated partners because redundant ties to the same network partners mean that there are few or no links to outside partners who can potentially contribute innovative ideas (Burt, 1992). Over-embeddedness amongst networked organisations may become a social liability resulting in dependency problems or vulnerability as a result of unexpected loss of a

core network player (Burt, 1992; Uzzi, 1997). In this context, networking may result in a time consuming and costly effort.

A weak tie-based network relation means that the persons in question may not personally know each other (but may know of each other) and is thus a basis for non-redundant information (Ulhøi, 2005).

Network theory also recognises the brokerage role of intermediary members in facilitating transactions or knowledge flows between members unknown to each other. The broker transfers expectations of trust and commitment from pre-existing relationships to newly formed ones (Uzzi, 1997). This point was illustrated the infamous structural hole theory (Burt, 1992), which asserts that relationships characterised by the absence of cohesive social networks are able to obtain and monitor information more effectively. A structural hole is a disconnection or extremely weak relationship between two contacts (Batjargal, 2007).

Coviello (2006) mentioned that the conduct and performance of firms can be understood by examining the network of relationships in which they are embedded. It has been suggested that entrepreneurs build and use networks that vary according to the phase of entrepreneurship (Jack, 2010). Pirolo and Presutti (2010) found that strong and weak ties influence performance in different ways depending on whether the performance target is economic or innovation, and the stage in the life-cycle of the firm. Pirolo and Presutti (2010) recommended that start-up firms should progress from strong ties of social capital toward weak ties to meet the increased quantity and scope of their resource needs during the innovation process as required during the start-up's life cycle. Hite and Hesterly (2001), cited in Coviello (2006) proposed that the entrepreneurial network will shift from being identity-based (path dependent) to more calculative (intentionally managed) over time. Hite and Hesterly argued that the network will begin with a base of strong socially embedded ties, and will evolve and become less cohesive over time (Coviello, 2006). As the firm moves into the growth stage, the network changes to encompass a balance of embedded and arm's length economic ties that are more intentionally managed to explore growth (Coviello, 2006).

Drawing from the discussion presented, it is evident that there is a link between social capital and entrepreneurial performance (Davidsson and Honig, 2003; Coviello, 2006; Anderson et al., 2010; Bauernschuster et al., 2010). Social capital comprises both the network and the resources that may be mobilised through that network. Social resources and entrepreneurial networks provide information, create opportunities and enable resources to be accessed (Jack, 2010). Social capital is a multi-fasceted and dynamic concept (Pirolo and Presutti, 2010). Entrepreneurial networks can take different form with different features (Hoang and Antoncic, 2003; Coviello, 2006; Presutti et al., 2007; Bhagavatula et al., 2010; Parra-Requena et al., 2010) and evolve and develop over time (Coviello, 2006; Jack, 2010). Social capital theory explains the ability of actors to extract benefits from their social structures, networks and memberships and can be used to supplement the effects of education, experience and financial capital (Venter, Urban and Rwigema, 2008). The next section focuses on the link between social capital and internationalisation.

2.4.2.2 Social capital and internationalisation

Leiblein and Reuer (2004) premised that entrepreneurial firms face severe resource constraints arising from factors such as the possession of few tangible assets and large capital requirements and that these firms are faced with the challenges of overcoming foreign market entry barriers. In the international context, these resource constraints extend beyond financial constraints to include administrative resource constraints arising from a lack of familiarity with local market conditions and customs in host countries (Leiblein and Reuer, 2004).

Davidsson and Honig (2003) found that social capital, consisting of both strong and weak ties, was a robust predictor for advancing through the start-up process. The researchers also found membership to a business network to be a strong predictor of outcomes like making a first sales or showing a profit and rapid growth.

Anderson et al. (2010) argued for the social nature of entrepreneurial growth and the importance of networking in growth. Internationalisation is an important route through which new and small ventures can realise their growth potential (Pangarkar, 2008).

Research in international business and competitive strategy has contended that firms are at a natural disadvantage when expanding into foreign markets and contend that building foreign sales is one of the key rationales for collaborating with other firms (Leiblein and Reuer, 2004).

Jones, Coviello and Tang (2005) consolidated different views from international entrepreneurship research and pointed that entrepreneurial internationalisation behaviour is a complex social phenomenon encompassing borderless resources and networks. To succeed internationally firms must acquire information about foreign markets from external parties (Presutti et al., 2007). Information about foreign markets is acquired through a firm's social network (Agndal, Chetty and Wilson, 2008).

Noting other studies Leiblein and Reuer (2004) stated that born globals firms have been able to internationalise rapidly despite resource constraints across the value

chain and other administrative challenges that accompany international expansion. Coviello (2006) found that entrepreneurial growth is indeed co-created through strategic networking practices. Internationalisation is the most effective form of entrepreneurial growth (Acedo and Casillas, 2007).

A number of entrepreneurship studies have supported the arguments of scholars regarding the importance of networks for entrepreneurial success (Hoang and Antoncic, 2003). Business networks are considered the long-term business relationships that a firm has with the actors in a business network i.e. its customers, distributors, suppliers, competitors and government (Urban, Van Vuuren and Barreira, 2008).

In their study regarding the growth of international new ventures, Presutti et al. (2007) verified that social capital is a critical source of knowledge acquisition abroad. Social capital can play a role substitutive for more formal institutions in small business environments characterised by lack of market-oriented institutions such as specialized venture capital firms providing entrepreneurial finance (Bauernschuster et al., 2010).

An entrepreneurial firm can also use alliances to develop its foreign sales base. The empirical evidence from a study among firms in a high technology industry revealed that the formation of collaborative linkages is associated with greater foreign sales (Leiblein and Reuer, 2004). These researchers identified at least two mechanisms through which alliances may enhance organisational growth in general and the development of foreign sales in particular. Firstly, alliances enable firms to acquire complementary assets and local knowledge thereby enabling entrepreneurial firms with proactive competitive strategies to enter into a market before rivalry dissipates rents. Secondly, alliances can be viewed as transitional learning investments that open doors to future expansion opportunities.

To better understand how social capital affects international performance, several studies have drawn from the knowledge-based view of the firm. Social capital is a key regulator of learning, and therefore, of knowledge-based competitive advantage (Yli-Renko et al., 2001; 2002; Haahti et al., 2005, Presutti et al., 2007; Zhou, 2007). A study

of internationally oriented SMEs from mainland China, found that social networks mediate the link between internationalisation and performance through information benefits such as knowledge of foreign market opportunities, advice and experiential learning, and referral trust and solidarity (Manolova et al., 2010). SMEs employing cooperative strategies to enrich their knowledge base about export markets can consequently improve their performance (Haahti et al., 2005).

In a study among Swedish biotech SMEs Lindstrand et al. (2011) found that all dimensions of social capital affect the acquisition of foreign market knowledge and financial resources. A study among UK high-technology ventures found that the social interaction and network ties dimensions of social capital are indeed associated with greater knowledge acquisition, but that the relationship quality dimension is negatively associated with knowledge acquisition (Yli-Renko et al., 2001). This indicates that there are mixed findings regarding the relevance of social capital dimensions to acquisition of foreign market knowledge.

Coviello (2006) stated from prior research that the benefits of social capital for new ventures included better access to resources and international opportunities, and a means by which to overcome the liabilities of newness and foreignness. Yli-Renko et al. (2002) showed that external social capital (in the form of management contacts, involved customers and involved suppliers) positively impacts upon foreign market knowledge and, in turn, the international growth of new ventures.

A firm's distinctive knowledge on internationalisation is obtained from diverse sources through individual level, organisational, and inter-organisational relationships (Yli-Renko, Autio and Tontti, 2002; Casillas, Acedo and Barbero, 2010) and derived from the participation in social and institutional networks (Casillas et al., 2010). A review of the work of Lin and Chaney (2007) in their study of the internationalisation process of Taiwanese SMEs noted that entrepreneurial firms are able to exploit advantages from being part of a network, such as low transaction costs, assured orders, and access to external resources and knowledge (Manolova et al., 2010).

Casillas et al. (2010) found that collective knowledge, i.e. knowledge derived from participation in social and institutional network, has a more intense influence than the individual knowledge in motivating favourable attitude to initiate a process of internationalisation through exports. Yli-Renko et al. (2001) maintains that competitive advantage derives not solely from firm-level resources but also from difficult-to-imitate capabilities embedded in dyadic and network relationships. Collective knowledge seems to be more important in an international context, where the individual search for information is more difficult. Knowledge-based competition has magnified the importance of learning alliances as a fast and effective way to develop such capabilities.

Oviatt and McDougall (2005) presented a framework that incorporates recently developed ideas from entrepreneurship scholars about how ventures gain influence over vital resources without owning them, and from strategic management scholars about how competitive advantage is developed and sustained. In their framework they describe strong reliance on alternative governance structures to access resources as a necessary element for the existence of international new ventures.

It is evident from the extant literature that there is widespread agreement regarding the importance of networks in successful ventures (Davidsson and Honig, 2003; Urban et al., 2008) and specifically international ventures (Yli-Renko et al., 2002; Hoang and Antoncic, 2003; Leiblein and Reuer, 2004; Haahti et al., 2005; Presutti et al., 2007). However, having a good network in itself is no guarantee for success Bhagavatula et al. (2010).

Arguing from a capability-based view of the firm, Walter et al. (2006) stated that it is the ability to network that is essential and not only the existence of a network, highlighting that firms perform better as their network capability increases. Westerlund and Svahn (2008) indicated that the relevant dimensions of value in relationships should be distinguished, cultivated and managed carefully. Some relationships are arguably more important or valuable than others and firms with limited resources need to build fewer relationships with greater outcomes (Westerlund and Svahn, 2008).

Social capital use can contribute to a rapid internationalisation; however, this may impede a firm's understanding of a foreign market. In their study of growth of Italian international new ventures, Presutti et al. (2007) showed that strong ties (both relational and cognitive dimensions) were negatively linked to knowledge acquisition. This could be explained by the surmise that very close customer relationships may result in over-embeddedness (Uzzi, 1997). Yli-Renko et al. (2001) posited that there may be a presence of information redundancy within strong business ties. In other words, very close relationships may insulate small firms from other external sources of knowledge and information.

Recent network research in international entrepreneurship has become more sophisticated in that it deconstructs network dynamics and the relationships between networks and resources.

Based on the findings of their study among biotech SMEs, Lindstrand et al. (2011) argued that social capital should not be perceived as a static concept. The usefulness of an individual's social capital often changes during the SMEs' internationalisation. In the early phase of internationalisation, SMEs primarily draw on the social capital residing in direct relationships to enable foreign market entries (FMEs). Later on, the role of indirect relationships social capital becomes more prominent, indicating that social capital changes with the firm stage of internationalisation (Agndal et al., 2008). Coviello (2006) noted the network dynamics of early stage entrepreneurial firms and argued, that the network begins with a base of strong socially embedded ties, and will evolve and become less cohesive over time. Agndal et al. (2008) suggested that in the later stages of internationalisation, firms may have exhausted the readily recognisable opportunities available through their well-known partners. According to Agndal et al. (2008), in the later stages of internationalisation, indirect relationships may provide unexpected opportunities as managers obtain new information from previously unconnected networks.

Research has pointed to the need for entrepreneurs to consider carefully the balance between the risks and benefits of particular types of alliances as well as alternative mechanisms for organizing the firm's international expansion (Leiblein and Reuer,

2004). Lechner et al. (2006) and Bhagavatula et al. (2010) indicated that it is important to know the conditions under which different network elements lead to specific benefits and to have the right mix of strong and weak ties. This mix is contingent on a number of aspects, such as the industrial, technological and environmental conditions.

Cross-country research shows that networks are crucial in leveraging external resources such as venture capital or angel funding, and that entrepreneurs perceive opportunities based on the cohesion of their networks (Jones, Coviello and Tang, 2005). However, Danis, De Clercq and Petricevic (2010) provided empirical proof that social networks are more important for new business activity in emerging than in developed economies due to high regulatory and normative institutional burdens in emerging markets. This may be explained by Singh (2009)'s posit that emerging market firms may not target overseas customers though the advertising campaigns due to their limited resources.

As stated in Batjargal (2007), Batjargal found in prior research among entrepreneurs that an effective way of managing hostile environments in transition economies is doing business through personal networks of relationships because network ties provide resources and information, and help to find clients, suppliers, and investors, who are socially bound. Research exploring the internationalisation of entrepreneurial ventures in Bulgaria found that domestic personal networks have a positive effect on internationalisation (Manolova et al., 2010). Manolova et al. (2010) remarked that entrepreneurial firms in transition economies use network embeddedness to decrease transaction and information-acquisition costs and develop resources and capabilities needed for internationalisation. Cohesive networks are conducive to firm survival because of high trust, cooperative norms and informal sanctions for deviant behaviours (Batjargal, 2007).

Extant literature has identified the numerous constraints faced by SMEs in expanding internationally. The relevance of social capital in the SME internationalisation context is mainly a consequence of the resource limitations arising from the liability of smallness and newness in the foreign markets (Leiblein and Reuer, 2004; Coviello, 2006). In order to remain competitive and to take advantage of new market

opportunities, entrepreneurial firms need to gain influence over vital resources without owning them (Oviatt and McDougall, 2005). From an entrepreneurial perspective, social capital is a key driver in providing access to these resources (Yli-Renko et al., 2002; Coviello, 2006; Manolova et al., 2010; Casillas et al., 2010).

This review has argued and evidenced on the connection between social capital or social networks and international entrepreneurial performance. There seem to be tentative evidence that social capital positively contributes to international performance (Pangarkar, 2008). Manolova et al. (2010) explored the role of personal and inter-firm networks for new-venture internationalisation. Yli-Renko et al. (2001) examined the effects of social capital in key customer relationships on knowledge acquisition and knowledge exploitation, although their study was not located in the domain international entrepreneurship. Yli-Renko et al. (2002) developed a model of the international growth of technology-based new firms by drawing on the social capital theory and the knowledge-based view of the firm. This paper focuses on the following dimensions of social capital: Social interaction, relationship quality and network ties (Yli-Renko, 2001).

Based on Yli-Renko (2001), our empirical study will look at social capital as a multidimensional asset inside the business relationships comprising of both strong and weak ties, and implemented by the firms with their international partners or contacts. Social capital is analyzed in relationships among firms and their foreign actors/contacts rather than domestic. It follows that the two views used in the deconstruction of social capital, i.e. the strong ties/weak ties as well as the relational/cognitive/ structural dimensions, are applicable to our conceptualisation of social capital in this study: the social interaction and relationship quality constructs are analogous to the relational dimension whereas the network ties construct represents the structural dimension. Using the alternative categorization, the social interaction and relationship quality represents inter-organisational strong ties whereas network ties represent inter-organisational weak ties. The above discussion illustrates that relationships, of one form or another, are at the core of competiveness.

2.4.3 Human capital

2.4.3.1 Human capital theory of entrepreneurship

Entrepreneurship can be defined as an activity and process involving the discovery, creation, and exploitation of opportunities in order to create value by introducing new goods, services, processes and organisations (Blanco, 2007). The fundamental activity of entrepreneurship is new venture creation, and new venture creation is a process. Based on a meta-analytical review of literature integrating results from three decades of human capital research in entrepreneurship, Unger, Rauch, Frese and Rosenbusch (2009) state that human capital attributes including education, experience, knowledge, and skills are critical resources for success in entrepreneurial firms. Opportunity recognition is at the beginning of this entrepreneurship process (Urban, 2009a). According to Dimov and Shepard (2005) and Unger et al. (2009) human capital is an important variable that increases entrepreneurs' capabilities of recognition and exploitation of business opportunities.

Entrepreneurs are those people who sense, create, and respond to change regarding a possible opportunity for profit (Blanco, 2007). It is a person's specific knowledge that is apparently the most important contributing factor in making a discovery and exploiting wealth-generating ideas, Urban (2010) citing prior research. Urban (2009a) states that the ability to identify opportunities is related to human capital variables such as education, work experience, prior start-up experience, and prior knowledge, and prior knowledge of customer problems. There is a positive relationship between human capital and success (Unger, Rauch, Frese and Rosenbusch, 2009; Urban, 2009b). Based on these perspectives, the study posits human capital as an important antecedent to entrepreneurial alertness, opportunity recognition, and entrepreneurial success and therefore lies at the core of the entrepreneurial process.

Different approaches have been adopted by scholars about the nature of an opportunity, and there exist different streams on the definition for what constitutes an entrepreneurial opportunity or whether opportunities are 'identified', 'recognised', or 'created' (Ardichvili, Cardozo and Ray, 2003; Urban, 2009a; Tang, Kacmar and Busenitz,

2010). Urban (2009a) defines an entrepreneurial opportunity as a feasible, profit-seeking, potential venture that provides an innovative new product or service to the market, improves on an existing product/service, or imitates a profitable product/service in a less than saturated market. Urban (2009a) states that 'recognition' carries with it a presumed ontological perspective that opportunities 'exist out there' and it is the entrepreneur's role to recognise them. In other words, 'recognition' suggests that opportunities are objective phenomena that exist whether or not anyone discovers them. 'Creation' limits opportunities to only those that the entrepreneur creates (Urban, 2009a). While elements of opportunities may be 'recognised', opportunities are made, not found. It is built in the mind of the entrepreneur (Blanco, 2007). 'Identification' seems a more inclusive term that encompasses both potential opportunities already existing in the environment and opportunities that are created by the entrepreneur (Urban, 2009a). Entrepreneurs create opportunities to create and deliver value for stakeholders in prospective (Ardichvili et al., 2003). Vaghely and Julien (2010) integrated the opportunity recognition or discovery viewpoint and the opportunity construction or enactment streams of thought into a pragmatic frame that suggests that entrepreneurial opportunities can be recognised and constructed at the same time in a variety of combinations and recognised or constructed individually.

Opportunity recognition process begins when alert entrepreneur notice factors in their domain of expertise that result in the recognition and evaluation of potential business opportunities (Ardichvili et al., 2003). Blanco states that the process of opportunity recognition starts with sensing of a need or a possibility for change and action, and the realisation of an idea (Therin, 2007). Other researcher have called this state entrepreneurial awareness, defined as a propensity to notice and be sensitive to information about objects, incidents, and patterns of behaviour in the environment, with special sensitivity to maker and user problems, unmet needs and interests, and novel combinations of resources (Ardichvili et al., 2003). Alertness is an individual's ability to identify opportunities which are overlooked by others. Tang, Kacmar and Busenitz (2010) defined alertness as consisting of three distinct elements: scanning

and searching for information, connecting previously-disparate information, and making evaluations on the existence of profitable business opportunities.

Alertness is likely to be heightened when there is a coincidence of several factors: certain personality traits (creativity and optimism); relevant prior knowledge and experience; and social networks (Ardichvili et al., 2003). Tang et al. (2010) found that entrepreneurs' prior knowledge is significantly related to alertness and that alertness is positively associated with firms' innovation. Prior knowledge refers to an individual's distinctive information about a particular subject matter and provides him or her with the capacity to identify certain opportunities. The type of knowledge involved affects knowledge acquisition and exploitation (Yli-Renko and Autio, 2001).

Opportunity recognition may be the result of systematic search of answers to a specific question and/or careful strategic planning. Opportunity recognition consists of either perceiving a possibility to create new businesses, or significantly improving the position of an existing business, resulting in new profit potential (Urban, 2009). However these views have been challenged by the existence of 'accidentally' discovered ventures, which happens when people discover the value of the information they perceive.

Researchers have argued that the creation of successful businesses follows successful 'opportunity development', which involves the entrepreneur's creative work, rather than 'opportunity recognition' (Urban, 2009). This opportunity development process includes recognition of an opportunity, its evaluation, and development. The need or resource 'recognised' or 'perceived' cannot become viable without this 'development' (Urban, 2009). Opportunities are evaluated at each stage of their development and the evaluation may be informal or even unarticulated (Ardichvili et al., 2003; Tang, 2010). The term ''evaluation'' typically communicates a judgment, which determines whether a developing opportunity will receive the resources to mature to its next stage. It does not entail the actual launching and capitalising on the opportunity, only whether an opportunity exists. Entrepreneurs may informally pursue investigations of presumed market needs or resources, judge the content of the new information, filter unessential information until concluding either that these warrant no further

consideration based on market needs and value creation capability (Ardichvili et al., 2003; Tang, 2010).

In general, people discover opportunities that others do not identify for two reasons; first, they have better access to information about the existence of the opportunity. Second, they are better able than others to recognise opportunities given the same amount of information about it (Urban 2010). The ability to identify opportunities is a cognitive task that allows some individuals, though not others, to identify opportunities (Shane, Locke and Collins, 2003). The broad notion of human capital includes both innate characteristics and those that can be acquired. Their discussion focuses on prior knowledge necessary to perform entrepreneurial tasks.

Human capital theory maintains that knowledge provides individuals with increase in their cognitive abilities, leading to more productive and efficient potential activity (Urban, 2008). Knowledge can be defined as high-value form of information combined with experience, context, interpretation, and reflection which can readily be applied to decision making and action (Vaghely and Julien, 2010). Prior research identified three major dimensions of prior knowledge that are important to the process of opportunity identification. The first is prior knowledge of markets, which enables people to understand demand conditions, therefore facilitating opportunity discovery. Second is prior knowledge of how to serve markets, which helps identify opportunities because people know the rules and operations in the markets. Finally, prior knowledge of customer problems or needs stimulates opportunity identification because such knowledge would help trigger a new product or service to solve customer problems or to satisfy unmet needs (Ardichvili et al., 2003; Tang et al., 2010).

Differences in human capital are related to the selection and application of different opportunity identification processes. People tend to notice information that is related to what they already know (Ardichvili et al., 2003). Prior knowledge plays a critical role in intellectual performance and affects the ability to identify entrepreneurial opportunities. Entrepreneurs with prior knowledge of a given domain are alert to opportunities in that business environment. Information and knowledge are vital in order to match (technology-based) solutions to opportunities, reduce uncertainties

improve feasibility, and predict consequences (Blanco, 2007 in Therin, 2007). Linking patterns of information from various sources forms the basis of innovation and new business opportunities (Vaghely and Julien, 2010). Having experience and knowledge within an industry facilitates entrepreneurs recognising market gaps and assessing the market potential of new ventures.

Knowledge is particularly important for technology-based firms: generating and exploiting knowledge in high-technology sectors demands that knowledge be continually replenished. Yli-Renko and Autio (2001) argue that technology-based firms can leverage inter-organisational relationships to acquire external knowledge and exploit it for competitive advantage. Entrepreneurial competency consists of a combination of skills, knowledge and resources that distinguish an entrepreneur from competitors (Urban, 2009b). Techno-entrepreneurs often have technical skills (Contractora and Kundub, 2004) but usually lack the business management and marketing skills necessary for commercial success. They will not succeed if they implement business practices in an arbitrary and uncoordinated manner, expending scarce resources on unproductive initiatives. Knowledge-based competition has magnified the importance of learning alliances as a fast and effective way to develop such capabilities. To achieve a competitive advantage, firms need better quality, improved efficiency, innovation, and customer experience. This requires a constant search for new tools and management opportunities that would provide these competencies (Li-Renko and Autio, 2001; Abdelkader, 2004). Introducing technology into the scope of entrepreneurship brings in more novelty, new eventualities, as well as constraints and contexts (Blanco, 2007).

Unger et al. (2009) looked at specific conceptualisations of human capital attributes and found that different conceptualisations of human capital differently relate to business success. Their study distinguishes human capital along with two distinct conceptualisations of human capital attributes: human capital investments versus outcomes of human capital investments and task-related human capital versus human capital not related to a task. Human capital investments include experiences such as education and work experience that may or may not lead to knowledge and skills. The outcomes of human capital investments are acquired knowledge and skills**.** The human

capital–success relationship was higher for knowledge and skills which are outcomes of human capital investments compared to education and experience which are direct human capital investments, indicating that knowledge and skills are more important than education and experience for entrepreneurial success.

Task-relatedness addresses whether or not human capital investments and outcomes are related to a specific task, such as running a business venture. Human capital leads to higher performance only if it is applied and successfully transferred to the specific tasks that need to be performed by the entrepreneur (Unger et al., 2009). Task-specific and industry-specific human capital, as measured by prior experience, are stronger predictors of performance than are measures of general human capital i.e. qualifications (Patzelt, 2010; Zarutskie, 2010).

Research has shown that human capital positively affects entrepreneurial performance (Dimov and Shepherd, 2005; Patel and D'Souza, 2009; Unger et al., 2009; Urban, 2009a; Zarutskie, 2010). Human capital comprises education, work experience, entrepreneurial experience, and prior knowledge (Unger et al., 2009; Urban, 2009a; Bhagavatula et al., 2010) and these are important stimulus of entrepreneurial alertness, opportunity recognition and exploitation (Ardichvili et al., 2003; Blanco, 2007; Tang et al., 2010; Vaghely and Julien, 2010). Human capital is a high-level construct which has been distinguished into human capital investments and human capital outcomes (Unger, 2009). Specific forms of human capital such as industry-specific and/or task-related have been shown to be superior predictors of entrepreneurial performance (Yli-Renko et al., 2001; Unger et al., 2009; Patzelt, 2010; Zarutskie, 2010). The next section focuses on the relationship between human capital in firm internationalisation.

2.4.3.2 Human capital and internationalisation

The cross border practice of entrepreneurship has been labelled international entrepreneurship and can be understood from Shane and Venkataraman's opportunity discovery, evaluation and exploitation entrepreneurship perspective. International experience can lead to opportunity identification, market knowledge, and network

building, all of which are determinants of internationalisation (McDougall et al., 2003). Zhou (2007) argued that innovative and proactive pursuit of entrepreneurial opportunities across national borders among entrepreneurial international firms led to acquisition of requisite foreign market knowledge. Based on literature, Casillas et al. (2009) stated that in the international entrepreneurship context, knowledge allows a clearer understanding of the process of identifying and exploiting opportunities abroad.

Knowledge about foreign markets and entrepreneurial knowledge is critical to the firm's success in the international market. Ibrahim (2004) stated that acquisition of knowledge allows firms to enhance their learning capabilities, thereby reducing uncertainty and risk and improve their competitive position (Autio et al., 2000). Samiee and Walters (1999) observed a significant relationship between firms participating in structured export knowledge acquisition (through formal, structured export education programs) and export performance. Contractora and Kundub (2004) found that attributes such as technical education and foreign experience among Indian and Taiwanese techno-entrepreneurs were linked to successful export performance.

Educational profile and professional experience appear to be most influential in the international entrepreneurship phenomenon. The background professional experience together with the networks of individuals or within the management team play a role in the establishment of the international new ventures (Oviatt and McDougall, 2005). Education level and international experience positively affect international performance (McDougall et al., 2003; Camisón and Villar-López, 2010; Javalgi and Todd, 2010). Internationalisation can promote learning and the accumulation of the knowledge, skills and capabilities that SMEs need to create and sustain competitive advantage. Learning and knowledge accumulation can also improve product innovations (Zahra et al., 2009). Accordingly, human capital is a significant predictor of international performance (Javalgi and Todd, 2010).

According to the historic work of Johanson and Vahlne (1977; 1990), market knowledge, along with commitment, is central to the Uppsala model of firm internationalisation (Weerawardena, Mort, Liesch and Knight, 2007; Zhou, 2007;

Casillas et al., 2009). The basic assumption is that internationalisation is the consequence of a series of incremental decisions and the knowledge acquired on a market basis through experience and supports the company's behaviour. Knowlege gained at various stages can profoundly influence future international expansion, as firms experiment, take risks,and learn (Zahra and Garvis, 2000). Recent international entrepreneurship literature that explains the born-global or early internationalisation suggests foreign market knowledge as a key factor in understanding and explains the rapid internationalisation of the firms (Knight and Cavusgil, 2004).

These arguments show that knowledge is considered an essential resource in a company's internationalisation process, both from the sequential point of view and from the perspective of international entrepreneurship (Zhou, 2007; Brennan and Garvey, 2009; Casillas et al., 2009). Although the two approaches assert that knowledge-based capabilities are important for successful international expansion, the incremental internationalisation and the born-global internationalisation differ on what constitutes the sources of the knowledge.

Entrepreneurship scholars have argued from the organisational learning context that three types of knowledge are critical to the firm's success in the international market: knowledge about the technology, foreign market knowledge and entrepreneurship knowledge (Ibrahim, 2004). Zhou (2007) argued that for early internationalising firms, foreign market knowledge can be acquired early on in the life of the firm and tends to emanate from the innovative and proactive pursuit of entrepreneurial opportunities across national borders, rather than from incremental accumulation of experience in foreign markets as argued by the traditional view. However, Weerawardena et al. (2007) found that a gap still remained in that both the experiential learning perspective of accelerated internationalisation of born global firms as well as the incremental internationalisation (Uppsala model) failed to capture the learning that is undertaken by these firms and their founders prior to the firm's legal establishment or at the pre-internationalisation stage.

Weerawardena et al. (2007) surmised that learning and knowledge acquisition should be positioned as an antecedent at the pre-internationalisation stage in the

internationalisation process. Casillas et al. (2009) 's integrative model of the role of knowledge in the internationalisation process seems to have paved the way to bridge the gap espoused by researchers regarding the knowledge context. Casillas et al. (2009) distingushes several phases of knowledge that constitutes the main factors behind a company's international behaviour: prior knowledge; acquisition of new knowledge; integration of both sets of knowledge; action and feedback knowledge (Casillas et al., 2009). Casillas et al. (2010) incorporated the unlearning context into a learning model of the internationalisation process and argued that the unlearning context plays an important mediating role between existing knowledge of the internationalisation process and the active search of new knowledge. Companies initiating an internationalisation process should rid themselves of certain routines developed in their domestic markets before starting the learning process required for their expansion abroad (Casillas et al., 2009).

Accordingly, internationalisation is itself a learning process in which the company, starting from the different degrees of previous knowledge at its disposal, generates new knowledge based on its behaviour abroad (Casillas et al., 2009) and unlearns its old modus operandi.

In a comparative study of international new ventures (INVs) and domestic new ventures (DNVs), the entrepreneurial team of INVs exhibited higher levels of previous international and industry experience (McDougall et al., 2003). McDougall et al. (2003) contended that founders of INVs saw opportunities to earn higher return as a result of previous international experience. Prior international exposure of entrepreneurs can act as a trigger for the founding of an international venture. However, Autio (2005) maintained that due to its context-specific nature, knowledge created in one context is not easily transferred to other contexts. Camisón and Villar-López (2010) contended that international experience is determined by whether the firm has prior experience in regions similar to the new markets it is entering.

However the prior knowledge and experience view does not exhaust the human capital debate of firm internationalisation. In a case study among small Scottish firms Fletcher and Harris (2011) found that these firms may be characterised by lack of

relevant experience or useful networks, and relied on rarely used sources like recruitment, government advisors and consultants to acquire indirect experience. Similarly, Haahti et al. (2005) found that SMEs employing cooperative strategies to enrich their knowledge base about export markets consequently improve their performance. Thus firms can rapidly access critical exporting knowledge by recruiting knowledgeable, experienced export staff and by positioning itself within alliances and networks. Autio (2005) asserts that international managerial experience had become more widely available, enabling firms to quickly acquire such knowledge through recruitment.

Taking from the Uppsala school of thought, Casillas (2009) explicated that companies will initiate their internationalisation in those countries that are physically or psychologically closer to their own in order to minimize the degree of uncertainty and apparent risk. Based on the work of Johanson and Vahlne (1977) this concept is known as 'psychic distance' and has been defined as factors preventing the flow of information from and to the market including such factors as language, culture, political systems, level of education, level of industrial development (Brennan and Garvey, 2009). The basic assumption is that lack of knowledge about foreign markets is an obstacle to the development of international venture. However this view is less widely accepted today with the advent of technology development, and more specifically the effects of online internationalisation where knowledge is the subject of the exchange (Yamin and Sinkovics, 2006). These properties of e-commerce have been described as the 'death of distance'.

The extant literature shows that firms can leverage human capital to positively influence their international success (Samiee and Walters, 1999; Yli-Renko et al., 2001; McDougall et al., 2003; Ibrahim, 2004; Oviatt and McDougall, 2005; Zhou, 2007; Casillas et al., 2009;Javalgi and Todd, 2010). The apparent tension between the sequential process of internationalisation and the international entrepreneurship view with regards to knowledge can be resolved by understanding the souce of foreign knowledge (Zhou, 2007). Knowledge gained from international experience can be turned into an endowment of internationally exploitable intangible assets and into a

differentiation competitive strategy to achieve superior international performance (Camisón and Villar-López 2010; Patzelt, 2010).

Knowledge of markets is an important source of entrepreneurial opportunities. The notion of internationalisation knowledge adopted in this research is based on the international market knowledge conception (Hadley and Wilson, 2003; Zhou, 2007; Casillas et al., 2009) consiting of three dimensions: foreign institutional knowledge, foreign business knowledge, and internationalisation knowledge. The focus is on these dimensions because they encompass both the accumulated skills and knowledge learnt though experience, education and training, and performed tasks, thereby covering the human capital investments and outcomes conceptuslised by Unger et al. (2009). These dimensions capture task-specific aspects of human capital that have been found to be stronger predictors of performance than are measures of general human capital i.e. qualifications (Patzelt, 2010; Zarutskie, 2010). Gimmon and Levie (2010) found support for the importance of competence-based human capital (business management and technological expertise) over academic qualifications on the survival of high-technology ventures. Bojica and Fuentes (2011) explained that this type of knowledge exercised in the performance of tasks is rare, heterogeneous and difficult to articulate and imitate due to its tacit nature, and is essential for the identification and exploitation of entrepreneurial opportunities.

2.4.4 Technology

Technological innovation is of fundamental importance as a driver for global growth and economic development (Erensal, Öncan and Demircan, 2006; Urban et al., 2011). Due to the rapid and dynamic shifts in markets, the unlimited proliferation of new technologies, and the resultant shrinking product life cycles, companies have to consistently to develop new products if they are to gain or maintain a competitive edge (Erensal et al., 2006). In such a turbulent environment, firms are focusing more attention on innovation and increasing investment in technology as a source of that innovation (Lee, Yoon, Lee and Park, 2009).

"According to Schumpeter (1976, p. 132), the function of entrepreneurs is to reform or revolutionalize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on..." (Venkataraman, 2004). Schumpeterian capitalism is characterised by rapid change, strives for disruption rather than stability, and centres on the entrepreneur to create the change.

Entrepreneurship plays an important role in the development and commercialization of new technologies. A firm's technology is defined as as 'the company's technological skills and knowledge as well as the products, services, and processes based on these skills and knowledge (Yli-Renko et al., 2001). Technological change, and hence innovation, is the specific tool by which entrepreneurs enact opportunities.

Technological innovation is defined as the generation of new products and processes or significant technological improvements in the current products and processes. Product technology is the technology purchased by the customer and used to meet his needs. Product technology includes the technology used in product development and, the technology used for the service and distribution of the product (Furu, 2000; Erensal et al., 2006). Process technology is the technology utilized to manufacture the product at the lowest cost. Moreover, process technology also includes the technology used in quality control, inventory control and production planning (Furu, 2000; Erensal

et al., 2006). Product innovation enables firms to maintain their position in the market or their relationship with important customers, while process innovation would aim to improve their competitiveness by reducing production costs and increasing the flexibility of their productive apparatus (Raymond and St-Pierre, 2010).

Deeds (2001) provided evidence that high technology ventures create entrepreneurial wealth by investing resources in the development of technological capabilities. Based on the work of Kim (1980) on the development of Korea, Filippetti and Peyrache (2011) define the concept of technological capabilities as "the ability to make effective use of technological knowledge in efforts to assimilate, use, adapt, and change existing technology". Technological capability measures the extent to which the organisation is proficient in the use of advanced technologies and systems. At the firm-level, technological capabilities are defined as the knowledge, competences, and skills that the firm needs to acquire, adapt, improve in order to create technology (Filippetti and Peyrache, 2011). Raymond and St-Pierre (2010) argued that the firm's strategic capabilities can be leveraged for the purposes of innovation.

Knight (2001) defines technology acquisition as the efforts by management to acquire technologies that will augment the firm's ability to compete in international markets, via the creation of superior products and/or processes. Improved technology is widely regarded as a critical, fundamental lever for allowing firms to innovate and respond to changing conditions in their external. Technology acquisition that allows the firm to compete more effectively, increase operational efficiency, or launch products that better satisfy customer needs can have a favourable effect on market share and overall performance (Knight, 2001).

Based on the above, technology capability in this study is viewed from two paradigms or perspectives: the first paradigms views technology as a firm's skill or competence necessary to bring about innovative processes; and the second paradigms looks technology as a resource acquired and available to the firm from which innovative products or processes can be produced. Accordingly, this study refers to two dimensions of technology: technology distinctiveness and technology acquisition.

Technology capability within a firm is an important determinant of innovation and performance (Raymond and St-Pierre, 2010). According to Raymond and St-Pierre (2010) technological capability forms part of a firm's strategic capabilities and should be coherent with the firm's strategy, business model, and technological choice in order to improve performance. Additionally, in order to be successful, a venture's technology strategy should be customized to match the conditions of its external environment (Zahra and Garvis, 2000). Technology is a strategic asset and therefore, the organisation's ability to manage and exploit technology can be considered as a core competency (Erensal et al., 2006).

According to Knight (2001), international entrepreneurial orientation tends to promote the development of a strategic competencies such as technology acquisition (Knight, 2001). It has been argued that entrepreneurial orientation should be instrumental into the development and enactment of organisational routines. Contrary to Knight (2001) 's results, Urban (2010) found no significant correlations between EO and technology orientation among Johannesburg-based firms. This perhaps emphasises the challenge for firms in emerging economies to adopt technology and act entrepreneurially.

Urban et al. (2011) states from research that a firm's use of technology and innovation to achieve its objectives such as maximising profits, gaining market share, creating niche markets or adding value to shareholders can be used as a basis of evaluating firm performance. Using a sample of a sample of North American semiconductor firms, Leiblein and Reuer (2004) provided evidence that the influence of technological capabilities and international alliances differs across entrepreneurial and established firms. The researchers argued that these differences are due to the dissimilar strategies and resource characteristics of entrepreneurial versus established firms (Leiblein and Reuer, 2004).The findings of a study conducted by Raymond and St-Pierre (2010) among manufacturing SMEs indicated that entrepreneurial SMEs that possesed technological capabilities and were leaders in R&D and product innovation.

An examination of major technological breakthroughs revealed that an overwhelming proportion was contributed by independent inventors and small newly founded firms rather than major firms (Urban et al., 2011). SMEs capability to invest in R&D and to

assimilate advanced technologies plays a significant role in their innovativeness (Raymond and St-Pierre, 2010).

In a study involving new high-technology firms participating in an Israeli technology incubator program, Gimmon and Levie (2010) found that although the founder's management expertise attracted external investment, general technological expertise did not. Erensal et al. (2006) found that product and process technologies alone will not provide competitive advantages; it is the concept of management of technology that provides a balanced and integrative approach to deal with complex investment decisions on technology. The concept of the management of technology emerges to be more important than both the product technology and the process technology.

Other researchers proposed that innovation and firms' capacity to innovate can be associated with the capacity to combine and exchange knowledge resources (Molina-Morales and Martínez-Fernández, 2010). Empirical evidence from a study of high-technology firms indicates that technological capabilities and the formation of international collaborative linkages are jointly associated with entrepreneurial firms' abilities to build a foreign sales base (Leiblein and Reuer, 2004; Raymond and St-Pierre, 2010). In their study focusing on internal technological capabilities among high-technology new firms (HTNFs), Haeussler et al. (2010) found that the degree of specialization of these capabilities significantly influences the contribution of strategic alliances to their new product development.

Knight (2001) found that although R&D may be costly and can decrease the short term profitability of foreign ventures, R&D is critical to the pursuit of foreign business to the extent it allows firms to address the specific needs of foreign customers. Companies may need to invest in R&D to upgrade and accelerate their innovative capabilities. Raymond and St-Pierre (2010) stated that the firm's success rests in its ability to create distinctive capabilities such as research and development (R&D), networking and technology. Through cooperation with outside experts for the supply of peripheral resources, firms may derive the benefits such as cost reduction, improved quality and flexibility. Inter-firm capabilities that span organisational boundaries may achieves the dual role by compensating the for lack of internal resources through (1) generation of

new knowledge and (2) assimilation of external knowledge and technology. The acquired technology and knowledge may be used to achieve a competitive advantage (Oviatt and McDougall, 2005; Raymond and St-Pierre, 2010).

Haeussler et al. (2010) showed in study among young high-technology firms that alliance success depends on a firm's alliance experience. Firms with considerable alliance experience in the domain stand to gain more benefits from entering into additional alliances (up to a certain point) than firms with a limited experience. The relationship between the number of strategic alliances and the rate of new product development is said to be inverted U-shaped (Urban et al., 2011). This means that the rate of new product development increases as the number of strategic alliances increases, and then after a certain number of alliances are attained, rate of new product development begins to decrease.

Oviatt and McDougall (2005) contend that inter-firm alliances rely on alternative governance structures and posit that international entrepreneurial firms strongly rely on such arrangements to access resources and power. In the international markets, these collaborations are aimed at reducing uncertainty related to the liability of foreignness and benefiting from economies of scale or diversification (Autio et al., 2000). Such relationships often rely on the principle of a social contract, dependent on the control of behaviour through trust and moral obligation, and reputation. However due to the potential for opportunism (Haeussler et al., 2010), the risks of dissipating competitive advantages, expropriation and imitation, losing opportunities for learning, and becoming a 'hollow corporation' are significant (Oviatt and McDougall, 2005). Haeussler et al. (2010) emphasized the importance of internal technological capabilities in determining potential benefits and risks when joining strategic alliances.

The literature reveals that technological capabilities have always been unevenly distributed across countries reflecting the differences in capabilities among countries. In particular, a few countries from the developed world have accounted for the lion’s share of technological capabilities and responsible for the major production of technology and innovation (Filippetti and Peyrache, 2011). Lee (2011) empirically found that the firms with higher technological intensity had higher export performance

and this explained differences in economic growth across countries (Lee, 2011). Filippetti and Peyrache (2011) confirmed that a process of development and diffusion of technological infrastructure is taking place particularly in the 'catching-up countries', leading to the reduction of the digital divide, reflecting increasing investment in education and research among these countries.

Mastromarco and Ghosh (2009) state that human capital plays a role in economic growth by helping in the adoption of technology from abroad and in creating the appropriate domestic technology. Technology diffusion through external R&D depends on the level of accumulated human capital (Mastromarco and Ghosh, 2009). In the context of emerging markets this raises the debate whether these economies are able to absorb the knowledge and technologies transferred externally, including across the borders, to build up their own innovation capability (Li, 2011).

The process of technology adoption and diffusion does not occur in a spontaneous way (Erensal et al., 2006). Due to the tacit and context-specific nature of technological knowledge, it is not easy for recipient firms to acquire innovation capacity through the mere license or purchase of external technology (Li, 2011). In a study among Chinese high-technology state-owned enterprises Li (2011) looked at the impact of three types of investments for acquiring technological knowledge - In-house R&D; Importing foreign technology; and purchasing domestic technology - on the innovation capabilities of firms. The results showed that domestic technology purchases have a favourable direct impact on innovation, suggesting that firms have less difficulty in absorbing domestic technological knowledge than utilizing foreign technology and that absorptive capacity is contingent upon the source or nature of the external knowledge (Li, 2011). This argument confirms the notion that knowledge spillovers are geographically localized (Mastromarco and Ghosh, 2009).

Scholars of innovation recognise that knowledge flow displays geographic clustering, and therefore innovations developed in remote regions diffuse less widely and/or rapidly (Waguespack and Birnir, 2005; Mastromarco and Ghosh, 2009). On the other hand, scholars have also established that discoveries or inventions combining otherwise disconnected knowledge clusters tend to be more novel, and therefore will

ultimately diffuse more widely and/or rapidly (Waguespack and Birnir, 2005; Mastromarco and Ghosh, 2009).

In an analysis of the citations received by US patents office (patents are a common measure of the technical and economic importance of technology), Waguespack and Birnir (2005) found that cross-state collaborations do indeed result in higher rates of citation relative to new inventions where all inventors are located in the same region. This argument is consolidated by the social network theory which advocates that social distance or weak social ties (as proxied by geographic distance) are the most valuable network positions and result in truly novel ideas and therefore will diffuse more widely and/or rapidly (Burt, 2000; Mastromarco and Ghosh, 2009).

Evaluating regional transformation through technological entrepreneurship, Venkataraman (2004) analysed how in a modern economy, universities and research and development laboratories are the incubators of novel technical ideas; the emergence of high-tech wealth creating regions such Silicon Valley in California, Research Triangle in North Carolina, and Cambridge in the United Kingdom is testimony to the regional promotion of an enterprising spirit (Urban, 2010; Urban et al., 2011). Regional innovative capability is a crucial factor in building regional competitive advantage under the present techno-economic paradigm (Urban et al., 2011).

Entrepreneurship plays an important role in the development and commercialization of new technologies. Technology capability within a firm is an important determinant of innovation and performance. Technology competence and technology acquisition will augment the firm's ability to compete in international markets.

2.4.5 Summary of literature on entrepreneurial capabilities and formulation of hypothesis 2

Obrecht (2004) declared that human capital and social capital are among the most essential capabilities for organisational perfomance. Zahra et al. (2000) suggested that the firm's technological capability is critical to successful internationalisation. Bojica and Fuentes (2011) maintained that market and technological knowledge represent a

necessary condition for identification and exploitation of opportunities and therefore play an important role in sustaining entrepreneurial activities. Similarly, other researchers in the literature of international entrepreneurship have asserted that knowledge-based, social-based, and technological capabilities are important for successful international expansion (Autio et al., 2000; Deeds, 2001; Zhou, 2007; Brennan and Garvey, 2009). Entrepreneurial capabilities are viewed as a broader range of abilities needed to initiate appropriate action in specific organisational situations and reflect the capacity to initiate and sustain an entrepreneurial dynamism throughout the organisation (Obrecht, 2004).

Leiblein and Reuer (2004) marked the need for theoretical literature to investigate the specific capabilities that lead to successful internationalisation. Based on theoretical literature, the study focuses at a family of entrepreneurial capabilities, which can be classified into social capital, human capital, and technology (Autio et al., 2000; Deeds, 2001; Obrecht, 2004; Zhou, 2007; Camisón and Villar-López, 2010).

Pangarkar (2008) stated, based on the work of prior researchers, that entrepreneurial firms possesing stronger capabilities will enjoy greater competitive advantage over existing or potential competitors in the foreign markets and hence the better their performance.

These theoretical underpinnings lead to the following hypothesis:

Hypothesis 2: Entrepreneurial capabilities are positively related to international performance.

2.5. The environment

This section of the report relates to both the first and second sub-problems.

Jones and Coviello (2005) emphasise that certain conditions within the firm and environmental factors are necessary to explain internationalisation. Foreign opportunities are tempered by the constraints imposed by the competitive forces that exist in international environments, such as aggressive government intervention, technological changes, and fierce local rivalries all contributing to hostile international environment. Turbulent business environments characterised by rapid and dynamic shifts in markets, the unlimited proliferation of new technologies, and the resultant shrinking product life cycles, force companies to consistently be innovative in order to gain or maintain a competitive edge (Erensal et al., 2006).

Bhagavatula et al. (2010) pointed that different elements of social capital lead to specific benefits depending on a number of aspects, such as the industrial, technological and environmental conditions. Batjargal explored ways of managing hostile environments in transition economies and found that entrepreneurs effectively did this by doing business through personal networks of relationships. Network ties provided resources and information, and help to find clients, suppliers, and investors, who are socially bound (Batjargal, 2007).

Research found that technological capabilities can improve performance within certain environments; however the same choices may lower performance in other environments. In other words, the external environment, can moderate the relationship between a firm's technological choices and its performance (Zahra and Garvis, 2000).

Similarly, Lumpkin and Dess (1996) premised that EO dimensions may vary independently contingent on influences external to the firm. Firms with entrepreneurial orientation can discover and exploit new market and respond to challenges to in the competitive and uncertain environment (Lumpkin and Dess, 1996).

The benefits derived by SMEs from internationalisation may depend on the characteristics of the international business environment (Pangarkar, 2008). As previously stated firm behaviour and characteristics may vary, contingent on influences external to the firm. Firms (managers) can consciously make strategic choices which optimize the characteristics of a given environment.

This study therefore examines the moderator effect of the environment in the relationship between entrepreneurial intensity, entrepreneurial capabilities and international performance. The two sub-dimensions of the environment under study are: environmental hostility and dynamism. These are briefly discussed below:

2.5.1 Environmental hostility

Environmental hostility refers to unfavourable environmental changes, which create threats to a company's mission. Hostility arises from several sources like radical industry change; new legislative requirements placed on an industry, or intensified competition (Zahra and Garvis, 2000; Lumpkin and Dess, 2001; Scheepers et al., 2007).

Zahra and Garvis (2000) found that perceived characteristics of the international environment, in particular when market turbulence is high, firm entrepreneurship can positively affect firm performance. Zahra found that firms that aggressively pursued entrepreneurship behaviour in international environments with higher levels of hostility experienced higher returns (Zahra and Garvis, 2000).

Hostile environments create threats, which may force a company to respond in innovative ways to minimise threats and create opportunities. Those ventures that align their strategic choices with their external environments are better positioned to achieve superior performance. For instance, in hostile environments pioneering firms managed to grow despite operating in price-based competitive environments while charging high prices by limiting product line breath to a small number of product offerings that provided a "tight fit" with market needs (Covin, Slevin and Heeley, 2000; Zahra and Bogner, 2000). In such environments, entrepreneurial firms, more especially firms in high-tech industries, apply their relative agility and flexibility to innovate and take risks (Ibeh, 2003).

On the contrary, firms adopt a conservative strategic posture to achieve better performance in benign environments (i.e. low hostility) (Covin and Slevin, 1989), suggesting a strategic fit between an entrepreneurial strategic posture and the level of hostility in the environment. Benign environments are generally thought to provide a safe setting for business climate due to their relatively stable industry settings, abundant exploitable opportunities, and sparse competition. Pangarkar (2008) states that environments characterised by factors such as high market demand and/or growth potential, low investment risk, favourable attitude of the host government towards foreign firms and high political and economic stability, provide firms ample opportunities to grow and also to achieve scale economies.

2.5.2 Environmental dynamism

While a number of studies have been done on environmental hostility, very few exist on environmental dynamism. Environmental dynamism can be defined as the perceived instability of an enterprise's market, due to unpredictable and persistent changes in its external environment. These changes result from the entry or exit of competitors, changes in customers' needs, and shifts in technological conditions (Lumpkin and Dess, 2001; Scheepers et al., 2007; Urban, 2010). Dynamism reflects the rate and continuity of change within an industry (Zahra and Bogner, 2000).

Wiklund and Shepherd (2005) and Urban (2010) found that the dynamism of the environment is important moderator of the EO and business performance. Dynamic environments create opportunities for companies to act more entrepreneurially (Scheepers et al., 2007). For instance, Zahra and Bogner (2000) found that new product radicality, which means developing and introducing new products ahead of competitors, enhances performance in dynamic environments. Research and development (R&D), however, was not associated with strong short-term performance. (Zahra and Bogner, 2000) - It may take some time for a company to realise the benefits of investing in R&D.

Zahra and Bogner (2000) suggested that dynamism should encourage firms to copyright or patent their innovations to safeguard them against abuses by rivals. The

researchers found that in a dynamic environment, copyrights and other means of intellectual property protection did not enhance performance. They argued that the release of such information into the market rather facilitates the diffusion of the knowledge to rivals.

2.5.3 Summary of literature review on the environmental factors and formulation of hypothesis 3 and 4

The environment can either have a negative or a positive impact on firm performance. Environmental factors are necessary to explain internationalisation. Foreign opportunities are tempered by the constraints imposed by the competitive forces that exist in international environments. The external environment can moderate the relationship between a firm behaviour and its performance. Similarly external environment can moderate the relationship between a firm's internal capabilities and its performance.

Hostile environments create threats, which may force a company to respond in innovative ways to minimise threats and create opportunities. On the contrary, benign environments provide a safe business climate and firms adopt a conservative strategic posture to achieve better results. Wiklund and Shepherd (2005) found that the dynamism of the environment moderates the relationship between entrepreneurial behaviour and business performance. Under conditions of environmental dynamism firms act entrepreneurially to create opportunities (Scheepers et al., 2007).

These arguments inform the formulation of the following hypotheses:

Hypothesis 3: The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics.

Hypothesis 4: The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics.

2.6. Conclusion of Literature Review

The literature reviewed the concept of entrepreneurial intensity which is conceptualised to capture both the degree entrepreneurship and frequency of entrepreneurship within a given organisation. The degree of entrepreneurship, also known as entrepreneurial orientation (EO) refers to the extent to which events occurring within a firm are innovative, risk-taking, and proactive (Morris and Sexton, 1996).The frequency of entrepreneurship refers to the number of such (innovative, risky, and proactive) events (Morris et al., 2008). Several studies in entrepreneurship have attempted to explain performance by investigating the relationship between entrepreneurship and firm performance. Given that research in international entrepreneurship tends to mirror empirical developments in entrepreneurship research, it is suggested that the relationship should be investigated among international firms.

The literature further reviewed specific entrepreneurial capabilities that lead to successful internationalisation. These are classified into social capital, human capital, and technology (Autio et al., 2000; Deeds, 2001; Obrecht, 2004; Zhou, 2007; Camisón and Villar-López, 2010). Based on the literature, it can be concluded that entrepreneurial firms possesing stronger capabilities will enjoy greater competitive advantage over existing or potential competitors in the foreign markets and hence the better their performance.

The literature review pointed that certain conditions within the environment explain internationalisation. In particular, the external environment can moderate the relationship between a firm's technological choices and its performance. The environmental factors reviewed in this chapter are environmental hostility and dynamism.

The following hypotheses were formulated by drawing on the emerging body of knowledge. Given the multi-level dimensionality of the constructs, instead of numerous hypotheses, the study formulates high-level hypotheses termed here as 1st order Hypotheses which allow for general explanations using the main constructs. In

Chapter 4 the hypothesis are restated including the lower level sub-hypotheses that make up the hypotheses stated below.

1st order Hypotheses

2.6.1 Hypothesis 1:

Entrepreneurial intensity is positively related to international performance

2.6.2 Hypothesis 2:

Entrepreneurial capabilities are positively related to international performance

2.6.3 Hypothesis 3:

The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics

2.6.4 Hypothesis 4:

The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics

2.6.5 The theoretical framework

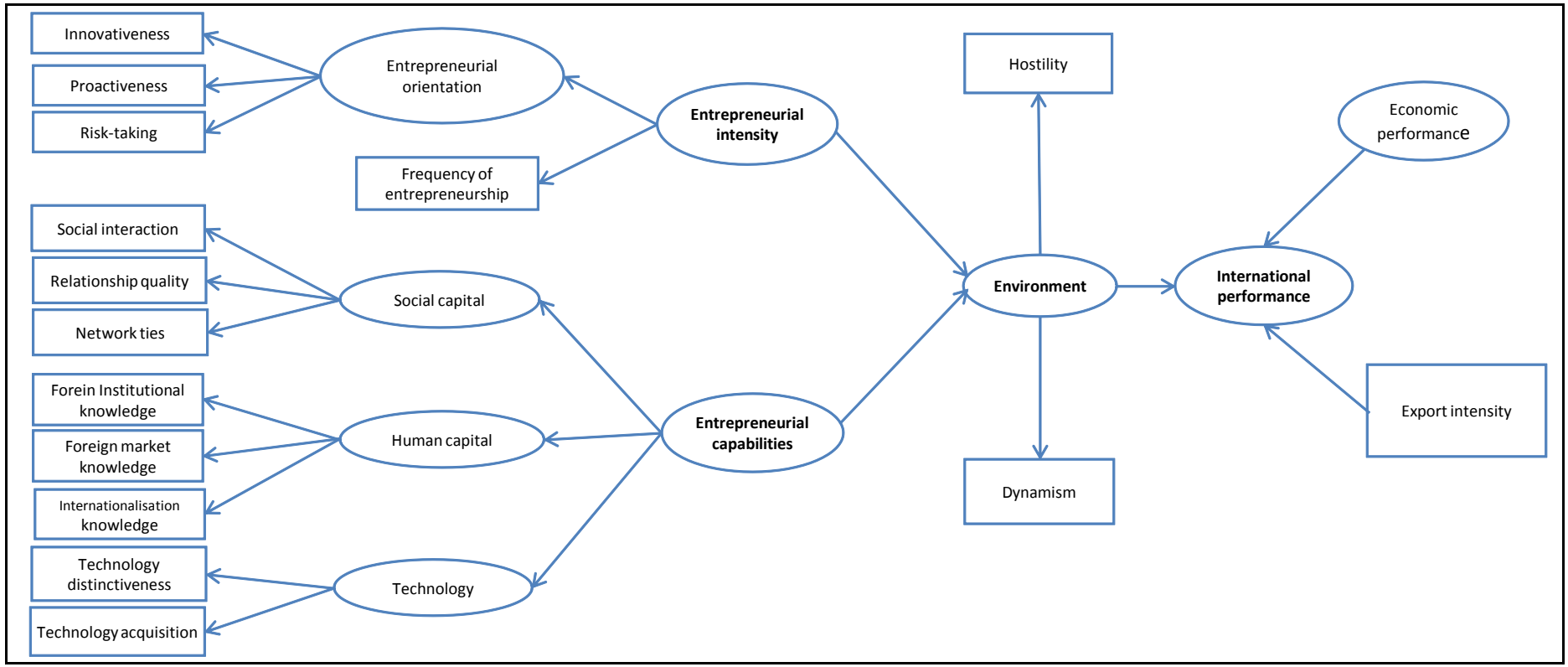
Figure 5 shows the theoretical framework model of the study. The model comprises four sets of constructs and is briefly explained as follows:

(1) The entrepreneurial intensity construct, comprising of two main dimensions degree and frequency of entrepreneurship. The degree of entrepreneurship dimension/ entrepreneurial orientation (EO) comprises of three sub-dimensions innovativeness, proactiveness, and risk-taking;

(2) The entrepreneurial capabilities construct, comprising of three dimensions, social capital, human capital, and technology. Social capital consists of social interaction, relationship quality, and network ties. Human capital comprises of foreign institutional knowledge (FIK), foreign business knowledge (FBK), and internationalisation knowledge. The technology dimension comprises of technology distinctiveness and technology acquisition.

(3) The outcome variable, namely international performance comprises of 9 measures, which are grouped into two categories: economic performance and international intensity. Economic performance comprises of export profitability, overall profitability, export market share, employee growth, foreign sales growth, and exports market share growth. International intensity comprises of degree of internationalisation (export intensity), scope of internationalisation, and speed of internationalisation;

(4) The environmental variables posited to moderate the relationship between entrepreneurial intensity-performance and entrepreneurial capabilities-performance. The composites of the environment are two variables, namely environmental hostility and environmental dynamism.



* According to the conventions of SEM, latent variables or constructs are shown as ovals, while measurement variables are shown as rectangles.

Figure 5: The theoretical framework model of the study

CHAPTER 3: RESEARCH METHODOLOGY

Methodology refers to the philosophical rationale and/or justification for the approach to research and the use of specific data collection, sampling and analysis tools. This section describes the methodology that was followed to test the hypotheses that were put forward to address the sub-problems presented in the previous chapters.

3.1 Research methodology /paradigm

The study was quantitative in nature. Quantitative research methods are those in which the observed data exist in a numerical form. Quantitative research (also known as empirical research) is a means for testing objective theories by examining the relationship among variables (Creswell, 2008). The scientific approach involves formulating a problem, developing a hypothesis, testing it and drawing conclusions.

The research approach used in this study is deductive. A deductive approach describes the situation whereby the researcher, on the basis of what is known in a particular domain and the theoretical considerations in relation to that field, deduces a hypothesis (or hypotheses) that is/are subjected to empirical scrutiny (Kock, 2007).

The deductive approach progresses in the following steps (Kock, 2007):

1. Hypotheses are deduced from literature review
2. The hypotheses are operationalised to enable the variables to be measured quantitatively
3. Data is collected
4. The operational hypotheses are subjected to empirical scrutiny
5. The outcome of the inquiry is examined with the application of statistical techniques
6. The theory is verified or modified if necessary

As stated already, quantitative or empirical research is concerned with establishing the relationship between variables. This research study is based on the proposition that

relationships do exist between the constructs/or variables: entrepreneurial intensity (EI), entrepreneurial capabilities (EC), the environment characteristics, and international performance. The central research problem of this study was to examine the relationship between entrepreneurial intensity, entrepreneurial capabilities, and international performance among South African exporting firms and the moderating effect of the environmental characteristics on these relationships.

Research traditions dictate that hypotheses must be stated precisely to facilitate statistical testing. The arising hypotheses have been summarised in Section 2.6.1 to Section 2.6.4. For completion, the hypotheses are re-stated here:

H1: Entrepreneurial intensity is positively related to international performance

H2: Entrepreneurial capability is positively related to international performance

H3: The relationship between entrepreneurial intensity and international performance is moderated by environmental hostility and dynamism

H4: The relationship between entrepreneurial capability and international performance is moderated by environmental hostility and dynamism

The hypotheses have been framed as research hypotheses rather than as statistical null and alternative hypotheses. As such, the research seeks to obtain support for them. Later in Chapter 4 the research uses correlations and regression analysis to test statistical null hypotheses and seeks to reject them so as to provide support for the research hypotheses.

The constructs in the hypothesis statements have 3 levels that differ in their levels of abstraction (first order, second order and third level). The 3 levels of measurement for the constructs are achieved by taking summative measures across subscales. For example, EI is a level 1 construct and it is measured by considering jointly the subscales for EO and frequency of entrepreneurship, which are both level 2. EO is measured by jointly considering all the items measuring the level 3 dimensions – innovativeness, proactiveness, and risk-taking. Frequency of entrepreneurship is measured by taking

directly the summative measures of its items. Table 1 shows the order structure of the constructs as discussed.

Table 1: Levels of constructs

Variable type	Level 1 construct	Level 2 construct	Level 3 construct
Indepenent variable (IV)	Entrepreneurial intensity	Frequency of entrepreneurship	
		Degree of entrepreneurship/ Entrepreneurial orientation	Innovativeness Proactiveness Risk-taking
Indepenent variable (IV)	Entrepreneurial capabilities	Social capital	Social interaction Relationship quality Network ties
		Human capital	Foreign institutional knowledge Foreign business knowledge Internationalisation knowledge
		Technology	Technology distinctiveness Technology acquisition
Depenent variable (IV)	International performance	Economic performance	Export profitability Overall profitability Export market share Employee growth Foreign sales growth Exports market share growth.
		International intensity	Degree of internationalisation Scope of internationalisation Speed of internationalisation
Moderator	Environment	Environmental hostility	
		Environmental dynamism	
Control	Company Size		
	Company Age		
	Industry	Industry type	
		Industry technological intensity	

The measurement variables considered in empirical research may be categorised as either dependent or independent variables. The independent variable(s) is/are the variable(s) that is/are influencing the outcome of the other variable. The dependent variable is the variable under prediction, and it is also called the outcome variable. Thus the researcher is interested in determining the impact of the changes in the independent variable upon the dependent variable[1].

Furthermore, the relationship between the independent and dependent variable may change depending on the levels of another variable, the moderator. These classifications of the main variable types have been mapped in Table 1.

[1]The model doesn't posit causality. Plain relationships do not imply causal relationships and the research does not imply cause (third variable problem - it is possible that another variable is causing the relation; directionality problem.

It is important to note that the construct of environmental has been coined by the researcher and constructed to reflect the constructs of hostility and dynamism. These two constructs are considered separately as second-order level constructs as there is no theoretical basis for combining them into the higher order construct "Environment". In Chapter two, the said relationships between our constructs for the study have been depicted in the model in Figure 5 section 2.6.5.

3.2 Research Design

The research strategy used was an online web-based survey. Survey methods gather primary data through the direct questioning of the respondent. Online surveys are very effective for collecting data from large samples because they are automated, cheaper and faster, and can reach geographically dispersed target population (Wegner, 2007). Online surveys still enjoy perceived anonymity, although there are growing concerns about privacy.

The primary drawback experienced in this research is that there is a lack of comprehensive sampling frames, i.e. e-mail listings may be outdated or may not be exclusive to specific user groups. Secondly, the recipients tend to distrust unsolicited emails and may simply not respond or even threaten.

In order to maximise participation in the self-administered survey, effort was made to ensure that survey was easy to read. Furthermore, an official ethics letter from Wits Business School (See APPENDIX A, Ethics letter) was attached to assure anonymity, confidentiality and good ethical treatment of the participants.

3.3 Population and sample

3.3.1 Population

The research population comprised of South African firms of any size that are involved in export of goods, products, or services to any cross-border destination in the world and in any industry. The Department of Trade and Industry (DTI) as well as Statistics South Africa (Stats SA) could not provide information on the population of SA exporting firms, and further attempts with other sources did not yield any results. Therefore population size of SA exporting firms is unknown.

3.3.2 Sample and sampling method

The units of analysis in the sampling frame are exporting firms in South Africa (SA). The survey questionnaires were targeted at senior or executive management who are knowledgeable about export practices and performance within their firms. This firm level approach is consistent with entrepreneurship studies among firms whereby the individual entrepreneur is regarded as a firm; whereby at the firm level, mangers' self-perception of a firm's strategic orientation and different aspects of the firm represents firm behaviour (Urban and Oosthuizen, 2009). The research uses a sample of South African firms and focuses on firm-level behavioural practices among the responding firms and relates these to self reported (perceptual) measures.

The Department of Trade and Industry does not have an explicit database of South African exporting firms. To the researcher's knowledge there is no single database in South Africa listing exporters. The sample frame was therefore constructed as a convenience sample using a number of sources which follows:

- Members of export councils listed on the DTI website. Each export council was requested to circulate the link to the questionnaire to their member firms via email. Some of the councils refused to pass the survey link to their member firms; in these cases, the researcher attempted to contact the firms through contacts obtained from the companies' websites.

- A database obtained from the Department of Agriculture, Forestry and Fisheries
- A database purchased from an online database re-seller. The database listed firms in spread across a variety of industries

The firms on the databases were cross matched to ensure there were no duplicates. Our final list of responses included only firms that met the criteria for our sample frame. Although the export councils listed may be a wide variety, the researcher does not claim them to be representative of various industry sectors; furthermore, it is acknowledged that membership to specific councils might have been induced by specific interests (e.g. firms seeking promotion opportunities) and therefore there might exist the potential of common method bias. Common method bias refers to variance that is attributed to the measurement method rather than the constructs of interest.

In all it is estimated that up to 1500 emails were sent out. The researcher anticipated that at least 150 questionnaire responses, representing a 10% anticipated response rate. A minimum sample size of questionnaires n = 150 was targeted for the purposes of quantitative analysis. For those potential respondents whose email addresses were from the acquired databases, weekly reminders were sent. For those that relied on the export councils, emails were sent out periodically to the councils to remind their members to participate, however it could not be verified whether this was done; thus non-response bias is likely to exist.

Inevitably, majority of the emails did not reach their intended recipients; this may be due to wrong email addresses; strict firewall policies among the firms sampled; and email address changes due to labour mobility.

The researcher therefore makes provision that sample may not be representative of the population of exporting firms in South Africa and this should be borne in mind when interpreting the results.

Of the +- 1500 emailed links to the survey questionnaires, 181 responses were received over a period of 12 weeks and 33 of them were incomplete. The remaining

148 complete questionnaires were available for the quantitative analysis, representing a useable response rate of 10%. This is a reasonable response rate, given that a number of emails did not reach the recipients presumably due staff mobility, error in capturing email addresses, and/or strict email policy among the companies surveyed. Preliminary analyses were conducted to provide information about the characteristics of sample firms.

Preliminary profile analysis of the data revealed that firms with export intensity (export sales as a percentage of total sales) of less than 10% and exporting to fewer than 5 countries had significant differences in economic performance compared to the rest of the firms. This implied a difference in firm commitment to exporting. These firms could not be considered as trading internationally to any material extent. Therefore, firms with export intensity of less than 10% and exported to less than 5 countries were excluded from the sample. Given the context of the internationalising firms from a less developed country (South Africa), in line with Zhou (2007), the researcher adjusted the percentage of foreign sales defined for firms for the advanced countries (10 or 20%). The less restrictive cut-off of 10% which is in line with previous studies (Zhou, 2007) was adopted. Hence, in this study, a firm is considered internationalized when their foreign sales represents at-least 10% of total sales or exports to more than five countries.

The sample size of the refined final sample presented for further analysis was 117.

3.4 The research instrument

Consistent with the chosen research design, a structured questionnaire was used to conduct the survey. The questionnaire Appendix B (Actual research instrument) was constructed in order to assess top level management perspectives about their firm's practices in relation to the constructs. The preamble to the questionnaire made clear to the respondents the purpose of the survey and assured confidentiality and obedience to research ethics.

The survey instrument was built based on literature pertaining to the constructs. The scale comprised of multi-item sub-scales for the constructs as well as a demographic section. The instrument consisted of seven sections, A to G, as illustrated in Table 2.

Section A pertains to the demography questions. The items related to the control variables as well as internationalisation performance items were grouped into this section. The included questions were found to relate to the demographic questions and it was logical to group them together.

Section B had two sub-scales for the entrepreneurial intensity construct, which are frequency of entrepreneurship and entrepreneurial orientation (EO). Section C, D, and E corresponds to the component scales for the entrepreneurial capabilities construct, which are Human capital, Social capital, and Technology, respectively. Entrepreneurial intensity is a level 1 construct. Entrepreneurial orientation (EO) and frequency of entrepreneurship dimensions are level 2 constructs and together they make up the entrepreneurial intensity construct. EO has three dimensions – innovativeness, proactiveness, and risk-taking.

Section F had two component sub-scales for the environment construct, which are environmental hostility and environmental dynamism. The environment is a **level 1** construct, comprising of two **level 2** dimensions – environmental hostility (questions 53 – 58) and environmental dynamism (questions 59 to 63).

Section G comprised the remainder of the international performance items which were not been included in Section A, namely the economic performance subscale. Performance is a level 1 construct, comprising of two level 2 dimensions – economic performance and international intensity. Economic performance is divided into two level 3 measures - financial performance (questions 64, 65, 68, and 69) and growth (questions 66, and 67). Economic performance was a perceptive measure of company performance for the past three years – the supposition was that performance over three years is broad enough time-space to account for seasonal and cyclical variations in business practices and performance.

Following the frequently used approach to assess international performance in the literature, a perceptual measure of a self-report was used. In the questionnaire, respondents were asked to rate their satisfaction with the three measuring items (export profitability, overall profitability, and market share) over the past three years. The measure was obtained for each item on a seven-point scale, ranging from 1 = very dissatisfied, to 7 = very satisfied (Zhou, 2007). The composite variable, financial performance was measured as the average of the three observable indicators (Pangarkar, 2008; Camisón and Villar-López, 2010).

Similarly, the respondents were asked to rate their satisfaction with the three measuring items on growth (employee growth, foreign sales growth, and exports market share growth) over the past three years. The measure was obtained for each item on a seven-point scale, ranging from 1 = very dissatisfied, to 7 = very satisfied (Zhou, 2007). The composite variable, growth was measured as the average of the three indicators that are observable (Pangarkar, 2008; Camisón and Villar-López, 2010).

International intensity comprises of three level 3 measures of internationalisation - namely speed (question 7), scope (question 8), and export intensity (question 9).

The questions in section B to G were measured on a one directional 7-point Likert-type scale, with 1 being the least impression and 7 the most (e.g. 1 = strongly disagree - 7 =

strongly agree; or 1 = very inactive - 7 very active; or 1 = much worse – 7 = much better). Using similar scale anchors or values ("extremely" vs. "somewhat," "always" vs. "never," and "strongly agree" vs. "strongly disagree") makes it easier for the respondents to complete the questionnaire (Podsakoff, MacKenzie, Lee and Podsakoff, 2003).The advantage of a 7-point scale is that it allows more variability among respondents. Question 49 and 50 were a duplicate, and hence item 50 was deleted in the analysis phase.

As already indicated, the main constructs - entrepreneurial intensity, entrepreneurial capabilities, environment, and performance - are high-level constructs with their own sub-scales. The sub-scales used in constructing the instrument have been adapted from existing items used and validated in prior studies as illustrated in Table 2.

Level 1 is the highest level of measurement – for this level all the items measuring the level 2 dimensions were considered jointly. Similarly the level 2 construct is the second level of measurement in terms of conceptual complexity for this level all the items measuring the level 3 dimensions were considered jointly. This breakdown is illustrated in Table 2 below. For example, EI is a level 1 construct and it is measured by considering jointly the items for EO and frequency of entrepreneurship. EO is measured by jointly considering all the items measuring the level 3 dimensions – innovativeness, proactiveness, and risk-taking.

Table 2: Sections of the survey instrument

Section	Sub-sections	Number of items	Sources	Prior Sources
A - Demographic Information	Mixed with demography questions, control variables, and internationalization performance	9		
Sub-total		**9**		
B - Intrepreneurial intensity	Frequency of entrepreneurship	4	Scheepers et al. (2007)	(Certo et al., 2009, Green et al., 2008, Hansen et al., 2011, Knight, 2001, Heilbrunn, 2008, Javalgi and Todd, 2010, Keh et al., 2007, Kuratko et al., 2007, Li et al., 2009, Patel and D'Souza, 2009, Scheepers et al., 2007, Racela, 2010, Zhou, 2007)
	Degree of entrepreneurship/ Entrepreneurial orientaion (EO)	14	Zhou (2007)	(Certo et al., 2009, Green et al., 2008, Hansen et al., 2011, Knight, 2001, Heilbrunn, 2008, Javalgi and Todd, 2010, Keh et al., 2007, Kuratko et al., 2007, Li et al., 2009, Patel and D'Souza, 2009, Scheepers et al., 2007, Racela, 2010, Zhou, 2007)
Sub-total		**18**		
Intrepreneurial capabilities	C - Social capital	7	(Autio et al., 2011, Agndal et al., 2008, Sullivan and Marvel, 2011, Yli-Renko et al., 2001)	(Bauernschuster et al., 2010, Bhagavatula et al., 2010, Lindstrand et al., 2011, Molina-Morales and Martínez-Fernández, 2010, Presutti et al., 2007, Sullivan and Marvel, 2011, Walter et al., 2006, Yli-Renko et al., 2001, Yli-Renko et al., 2002)
	D - Human capital	11	Zhou (2007)	(Autio et al., 2011, Batjargal, 2007, Bhagavatula et al., 2010, Gimmon and Levie, 2010, Javalgi and Todd, 2010, Stoian et al., 2011, Unger et al., 2009, Weerawardena et al., 2007, , Yli-Renko et al., 2002)
	E -Technology	7	(Covin et al., 2000, Covin et al., 2001, Sullivan and Marvel, 2011, Yli-Renko et al., 2001)	(Furu, 2000, Haeussler et al., 2010, Knight, 2001, Leiblein and Reuer, 2004, Raymond and St-Pierre, 2010, Sullivan and Marvel, 2011, Urban, 2010, Yli-Renko et al., 2001, Yli-Renko et al., 2002)
Sub-total		**25**		
F - Environmental	Environmental hostility	6	(Balabanis and Katsikea, 2003, Covin et al., 1998, Green et al., 2008, Urban, 2010, Zahra and Bogner, 2000, Patel and D'Souza, 2009)	(Balabanis and Katsikea, 2003, Covin et al., 1997, Covin and Slevin, 1998, Covin et al., 2000, Covin et al., 2001, Green et al., 2008, Urban, 2010, Zahra and Bogner, 2000, Patel and D'Souza, 2009)
	Environmental dynamism	4	(Green et al., 2008, Urban, 2010, Zahra and Bogner, 2000, Patel and D'Souza, 2009)	(Covin et al., 1997, Covin and Slevin, 1998, Covin et al., 2000, Covin et al., 2001, Green et al., 2008, Urban, 2010, Zahra and Bogner, 2000, Patel and D'Souza, 2009)
Sub-total		**10**		
G -Performance	Economic performance	6	(Knight, 2001, 2002, Kuivalainen et al., 2007, Li et al., 2009, Zhou, 2007, Rose and Shoham)	(Javalgi and Todd, 2010, Knight, 2001, Kuivalainen et al., 2007, Li et al., 2009, Rose and Shoham, 2002, Zhou, 2007)
	* Internationalisation performance		(Javalgi and Todd, 2010, Knight, 2001, Kuivalainen et al., 2007, Rose and Shoham, 2002, Zhou, 2007)	(Javalgi and Todd, 2010, Knight, 2001, Kuivalainen et al., 2007, Li et al., 2009, Rose and Shoham, 2002, Zhou, 2007)
Control	* Firm size		(Haahti et al., 2005, Javalgi and Todd, 2010, Wiklund and Shepherd, 2005, Zahra and Garvis, 2000, Zhou, 2007)	(Balabanis and Katsikea, 2003, Covin and Slevin, 1998, Haahti et al., 2005, Javalgi and Todd, 2010, Presutti et al., 2007, Raymond and St-Pierre, 2010, Wiklund and Shepherd, 2005, Yli-Renko et al., 2002, Zahra and Garvis, 2000, Zhou, 2007)
	* Firm age		(Balabanis and Katsikea, 2003, Haahti et al., 2005, Wiklund and Shepherd, 2005, Yli-Renko et al., 2002, Zahra and Garvis, 2000)	(Balabanis and Katsikea, 2003, Covin and Slevin, 1998, Haahti et al., 2005, Javalgi and Todd, 2010, Presutti et al., 2007, Raymond and St-Pierre, 2010, Wiklund and Shepherd, 2005, Yli-Renko et al., 2002, Zahra and Garvis, 2000, Zhou, 2007)
	* Industry		(Haahti et al., 2005, Javalgi and Todd, 2010, Wiklund and Shepherd, 2005, Yli-Renko et al., 2002, Zahra and Garvis, 2000, Zhou, 2007)	(Balabanis and Katsikea, 2003, Covin and Slevin, 1998, Haahti et al., 2005, Javalgi and Todd, 2010, Presutti et al., 2007, Raymond and St-Pierre, 2010, Wiklund and Shepherd, 2005, Yli-Renko et al., 2002, Zahra and Garvis, 2000, Zhou, 2007)
Sub-total		**6**		
Total number of items		**68**		

Although the questionnaire mainly used the 7-point Likert-type scale, which may lead to the problem of method biases (Podsakoff et al., 2003), other scales of measurement in the questionnaire were also used e.g. for speed of internationalisation, export intensity etc.. (Podsakoff et al., 2003) argued that similar scale formats and anchors

may increase the possibility that some of the covariation observed among the constructs examined may be the result of the consistency in the scale properties rather than the content of the items.

3.5 Procedure for data collection

The hypotheses that have been deduced drive the process of gathering data through the selected methods (Kock, 2007). Creswell (2008) describes a survey research as one strategy for enquiry associatedwith quantitative research. This study uses an online survey as a method of collecting data from respondents in the sample frame. Data was collected by means of a self-administered online survey over a period of 12 weeks. The questionnaire link was sent via email to the targeted respondents. The responses were collected through a collector which had been setup on www.surveymonkey.com.

3.6 Data analysis and interpretation

The analytical approach adopted in this study comprised of four main steps is discussed in this sub-section. Statistical significance for the purposes of this research project were assessed at the p-value=0.05 level (i.e. 95% confidence level). The probability (p-value) of 0.05 or smaller indicates that there is a 5% chance that the relationship between two variables occurred by chance alone and the relationship is thus may be considered to be statistically significant.

3.6.1 Regression analysis

This research problem has hypothesised the influence of entrepreneurship variables on the performance of internationalising firms. In order to test the hypothesised relationships, the researcher constructed statistical models in the form of linear regression. **Multiple regression analysis** is a multivariate statistical technique used to analyse the relationship between a single dependent variable and several independent variables (Hair, Black, Babin and Anderson, 2010). The researcher used hierarchical regression analysis to assess the contribution of moderator variables added in sequence to the other predictors present in the model.

Research problems largely resolved through the application of regression analysis fall into either of the following classes: prediction or explanation. Prediction involves the extent to which the independent variables can predict the dependent variable; Explanation examines the regression coefficients (magnitude, sign and statistical significance) for each independent variable and attempts to develop a theoretical reason for the effects of the independent variables (Hair et al., 2010). Our research problem is illustrative of a confirmatory study seeking to test the hypotheses statistically.

The essence of regression analysis is to build a model, comprising of weighted independent variables, the moderator and the dependent variable, with the aim:

- To represent the hypothesised relationships
- To select the model that best predicts the dependent variable

Multiple linear regression models that represent the hypothesised relationships were constructed using the Statistica software package StatSoft, Inc. (2011), STATISTICA (data analysis software system), version 10. www.statsoft.com. The interpretation of the regression model examines the role played by each independent variable in the prediction of the dependent measure (Hair et al., 2010). This study examines, through hierarchical multiple regressions:

1. the individual contribution of the variables to the model;
2. the simultaneous assessment between all the variables and the dependent variable; and
3. The moderation effect of the interaction variables to the above relationships. I.e. the change in the slope of the above stated relationships along all values of the moderator variable

In all cases, regression analyses started by analysing measures of the constructs at the highest level (first order), and then proceeded to regressing the second level performance measures on the second level predictor measures, followed in turn by the third level analyses. For instance, entrepreneurial capabilities comprises three

level2 dimensions, namely human capital, social capital and, technology. Each of the level2 dimensions themselves comprises of level 3 variables which are also analysed. The researcher used this exhaustive method of hypothesis testing to take account of the possibility that combinations of subscales used as single predictors may mask the relations between the individual subscales and the performance measures.

3.6.2 Moderator effects

Moderation refers to the examination of the statistical interaction between two independent variables in predicting a dependent variable. Moderator effects occur when a moderator variable changes the strength of the relationship between one or more independent variables and the dependent variable(Baron and Kenny, 1986). In order to assess the significance of the moderator, the following steps are followed (Hair et al., 2010):

1. Estimate the original (unmoderated) equation
2. Estimate the moderated relationship (original equation plus the moderator variable)
3. Assess the change in R-squared. If the change is statistically significant, then the moderator effect is significant

It is commonly suggested in research that all independent variables that constituted an interaction should be mean-centered term in order to mitigate the potential threat of multi-collinearity. However, Hess (2007) analytically proved that the multi-collinearity problem in the moderated regression remains unchanged by mean-centering. Mean-centering neither changes the computational precision of parameters, the sampling accuracy of main effects, simple effects, interaction effects, nor the R^2 (Hess, 2007). Therefore the independent variables that constitute the interaction term in performing step 2 above were not centred, as this does not solve the potential problem of multi-collinearity.

The discussion on moderation concludes with the presentation and analysis of slopes.

3.6.3 Regression assumptions

The underlying statistical assumptions of normality, linearity, multicollinearity, independence of error terms, and equality of variances (homoscedasticity) must be met before the estimation of the multivariate model.

Linearity refers to the implicit assumption in correlation analysis that the collection of data can be described by a straight line passing through the data array (Cooper and Schindler, 2008). The relationships are examined to identify any possible departure from linearity that may affect the estimation of the strength of the relationship by examining the scatter plots of the variables as well as the residuals of the regressions. In the present research, bivariate scatterplots were used to examine the linear relations between the predictor variables and performance variables.

The scores for each variable in the analysis should be normally distributed to result in valid statistical tests of *F-stats* and *t statistics***. Multivariate normality** refers to the shape of the distribution of the individual variables benchmarked against the *normal distribution*. The researcher assessed normality by looking at the shape of the frequency distributions with superimposed normal probability plots, as well as considering the descriptive statistics of the skewness and kurtosis indices.

Independence of error terms is essential in order to meet the condition of independence of the independent variable. The residual plots are used to identify such occurrences by observing whether the residuals exhibit any pattern (i.e. correlated errors).

Homoscedasticity refers to the assumption that dependent variable(s) exhibit *equal level of variance* across the range of independent variables (Hair et al., 2010). This requirement is essential because it is undesirable to have the dependence relationship concentrated on a limited range of independent values. If the dispersion is unequal across values of independent variables, the relationship is said to be **heteroscedastic** (Hair et al., 2010).

The above described statistical assumptions were performed and remedial steps carried out where necessary to avert flawed analysis. The details are discussed in section 4.4 of Chapter four.

3.6.4 Descriptive statistics

Descriptive statistics of the composite variables will be presented to numerically profile the sample data. For continuous variables, means, standard deviations and variance in the variables were presented and analysed. Frequency distributions were used to describe the categorical demographic characteristics of the respondents. Skewness and Kurtosis indices will be presented.

3.6.5 Exploratory data analysis

Exploratory data analysis (EDA) is about investigating patterns in the collected data in order to guide data analysis or suggest revisions to the initial data analysis plan (Cooper and Schindler, 2008). A range of diagnostic techniques are conducted to facilitate discovery of any observations with particular influences on the results or any possible multivariate relationships among the data. In our exploratory data analysis we evaluate:

1. the presence of outliers in the data
2. international intensity as a measure of performance
3. the control variables (firm age, size and industry)

Outliers are observations with a unique combination of characteristics identifiable as distinctly different from the other observations (Hair et al., 2010). The presence of outliers may affect empirical analysis. The researcher examined the data for potential outliers and decisions on their deletion or retention are discussed in Chapter four.

Section 2.2.2 of the literature review posed the question: What is a suitable measurement of **international performance** of a firm? While there has been widespread use of economic performance measures, Ripollés-Meliá et al. (2007) proposed measuring internationalisation in terms of **international intensity** comprising

of degree; scope; and speed of internationalisation. These measures are examined in the analyses to assess their validity as measures of international performance. Chi square test was used to detect the strength of the relations between the three sets of bivariate relations and the categorical variables.

Control variables are variables introduced to help interpret the relationship between variables (Cooper and Schindler, 2008). Prior empirical research has highlighted the theoretical importance of firm age, size, and industry in their relationship to performance (Yli-Renko et al., 2001; Coviello and Jones, 2004; Javalgi and Todd, 2010). These variables affect the venture's ability to obtain and deploy resources (Zahra and Bogner, 2000). Firm age influences entrepreneurial intensity (Scheepers et al., 2007; Heilbrunn, 2008). For instance, the older the companies the less entrepreneurial they become (Scheepers et al., 2007). Large firms are seen to possess resource slack and capabilities to overcoming foreign market barriers and will have a performance edge over their smaller counter parts.Industry type was included because of the inter industry differences in entrepreneurial activities (Morris et al., 2008), and the technology intensity has an effect on the propensity to export (Serra et al., 2011).

Therefore the study tests for the statistical significance of these factors to evaluate whether the research model should include these factors as control variables to provide added validity to the results.

3.7 Validity and reliability

Measurement error is guaranteed to distort the observed relationships and makes multivariate techniques less powerful, therefore it is imperative for the researcher to improve reliability and validity (Hair et al., 2010).

In order to enhance the reliability of data – this is to eliminate inconsistencies and ambiguity in the wording of the instructions and the items the survey was pre-tested with the help of an expert who reviewed the survey. Secondly, in order to measure the constructs, tried and tested scales obtained from prior studies are used, which have been validated. Thirdly, the researcher used multi-item measures in our scales since

they provide considerable advantages over single-item measures (Pirolo and Presutti, 2010). These steps were taken as pre-cautionary measures to obtain validity and reliability.

The validity and reliability of scales were evaluated at both level 2 and 3 of the constructs. The next three sub-sections discuss the technical ways in which the measuring tool was tested for validity and reliability.

3.7.1 External validity

The external validity of research findings is the data's ability to be generalised across persons, settings, and times (Cooper and Schindler, 2008). The researcher attempted to achieve external validity by sampling respondents from variety of industries operating throughout South Africa. As a requirement for statistical inferences, the researcher also tried to get a high number of respondents (n> 100). However, the ability to make generalisations across the population of SA exporting firms remains limited by the use of convenience sampling methodology.

3.7.2 Internal validity

Construct validity is the extent to which the items in a construct measure what the researcher actually wishes to measure. In general, the measurement scales used were taken from prior studies. Internal validity of the research requires that the constructs measured are valid. In an attempt to enhance construct validity, it is ensured that the operational definitions of the constructs were theoretically grounded.

Construct validity of scales/subscales comprising the research instrument was evaluated using factor analysis with the objective to establish whether the items converged as expected based upon findings of prior researchers. The degree to which the scores on the scale load on a single factor is referred to as convergent validity. The degree to which scores on a scale do not correlate with scores from scales designed to measure different constructs is discriminant validity (Cooper and Schindler, 2008). Before proceeding with the exploratory factor analysis, the researcher tested the

underlying assumptions that sufficient correlations existed among the variables of the analysis using the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity.

Factor analysis using principal component extraction and varimax rotation was used as the factor model as this method is well specified for identifying latent constructs or dimensions. The decision on the number of factors was determined based on the following considerations (Hair et al., 2010):

- The selection of factors with *eigenvalues* greater than 1.0
- A predetermined number of factors based on prior research
- Enough factors to meet a specified percentage (60%) of variance explained
- Combination of the above three criteria were used for validity checks of the data derived factor solution. As recommended for sample sizes greater than 100, *factor loadings* were assessed as follows (Hair et al., 2010): +-.40 are minimally acceptable; +-0.5 or greater is practically significant; and > 1.7 are indicative of a well defined structure.

The anticipated factor structure would also serve as a check that the scores obtained did not comprise mainly common method variance defined by Podsakoff (2003) as variance attributable to the measurement method rather than to the underlying constructs. The presence of common method variance would be expected to obscure the expected factor structure, resulting in a single factor emerging from the exploratory factor analysis (Podsakoff et al., 2003).

3.7.3 Reliability

Reliability is concerned with estimates of the degree to which a measurement is free from random error. A measure is said to be reliable to the degree that it produces consistent results (Cooper and Schindler, 2008). Internal consistency reliability indicates the consistency with which the respondents responded to the questions on the scale. It indicates the degree to which the items in the instrument are

homogeneous and reflect the same underlying construct (Cooper and Schindler, 2008). Reliability of an instrument is a necessary (but not sufficient) condition for validity.

The scales were measured for internal consistency by subjecting the constituent items to a reliability test using *Cronbach's alpha (α)*, *item-to-total* correlation, and *inter-item* correlation (Hair et al., 2010). Cronbach's alpha *(α), the reliability coefficient,* measures the consistency of the entire scale. Inter-item correlation is the correlation among items. As suggested (Hair et al., 2010):

- Generally, If Cronbach's $\alpha > 0.7$ then internal consistency reliability is good although the lower limit of 0.6 is acceptable in exploratory research; if Cronbach's $\alpha < 0.6$ then internal consistency reliability is poor
- Inter-item correlation must exceed 0.30

3.8 Limitations of the study

This study has some inherent limitations:

- The cross-sectional design prevents us from studying causal relationships among our variables. It may take considerable time for the effects of entrepreneurship to materialize (Lumpkin and Dess, 1996). Venkataraman suggested that longitudinal designs are needed in configurational studies (Wiklund and Shepherd, 2005), however this was not possible due to the limited timelines for this study. A longitudinal investigation (measuring entrepreneurial intensity and capabilities at one point, and then performance at some point later) would provide further insights into the dynamic nature entrepreneurial intensity and capabilities and their effect on international performance. Future research might use longitudinal design to draw causal inferences of our model
- The single-country focus might suggest a certain amount of ethnocentrism in the findings (Coviello and Jones, 2004)
- The study is based on self-report data incurring the possibility of common method bias. However, respondents were provided with anonymity and we perceive that sensitive data was not requested. Future studies might use objective measures for firm performance to strengthen the research design
- Only one member of top management per firm was surveyed. It may be possible that another study examining all members of the top management team may yield different outcomes
- The respondents included management at various levels within their firms (Founders, CEOs, executives, export managers, etc). This is a heterogeneous group and different views may exist at different levels on management
- Not all export councils agreed to distribute the questionnaire to their members, and therefore the sample may be biased towards those sectors that received the questionnaires from their council rather than directly from the researcher

- Nonparticipation bias – the lower response rate (+-10%) may have affected the final sample in unknown ways, as the lower the response rate, the greater the sample bias
- Most of the literature reviewed was from developed countries, with a few exceptions from India and China.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results. At the outset, the demographic characteristics of the respondents are described in terms of respondent details, followed by a description of the unit of analysis, i.e., the companies that the responses represent. Thereafter, the measurement aspects of the model are evaluated in terms of their psychometric properties and the distributions of the variables. Finally the model results are presented.

4.2 Sample characteristics

4.2.1 Demographic profile of respondents

Almost all (97%) of respondents were in management positions with a breakdown of directors (30%), managers (29%), executives (26%) and export managers (12%). Few (3%) were assistants or coordinators. Approximately three-quarters (77%) of the respondents had a degree, with 61% holding postgraduate degrees. Almost one in five (18%) had a Certificate/Diploma, while 4% had Matric.

Respondent characteristics are presented as bar charts in Figure 6 and Figure 7.

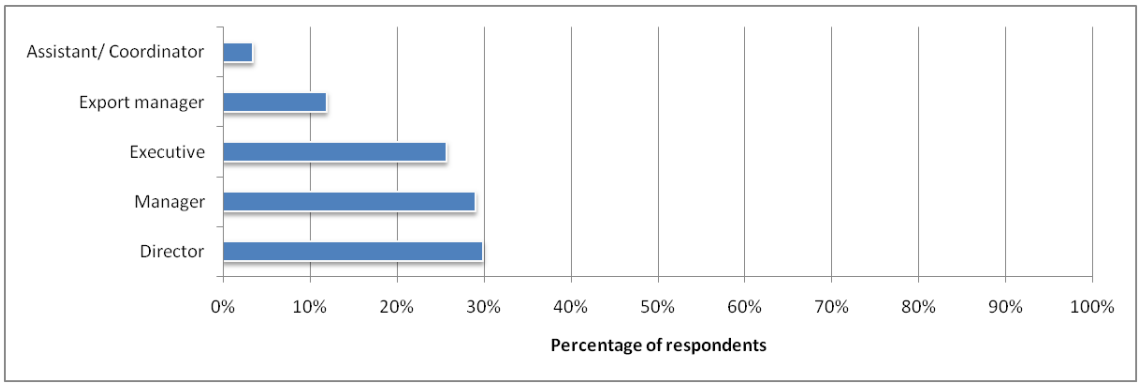


Figure 6: Respondent characteristics: Position in the firm

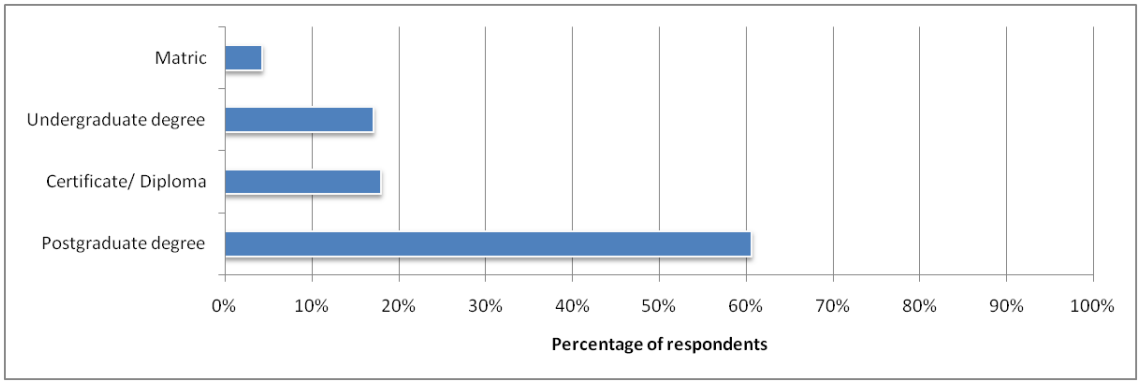


Figure 7: Respondent characteristics: Highest qualification level

4.2.2 Demographic profile of firms

4.2.2.1 Firm size

About half of the firms (51%) firms are large firms (greater than 250 employees); and the rest, are medium (between 50 and 250 employees) and small (up to 50 employees), 23% and 26%, respectively. Figure 8 shows breakdown by company size.

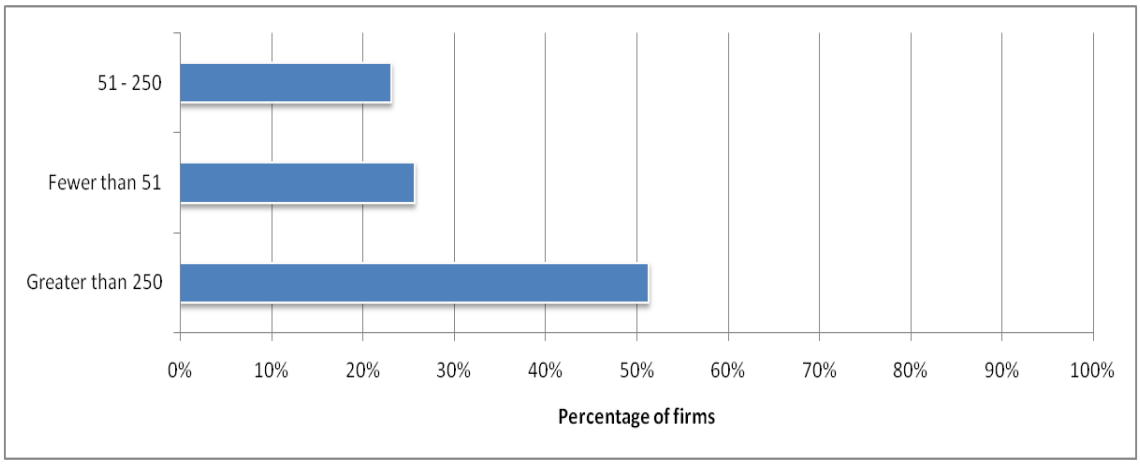


Figure 8: Company characteristics: Size as measured by number of employees

4.2.2.2 Firm age

The majority of firms (40%) were founded between the years 1951 – 1990 and 20% were founded between the years 1991 - 2000. Approximately one in four (26%) of the

firms were founded before 1950, while only 15% were founded after the year 2000. The breakdown by year of founding of the company is shown in Figure 9.

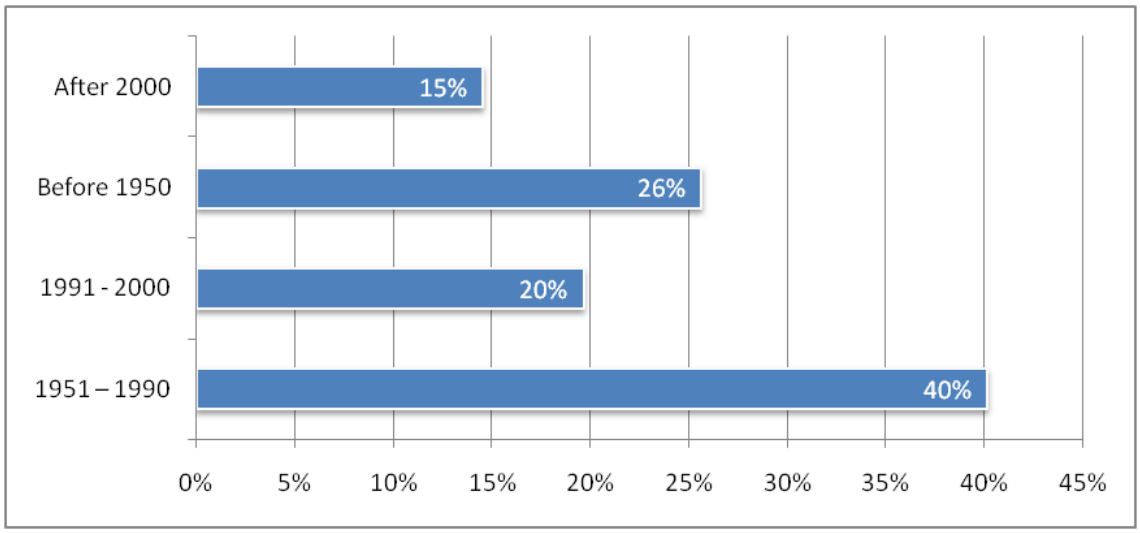


Figure 9: Company characteristics: Age as measured by when firm was founded

4.2.2.3 Firm industry

Almost half of the companies (47%) were in the manufacturing industry. Nearly a quarter (24%) of the firms was in the agricultural industry. Only 9% of the companies were in the retail industry. The rest were spread across all the various industries. Almost two-thirds of the firms (65%) were operating in high-tech industries, while a third (32%) operated in medium tech industries. Only 3% operated in low-tech industries. Firm industry characteristics are presented in Figure 10 and Figure 11.

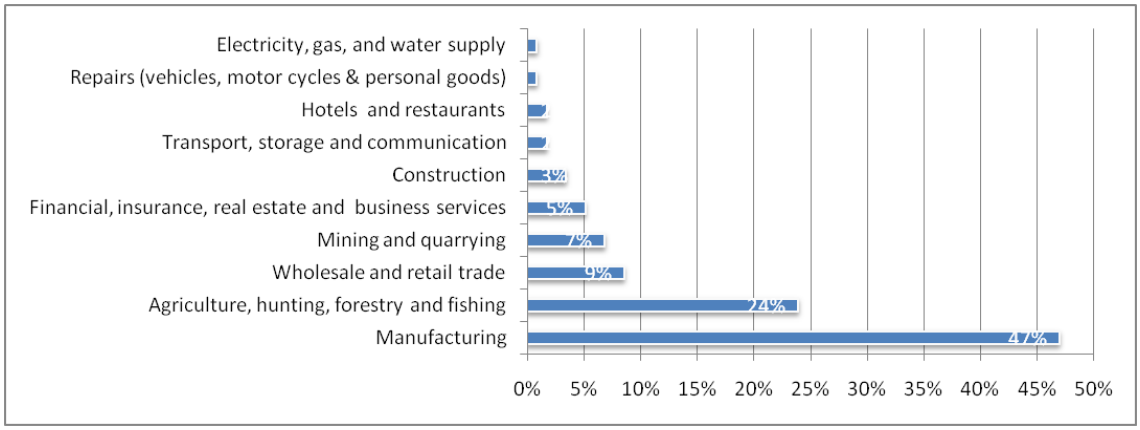


Figure 10: Company characteristics: Industry type

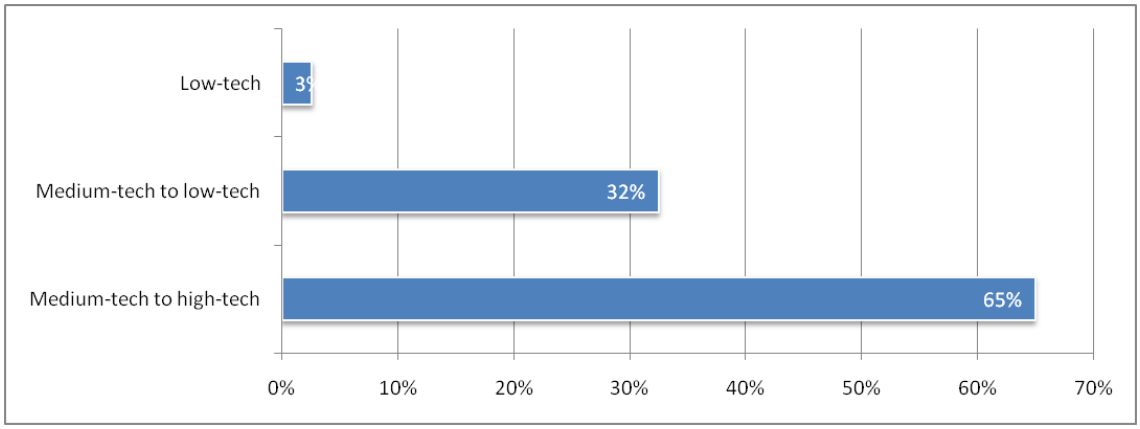


Figure 11: Company characteristics: Technological intensity of industry

4.2.2.4 Speed of internationalisation

About forty percent (38%) of the firms went international within three years of their start-up. Cumulatively, almost 60% (58%) of the firms were internationalised by the age six years and almost three-quarters (74%) were internationalised by the age 10 years. The distribution of speed of entry into international markets is presented in Figure 12.

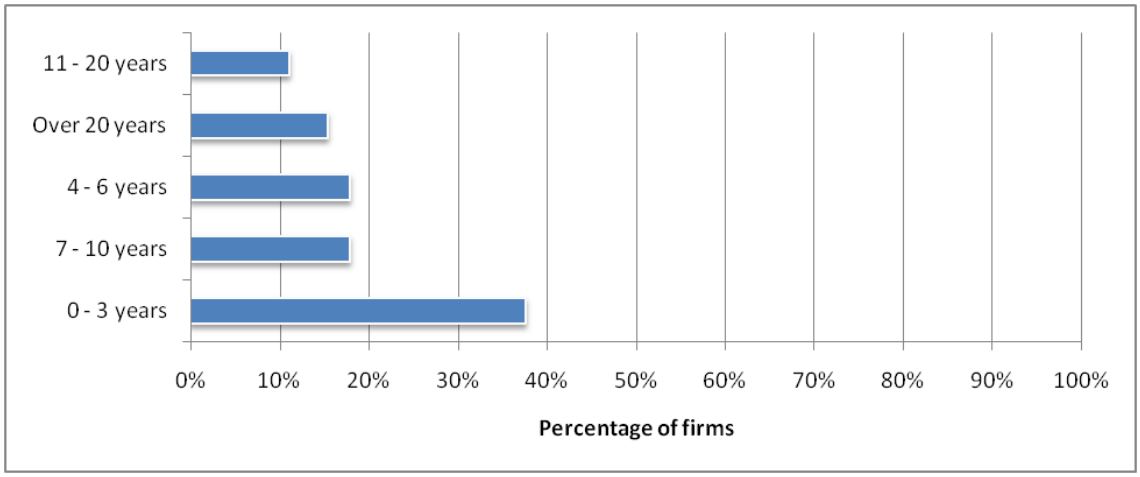


Figure 12: Company characteristics: Speed of entry to international markets

4.2.2.5 Scope of internationalisation

Almost three-quarters of the firms (73%) exported to more than 5 countries. About a quarter (27%) of the firms exported to less than 5 countries. Almost another quarter (27%) exported to 6-10 countries and another 27% exported to 11-20 countries. About ten percent of the firms (11%) exported to more than 20 foreign countries. The distribution of number of countries exporting to is presented in Figure 13.

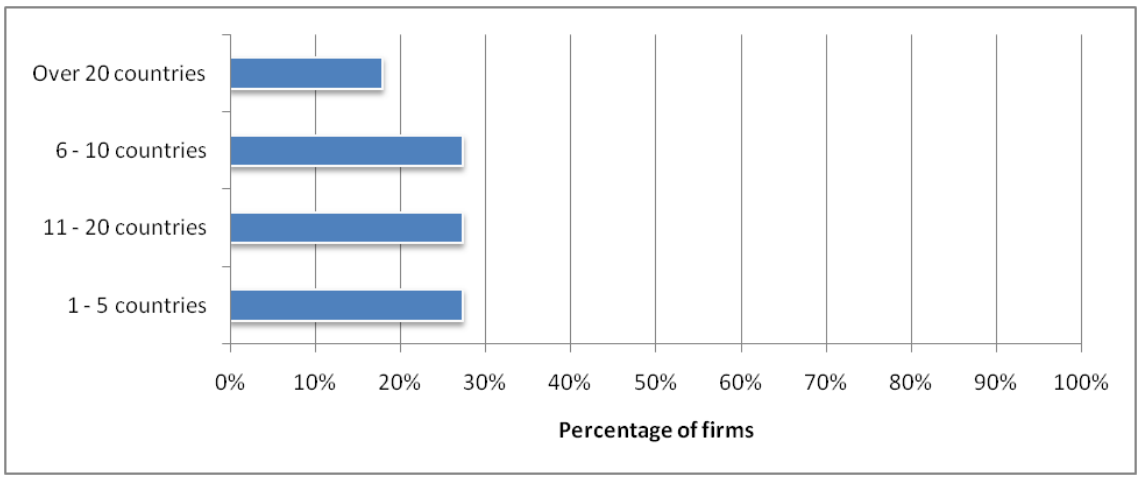


Figure 13: Company characteristics: Number of countries exporting to

4.2.2.6 Export intensity

Only 12% of the firms had export sales contributing less than 10% of total sales. But these firms exported to atleast 5 countries, by sample definition. Almost 90% (88%) firms had export sales contributing at-least 10% of their total sales. Over half of the firms (53%) had export sales contributing at-least 25% of their total sales. One in five firms (20%) had over 75% of their sales geared towards exports. The distribution of export intensity is presented in Figure 14.

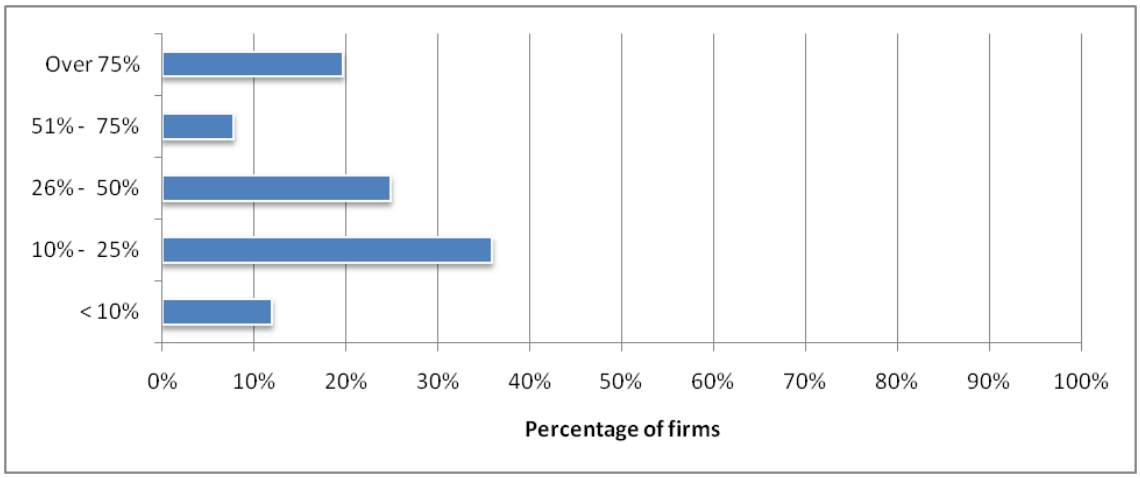


Figure 14: Company characteristics: export sales as a percentage of total sales (export intensity)

4.3 Measurement of variables of the model

This section examines the psychometric properties of the scales of the independent variables, hypothesised moderators and dependent variables in terms of reliability and validity. This is essential before any examination of the structure of the hypothesized model can be performed.

In view of the large number of constructs and thus measurement scales used in the research, the structure of the constructs and their scales is re-presented in Table 3.

Table 3: The structure of the constructs and their scales

Variable type	Level 1 construct	Level 2 construct	Level 3 construct
Indepenent variable (IV)	Entrepreneurial intensity	Frequency of entrepreneurship	
		Degree of entrepreneurship/ Entrepreneurial orientation	Innovativeness Proactiveness Risk-taking
Indepenent variable (IV)	Entrepreneurial capabilities	Social capital	Social interaction Relationship quality Network ties
		Human capital	Foreign institutional knowledge Foreign business knowledge Internationalisation knowledge
		Technology	Technology distinctiveness Technology acquisition
Depenent variable (IV)	International performance	Economic performance	Export profitability Overall profitability Export market share Employee growth Foreign sales growth Exports market share growth.
		International intensity	Degree of internationalisation Scope of internationalisation Speed of internationalisation
Moderator	Environment	Environmental hostility	
		Environmental dynamism	
Control	Company Size		
	Company Age		
	Industry	Industry type	
		Industry technological intensity	

4.3.1 Reliability

To assess the reliabilities of the scales and sub-scales, Cronbach's alpha and average inter-item correlations of each of the scales were assessed. The internal consistency reliability measures are summarized in Table 4 below. The standardized Cronbach's alpha has not been shown because the scaling of the items was the same (i.e. 7-point Likert) for the scales considered.

Table 4: Reliability measures of the scales and subscales

		Variable type	Variable level	Number of items	Cronbach alpha	Average inter-item corr
EI	EI	IV	1	18	0.88	0.31
EC	EC	IV	1	24	0.93	0.38
Environmental Hostility	Environmental Hostility	Moderator	2	6	0.74	0.33
Environmental Dynamism	Environmental Dynamism	Moderator	2	5	0.62	0.25
EI	EO	IV	2	14	0.86	0.35
	Frequency of entrepreneurship	IV	2	4	0.76	0.45
Human capital	Human capital	IV	2	11	0.93	0.57
Social capital	Social capital	IV	2	7	0.84	0.44
Technology	Technology	IV	2	6	0.86	0.55
Economic Performance	Growth	DV	3	3	0.80	0.60
	Financial	DV	3	3	0.80	0.58
Economic Performance	Economic Performance	DV	2	6	0.89	0.60
EO	Innovativeness	IV	3	5	0.75	0.44
	Proactiveness	IV	3	5	0.79	0.47
	Risk-taking	IV	3	4	0.75	0.45
Human capital	Foreign institutional knowledge	IV	3	3	0.80	0.59
	Foreign business knowledge	IV	3	4	0.87	0.63
	Internationalization knowledge	IV	3	4	0.92	0.75
Social capital	Social interaction	IV	3	2	0.76	0.63
	relationship quality	IV	3	3	0.80	0.58
	network ties	IV	3	2	0.88	0.78
Technology	Technology distinctiveness	IV	3	3	0.87	0.72
	Technology assimilation	IV	3	3	0.83	0.64

4.3.1.1 Independent variables

4.3.1.1.1 Entrepreneurial intensity (EI)

As EI is composed of the theoretical dimensions of Frequency of entrepreneurship and entrepreneurial orientation, these constructs are measured at Level 2. At the highest level of measurement (level 1), the composite measure of entrepreneurial intensity (EI) indicates high internal consistency reliability of the summated scale, and with the value of Cronbach's alpha at 0.88 and average inter-item correlation of 0.31.

At level 2, the Frequency and EO subscales show good internal consistency reliability. For the frequency of entrepreneurship dimension, the Cronbach's alpha was 0.76 and inter-item correlation was 0.45. The value of Cronbach's alpha for the EO scale was 0.86 and the inter-item correlation was 0.35.

At the lowest level of measurement (Level 3) of the components of the EO scale, the reliability coefficients were moderately high for Innovativeness, Proactiveness and

Risk-taking with values of 0.75, 0.79, and 0.75 for Cronbach's Alpha respectively, and values of 0.44, 0.47, and 0.45 for inter-item correlation respectively.

The above results confirm that the individual items of both the subscales (frequency and EO) and the items of the EI scale are measuring consistently, with the minimum value of Cronbach's alpha at 0.76 and the inter-item correlations exceeding the minimum guideline score for adequate internal consistency reliability of 0.3.

4.3.1.1.2 Entrepreneurial capabilities (EC)

The level 1 construct, entrepreneurial capacity, is a composite construct made up by combining theoretically distinct dimensions, namely human capital, social capital and technology. Our scale reliability analysis for entrepreneurial capability scale at level 1, shows a calculated Cronbach's alpha of 0.93 and inter-item correlation of 0.38.

At level 2, the values of Cronbach's alpha for the level 2 subscales of human capital, social capital, and technology were high at 0.93, 0.84, and 0.86 respectively, with respective values for inter-item correlations of 0.57, 0.44, and 0.55.

At level 3, the human capital variables - namely foreign institutional knowledge, foreign business knowledge, and internationalisation knowledge measured 0.80, 0.87, and 0.92 on Cronbach's alpha respectively, and 0.59, 0.63, and 0.75 on inter-item correlation respectively.

At level 3, the social capital variables - namely social interaction, relationship quality, and network ties measured 0.76, 0.80, and 0.88 on Cronbach's alpha respectively, and 0.63, 0.58, and 0.78 on inter-item correlation respectively.

At level 3, the technology variables - namely technology distinctiveness and technology acquisition measured 0.87, and 0.83 on Cronbach's alpha respectively, and 0.72 and 0.64 on inter-item correlation respectively.

Accordingly, the above analyses show acceptable to good levels of internal consistency reliability of the subscales of the EC construct with all Cronbach's alphas (except

relationship quality, 0.58) exceeding 0.8 and the minimum inter-item correlations of 0.44 at subscale level exceeding the minimum accepted score of 0.3 for inter-item correlation. The Cronbach's alpha for social interaction is 0.76 which still exceeds the acceptable minimum of 0.7.

4.3.1.2 Moderating variables

The hypothesised environment construct is a level 1 composite abstract comprising two separate distinct dimension, namely environmental hostility and environmental dynamism. Hostility and dynamism are thus assessed separately at level 2.

4.3.1.2.1 Hostility

At level 2, the value of Cronbach's alpha for the environmental hostility scale was 0.74, and 0.33 on inter-item correlation. The calculated Cronbach's alpha of 0.74 is higher than the acceptable value of 0.7. The calculated inter-item correlation of 0.33 marginally exceeds the minimum recommended 0.3. This scale thus meets the conditions of satisfactory reliability.

4.3.1.2.2 Dynamism

At level 2, the environmental dynamism scale scored 0.62 on Cronbach's alpha, and 0.31 on inter-item correlation. The calculated Cronbach's alpha of 0.62 is lower than the acceptable minimum score of 0.7 but higher than the more lenient acceptable value of 0.6. The calculated the inter-item correlation value of 0.25 is below the minimum recommended 0.3. Thus the internal consistency reliability of the dynamism scale is considered weak.

4.3.1.3 Dependent variables

Export intensity, Scope of internationalisation and Speed of internationalisation are all measures of International Intensity, but as they were all single-item measures, they could not be assessed for internal consistency reliability.

4.3.1.3.1 Economic performance

Economic performance, a level 2 measure, is a subset of the international performance construct (level 1). Economic performance consists of level 3 measures, financial performance and growth.

At level 2, the subscale economic performance measured 0.89 on Cronbach's alpha, and 0.60 on inter-item correlation.

At level 3, the economic performance variables - namely financial performance and growth each measured 0.80 on Cronbach's alpha, and 0.58, and 0.60 on inter-item correlations respectively.

This scale as well as its subscales meets the conditions of high internal consistency reliability.

4.3.2 Validity

This study uses exploratory factor analysis (EFA) for confirmatory purposes to confirm the perceived structure of the individual theoretically derived scales. The primary aim of factor analysis is to determine the underlying structure among the variables with the aim to explain the patterns of interrelationships (correlations) among the variables. Sets of variables that are highly interrelated are known as factors.

For the purposes of this study, in cases where variables designed to reflect the same construct loaded on different factors from those defined in the theory, the researcher noted these results but continued to work with the combinations of items derived from theory. The research was not designed to attempt to create new scales but rather to confirm the reliabilities of the existing theoretical scales. Thus the discussion is limited to the number of factors that provide the highest level of interpretability in line with theoretical constructs. The aim of the research was to search for or define the fundamental constructs or dimensions assumed to underlie the variables, and the purpose of the research was to retain the nature and character of the original variables with minimal addition of new information.

4.3.2.1 Independent variables

The sufficiency of the inter correlations among the 18 items designed to measure EI at level 1 was examined using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's test of sphericity. As the KMO value was high at 0.81 and Bartlett's test of sphericity was significant ($p<0.001$), the factor analysis was allowed to proceed (Table 5).

Table 5: Tests of assumptions of factor analysis of EI items

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.810
Bartlett's Test of Sphericity	Approx. Chi-Square	1002.456
	df	153
	Sig.	.000

4.3.2.1.1 Entrepreneurial intensity (EI)

Table 6: EI Eigenvalues principal components extraction

EI - Eigenvalues Extraction: Principal components				
Factor	**Eigenvalue**	**% Total - variance**	**Cumulative - Eigenvalue**	**Cumulative - %**
Proactiveness	6.38	35.46	6.38	35.46
Frequency	1.87	10.37	8.25	45.83
Risk-taking	1.78	9.90	10.03	55.73
Innovativeness	1.20	6.68	11.23	62.41

The eigenvalue summary for the EI scale (Table 6) indicates that a four factor solution is suitable for determining the factor structure of the scale. This number of factors is in line with the theoretically derived scale. These factors all have eigenvalues greater than 1.0; and the factors explain 62.4% of the variance which is marginally above the recommended 60%.

Table 7: EI: Factor loadings

EI	Proactiveness	Risk taking	Innovativeness	Frequency
10: Our top management encourages new product ideas for international markets	0.207	0.335	0.670	0.246
11: Our top management is receptive to innovative ways of exploiting international market opportunities	0.339	0.132	0.748	0.090
12: Our top management believes that the opportunity for international markets is greater than the opportunity for the domestic market	0.341	0.555	-0.003	-0.131
13: Our top management continuously searches for new export markets	0.722	0.220	0.350	0.051
14: Our top management is willing to consider new suppliers/clients abroad	0.769	0.059	0.193	0.068
15: Our top managers regularly attend local/foreign trade fairs	0.663	-0.038	0.061	0.351
16: Our top managers have usually spent some time abroad	0.640	0.131	0.029	0.255
17: Our top management actively seeks contact with suppliers or clients in international markets	0.712	0.152	0.426	0.079
18: Our top management regularly monitors the trend of export markets	0.302	0.161	0.592	0.199
19: Our top management actively explores business opportunities abroad	0.632	0.195	0.535	-0.038
20: Our top management focuses abroad more on opportunities than on risks	0.401	0.563	-0.299	0.015
21: When confronted with decisions about exporting or other international operations, our top management is tolerant of potential risks	0.087	0.825	0.148	0.229
22: Our top managers have shared vision of the risks of foreign markets	0.158	0.655	0.159	0.190
23: Our top management values risk-taking opportunities abroad	0.007	0.781	0.310	0.022
24: Product	0.069	0.181	0.015	0.767
25: Service	0.083	0.115	0.203	0.772
26: Process	0.128	0.047	0.167	0.778
27: Business development	0.195	0.020	0.609	0.435
Expl.Var	3.494	2.681	2.662	2.397
Prp.Totl	0.194	0.149	0.148	0.133

By examining the pattern of high factor loadings, the factors were named as shown in Table 7. An examination of these factor loadings (Table 7) shows that the frequency of entrepreneurship dimension is distinct from the EO dimensions (Innovativeness, Proactiveness, and Risk-taking). The factor analysis show that the frequency items (the last four items on the construct measures) correlate highly on their own factor, but correlate low with the other factors. The reader should note, however, that the four item on the frequency dimension has a moderate correlation (0.435) with the factor.

Table 7 highlights (red) the factor loadings of 0.5 or greater which are interpreted as practically significant (i.e. would sufficiently correlate with the particular factor).

Three of the four items on the Frequency of entrepreneurship dimension sufficiently loaded on the factor with factor loadings of 0.76 and above. The items that adequately loaded related to the levels of innovation within the firms with regards to product, service, and process. The fourth item of the scale, rating the frequency of innovation within the firm regarding business development, scored 0.435 on the factor loadings, which is considered minimally acceptable. The eigenvalue on this factor was 1.87. Eigenvalues > 1.7 are indicative of a well defined structure.

Only two of the four items on the Innovativeness dimension loaded sufficiently high on the factor with factor loadings of 0.67 (question 11) and 0.74 (question 12). The other two items (question 11 and 14) were not correlated with the factor but loaded highly with the next factor proactiveness. The eigenvalue on this factor was 1.2.

Four of the five items on the proactiveness dimension loaded sufficiently high on the factor with factor loadings of exceeding 0.63. As indicated, two items (question 11 and 14) from the innovativeness dimension correlated strongly with the factor proactiveness. The eigenvalue on this factor was 6.38 and accounting for 35.5% of the variance.

All four of the items on the Risk-taking dimension loaded sufficiently high on the factor with factor loadings ranging from 0.63 to 0.83. The eigenvalue on this factor was 1.78, indicating a well defined structure.

An analysis of the factors constituting the entrepreneurial orientation (EO) dimension shows that all fourteen of the items (Questions 10 – 23) loaded on its component factors with factor loadings exceeding 0.63.

The above results confirm both the uni-dimensionality and multi-dimensionality of the IE scale and the EO subscale. This analysis confirms the validity of the factor structure of the entrepreneurial intensity scale (level 1) and subscales (level 2 and 3).

4.3.2.1.2 Entrepreneurial capabilities (EC)

The data matrix of the 24 items designed to measure Entrepreneurial capabilities (EC) showed sufficient correlations to proceed with the application of factor analysis as the sampling adequacy measure of The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was high at 0.88 and Bartlett's test of sphericity was significant ($p<0.001$) (Table 8).

Table 8: Tests of assumptions of factor analysis of EC items

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.878
Bartlett's Test of Sphericity	Approx. Chi-Square	1465.924
	df	136
	Sig.	.000

Table 9: EC principal components: Eigenvalues extraction

EC - Eigenvalues Extraction: Principal components				
Factor	**Eigenvalue**	**% Total - variance**	**Cumulative - Eigenvalue**	**Cumulative - %**
Human Capital	9.63	40.12	9.63	40.12
Social Capital	2.12	8.84	14.42	48.96
Technology Distinctiveness	2.67	11.11	12.29	60.07
Technology Acquisition	1.28	5.33	15.70	65.40

The *eigenvalue* summary for the EC scale (Table 9) indicates that a four factor solution is suitable for determining the factor structure of the scale. Although the number of factors in the theoretically constructed scale was three, the technology dimension was constructed by combining two distinct scales. Therefore the suggested four factor scale is in line with theory. These factors all have eigenvalues greater than 1.0; and the factors jointly explain 65.4% of the variance which is considerably above the recommended 60%.

By examining the pattern of high factor loadings, the factors were named as shown in Table 10.

Table 10: EC Factor loadings

EC	Human Capital	Technology Distinctiveness	Social Capital	Technology Acquisition
28: Our top managers' knowledge about foreign language and norms	0.521	-0.013	0.025	0.507
29: Our top managers' knowledge about foreign business laws and regulations	0.660	0.199	0.195	0.137
30: Our top managers' knowledge about host government agencies	0.803	0.064	0.029	0.052
31: Our top managers' knowledge about foreign competitors	0.746	0.090	0.147	0.102
32: Our top managers' knowledge about the needs of foreign clients/customers	0.720	0.004	0.321	-0.104
33: Our top managers' knowledge about foreign distribution channels	0.737	0.163	0.289	0.063
34: Our top managers' knowledge about effective marketing in foreign markets	0.790	0.171	0.125	0.194
35: Our top managers' international business experience	0.696	0.229	0.150	0.280
36: Our top managers' ability to determine foreign business opportunities	0.752	0.173	0.125	0.242
37: Our top managers' experience in dealing with foreign business contacts	0.782	0.159	0.100	0.239
38: Our top managers' capability to manage international operations	0.780	0.154	0.137	0.201
39: We maintain close social relationships with our key foreign contacts	0.294	0.079	0.608	0.273
40: We know the names of our key foreign contacts personally	0.202	-0.200	0.582	0.393
41: In these relationships, both sides avoid making demands that can seriously damage the interests of the other	0.159	0.005	0.714	0.300
42: In these relationships, neither side takes advantage of the other, even if the opportunity arises	0.122	-0.015	0.786	-0.046
43: Our key foreign contacts always keep their promises to us	0.107	0.112	0.772	0.126
44: We have established new contacts through our key foreign contacts	0.438	0.415	0.542	-0.116
45: Our key foreign contacts have 'opened the doors' of other contacts for us	0.412	0.450	0.450	-0.011
46: Our technology is better than our competitors' technology	0.111	0.859	0.041	0.140
47: Our competitive advantage is based on our technology	0.105	0.874	-0.041	-0.016
48: We invest very heavily in R&D	0.129	0.819	0.026	0.187
49: Assimilation of product development technology	0.263	0.667	0.130	0.455
51: Assimilation of process technology	0.217	0.425	0.179	0.726
52: Assimilation of logistics and planning applications	0.252	0.228	0.182	0.698
Expl.Var	6.624	3.523	3.346	2.202
Prp.Totl	0.276	0.147	0.139	0.092

Table 10 highlights (red) the factor loadings of 0.5 or greater which are interpreted as practically significant (i.e. would sufficiently correlate with the particular factor).

All nine of the items on the human capital dimension sufficiently loaded on the factor with factor loadings of ranging from 0.52 to 0.80 and averaging 0.73. The eigenvalue on this factor was 9.63, indicating an extremely well defined structure. This factor accounted for 40.1% of the variance.

All seven of the items on the social capital dimension loaded on the factor with factor loadings of ranging from 0.45 to 0.79 and averaging 0.63. The eigenvalue on this factor was 2.1, indicating a well-defined factor structure. This factor accounted for 40.1% of the variance.

The technology dimension clearly shows composition of two separate dimensions – technology distinctiveness and technology acquisition.

All three items on the technology distinctiveness dimension sufficiently loaded on the factor with factor loadings exceeding 0.81 (questions 46 - 48). A fourth item (question 49), belonging to the next dimension, Technology acquisition, loaded higher with this factor (0.67) than with its own factor (0.45). The eigenvalue on this factor was 2.7.

Although all three items on the technology acquisition dimension loaded sufficiently high on the factor, only two of the items loaded highly with the factor, with factor loadings of almost exceeding 0.70. As previously explained the question 49 (49: Assimilation of product development technology) overlapped between the technology distinction and technology acquisition factors. For ease of interpretation the item (question 49) is left assigned to the acquisition dimension, thereby retaining the character of the original variables. The eigenvalue on this factor was 1.2.

An analysis of the factors (Level 3) constituting the technology dimension shows that all six of the items (Questions 46 – 52; Question 50 was deleted as per chapter 3) loaded on its component items with factor loadings exceeding 0.67.

This analysis confirms the validity of the factor structure of the entrepreneurial capability scale (level 1) and subscales (level 2). However caution needs to be exercised with regard to the technology dimension at Level 3.

4.3.2.2 Hypothesised Moderating variables

As already stated, the scales for hostility and dynamism were assessed separately at level 2 rather than at the level 1 for this construct (i.e. environment).

The data matrix of the 11 items designed to measure the environmental construct showed barely sufficient correlations to proceed with the application of factor analysis as the sampling adequacy measure of The Kaiser-Meyer-Olkin (KMO) Measure of

Sampling Adequacy was poor at 0.59, although Bartlett's test of sphericity was significant ($p<0.001$) (Table 11).

Table 11: Tests of assumptions of factor analysis of the Environmental Construct items

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.587
Bartlett's Test of Sphericity	Approx. Chi-Square	319.856
	Df	55
	Sig.	.000

Furthermore, the factor loadings of the items designed to reflect the two theoretical dimensions of environment did not all load on the factors as expected (Table 13). This again suggests that the factor structure of the Level 1 Environmental scale is weak.

The EFA suggested the presence of three factors – namely hostility, market stability, and competition. However, in line with the researcher's stance to retain the original dimensions of the constructs for the purposes of model testing, the theoretical two factors were retained. The eigenvalues extraction for the factors is shown in Table 12. The reliability of the factors was acceptable at 55% explained variance.

Table 12: Eigenvalues extraction for the hostility and dynamism scales (3 factors)

Env - Eigenvalues Extraction: Principal components				
Factor	**Eigenvalue**	**% Total - variance**	**Cumulative - Eigenvalue**	**Cumulative - %**
Hostility	2.74	24.90	2.74	24.90
Market stability	2.02	18.33	4.76	43.23
Competition	1.31	11.87	6.06	55.10

Table 13: Environment: Factor loadings

Environment	Hostility	Market stability	Competition
53: The failure rate of firms in my industry is high	0.845	0.026	0.016
54: My industry is very risky - one bad decision could easily threaten the viability of my business	0.847	0.018	0.112
55: Competitive intensity is high in my industry	0.249	-0.293	0.612
56: Customer loyalty is low in my industry	0.559	-0.071	0.110
57: Severe price wars are characteristic of my industry	0.468	-0.216	0.455
58: Low profit margins are characteristic of my industry	0.341	-0.072	0.693
59: Actions of competitors are easy to predict	0.007	0.363	0.477
60: The set of competitors is relatively constant	-0.270	0.375	0.651
61: Product demand is easy to forecast	0.022	0.779	0.065
62: Customer requirements are easy to forecast	0.004	0.890	-0.023
63: My industry is very stable with very little change	-0.051	0.492	-0.209
Expl.Var	2.217	2.057	1.787
Prp.Totl	0.202	0.187	0.162

4.3.2.2.1 Hostility

The data matrix of the 6 items designed to measure the environmental dimension of hostility showed sufficient correlations to proceed with the application of factor analysis as the sampling adequacy measure of The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was good at 0.81, and Bartlett's test of sphericity was significant ($p<0.001$) (Table 14).

Table 14: Tests of assumptions of factor analysis of the Environmental Hostility items

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.812
Bartlett's Test of Sphericity	Approx. Chi-Square	461.884
	Df	15
	Sig.	.000

The eigenvalue summary for the hostility scale (Table 15) suggests that a two factor solution would be suitable for determining the factor structure of the scale. These

factors both have eigenvalues greater than 1.0; and the factors cumulatively explain 62.1% of the variance which is above the recommended 60%.

Table 15: Eigenvalues extraction for the hostility and dynamism scales (2 factors)

Env - Eigenvalues Extraction: Principal components				
Factor	**Eigenvalue**	**% Total - variance**	**Cumulative - Eigenvalue**	**Cumulative - %**
Dynamism	2.62	43.64	2.62	43.65
Hostility	1.11	18.42	3.72	62.06

4.3.2.2.2 Dynamism

The data matrix of the 5 items designed to measure the environmental dimension of dynamism showed insufficient correlations to proceed with the application of factor analysis as the sampling adequacy measure of The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was poor at 0.46, although Bartlett's test of sphericity was significant ($p<0.001$) (Table 16).

Table 16: Tests of assumptions of factor analysis of the Environmental Dynamism items

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.461
Bartlett's Test of Sphericity	Approx. Chi-Square	116.439
	Df	10
	Sig.	.000

As the assumptions of factor analysis are not met, the factor analysis was not computed for the dynamism items. Dynamism was kept as a single measure.

4.3.2.3 Dependent variables

The data matrix of the 6 items designed to measure Economic performance showed sufficient correlations to proceed with the application of factor analysis as the sampling adequacy measure of The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was poor at 0.81, with Bartlett's test of sphericity significant ($p<0.001$) (Table 18).

Table 17: Tests of assumptions of factor analysis of the Economic performance items

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.812
Bartlett's Test of Sphericity	Approx. Chi-Square	461.884
	Df	15
	Sig.	.000

4.3.2.3.1 Economic performance

Table 18: Eigenvalues extraction for the economic performance scale

Econ Performance - Eigenvalues Extraction: Principal components				
Factor	**Eigenvalue**	**% Total - variance**	**Cumulative - Eigenvalue**	**Cumulative - %**
Economic performance	3.93	65.43	3.93	65.43

The eigenvalue summary for the Economic performance scale (Table 19) indicates that a one factor solution the suitable factor structure of the scale. This factor has an eigenvalue of 3.93; and the factor explains 65.4% of the variance which is considerably above the recommended 60%.

Table 19: Economic performance: Factor loadings

Econ performance	Factor - 1
64: My firm's satisfaction with export profitability over the past three years	-0.773635
65: My firm's satisfaction with overall profitability over the past three years	-0.844871
66: My firm's satisfaction with employee growth over the past three years	-0.656433
67: My firm's foreign sales growth over the past three years	-0.873085
68: My firm's satisfaction with market share in the exports market	-0.798828
69: My firm's satisfaction with growth in market share in the exports market over the past three years	-0.884364
Expl.Var	3.925725
Prp.Totl	0.654288

Factor analysis on all six of the items on the economic performance dimension yielded a single factor. The correlation of the items with the factor was high and negative, with factor loadings ranging from -0.65 to -0.88 and averaging -0.81. A strong negative variable-factor correlation indicates a strong negative association between the variable and the factor. The eigenvalue on this factor was 9.63, indicating an extremely well defined structure. This factor accounted for 65.4% of the variance.The reliability of the measures for the level 1 construct was shown by a high coefficient alpha (0.89). Therefore, the economic performance scale was aggregated by summing the measurement items at the level 1 construct level for subsequent hypothesis testing.

4.3.2.3.2 Evaluation of the retention of additional measures of the dependent variable

The questionnaire included three single-item measures of internationalisation performance - speed, scope and intensity respectively.

The first step was to investigate the feasibility of combining the three measures into a composite measure with a view to creating a single measure of internalisation performance created independently of the economic performance scale. The Chi square test was used to examine relations between the three sets of bivariate relations and the categorical variables as shown in Table 52 to Table 54.

Relation between speed, scope and intensity of internationalisation

No significant relations were found between the three measures of internationalisation: between Scope and Export intensity $\chi^2(2) = 4.233$, $p>0.05$; between Speed and Scope $\chi^2(8) = 9.978$, $p>0.05$; and between Speed and intensity $\chi^2(4) = 8.527$, $p>0.05$.

As these three measures were found to be uncorrelated, there was no clear evidence of an internally consistent single composite measure of the dependent variable, Internationalisation performance, which could be derived from these three measures. Consequently, the researcher undertook to assess the merits of using each measure separately in additional tests of the model. As each of the three variables were measured on an ordinal categorical scale, three sets 1-way Analyses of Variance were computed using these measures as independent variables. The Level 1-3 measures of EI and EC, and in line with the moderation hypotheses, the interactions of hostility and the EI and EC measures at Levels 1-3, and the interaction of dynamism and the EI and EC measures at Levels 1-3, served as single dependent variable measures in these ANOVAs.

Effects of speed, scope and intensity of internationalisation on scale variables

The researcher then looked for significant effects of each of these three internationalisation measures on the 1st, 2nd and 3rd level measures of International EI and EC, and in line with the moderation hypotheses, on the interactions of hostility or dynamism and the EI measures at Levels 1-3, and between hostility or dynamism and the EC measures at Levels 1-3. For example, a significant effect of export intensity on EC would imply a difference in EC depending on the Export intensity levels, while a significant interaction of EC and Hostility would imply a difference in export intensity depending on the combination of EC and Hostility levels. Such significant effects would then suggest that Export intensity be retained as a measure of the dependent variable, Internationalisation performance. On the other hand, nonsignificant effects of export intensity on the Level 1-3 measures of EI and EC and on their interaction effects with

hostility and dynamism would suggest an absence of a relation between EI measures and export intensity, and between EC measures and export intensity. These nonsignificant effects would then suggest that export intensity be dropped as a measure of the dependent variable, Internationalisation performance. The three sets of ANOVA analyses are presented in Appendix C, Table 52, Table 53, and Table 54 for Internationalisation speed, scope and intensity respectively.

Finally, in view of the inherent unreliability of single item scales, the direction of the means was checked across the levels of all the variables involved in the case of significant effects.

Only two significant effects (proactiveness and technology distinctiveness) were found on Speed of internationalisation. However, a plot of their mean scores across the groups ordered on **Speed** of internationalisation revealed inconsistent trends (Figure 15). The overall conclusion for Speed of internationalisation was that EI and EC scales generally did not differ significantly, either alone or in combination with Hostility and dynamism, at any level. Speed of internationalisation was therefore dropped as an additional measure of Internationalisation performance.

The two significant effects (proactiveness and foreign institutional knowledge) were found on **Scope** of internationalisation. However, the means plotted across the groups ordered on **Scope** of internationalisation (Figure 16) were not consistent in terms of order and direction and the overall conclusion for Scope of internationalisation was that EI and EC scales generally did not differ significantly, either alone or in combination with hostility and dynamism, at any level. Scope of internationalisation was therefore dropped as an additional measure of Internationalisation performance.

There were four significant effects found on **export intensity** (Proactiveness and Foreign institutional knowledge as well as the interaction of EC with hostility and EC with dynamism). Moreover, the means of proactiveness and foreign institutional knowledge plotted across the groups ordered on **export intensity** (Figure 17) were generally consistent in terms of order and direction and thus the overall conclusion for

Intensity of internationalisation was that there was sufficient evidence to retain export intensity as an additional measure of Internationalisation performance.

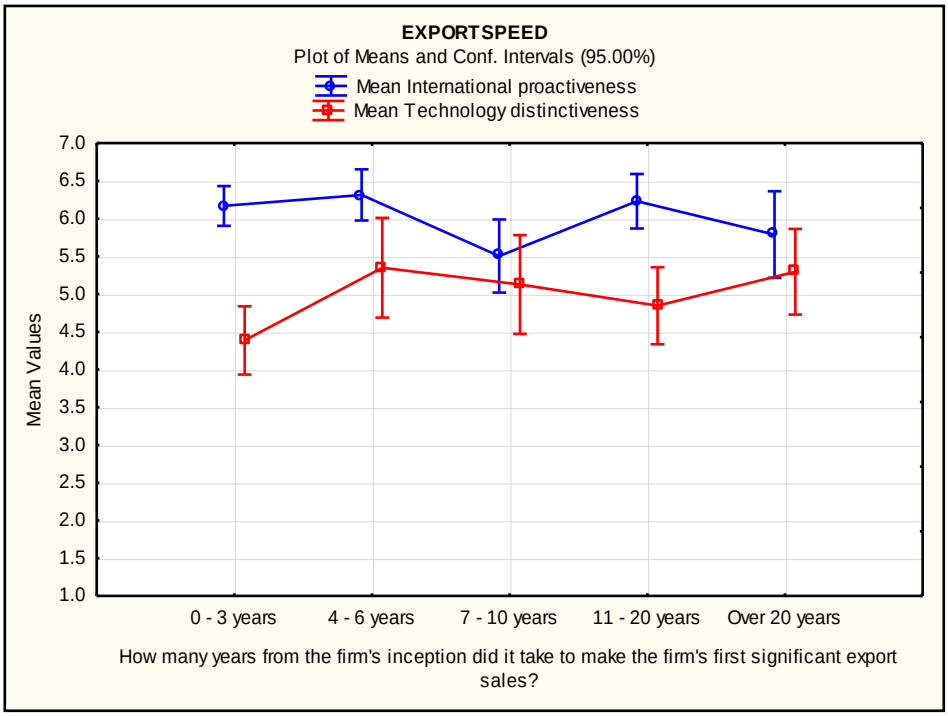


Figure 15: Mean scores across groups ordered on export speed

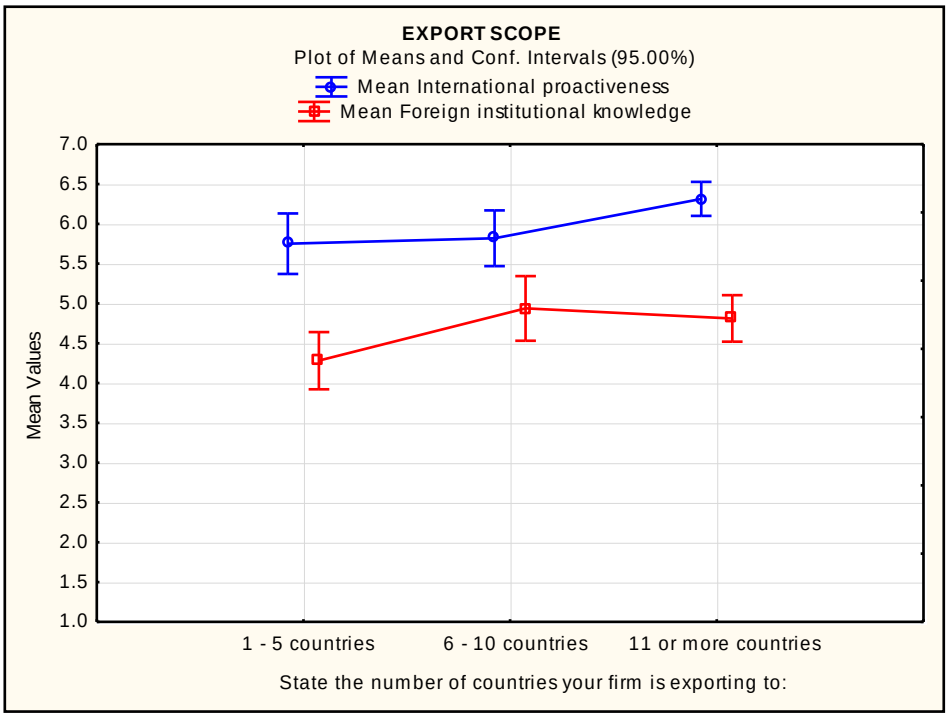


Figure 16: Mean scores across groups ordered on export scope

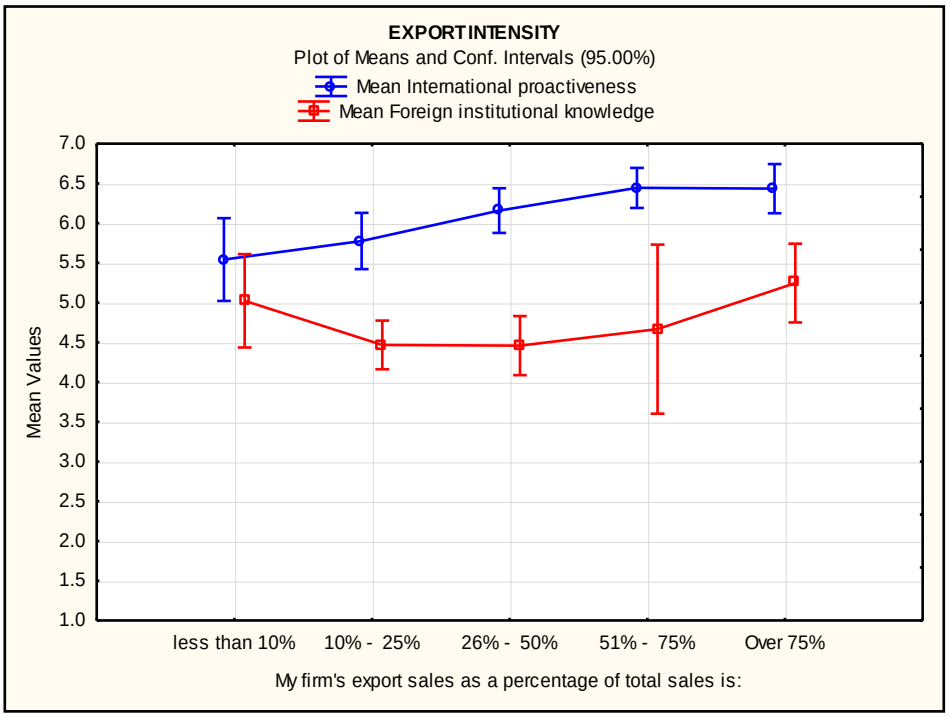


Figure 17: Mean scores across groups ordered on export intensity

4.3.3 Descriptive statistics

The descriptive statistics display characteristics of the location, spread, and shape of the variables under study.

The measures of central location (mean and median) of all the variables are interpreted relative to the neutral value of 4, the midpoint of the 7-point Likert scales. Variability in the distribution of the variable is represented by the standard deviation (std. dev. column). Skewness measures the variable's distribution's deviation from symmetry and whereas kurtosis is a measure of its peakedness of flatness when plotted on a graph. The skewness and Kurtosis indices were also calculated.

4.3.3.1 Descriptive statistics

Table 20 contains information that is useful in understanding the descriptive qualities of the data. All the means of the scales and subscales where higher than the Likert scale midpoint of 4 (neutral). The skewness index (SI) and the Kurtosis index (KI) were not severe.

Table 20: Descriptive statistics for all measurement scales

	Variable type	Variable level	Number of items	Valid N	Overall Mean	Confidence -95.000%	Confidence - 95.000%	Median	Std.Dev.	Skewness	Kurtosis
Entrepreneurial Intensity	IV	1	18	117	5.75	5.61	5.89	5.83	0.75	-0.77	0.25
Entrepreneurial Capability	IV	1	24	117	5.17	5.02	5.32	5.13	0.81	0.07	-0.93
Environmental Hostility	Moderator	1	6	117	4.54	4.34	4.75	4.50	1.11	-0.12	0.42
Environmental Dynamism	Moderator	1	5	117	4.16	3.98	4.34	4.20	0.99	-0.32	-0.36
Entrepreneurial Orientation	IV	2	14	117	5.69	5.53	5.84	5.79	0.83	-0.84	0.26
Frequency of entrepreneurship	IV	2	4	117	5.97	5.81	6.13	6.00	0.86	-1.04	1.20
Human capital	IV	2	11	117	5.03	4.85	5.20	4.82	0.95	0.18	-1.04
Social capital	IV	2	7	117	5.51	5.33	5.69	5.57	0.97	-0.47	-0.62
Technology	IV	2	6	117	5.04	4.84	5.24	5.00	1.10	-0.03	-0.63
Growth	DV	2	3	117	4.62	4.38	4.87	5.00	1.34	-0.62	-0.42
Financial	DV	2	3	117	4.60	4.35	4.86	5.00	1.38	-0.53	-0.49
Economic Performance	DV	1	6	117	4.61	4.37	4.85	5.00	1.30	-0.54	-0.58
Innovation	IV	3	5	117	5.95	5.77	6.12	6.00	0.93	-1.10	1.28
Proactiveness	IV	3	5	117	6.02	5.85	6.20	6.20	0.94	-1.04	0.65
Risk-taking	IV	3	4	117	4.94	4.72	5.16	5.00	1.20	-0.73	0.33
Foreign institutional knowledge	IV	3	3	117	4.70	4.50	4.90	4.33	1.08	0.17	-0.55
Foreign business knowledge	IV	3	4	117	5.06	4.87	5.24	5.00	1.00	0.09	-0.87
Internationalization knowledge	IV	3	4	117	5.25	5.04	5.45	5.25	1.11	-0.01	-1.05
Social interaction	IV	3	2	117	6.10	5.90	6.29	6.50	1.06	-1.54	2.98
relationship quality	IV	3	3	117	5.28	5.07	5.50	5.67	1.18	-0.41	-0.70
network ties	IV	3	2	117	5.26	5.01	5.51	5.50	1.37	-0.82	0.42
Technology distinctiveness	IV	3	3	117	4.88	4.63	5.14	4.67	1.40	-0.19	-0.82
Technology assimilation	IV	3	3	117	5.20	5.00	5.40	5.33	1.09	-0.15	-0.58

4.3.3.2 Graphical frequency distributions

An analysis of the level 3 distributions shows that a few variable distributions namely Innovativeness, Proactiveness, Social Interaction, Relationship Quality, and Network Ties - were negatively skewed, with skew indices more negative than -1, although not extremely skewed based on the criterion of -3 for an extreme skew index. A range of variable transformation techniques were explored to test whether the transformed variables might result in normal distributions, but the skewness indices and shapes of the distributions were not substantially improved, the researcher preferred to use the untransformed variables consistent with the approach of maintaining the original scale measures as far as possible. Thus the original untransformed Level 3 measurement variables were considered in subsequent model testing.

An analysis of the level 1 distributions shows that the variables were fairly normally distributed about the means. The frequency distributions for the Level 1-3 measures may be found in Appendix C, Figure 30 to Figure 39.

4.3.5 Control variables

Tests were performed for the statistical significance of the effect of firm age, size, and industry as possible factors to control when examining the relationship between the predictor variables and performance.

Firm Size was operationalised as number of employees, whereas firm Age was operationalised as age of firm since founding year, and firm Industry operationalised as industry type and level of industry technological intensity. As shown in Table 21, there was no significant difference in performance ($p>0.05$) for any of these possible control variables. Therefore firm Size, Age, and Industry are not correlated with Economic performance and were therefore not entered as control variables when testing the researcher's model.

Table 21: Control Variables - ANOVAs

Economic Performance			
	df - Effect	**F**	**p**
Firm size	2	0.63597	0.531289
Firm age	3	0.904306	0.441476
Level of industry technological intensity	1	0.990661	0.321726
Industry type	2	0.067873	0.934427

4.3.6 Conclusions on the measurements adequacy of the variables

Overall there was strong support for the internal consistency reliability of scale and subscales with the exception of environmental dynamism which had weak reliability. For all scales and subscales, but environmental Dynamism, the values of Cronbach's alphas exceeded the minimum guideline score of 0.7 and the inter-item correlations exceeded the minimum guideline score for adequate internal consistency reliability of 0.3. The Cronbach's alpha value for Hostility exceeded the minimum acceptable 0.6, but the inter-item correlation was below 0.3.

With the exception of the moderator variables, there was support for construct validity of scales based upon theoretical expectation. The eigenvalues of all the factors exceeded the recommended minimum of 1.0, indicating well defined factor structure. All factor structures, except for hostility and dynamism, accounted for over 60% of the variance.

In general there is evidence of convergent and discriminant validity of the scales, but caution should be exercised when interpreting the hypothesised moderators.

At the highest level of analysis (level 1), all the frequency distributions of the variables were fairly normally distributed about the means and therefore satisfy the assumptions for regression. Although there was evidence of some negative skewness in the distributions of some level 3 measures, the original (untransformed) variables were retained consistent with the research approach adopted throughout the study to

use theoretical measures as far as possible. Examination of residual regression plots was thus necessary to check whether the assumptions of the regression were satisfied despite a degree of non-normality in the score distributions.

The final performance measures for the model are economic performance and export intensity and there are no control variables. Economic performance is a single factor.

4.4 Tests of the model

The previous sections have largely confirmed the measurement adequacy of the scales; and provided satisfactory evidence of theirconstruct validity. The next step was to test hypotheses, with the primary aim to analyze the predictive power of the independent variables as represented in the model.

The outcome variables, Economic performance and Export intensity, were measured on different scales. Economic performance was measured on an equal interval scale whereas Export intensity was originally measured on an ordinal scale. While parametric statistics assume that the variables are measured on at least an interval scale, the parametric approach of hierarchical linear regression analysis was adopted as explained in footnote[2].

[2]Export Intensity was originally measured on an ordinal scale. As it is one of the outcome or dependent variables of the study, the researcher needed to check whether its prediction could proceed via parametric or nonparametric statistics. While parametric statistics assume that the variables are measured on at least an interval scale, nonparametric statistics assume only an ordinal scale of measurement.

Ideally, if the Export Intensity scale could be considered to be equal interval, the same hierarchical linear regression analysis method could be applied as for the prediction of Economic Performance, the other outcome variable.

The nonparametric Spearman's Rho correlations between all predictor variables and Export Intensity were compared to the corresponding parametric Pearson product moment correlations to see whether they were different. This comparative analysis used the Fisher Z transformation of the correlations (Cohen, 1992).

In order to accommodate the tests of the two dependent variables, the initial model was tested in two separate steps:

- The first model, having economic performance as the dependent variable
- The second model, having export intensity as the dependent variable

The conceptual model is restated in Figure 18. The only difference in this model to the original conceptual model (Figure 1) is that in this model:

- Economic performance is a 1 factor composite
- Export intensity is the second outcome variable – Scope and Speed have been removed

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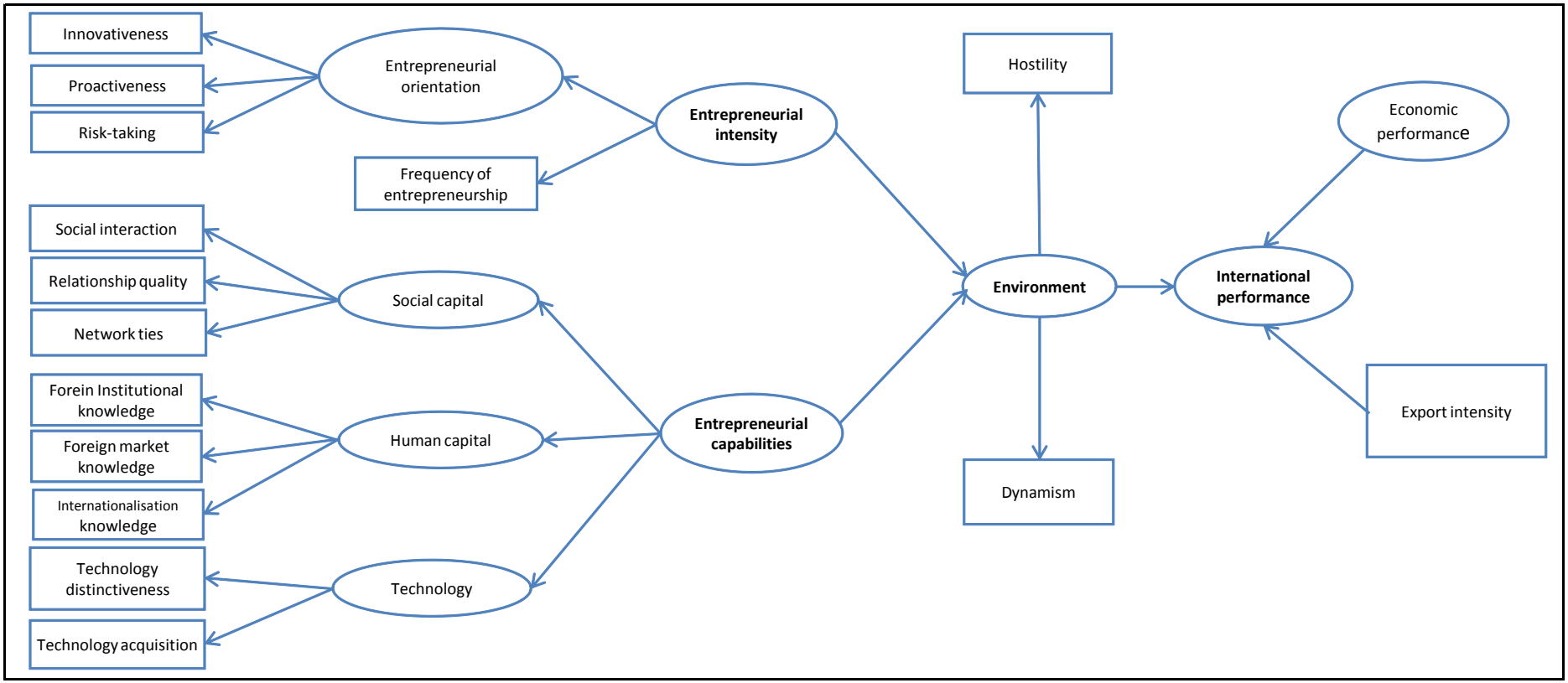
As the Spearman's Rho correlation and Pearson product moment correlations were not significantly different for any predictor variable with Export Intensity, the parametric approach of hierarchical linear regression analysis was adopted. The Spearman's Rho correlation and Pearson product moment correlations are presented in Table 58 and Table 59 in Appendix C.



* According to the conventions of SEM, latent variables or constructs are shown as ovals, while measurement variables are shown as rectangles.

Figure 18: Restatement of the conceptual model

4.4.1 Hypotheses restated based on conclusions on the measurements adequacy of the variables

The hypotheses are restated to incorporate:

- the split of the performance variables – economic performance and export intensity
- The explicit statement of the hypothesis involving the environmental characteristics (moderators) into separate hypothesis for Hostility and dynamism

In order to link the newly stated hypotheses to the original hypothesis, the original hypotheses are stated, and then followed by the new hypotheses.

Original Hypothesis 1: Entrepreneurial intensity is positively related to international performance.

New Hypothesis 1:

H1a: Entrepreneurial intensity is positively related to economic performance

H1b: Entrepreneurial intensity is positively related to export intensity

Original Hypothesis 2: Entrepreneurial capabilities are positively related to international performance

New Hypothesis 2:

H2a: Entrepreneurial capabilities are positively related to economic performance

H2b: Entrepreneurial capabilities are positively related to export intensity

Original Hypothesis 3: The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics

New Hypothesis 3:

H3a (i): The relationship between entrepreneurial intensity and economic performance is moderated by environmental hostility

H3a (ii): The relationship between entrepreneurial intensity and economic performance is moderated by environmental dynamism

H3b (i): The relationship between entrepreneurial intensity and export intensity is moderated by environmental hostility

H3b (ii): The relationship between entrepreneurial intensity and export intensity is moderated by environmental dynamism

Original Hypothesis 4: The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics

New Hypothesis 4:

H4a (i): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental hostility

H4a (ii): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental dynamism

H4b (i): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental hostility

H4b (ii): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental dynamism

4.4.2 Systematic presentation of the model: Base model and moderated model

The model is assessed systematically at level 1, level 2, and level 3 of the measurements variables. For each of the levels of measurement, the base model as well as the moderated model is assessed. The model with economic performance as a

performance variable is assessed separately from the model with export intensity as a performance variable. Hypotheses 1 and 2 are based on bivariate relationships between the independent and dependent variables; therefore the test of the hypotheses is based on the correlations between the variables as well as the scatterplots. Hypotheses 3 and 4 are based on multivariate relationships between the independent and dependent variables; therefore the test of the hypotheses is on the basis of multiple regression analysis.

The results are presented as follows: Firstly, the constructs are tested individually for their predictive power to the model for each hypothesis; then, in the case of multiple regression analysis, all the predictors are included in the model simultaneously to check whether the regression weights are similar in the presence of other variables. Using this method, the researcher attempted to control for specification error by including only relevant variables in the model and excluding irrelevant variables. The results are presented by sub-hypotheses, and then on the basis of the results conclusions are drawn for the overarching (original) hypotheses. Lastly, the summary regression results are presented.

Hypothesis 1: Entrepreneurial intensity is positively related to international performance

H1a: Entrepreneurial intensity is positively related to economic performance

The first hypothesis posits a bivariate relation; therefore the test of the hypothesis is on the basis of the correlations as well as the scatterplots. Correlation between any pair of variables provides insights into how the variables' values covary or move up or down together. There is a significant correlation ($r=0.27$, $p<0.01$) between entrepreneurial intensity (EI) and economic performance (Table 22). This means that the higher the EI of a firm the more likely it would be to have higher economic performance. The level 1 model explains approximately 7.2% of the variance in Economic performance. Although this relationship is considered weak, the result supports H1a.

Table 22: Correlations between EI scales and Economic Performance

Level of scale	EI Scale	Pearson Correlations with Economic Performance	
1	EI	.27	p<0.01
2	EO	.22	p<0.05
2	Frequency of entrepreneurship	.32	p<0.001
3	Innovation	.11	p>0.05
3	Proactiveness	.16	p>0.05
3	Risk-taking	.27	p<0.01

Further analysis into the components of EI shows that Frequency of entrepreneurship ($r=0.32$, $p<0.001$) and EO ($r=0.22$, $p<0.05$) are both significant correlates of Economic performance. Further analysis into the components of EO shows that Innovativeness and Proactiveness are not significant correlates of economic performance, whereas Risk-taking ($r=0.27$, $p<0.01$) is a significant correlate.

The scatterplots of these significant relations among EI variables and Economic performance are presented in Figure 19.

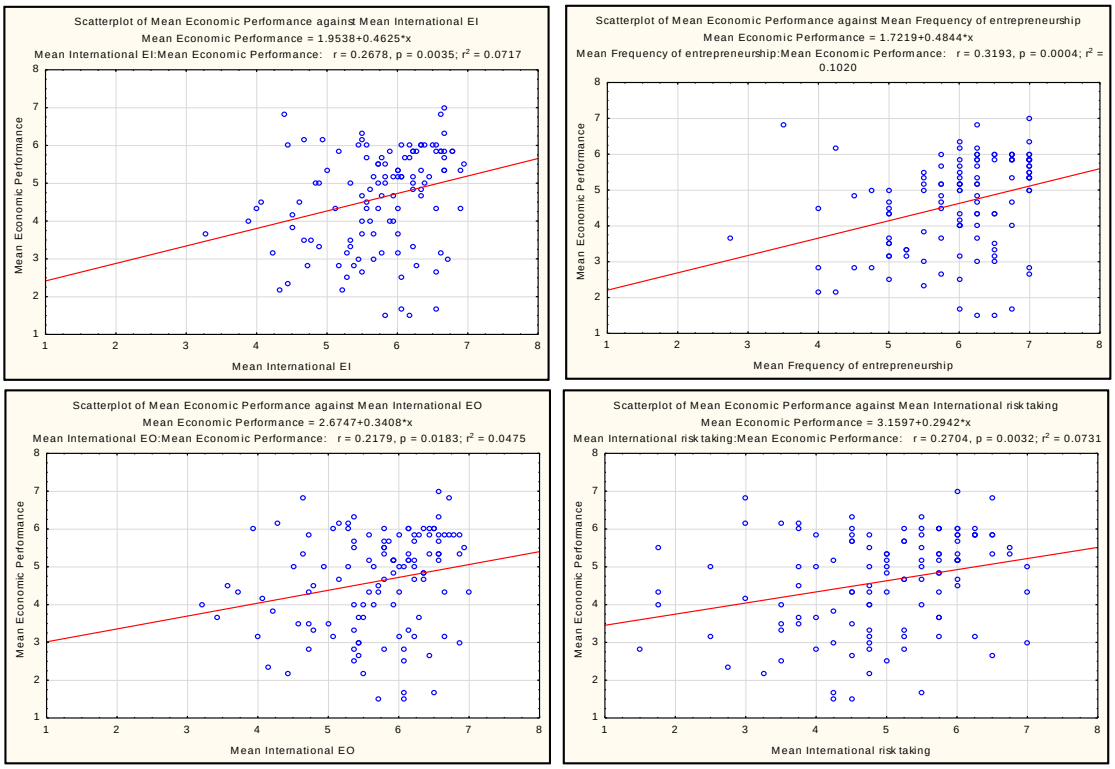


Figure 19: Scatterplots of the significant relations among EI variables and Economic performance

In conclusion, there is **support, although weak, for the hypothesis H1a** that entrepreneurial intensity is positively related to economic performance and it appears that frequency of entrepreneurship and risk-taking are the most important determinants of this relationship.

H1b: Entrepreneurial intensity is positively related to export intensity

Similar to the first hypothesis, the second hypothesis is a test of a bivariate relation; therefore the test of the hypothesis is on the basis of the correlations as well as the scatterplots. There is a significant correlation ($r=0.23$, $p<0.05$) between entrepreneurial intensity (EI) and export intensity (Intensity Table). This means that the higher the EI of a firm the more likely it would be to have higher export intensity. The level 1 model explains approximately 5.4% of the variance in export intensity. Although this relationship is considered weak, the result supports H1b.

Table 23: Correlations between EI scales and Export intensity

Level	Scale	Correlations with Export intensity	
1	EI	.23	p<0.05
2	EO	.26	p<0.01
2	Frequency of entrepreneurship	.027	p>0.05
3	Innovation	.19	p<0.05
3	Proactiveness	.33	p<0.001
3	Risk-taking	.13	p>0.05

Further analysis into the components of EI shows that EO is the only significant correlate ($r=0.26$, $p<0.01$) of export intensity. The correlation coefficients for frequency of entrepreneurship is almost zero ($r=0.03$, $p>0.05$) and not significant. This means frequency tells little or nothing about a firm's level of export intensity.

Further analysis into the components of EO shows that Innovativeness ($r=0.19$, $p<0.05$) and Proactiveness ($r=0.33$, $p<0.001$) are significant correlates of export intensity, whereas Risk-taking is not significant.

The scatterplots of these significant relations among EI variables and export intensity are presented in Figure 20.

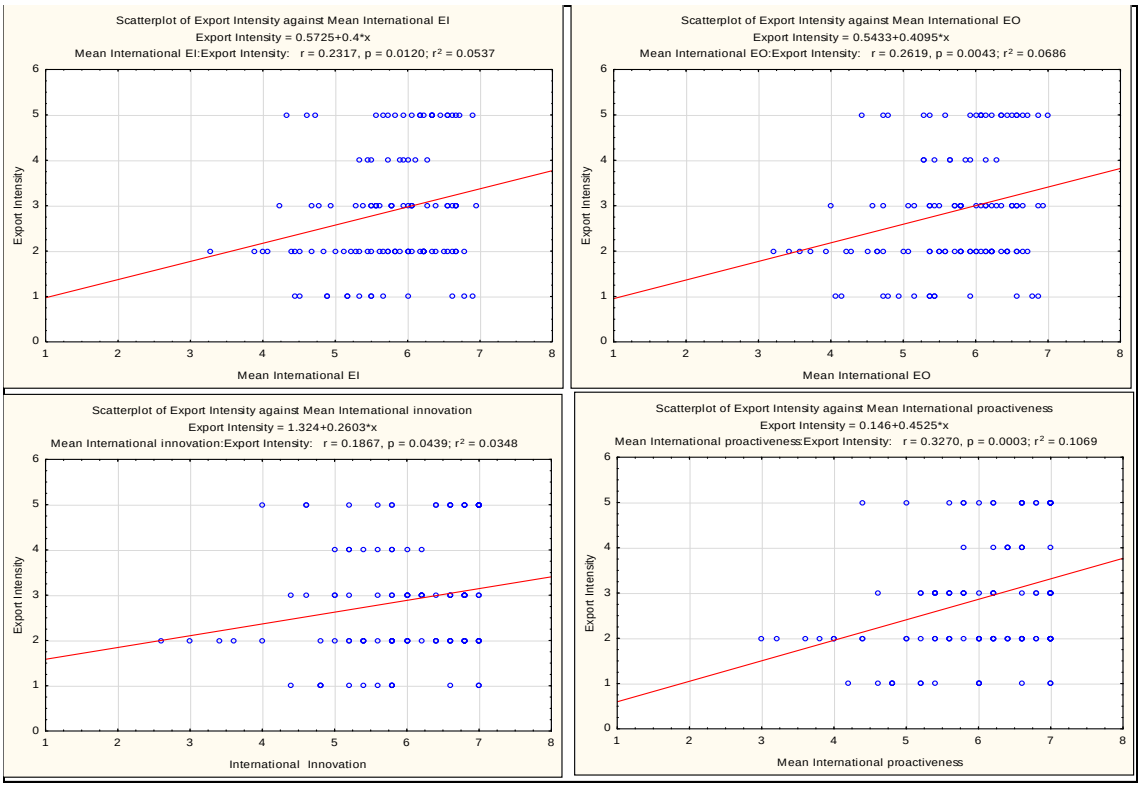


Figure 20: Scatterplots of the significant relations among EI variates and Export intensity

In conclusion, there is **support, although weak, for hypothesis H1b** that Entrepreneurial intensity is positively related to export intensity and it appears that EO, an in particular innovativeness and proactiveness, is most important in this relationship. Frequency of entrepreneurship and risk-taking are not important to export intensity.

In general, based on the support for H1a and H1b, there is support for Hypothesis 1 that Entrepreneurial intensity is positively related to international performance.

Hypothesis 2: Entrepreneurial capabilities are positively related to international performance

H2a: Entrepreneurial capabilities are positively related to economic performance

This hypothesis also posits a bivariate relation; therefore the test of the hypothesis is based on the correlations as well as the scatter plots. There is a significant correlation ($r=0.42$, $p<0.001$) between entrepreneurial capabilities (EC) and economic performance (Table 24). This means that the higher the EC of a firm the more likely it would have a higher economic performance. The level 1 model explains approximately 17.3% of the variance in Economic performance. This relationship is considered relatively strong. The result supports H2a.

Table 24: Correlations between EC scales and Economic Performance

Level of scale	EC Scale	Pearson Correlations with Economic Performance	
1	EC	.4156	p<0.001
2	Human capital	.2817	p<0.01
2	Social capital	.4153	p<0.001
2	Technology	.3506	p<0.001
3	Foreign institutional knowledge	.2382	p<0.05
3	Foreign business knowledge	.2462	p<0.01
3	Internationalisation knowledge	.2650	p<0.01
3	Social interaction	.3835	p<0.001
3	Relationship quality	.2607	p<0.01
3	Network ties	.3900	p<0.001
3	Technology distinctiveness	.2791	p<0.01
3	Technology assimilation	.3473	p<0.001

Further analysis into the components of EC shows that all the components of EC at level 2 are significant correlates of economic performance, with Social capital having the highest correlation ($b=0.42$, $p<0.001$)) with economic performance, followed by Technology ($b=0.35$, $p<0.001$), and lastly Human capital ($b=0.28$, $p<0.01$). The strength of the relations with economic performance for Social capital, Technology, and Human capital are considered strong/moderate, moderate and weak, respectively.

Further analysis shows that the level 3 measures of EC are all significant at p<0.001 (except Foreign Institutional Knowledge, p<0.05) and correlations ranging from b=0.24 to b=0.39. The scatterplots of these significant relations among EI variables and export intensity are presented in Figure 21.

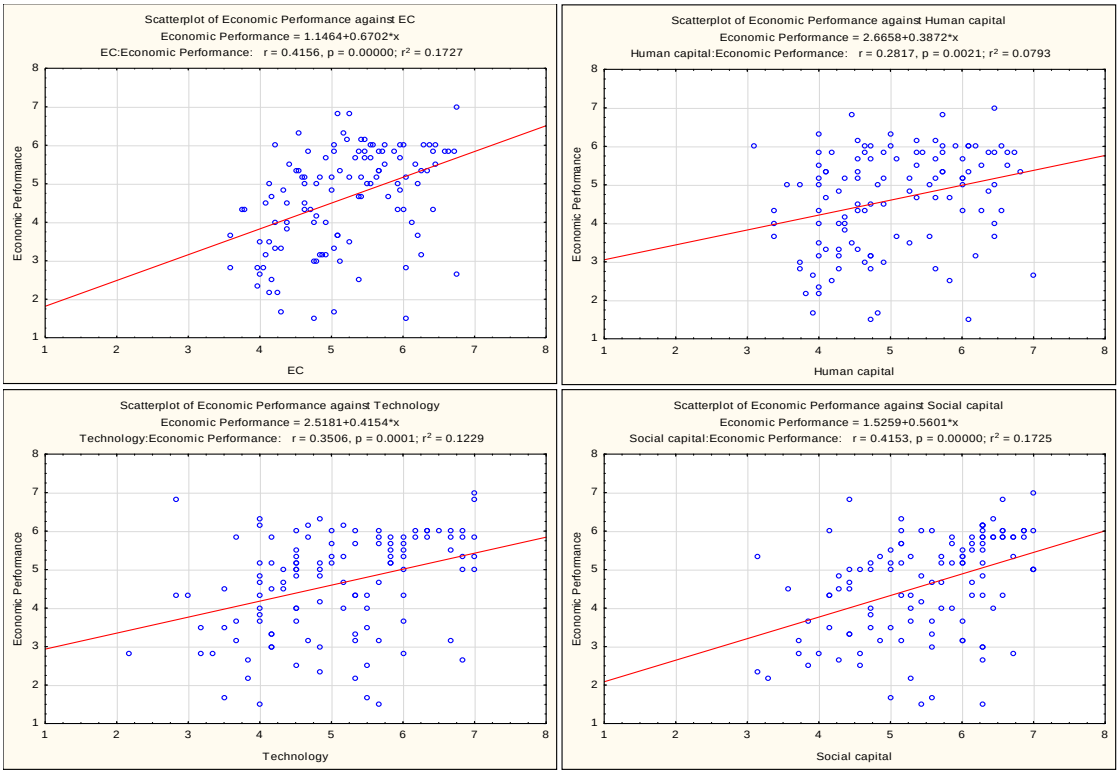


Figure 21: Scatterplots of the significant relations among EC variables and Economic performance

In conclusion, there is **support for hypothesis H2a** that Entrepreneurial capital is positively related to economic performance and it appears that social capital, human capital and technology are all important determinants of this relationship.

H2b: Entrepreneurial capabilities are positively related to export intensity

Similar to the above hypotheses, this hypothesis posits a bivariate relation; therefore the test of the hypothesis is on the basis of the correlations as well as the scatter plots. There is a significant correlation($r=0.19$, $p<0.05$) between entrepreneurial capabilities (EC) and export intensity (Table 25). This means that the higher the EC of a firm the more likely it would have a higher economic performance. The level 1 model explains approximately 3.6% of the variance in export intensity. This relationship is considered weak and positive, there supporting H2b.

Table 25: Correlations between EC scales and Export intensity

Level of scale	EC Scale	Pearson Correlations with Export intensity	
1	EC	.19	p<0.05
2	Human capital	.23	p<0.05
2	Social capital	.24	p<0.01
2	Technology	-.04	p>0.05
3	Foreign institutional knowledge	.16	p>0.05
3	Foreign business knowledge	.21	p<0.05
3	Internationalisation knowledge	.23	p<0.05
3	Social interaction	.26	p<0.01
3	Relationship quality	.22	p<0.05
3	Network ties	.098	p>0.05
3	Technology distinctiveness	-.22	p<0.05
3	Technology assimilation	.20	p<0.05

Further analysis into the components of EC shows that Social capital (b=0.24) and Human capital (b=0.23) are significant correlates of export intensity. The correlation coefficients for Technology is almost zero (b--0.04) and not significant. This means Technology at level 2 tells little or nothing about a firm's level of export intensity. However, at level 3 Technology is significant.

At level 3, all (except Network ties, $p>0.05$) the subscales of EC are significant ($p<0.05$). The scatterplots of these significant relations among EC variables and export intensity are presented in Figure 22.

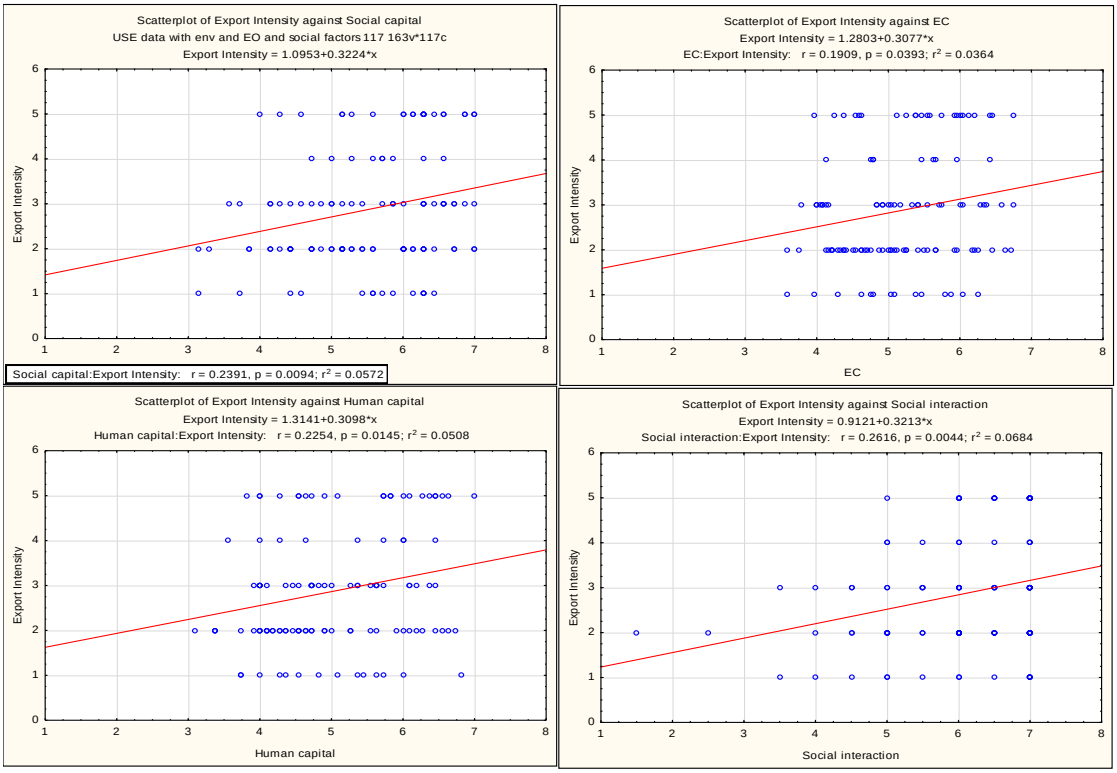


Figure 22: Scatterplots of the significant relations among EC variables and Export intensity

In conclusion, there is **support (relatively strong) for hypothesis H2b** that Entrepreneurial capital is positively related to export intensity. Social capital and human capital are important determinants of this relationship, but Technology is not.

In all, the correlations of EC with export intensity are generally weaker than with economic performance.

In general, based on the support for H2a and H2b, there is support Hypothesis 2 that Entrepreneurial capabilities are positively related to international performance.

Hypothesis 3: The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics

H3a (i): The relationship between entrepreneurial intensity and economic performance is moderated by environmental hostility

Table 26, Table 27, and Table 28 and presents the regression results of Economic performance with hostility as a moderator for Level 1, 2, and 3 respectively.

Table 26: Level 1 regression results for EI-Economic performance with Hostility

LEVEL 1	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	2.957226	0.923635		**	-1.14937	3.339156		
EI	0.543003	0.151667	0.31446	***	1.25419	0.576055	0.726317	*
Environmental Hostility	-0.322827	0.102795	-0.275838	**	0.58421	0.716287	0.49917	
EI*Hostility					-0.15624	0.122114	-0.943576	
R^2 base	0.1457							
ΔR^2	0.012201							
F(2,114) base	9.72***							
F(3,113) with moderator	7.06***							

* p < 0.05; ** p < 0.01; *** p < 0.001. EI: Entrepreneurial intensity

Analysis of the level 1 model results (Table 26) shows that in the Base model, EI is a significant predictor (unstandardised regression coefficient b=0.54, p<0.001) of economic performance. The results show that the base model explains approximately 14.6% of economic performance. There is minimal (1.22%) increase in the explained variance from the base model to the model including the moderator. The change is the b-weight for EI from 0.543 to 1.254 is considerable. The moderating effect (EI*Hostility) is not significant, although with a small change in the regression coefficient of EI being the only significant variable (b=1.25, p< 0.05). Therefore, there was weak support for H3a (i) at level 1.

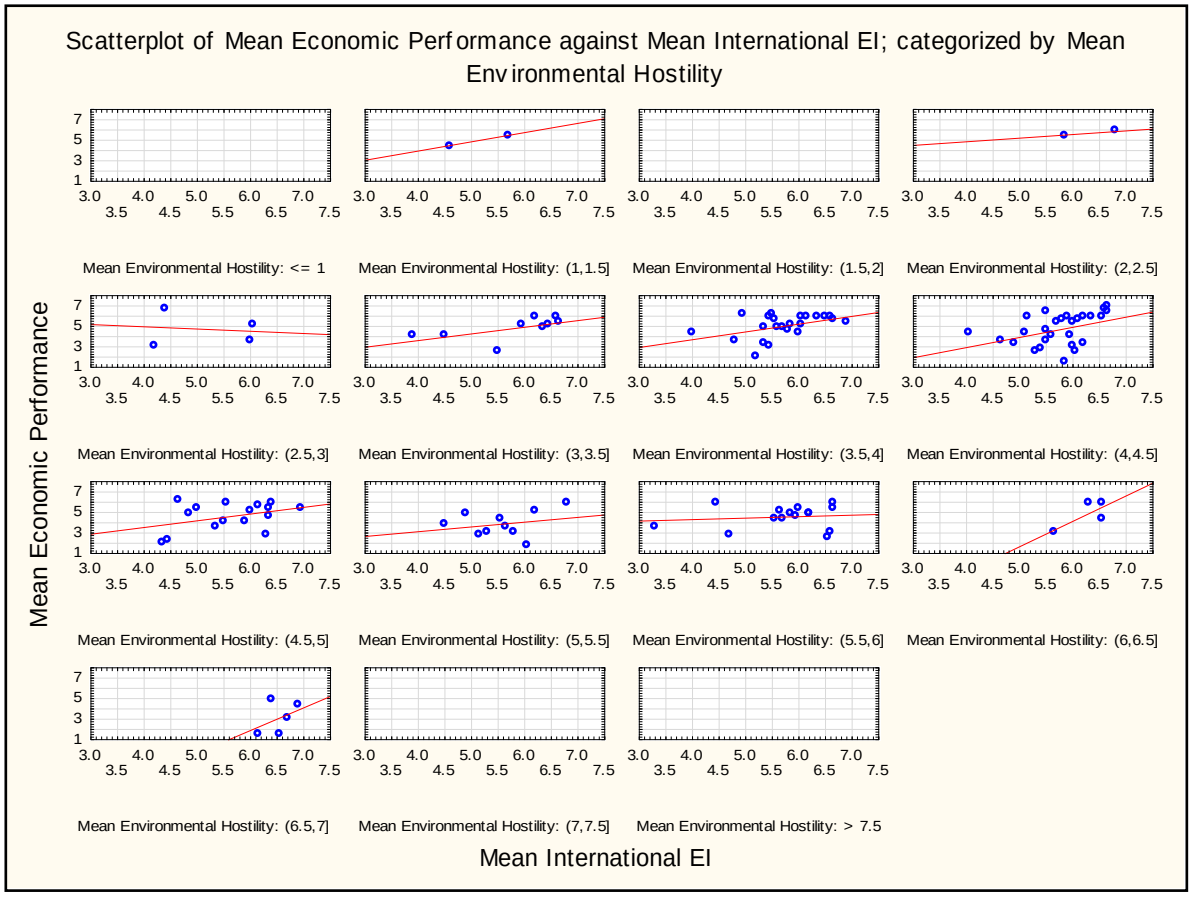


Figure 23: A representation of the moderating effect of Hostility on the relation between EI and Economic Performance

Detailed analysis of the graphic representation of the moderating effect of hostility on the relation between EI and economic performance shows some evidence that the relation tends to become weaker with increasing levels of hostility. This conclusion is based on perusal of the set of scatterplots in Figure 23 which shows the relation between EI and economic performance as hostility is incremented by .5 at a time. Note that the first and last few scatterplots are ignored as they are based on minimal numbers of observations.

Table 27: Level 2 regression results for EI-Economic performance with Hostility

LEVEL 2	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	1.649302	1.031214			-2.46729	3.32592		
EO	0.194993	0.150056	0.124654		0.97679	0.649481	0.62444	
Frequency of entrepreneurship	0.421992	0.144669	0.278208	**	0.35947	0.526276	0.23699	
Environmental Hostility	-0.309889	0.100663	-0.264783	**	0.59389	0.704237	0.50744	
Environmental Dynamism	0.17854	0.112498	0.135219		0.18072	0.112601	0.13687	
Freq*Host					0.01614	0.116818	0.10033	
EO*Host					-0.17357	0.141867	-1.06863	
R^2 base	0.2004							
ΔR^2	0.014336							
F(4,112) base	7.02***							
F(6,110) with moderator	5.01***							

* p < 0.05; ** p < 0.01; *** p < 0.001. EO: Entrepreneurial orientation

The level 2 regression results show (Table 27) that the model explains approximately 20.0% of economic performance, noting a considerable increase from the relation at level 1 (14.6%). There is a minimal increase in R^2 (1.4%) in the moderated model, and the moderator effect is nonsignificant (p>0.05). Therefore, H3a (i) was not supported at level 2.

Table 28: Level 3 regression results for EI-Economic performance with Hostility

LEVEL 3	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	3.418781	0.995892		***	-1.20778	3.328397		
innovation	-0.132582	0.172499	-0.095049		0.28607	0.849939	0.205089	
proactiveness	0.148422	0.160801	0.107222		0.80305	0.8209	0.580133	
risk taking	0.350024	0.110277	0.32165	**	-0.02333	0.337512	-0.021442	
Environmental Hostility	-0.320738	0.103703	-0.274053	**	0.71345	0.709685	0.609603	
Environmental Dynamism	0.195973	0.11477	0.148423		0.17383	0.114982	0.131652	
innovation*Host					-0.09636	0.177702	-0.630826	
proactiveness*Host					-0.14368	0.172079	-0.920993	
risk taking*Host					0.08751	0.075937	0.572029	
R^2 base	0.1820							
ΔR^2	0.032393							
F(5,111) base	4.94***							
F(8,108) with moderator	3.68***							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Further analysis of the regression results at level 3 of the measures of EI as a predictor of economic performance (Table 28) shows that only risk-taking (b=0.35, p<0.01) and the direct effects of hostility (b=-0.32, p<0.01) are significant. The R^2 of the base model

is 18% and increased by 3.3% when the model included the moderator, hostility. However, the moderation model is nonsignificant ($p>0.05$). Therefore, H3a (i) was not supported at level 3.

Based on the analysis the level 1,2, and 3 regression results for the EI construct, it can be concluded that there is **partial/weak support for the hypothesis H3a (i)** that the relationship between entrepreneurial intensity and economic performance is moderated by environmental hostility.

Note: From this point on in the analysis of regressions results, only the level 1 results are presented by default. The level 2 and 3 results will only be presented where there is a significant effect. The tables for the nonsignificant level 2 and 3 results are presented in the Appendix C for perusal.

H3a (ii): The relationship between entrepreneurial intensity and economic performance is moderated by environmental dynamism

Table 29 presents the regression results for the EI-Economic performance model with dynamism as a moderator for Level. The results for 2 and 3 are presented in the Appendix C Table 60 and Table 61 respectively.

Table 29: Level 1 regression results for EI-Economic performance with Dynamism

LEVEL 1	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	1.178536	0.982183			2.442183	4.183226		
EI	0.438272	0.154045	0.253809	**	0.223325	0.708599	0.129331	
Environmental Dynamism	0.219654	0.117789	0.166358		-0.088587	0.998685	-0.067093	
EI*Dynamism					0.052314	0.168302	0.27508	
R^2 base	0.0992							
ΔR^2	0.00077							
F(2,114) base	6.28**							
F(3,113) with moderator	4.18**							

* p < 0.05; ** p < 0.01; *** p < 0.001. EI: Entrepreneurial intensity

Table 29 shows that at level 1, none of the predictor variables in the model including the moderator is a significant predictor of economic performance. The results show that the base model explains approximately 9.9% of the variance in economic performance and there is almost no increase (0.1%) in the explained variance from the base model to the moderation model. The moderating effect of hostility was nonsignificant (p>0.05). Therefore, H3a (ii) was not supported.

Based on the analysis of the regression results for the EI construct, it can be concluded that there is **no support for the hypothesis H3a (ii)** that the relationship between entrepreneurial intensity and economic performance is moderated by environmental dynamism.

H3b (i): The relationship between entrepreneurial intensity and export intensity is moderated by environmental hostility

Table 30, Table 31, and Table 32 present the regression results of the EI-export intensity model with hostility as a moderator for Level 1, 2, and 3 respectively.

Table 30 shows that at level 1, the base model explains approximately 5.4% of the variance in export intensity. However, none of the predictor variables in the model including the moderator is a significant predictor of export intensity. There is a minimal increase (2.19%) in the explained variance from the base model to the model including the moderator. The moderating effect is nonsignificant (p>0.05). Therefore, H3b (i) was not supported at level 1.

Table 30: Level 1 regression results for EI-Export intensity with Hostility

LEVEL 1	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.512697	0.971751			6.00922	3.497335		
EI	0.395183	0.159568	0.228902	*	-0.55671	0.603344	-0.32247	
Environmental Hostility	0.019257	0.10815	0.016457		-1.19477	0.750219	-1.02107	
EI*Hostility					0.20912	0.127898	1.2632	
R^2 base	0.0539							
ΔR^2	0.021865							
F(2,114) base	3.25*							
F(3,113) with moderator	3.09*							

* p < 0.05; ** p < 0.01; *** p < 0.001. EI: Entrepreneurial intensity

Further analysis into the level 2 of the IE construct (Table 31) shows that only EO (b=0.478, p<0.01) is a significant predictor of export intensity in the base model. The base model explains approximately 10.5% of the variance in export intensity. However, none of the variables is significant in the moderated model, and the change in R^2 (1.3%) is minimal. Therefore, H3b (i) was not supported at level 2.

Table 31: Level 2 regression results for EI-Export intensity model with Hostility

LEVEL 2	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.300473	1.090625			5.41768	3.496964		
EO	0.478482	0.158701	0.305942	**	-0.66114	0.682882	-0.422733	
Frequency of entrepreneurship	-0.199542	0.153004	-0.131579		0.03913	0.553341	0.025803	
Environmental Hostility	0.034597	0.106462	0.029567		-1.0867	0.740454	-0.928712	
Environmental Dynamism	0.212437	0.11898	0.160925		0.21095	0.118392	0.159799	
Freq*Host					-0.05735	0.122825	-0.356487	
EO*Host					0.25399	0.149162	1.564054	
R^2 base	0.1052							
ΔR^2	0.02629							
F(4,112) base	3.29*							
F(6,110) with moderator	2.78*							

* p < 0.05; ** p < 0.01; *** p < 0.001. EO: Entrepreneurial orientation

Table 32: Level 3 regression results for EI-Export intensity model with Hostility

LEVEL 3	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	-0.877787	1.019656			3.329	3.363797		
innovation	-0.131378	0.176616	-0.094205		-1.18766	0.858978	-0.85162	
proactiveness	0.533329	0.164638	0.385363	**	1.41362	0.829631	1.02143	
risk taking	0.003133	0.112908	0.002879		-0.66696	0.341101	-0.61302	
Environmental Hostility	0.070363	0.106178	0.060134		-0.82725	0.717233	-0.70698	
Environmental Dynamism	0.236045	0.117509	0.178809	*	0.21714	0.116205	0.16449	
innovation*Host					0.2109	0.179592	1.38091	
proactiveness*Host					-0.18213	0.173909	-1.16771	
risk taking*Host					0.15418	0.076745	1.00808	*
R^2 base	0.1421							
ΔR^2	0.055121							
F(5,111) base	3.68**							
F(8,108) with moderator	3.32**							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Further analysis of the model results at level 3 of the EI construct (Table 32) shows that only Risk-taking interacts significantly with hostility, risk-taking*hostility (b=0.15, p<0.05). There is a considerable increase in the R^2 (5.5%) from the base model (14.2%) to the moderated model. Although the effect of the moderation model was considerable in terms of the increase in the explained variance, but still not substantial (<20%) in terms of R^2, it showed weak evidence of interaction. Therefore, H3a (ii) was supported.

Perusal of the moderation graphs in Figure 24 suggests the relation between EI and export intensity may tend to become somewhat weaker with increasing levels of hostility. Once again, the scatterplots at the extreme values of hostility are ignored.

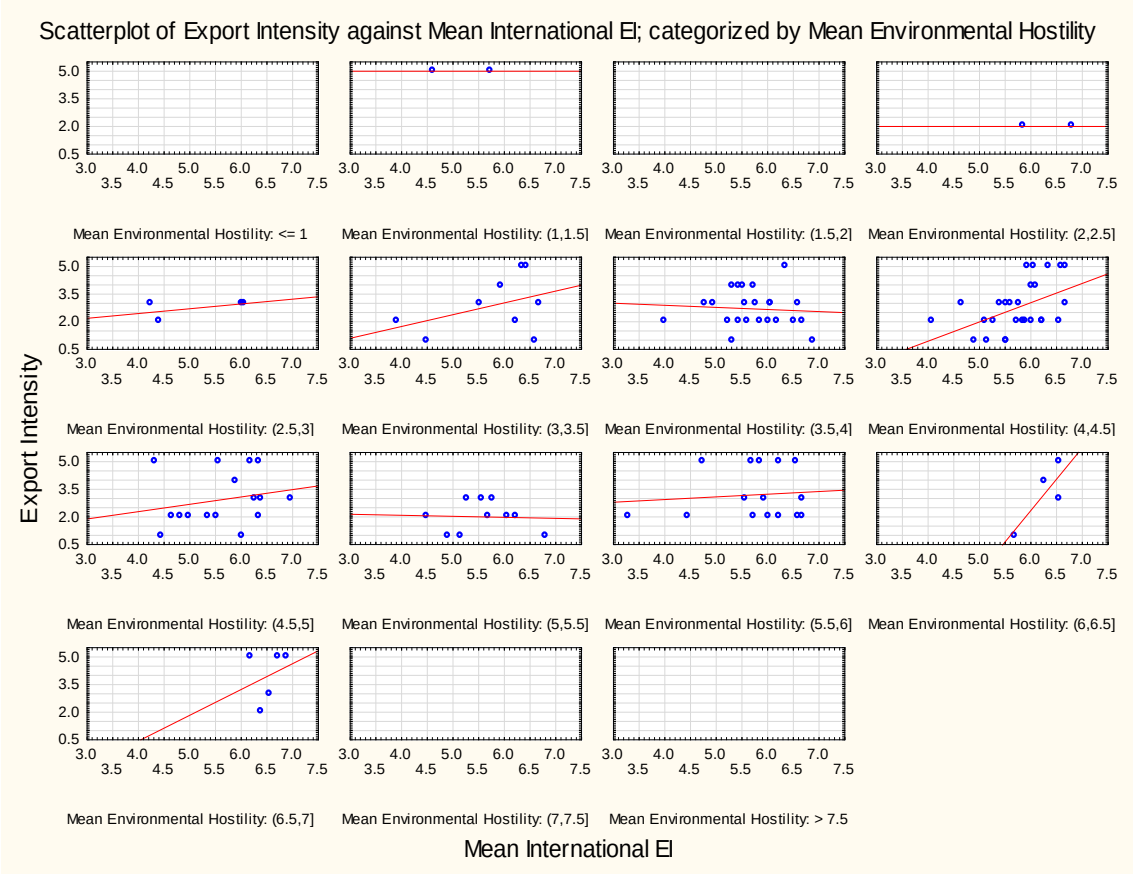


Figure 24: A representation of the moderating effect of Hostility on the relation between EI and Export intensity

Based on the analysis the level 1,2, and 3 regression results for the EI construct, it can be concluded that there is **partial/weak support for the hypothesis H3b (i)** that the relationship between entrepreneurial intensity and export intensity is weakly moderated by environmental hostility. It is only at level 3 that hostility has a significant interaction with risk-taking, although the moderation effect was weak.

H3b (ii): The relationship between entrepreneurial intensity and export intensity is moderated by environmental dynamism

Table 33 present the regression results for the EI-export intensity model with dynamism as a moderator for Level 1, 2, and 3 respectively.

Table 33: Level 1 regression results for EI-Export intensity with Dynamism

LEVEL 1	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	-0.123482	0.99465			-2.71911	4.23068		
EI	0.378217	0.156	0.219075	*	0.81973	0.716637	0.474815	
Environmental Dynamism	0.197199	0.119284	0.149382		0.83035	1.010014	0.629005	
EI*Dynamism					-0.10746	0.170211	-0.565151	
R^2 base	0.0758							
ΔR^2	0.003248							
F(2,114) base	4.68*							
F(3,113) with moderator	3.23*							

* p < 0.05; ** p < 0.01; *** p < 0.001. EI: Entrepreneurial intensity

Analysis into the level 1 model results (Table 33) shows that the model explains approximately 7.6% of export intensity. There is a minimal increase (0.3%) increase in the explained variance from the base model to the model including the moderator. The moderating effect of dynamism is nonsignificant (p>0.05). Therefore, H3b (ii) was not supported.

Based on the analysis regression results for the EI construct, it can be concluded that there is **no support for the hypothesis H3b (ii)** that the relationship between entrepreneurial intensity and export intensity is moderated by environmental dynamism.

In general, based on the results for H3a (i) (weakly supported), H3a (ii) (not supported), H3b (i) (not supported), and H3b (ii) (not supported), there is partial/weak support Hypothesis 3 that Entrepreneurial intensity measures are positively related to international performance.

Hypothesis 4: The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics

H4a (i): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental hostility

Table 34, Table 35, and Table 36 present the regression results EC-Economic performance model with Hostility as a moderator for Level 1, 2, and 3 respectively.

Table 34: Level 1 regression results for EC-Economic performance with Hostility

LEVEL 1	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	2.304793	0.84931		**	2.194693	0.862088		*
EC	0.652934	0.134168	0.404901	***	0.668423	0.135817	0.414506	***
Environmental Hostility	-0.235447	0.097374	-0.201176	*	-0.227387	0.09807	-0.194289	*
EC*Hostility					0.024479	0.031024	0.066666	
R^2 base	0.2131							
ΔR^2	0.004312							
F(2,114) base	15.43***							
F(3,113) with moderator	10.46***							

* p < 0.05; ** p < 0.01; *** p < 0.001. EC: Entrepreneurial capabilities

Analysis of the level 1 model results shows that in the moderation model, EC (b=0.668, p<0.001) and Hostility (b=-0.227, p<0.5) are both significant predictors economic performance. The results show that the model explains approximately 21.3% of economic performance. There is minimal (0.43%) increase in the explained variance from the base model to the model including the moderator. The moderating effect is nonsignificant, with minimal change in the regression weight of EC (from 0.653 to 0.668). There is therefore no support found for H4a (i) at level 1.

Table 35: Level 2 regression results for EC-Economic performance with Hostility

LEVEL 2	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	1.650697	0.916768			-4.22153	2.922702		
Human capital	-0.040199	0.143593	-0.029246		-0.16651	0.558913	-0.12114	
Social capital	0.434474	0.136094	0.322131	**	1.49434	0.579883	1.10794	*
Technology	0.271415	0.110476	0.229072	*	0.38021	0.456517	0.32089	
Environmental Hostility	-0.246205	0.095487	-0.210368	*	0.99091	0.601655	0.84667	
Environmental Dynamism	0.124793	0.109436	0.094513		0.13674	0.108764	0.10356	
HC*Host					0.02531	0.11389	0.13814	
SC*Host					-0.22201	0.119735	-1.31521	
Tech*Host					-0.02507	0.096016	-0.15	
R^2 base	0.2705							
ΔR^2	0.034001							
F(5,111) base	8.23***							
F(8,108) with moderator	5.91***							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Further analysis into the level 2 of the variables (Table 35) shows that Social capital is significant in both the main effects model (b=0.43, p<0.01) and the moderation model (b=01.49, p<0.05). The model explains approximately 27.1% of variation in economic performance. With hostility acting as a moderator, the R^2 increases by 3.4%, which is a small but considerable change given the small R^2. Only the regression weight for social capital changes noticeably, indicating some weak support for the relation between social capital and economic performance to be moderated by hostility. Therefore, H4b (i) was partially supported.

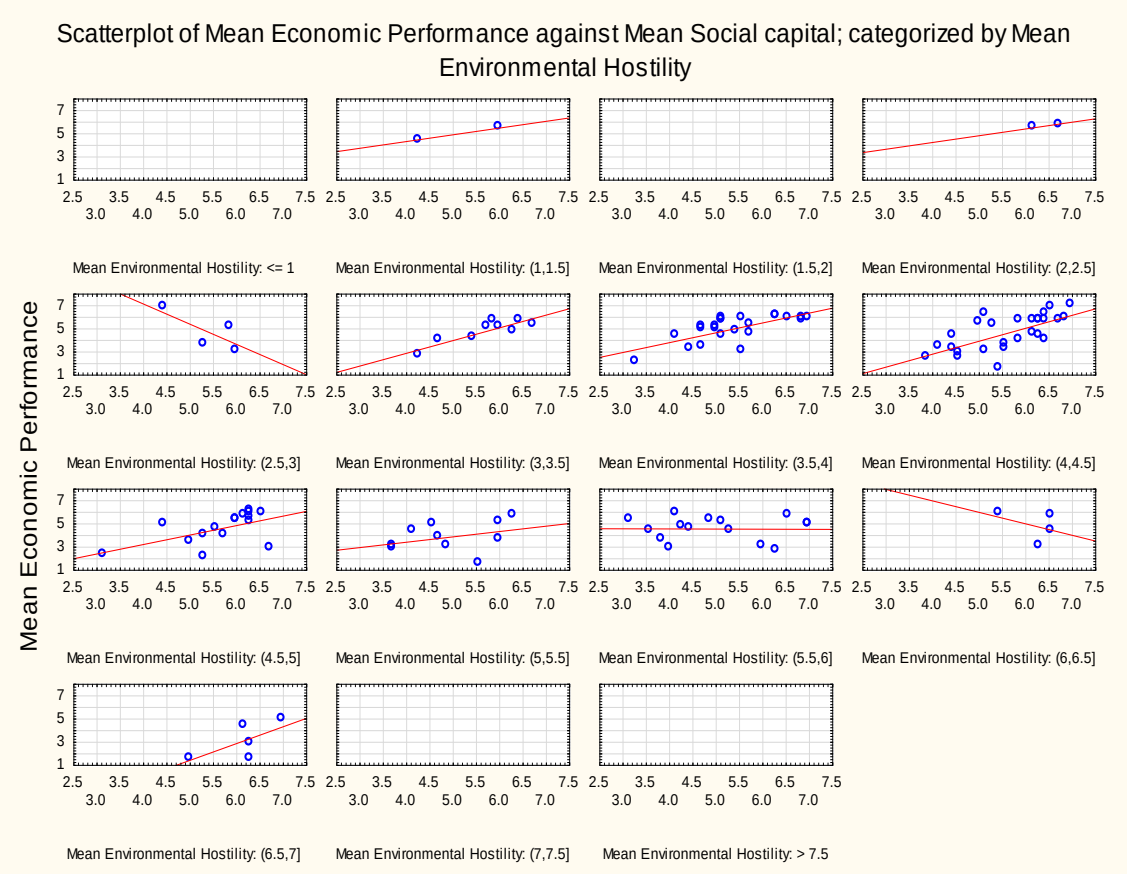


Figure 25: A representation of the moderating effect of Hostility on the relation between Social capital and Economic Performance

Perusal of the moderation graphs in Figure 25 suggests the relation between social capital and economic performance may tend to become somewhat weaker with increasing levels of hostility. Once again, the scatterplots at the extreme values of hostility are ignored.

Table 36: Level 3 regression results for EC-Economic performance with Hostility - Social capital

LEVEL 3	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	1.997601	0.881079		*	-8.50345	3.348717		*
Social interaction	0.286823	0.12222	0.233459	*	1.68251	0.551126	1.36948	**
Relationship quality	0.009621	0.107856	0.008741		0.5181	0.451385	0.47069	
Network ties	0.254866	0.089969	0.268183	**	0.0914	0.397042	0.09618	
Environmental Hostility	-0.24323	0.095715	-0.20783	*	1.91218	0.670198	1.63385	**
Environmental Dynamism	0.138995	0.109757	0.105269		0.12615	0.107792	0.09554	
Social interaction*Host					-0.28649	0.115003	-1.89036	*
Relationship quality*Host					-0.10493	0.098514	-0.64327	
Network ties*Host					0.03613	0.087374	0.24475	
R^2 base	0.262438							
ΔR^2	0.065882							
F(5,111) base	7.9***							
F(8,108) with moderator	6.6***							
*p<0.05; **p<0.01; ***p<0.001								

At level 3, the analysis of the regression results (Table 36) show that shows that Social interaction (b=29, p<0.05), Network ties (b=0.25, p<0.01), as well as the interaction term Social interaction*Hostility (b=-0.29, p<0.05), are the significant predictors. The R^2 of the base model is approximately 26.2% and increases considerably (6.6%) when moderated by hostility. There is a considerable change in the b-weight for social capital. Therefore, there was support for H4a (i) although it was weak.

Based on the analysis of the level 1,2, and 3 regression results for the EC construct, it can be concluded that there is **partial support for the hypothesis H4a (i)** that the relationship between entrepreneurial capabilities and economic performance is moderated by environmental hostility. The relation between social capital and economic performance is weakly moderated by hostility, with the interaction effect coming particularly from the social interaction dimension of social capital.

H4a (ii): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental dynamism

Table 37, Table 38, and Table 39 present the regression results EC-Economic performance model with Dynamism as a moderator for Level 1, 2, and 3 respectively.

Table 37: Level 1 regression results for EC-Economic performance with Dynamism

LEVEL 1	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.546903	0.803828			0.442258	0.811529		
Environmental Dynamism	0.179447	0.112195	0.135907		0.185653	0.112424	0.140607	
EC	0.641607	0.137025	0.397877	***	0.658158	0.138162	0.40814	***
EC*Dynamism					0.033509	0.035021	0.081504	
R^2 base	0.1909							
ΔR^2	0.006503							
F(2,114) base	13.45***							
F(3,113) with moderator	9.26***							

* p < 0.05; ** p < 0.01; *** p < 0.001. EC: Entrepreneurial capabilities

Analysis into the level 1 model results (Table 37) shows only EC is a significant predictor (b=0.64, p<0.001) of Economic performance. The results show that the model explains approximately 19.1% of Economic performance. There is almost no increase (0.65%) increase in the explained variance from the base model to the model including the moderator. The moderating effect is not significant, with minimal change in the b-weight of EC (b=0.64 to b=0.66, p< 0.001).Therefore, H4a (ii) was not supported at level 1.

Table 38: Level 2 regression results for EC-Economic performance with Dynamism

LEVEL 2	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	1.650697	0.916768			2.780341	3.510474		
Human capital	-0.040199	0.143593	-0.029246		-0.165603	0.758195	-0.120481	
Social capital	0.434474	0.136094	0.322131	**	0.090658	0.741044	0.067217	
Technology	0.271415	0.110476	0.229072	*	0.559271	0.579551	0.47202	
Environmental Hostility	-0.246205	0.095487	-0.210368	*	-0.252241	0.097645	-0.215525	*
Environmental Dynamism	0.124793	0.109436	0.094513		-0.13569	0.831638	-0.102767	
HC*Dynamism					0.027905	0.171955	0.148406	
SC*Dynamism					0.082491	0.173346	0.475253	
Tech*Dynamism					-0.068108	0.136147	-0.379393	
R^2 base	0.2705							
ΔR^2	0.002662							
F(5,111) base	8.23***							
F(8,108) with moderator	5.07***							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Table 39: Level 3 regression results for EC-Economic performance with Dynamism

LEVEL 3	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	2.995643	0.935827		**	0.42786	3.107438		
Foreign institutional knowledge	0.104697	0.149325	0.087054		1.45243	0.734376	1.20767	
Foreign business knowledge	0.058657	0.189622	0.045092		1.26709	0.975937	0.97407	
Internationalization knowledge	0.183765	0.1585	0.156571		-1.7206	0.837654	-1.46598	*
Environmental Hostility	-0.224322	0.103183	-0.19167	*	-0.23706	0.102039	-0.20255	*
Environmental Dynamism	0.212032	0.11631	0.160585		0.80018	0.714482	0.60603	
Foreign institutional knowledge*Dynamism					-0.31374	0.166843	-1.71245	
Foreign business knowledge*Dynamism					-0.27169	0.217359	-1.48309	
Internationalization knowledge*Dynamism					0.43927	0.191178	2.52671	*
R^2 base	0.1462							
ΔR^2	0.05289							
F(5,111) base	3.8**							
F(8,108) with moderator	3.36**							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Further analysis of the regression results at level 3 (Table 39) shows that the R^2 of the base model increases by a considerable 5.3% from 14.6% when the model included the moderator, dynamism. The interaction term Dynamism*Internationalisation knowledge, is significant (b=0.44, p<0.05). The regression weights of dynamism (b=0.21 to b=-0.24, p<0.05), Internationalisation knowledge (b=1.18 to b=-1.72, p<0.05), and hostility (b=0.22 to b= -0.24, p<0.05), changed considerably. The

moderation effect is considerable. Therefore, H4a (ii) was supported at level 3 the measurement for the EC construct.

The scatterplots in Figure 26 suggest the relation between Internationalisation knowledge and economic performance does not give a reliable picture of what the relationship looks like with increasing levels of dynamism. This may be due to the low reliability of the dynamism scale.

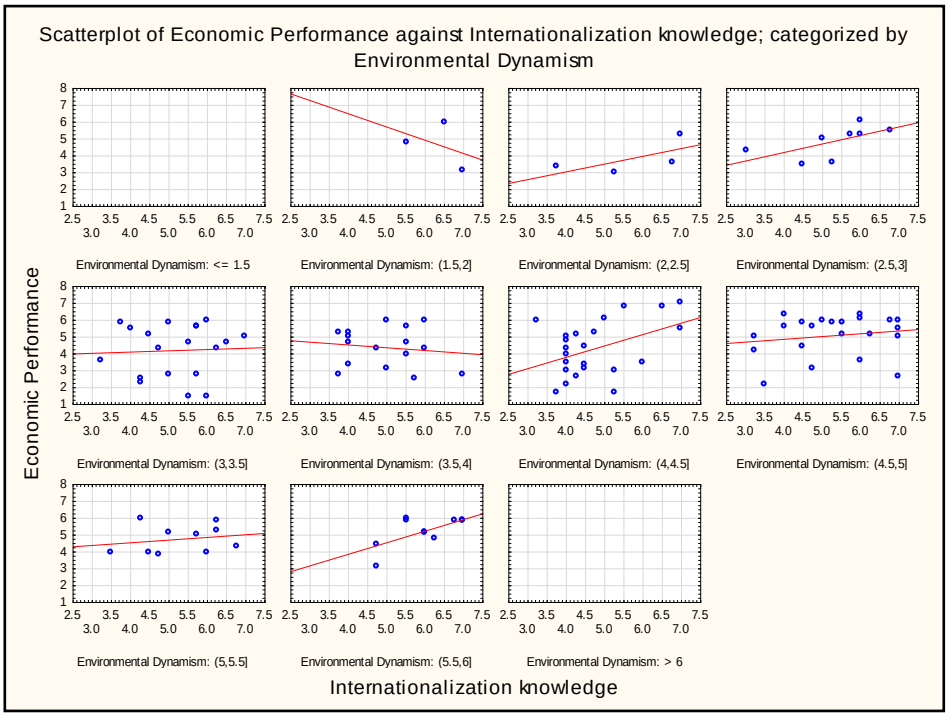


Figure 26: A representation of the moderating effect of Dynamism on the relation between Internationalisation knowledge and Economic performance

Based on the analysis the level 1,2, and 3 regression results for the EC construct in terms of Foreign institutional knowledge, it can be concluded that there is **support for the hypothesis H4a (ii)** that the relationship between entrepreneurial capabilities and economic performance is moderated by environmental dynamism. The relation between EC and economic performance is considerably moderated by dynamism, with the interaction effect coming particularly from the Internationalisation knowledge.

H4b (i): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental hostility

Table 40, Table 60 and Table 61 present the regression results EC-Export intensity model with Hostility as a moderator for Level 1, 2, and 3 respectively.

Table 40: Level 1 regression results for EC-Export intensity model with Hostility

LEVEL 1	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.903395	0.937538			1.294628	0.926775		
EC	0.313324	0.148106	0.19434	*	0.258284	0.146008	0.160201	
Environmental Hostility	0.076605	0.10749	0.065468		0.047964	0.105428	0.040991	
EC*Hostility					-0.086985	0.033352	-0.236941	*
R^2 base	0.0407							
ΔR^2	0.054465							
F(2,114) base	2.42							
F(3,113) with moderator	3.96**							

* p < 0.05; ** p < 0.01; *** p < 0.001. EC: Entrepreneurial capabilities

The results show (Table 40) that the model explains approximately 4.1% of export intensity. There is a considerable increase (5.5%) in the explained variance from the base model to the model including the moderator with a small change in the b weight for EC. The results show that there is a significant moderation effect, with the interaction term (EC*Hostility) significant *(b=-0.09, p<0.05)*.Therefore, H4b (i) was supported at level 1.

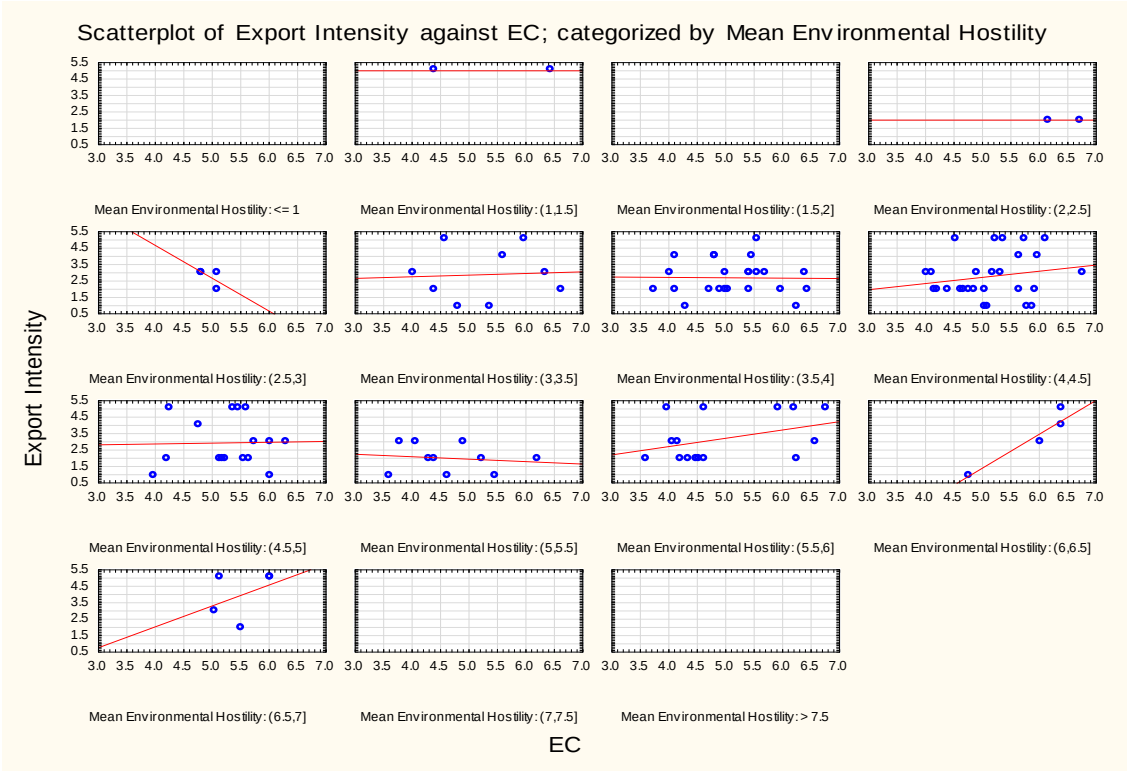


Figure 27: A representation of the moderating effect of Hostility on the relation between EC and Export intensity

The scatterplots in Figure 27 are unclear but may suggest that the relation between EC and Export intensity may tend to become somewhat stronger with increasing levels of Hostility. Once again, the scatterplots at the extreme values of Hostility are ignored. This effect must be interpreted cautiously as the pattern is unclear and R^2 is low.

H4b (ii): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental dynamism

Table 41, Table 42, and Table 43 present the regression results EC-Export intensity model with Hostility as a moderator for Level 1, 2, and 3 respectively.

Table 41: Level 1 regression results for EC-Export intensity model with Dynamism

LEVEL 1	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.638833	0.867502			0.903982	0.859655		
Environmental Dynamism	0.192024	0.121082	0.145461		0.176301	0.119091	0.133551	
EC	0.277137	0.147879	0.171895		0.2352	0.146356	0.145883	
EC*Dynamism					-0.084905	0.037098	-0.206556	*
R^2 base	0.0572							
ΔR^2	0.041766							
F(2,114) base	3.46*							
F(3,113) with moderator	4.14**							

* p < 0.05; ** p < 0.01; *** p < 0.001. EC: Entrepreneurial capabilities

Analysis into the level 1 model results (Table 41) shows that in the Base model, none of the variables is a significant predictor of export intensity. The results show that the model explains approximately 6% of export intensity. There is some increase (4.18%) in the explained variance of EI (R^2) from the base model to the model including the moderator (Table 41). The moderating effect (EC*Dynamism) is significant (b=-0.09, p<0.05). Therefore at level 1 measurement of the EC construct, H4b (ii) was supported.

However the pattern of the change in the relation between EC and export intensity with increasing levels of dynamism is unclear as would be expected with such a low value for R^2 and thus this effect should be interpreted with caution. The scatterplots for the above relation are shown in Figure 28.

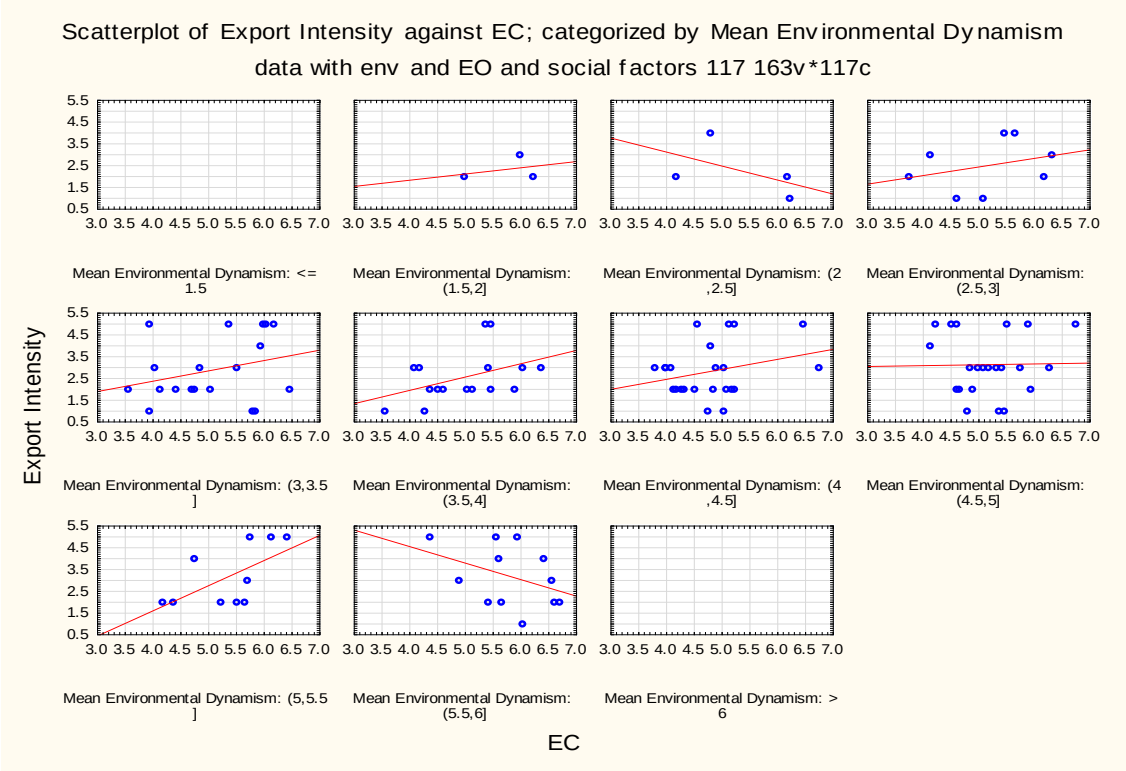


Figure 28: A representation of the moderating effect of Dynamism on the relation between EC and Export intensity

An analysis into the level 2 of the variables (Table 42) shows that only Human capital ($b=0.32$, $p<0.05$) and Technology ($b=-0.27$, $p<0.05$) are the significant predictors of export performance. The level 2 regression results show that the model explains approximately 13% of Export intensity. There is no change in R^2 (0.7%) after the model including Hostility as the moderator. There is no moderation effect. Therefore, H4b (ii) was not supported at level 2 measures.

Table 42: Level 2 regression results for EC-Export intensity model with Dynamism

LEVEL 2	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.087526	0.999481			-2.89368	3.819556		
Human capital	0.323748	0.156549	0.235584	*	0.79589	0.82495	0.579151	
Social capital	0.228083	0.148373	0.169141		0.36045	0.80629	0.267301	
Technology	-0.2717	0.120443	-0.229359	*	-0.33672	0.630577	-0.284244	
Environmental Hostility	0.098715	0.104103	0.084364		0.1003	0.106242	0.085719	
Environmental Dynamism	0.197179	0.11931	0.149367		0.92777	0.90486	0.702804	
HC*Dynamism					-0.10827	0.187095	-0.575936	
SC*Dynamism					-0.03525	0.188608	-0.20311	
Tech*Dynamism					0.01158	0.148134	0.064531	
R^2 base	0.1325							
ΔR^2	0.006613							
F(5,111) base	3.39**							
F(8,108) with moderator	2.18*							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Table 43: Level 3 regression results for EC-Export intensity model with Dynamism

LEVEL 3	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.020956	0.967882			-2.84533	3.235628		
Foreign institutional knowledge	-0.006726	0.15444	-0.005594		-1.5585	0.764671	-1.29613	*
Foreign business knowledge	0.089185	0.196117	0.068574		0.74736	1.016197	0.57464	
Internationalization knowledge	0.21229	0.163929	0.180912		1.4777	0.872209	1.25928	
Environmental Hostility	0.096266	0.106718	0.082271		0.11948	0.106249	0.10211	
Environmental Dynamism	0.211519	0.120294	0.160229		0.88901	0.743956	0.67344	
Foreign institutional knowledge*Dynamism					0.3606	0.173726	1.96861	*
Foreign business knowledge*Dynamism					-0.15257	0.226326	-0.833	
Internationalization knowledge*Dynamism					-0.30081	0.199065	-1.7306	
R^2 base	0.0863							
ΔR^2	0.044958							
F(5,111) base	2.1							
F(8,108) with moderator	2.04*							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Further analysis of the regression results at level 3 of the measures of EC as a predictor of export intensity (Table 43) shows none of the variables are significant on the base model. R^2 of the base model is approximately 8.6% and increases (4.5%) when the model included the moderator, environmental Dynamism. The model including dynamism as the moderator is significant, with Foreign institutional knowledge (b=-1.56, p<0.05) and the interaction term Foreign institutional knowledge*Dynamism (b=0.36, p<0.05) as the significant predictors. Therefore, H4b (ii) was supported at level 3 the measurement of the EC construct.

Once again, the pattern of the change in the relation between foreign institutional knowledge and export intensity with increasing levels of dynamism is unclear as would be expected with such a low value for R^2 and thus this effect should be interpreted with caution, although there is some evidence to say that this relationship weakens with increasing levels of dynamism.

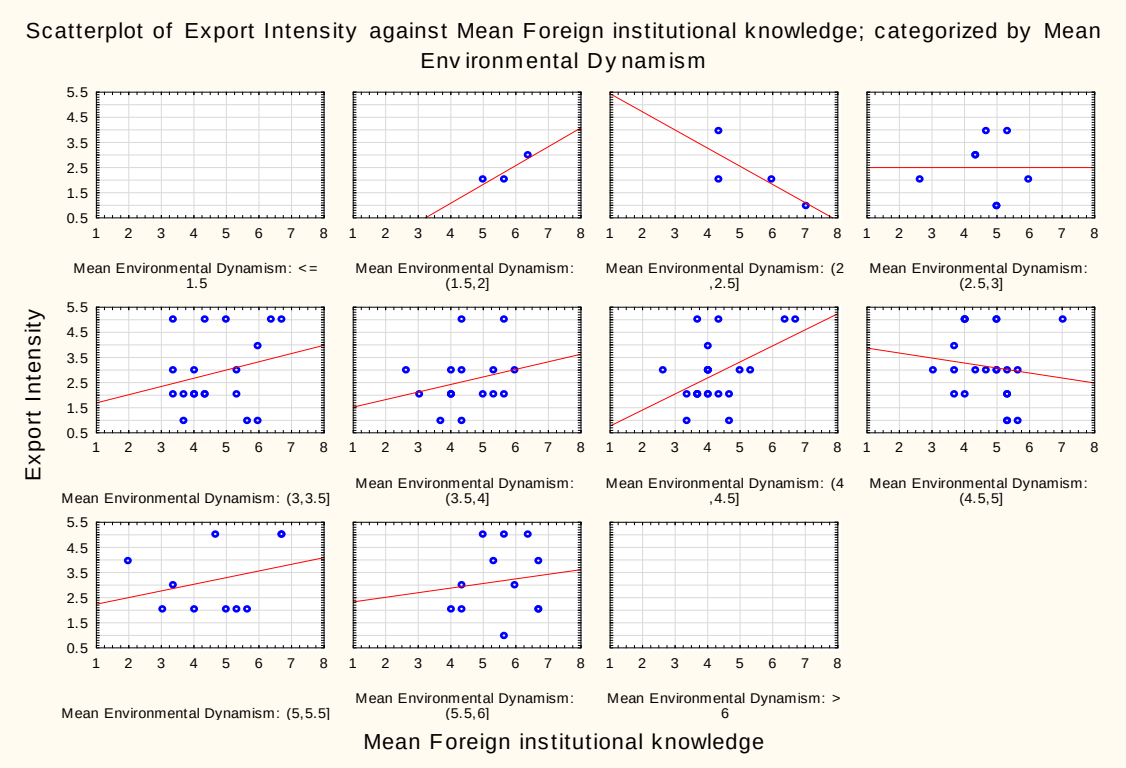


Figure 29: A representation of the moderating effect of Dynamism on the relation between foreign institutional knowledge and Export intensity

Based on the analysis the level 1,2, and 3 regression results for the EC construct, it can be concluded that there is **partial support for the hypothesis H4b (ii)** that the relationship between entrepreneurial capabilities and export intensity is moderated by environmental dynamism. The interaction effect seems to be coming from foreign institutional knowledge.

Conclusion of the Model results

Table 44: Regression results for the Economic performance model with all variables simultaneously

LEVEL 1	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	1.262522	1.019008			-3.3133	5.847458		
EI	0.194373	0.177056	0.112564		0.97069	1.00055	0.56214	
EC	0.524715	0.163764	0.325389	**	0.5298	0.164302	0.32855	**
Environmental Hostility	-0.25339	0.09988	-0.216508	*	0.95693	0.782978	0.81765	
Environmental Dynamism	0.160799	0.110194	0.121784		-0.12766	0.97082	-0.09668	
EI*Dynamism					0.05226	0.16377	0.27477	
EC*Dynamism					0.0959	0.126907	0.23326	
EI*Hostility					-0.20789	0.133625	-1.2555	
EC*Hostility					-0.04924	0.113199	-0.13411	
R^2 base	0.2365							
ΔR^2	0.027509							
F(4,112) base	8.67***							
F(8,108) with moderator	4.84***							

* p < 0.05; ** p < 0.01; *** p < 0.001. EI: Entrepreneurial intensity, EC: Entrepreneurial capabilities

The base model with all the variables included simultaneously shows that EC (b= 0.33, p<0.01) is significant predictors of Economic performance, whereas EI is not. The results are presented on the Base model results in Table 44.

Conclusion of the Model results

The results show that the direct effects model explains approximately 24% of economic performance. There is minimal increase (2.8%) increase in the model including the moderators. Only EC is the significant variable in the moderated model (b=0.53, p<0.01) when both hostility and dynamism were included as moderators. However the moderation effect is not significant. The results of this model show that the regression weights are similar the above tested models pertaining to economic performance where the predictive constructs are tested individually.

Table 45: Regression results for the Export intensity model with all variables simultaneously

LEVEL 1	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	-0.479981	1.117771			5.1053	6.319585		
EI	0.289374	0.194217	0.167614		-0.668536	1.081335	-0.387236	
EC	0.129716	0.179636	0.080456		0.129187	0.177568	0.080128	
Environmental Hostility	0.047474	0.10956	0.040572		-0.993309	0.846196	-0.848899	
Environmental Dynamism	0.192567	0.120874	0.145873		0.11636	1.049204	0.088145	
EI*Dynamism					0.012407	0.176993	0.065252	
EC*Dynamism					0.024467	0.137153	0.059522	
EI*Hostility					0.177121	0.144414	1.069897	
EC*Hostility					-0.097013	0.122339	-0.264259	
R^2 base	0.0809							
ΔR^2	0.059058							
F(4,112) base	2.47*							
F(8,108) with moderator	2.2*							

* p < 0.05; ** p < 0.01; *** p < 0.001. EI: Entrepreneurial intensity, EC: Entrepreneurial capabilities

The model shows with all the constructs included simultaneously, none of the variables are significant predictors of Export intensity. The results confirm that Export intensity is a poor outcome variable. The results are presented on the Base model results in Table 45.

Although there is considerable increase (6%) in the explained variance when the model included the moderators (Table 45), the R^2 was very small (8.1%) and the moderation effect of all the moderator variables was not significant (p>0.05) on the export intensity relationship. This result shows similarities with the above models pertaining to export intensity where the predictive constructs are tested individually.

Based on the assessment of the results of Table 44 and Table 45 in comparison with the results of Table 26 to Table 43, the researcher therefore concludes that the specification error is adequately controlled and that the model includes only the relevant variables. The presence of the other predictors did not adversely affect the stability of the regression weights (and hence did not affect the relationships).

4.5 Check for regression assumptions

At the highest level of analysis (level 1), all the frequency distributions of the variables were fairly normally distributed about the means and therefore satisfy the assumptions for regression.

Examination of residual regression plots shows that the residuals are fairly normal, with homogeneous variance across values of the predictors. Thus the assumptions of the regression were satisfied despite. Only the residual plots where the interaction effect is significant ($p<0.05$) and substantial change in the b-weight are presented in Appendix C Figure 40 to Figure 45.

4.6 Conclusions

The correlation model results summary for are presented for the outcome variable economic performance (Table 46 and Table 48) and for the other outcome variable Export intensity (Table 47 and Table 49). The model results correspond to hypothesis 1 and hypothesis 2 respectively. The multiple regression model results summary for are presented for the outcome variable economic performance (Table 48) and for export intensity (Table 49).

The independent variables i.e. main constructs significantly predict the outcome variables. Based on the results, economic performance seems to be a better outcome variable than export intensity, having more variance explained per model. There is some level evidence to support all the main hypotheses (at level 1) overall. However, for export intensity even though there is some evidence of moderation, the R^2 are too small. Hostility does appear to be a significant moderator even though there is some weak evidence that it could be affecting the relationships. It appears that dynamism did affect the relationships at level 3.

Social capital is an important predictor of economic performance. In particular, Social interaction and network ties were predicting significantly. The relationship between

social capital and economic performance may tend to become somewhat weaker with increasing levels of hostility but not with dynamism.

Internationalisation knowledge was an important predictor of both economic performance and export intensity in dynamic environments.

Technology did not seem to be more important with export intensity.

4.7 Summary of the results

The results are summarised in Table 46, Table 47, Table 48, and Table 49.

Table 46: Correlation model results summary – Economic performance

Main Construct (IV)	Hypothesis	Level	Result	R 2	Predictor1	Predictor2	Predictor3
EI	H1a	LEVEL 1	Supported (weak)	0.072	*EI (r=.2678)		
EI	H1a	LEVEL 2	Supported (weak)		**Frequency (r=.3193)	*EO (r=.2179)	
EI	H1a	LEVEL 3	Supported (weak)		Innovativeness	Proactiveness	**Risk-taking (r=.2704)
EC	H2a	LEVEL 1	Supported (rel. strong)	0.173	***EC (r=.4156)		
EC	H2a	LEVEL 2	Supported (rel. strong)		**Human capital (r=.2817)	***Social capital (r=.4153)	***Technology (r=.3506)
EC	H2a	LEVEL 3	Supported (rel. strong)		*FIK (r=.2382); **FBK (r=.2462); **IK (r=.2650)	***SI (r=.3835); **RQ (r=.2607); ***NT (r=.3900)	**Tech dist. (r=.2791); ***Tech aqc (r=.3473).

Table 47: Correlation model results summary – Export intensity

Main Construct (IV)	Hypothesis	Level	Result	R 2	Predictor1	Predictor2	Predictor3
EI	H1b	LEVEL 1	Supported (weak)	0.054	*EI (r=.2317)		
EI	H1b	LEVEL 2	Supported (weak)		Frequency	* *EO (r=2619)	
EI	H1b	LEVEL 3	Supported (weak)		*Innovativeness (r=.1867)	**Proactiveness (r=.3270)	Risk-taking
EC	H2b	LEVEL 1	Supported (weak)	0.036	*EC (r=.1909)		
EC	H2b	LEVEL 2	Supported (weak)		*Human capital (r=.2254)	***Social capital (r=.2391)	Technology
EC	H2b	LEVEL 3	Supported (weak)		FIK; *FBK (r=.2051); *IK (r=.2303)	*SI (r=.2616); *RQ (r=.2230); NT	*Tech dist. (r=-.2202); *Tech aqc (r=.2016).

Table 48: Multiple regression model results summary – Economic performance

Hypothesis	Level	Moderation	R2 base	ΔR2	Change in b weight	Interaction effect sig	Predictor1	Predictor2	Predictor3	Predictor4	Predictor5	Predictor6	Predictor7	Predictor8
H3a (i)	LEVEL 1	Yes (weak)	0.146	0.012	EI: from 0.543 to 1.254		*EI	Hostility	EI*Hostility					
H3a (i)	LEVEL 2	No	0.2	0.014	Frequency: from 0.422 to 0.359		EO	Frequency	Hostility	Dynamism	Freq*Host	EO*Host		
H3a (ii)	LEVEL 1	No	0.099	0.001	EI: from 0.438 to 0.223		EI	Dynamism	EI*Dynamism					
H3a (ii)	LEVEL 2	No	0.2	0.003	Frequency: from 0.422 to 0.364		EO	Frequency	Hostility	Dynamism	Freq*Dynamism	EO*Dynamism		
H4a (i)	LEVEL 1	No	0.213	0.004	EC: from 0.653 to 0.668		***EC	*Hostility	EC*Hostility					
H4a (i)	LEVEL 2	Yes (weak)	0.27	0.034	* Social capital: from 0.434 to 1.494		Human capital	Social capital	Technology	*Hostility	Dynamism	HC*Host	SC*Host	Tech*Host
H4a (i)	Level 3	No	0.182	0.032	risk taking: from 0.35 to -0.023		proactiveness	risk taking	Hostility	Dynamism	innovation*Host	proactiveness*Host	risk taking*Host	
H4a (i)	LEVEL 3	Yes	0.146	0.025	FIK: from 0.105 to -0.617		FIK	FBK	*Int. knowledge	Hostility	Dynamism	FIK*Host	FBK*Host	* Int. knowledge*Host
H4a (i)	LEVEL 3	Yes	0.262	0.066	Social interaction: from 0.287 to 1.683: Network ties: from 0.255 to 0.091	p<0.05	Social interaction	Relationship quality	*Network ties	Hostility	Dynamism	*Social interaction*Host	Relationship quality*Host	Network ties*Host
H4a (i)	LEVEL 3	No	0.197	0.007	Tech. assimilation: from 0.304 to 0.355		Tech. distinctiveness	Tech. assimilation	Hostility	Dynamism	Tech. distinctiveness*Host	Tech. assimilation*Host		
H4a (ii)	LEVEL 1	No	0.191	0.007	Dynamism: from 0.179 to 0.186		EC	Dynamism	EC*Dynamism					
H4a (ii)	LEVEL 2	No	0.27	0.003	Social capital: from 0.434 to 0.091		Human capital	Social capital	Technology	Hostility	Dynamism	HC*Dynamism	SC*Dynamism	Tech*Dynamism
H4a (ii)	LEVEL 3	No	0.182	0.004	innovation: from -0.133 to -0.174		innovation	proactiveness	risk taking	Hostility	Dynamism	innovation*Dynamism	proactiveness*Dynamism	risk taking*Dynamism
H4a (ii)	LEVEL 3	No	0.262	0.009	Network ties: from 0.255 to 0.069		Social interaction	Relationship quality	Network ties	Hostility	Dynamism	Social interaction*Dynamism	Relationship quality*Dynamism	Network ties*Dynamism
H4a (ii)	LEVEL 3	Yes	0.146	0.053	Int. knowledge: from 0.184 to -1.721	p<0.05	FIK	FBK	Int. knowledge	Hostility	Dynamism	FIK*Dynamism	FBK*Dynamism	* Int. knowledge*Dynamism
H4a (ii)	LEVEL 3	No	0.197	0.023	Tech. assimilation: from 0.304 to 1.525		Tech. distinctiveness	Tech. assimilation	Hostility	Dynamism	Tech. distinctiveness*Dynamism	Tech. assimilation*Dynamism		
H3 & H4	LEVEL 1	No	0.236	0.028	EI: from 0.194 to 0.971		EI	EC	Hostility	Dynamism	EI*Dynamism	EC*Dynamism	EI*Hostility	EC*Hostility

FIK = Foreign institutional knowledge; FBK = Foreign business knowledge; Frequency = Frequency of entrepreneurship

Table 49: Multiple regression model results summary – Export intensity

Hypothesis	Level	Moderation	R2 base	ΔR2	Change in b weight	Interaction effect sig	Predictor1	Predictor2	Predictor3	Predictor4	Predictor5	Predictor6	Predictor7	Predictor8
H3b (i)	LEVEL 1	No	0.054	0.022	EI: from 0.395 to -0.557		EI	Hostility	EI*Hostility					
H3b (i)	LEVEL 2	No	0.105	0.026	Frequency: from -0.2 to 0.039		EO	Frequency	Hostility	Dynamism	Freq*Host	EO*Host		
H3b (i)	LEVEL 3	Yes (weak evidence)	0.142	0.055	Proactiveness: from-0.533 to 1.414		innovation	proactiveness	risk taking	Hostility	Hostility	innovation*Hostility	*proactiveness*Hostility	risk taking*Hostility
H3b (ii)	LEVEL 1	No	0.076	0.003	EI: from 0.378 to 0.82		EI	Dynamism	EI*Dynamism					
H3b (ii)	LEVEL 2	No	0.105	0.013	Frequency: from -0.2 to 0.594		EO	Frequency	Hostility	Dynamism	Freq*Dynamism	EO*Dynamism		
H4b (i)	LEVEL 1	Yes (weak evidence)	0.041	0.054	EC: from 0.313 to 0.258	p<0.05	EC	Hostility	*EC*Hostility					
H4b (i)	LEVEL 2	No	0.133	0.041	Social capital: from 0.228 to 0.043		Human capital	Social capital	Tech.	Hostility	Dynamism	HC*Host	SC*Host	Tech*Host
H4b (i)	Level 3	Yes (weak evidence)	0.142	0.055	proactiveness: from 0.533 to 1.414; risk taking: from 0.003 to -0.667	p<0.05	proactiveness	risk taking	Hostility	Dynamism	innovation*Host	proactiveness*Host	*risk taking*Host	
H4b (i)	LEVEL 3	Yes (weak evidence)	0.086	0.06	FIK: from -0.007 to 0.659		FIK	FBK	knowledge	Hostility	Dynamism	FIK*Host	FBK*Host	knowledge*Host
H4b (i)	LEVEL 3	No	0.103	0.006	Social interaction: from 0.265 to 0.032		Social interaction	Relationship quality	Network ties	Hostility	Dynamism	Social interaction*Host	Relationship quality*Host	Network ties*Host
H4b (i)	LEVEL 3	No	0.212	0.001	Tech. assimilation: from 0.518 to 0.302		Tech. distinctiveness	Tech. assimilation	Hostility	Dynamism	Tech. distinctiveness*Host	Tech. assimilation*Host		
H4b (ii)	LEVEL 1	Yes (weak evidence)	0.057	0.042	Dynamism: from 0.192 to 0.176	p<0.05	EC	Dynamism	*EC*Dynamism					
H4b (ii)	LEVEL 2	No	0.133	0.007	Social capital: from 0.228 to 0.36		Human capital	Social capital	Tech.	Hostility	Dynamism	HC*Dynamism	SC*Dynamism	Tech*Dynamism
H4b (ii)	LEVEL 3	No	0.182	0.004	proactiveness: from 0.533 to 1.197		innovation	proactiveness	risk taking	Hostility	Dynamism	innovation*Dynamism	proactiveness*Dynamism	risk taking*Dynamism
H4b (ii)	LEVEL 3	No	0.103	0.002	Network ties: from -0.065 to 0.083		Social interaction	Relationship quality	Network ties	Hostility	Dynamism	Social interaction*Dynamism	Relationship quality*Dynamism	Network ties*Dynamism
H4b (ii)	LEVEL 3	Yes (weak evidence)	0.086	0.045	FIK: from -0.007 to -1.559	p<0.05	*FIK	FBK	knowledge	Hostility	Dynamism	*FIK*Dynamism	FBK*Dynamism	knowledge*Dynamism
H4b (ii)	LEVEL 3	No	0.212	0.001	Tech. assimilation: from 0.518 to 0.801		Tech. distinctiveness	Tech. assimilation	Hostility	Dynamism	Tech. distinctiveness*Dynamism	Tech. assimilation*Dynamism		
H3 & H4	LEVEL 1	Yes (weak evidence)	0.081	0.0590	EI: from 0.289 to -0.669		EI	*EC	Hostility	Dynamism	EI*Dynamism	EC*Dynamism	EI*Hostility	EC*Hostility

FIK = Foreign institutional knowledge; FBK = Foreign business knowledge; Frequency = Frequency of entrepreneurship

CHAPTER 5: DISCUSSION OF THE RESULTS

This chapter discusses and explains the results with reference to the literature review. Section 5.1 discusses the sample characteristics in terms of the demographic profiles of the respondents and the firms that they represent. Then section 5.2 and 5.3 discusses empirical results of the model. Since the aim is to estimate the relationships between constructs as stated in the first and second sub-problems in Chapter 1, the results of the model are discussed by construct. Section 5.2 discusses the results pertaining to entrepreneurial intensity. Section 5.3 discusses the results pertaining to entrepreneurial capabilities. Section 5.4 summarises the discussion.

5.1 Sample characteristics

A deeper understanding of the demographic profile of the respondents and the firms can provide more insights in the interpretation of the results. This section discusses the findings relating to the demographics of the sample.

5.2.1 Demographic profile of respondents

Despite the lack of well defined sapling frame of SA exporting firms and the potential difficulty in obtaining survey responses in the target management level, the results revealed that almost all (97%) of respondents were in management positions. Furthermore, three-quarters (77%) of the respondents had a degree, with 61% holding postgraduate degrees. This is in line with the expectations of the researcher that the respondents should have enough knowledge of export practices and performance within their firms. It is expected that this sample of respondents are conversant with the strategic orientation and different aspects of the firms they represents.

5.2.2 Demographic profile of firms

5.2.2.1 Firm size

Almost a quarter of the respondent firms were small size firms (up to 50 employees), and another quarter were medium size firms (between 50 and 250 employees). In line with the **resource based theories** these SMEs may have ventured into foreign markets in search of critical resources (Ibrahim et al., 2004). Smaller entrepreneurial firms may have ingenuous techniques to overcome their initial conditions of lack of resources in order to exploit the international market. They can focus on a set of capabilities, competencies, knowledge, and skills needed by the world markets.

The literature purported that size may be particularly important for firms in emerging economies, and alluded that most of the firms in emerging economies are small (Singh, 2009). However, the sample revealed that about half of the firms (51%) firms were large firms (greater than 250 employees). This breakdown shows that today's advances in communication technology, manufacturing technology and transportation as well as trade liberalization have allowed small and large companies alike to compete in international markets.

5.2.2.2 Firm industry

In line with the characteristics of samples observed in international entrepreneurship research (Coviello and Jones, 2004; Javalgi and Todd, 2010), majority of the companies were high-technology firms (65%) and operating in the manufacturing industry (47%). A substantial number (24%) of the firms was in the agricultural industry, and this was not expected.

The high concentration of the firms in high technology sectors (two thirds) may be indicative to the fact that the windows of opportunity in these dynamic sectors are short. Industries with rapid changes in technology and shorter product life cycles may naturally lead firms to internationalisation. Technological intensiveness was found to be consistently related to the propensity to export according to various studies (Serra et al., 2011).

5.2.2.3 Firm age

A cumulative 66% of the firms that responded were founded before 1990. Although not within the scope of this study, it may turn out that given the older firm age among the firms, and their early foreign market entry, these firms have been internationalised for a long time and as such have a broad knowledge base acquired through learning about new markets, customers, cultures, technologies, and innovation systems, which can enhance a firm's performance (Zahra and Garvis, 2000). The organisational knowledge gained at one stage can profoundly influence performance as firms experiment, take risk, learn and gains experience and knowledge of foreign markets.

5.2.2.4 Speed of internationalisation

The **traditional theories of internationalisation** (process theory) advocate that at the early stage of firm's growth process, the firm's horizon is limited to domestic market (Ibrahim, 2004). Contrary to this view, the sample revealed that almost 60% of the firms were internationalised by the age of six years. These firms initiate international activities in the early stage of venture growth with resources constrained by their young age. The early internationalisation among these firms cannot be explained by the process theory.

Coviello and Jones (2004) and McDougall et al. (2003) defined firms that achieved significant export sales within six years of founding as international new ventures (NIVs) or born-global firms. Despite resource constraints across the value chain and other administrative challenges that may accompany international expansion, these firms were able to internationalise rapidly.

5.2.2.5 Scope of internationalisation

This variable serves as a proxy of a firm's global geographic diversity. Three quarters of the firms exported to more than 5 countries. Although this measure was found not to have a significant correlation with economic performance, it may be linked to entrepreneurial orientation. Having a wider international market scope exposes SMEs

to a rich network of information that encourages and enhances future product innovation (Zahra et al., 2009). The greater the global scope of a firm's operations, the greater its opportunities to innovate, take risks, learn new skills, and explore new systems. Global geographic diversity may determine the firm's overall performance (Zahra, 2000).

5.2.2.6 Export intensity

This indicator is said to adequately reflect international intensity since the greater the intensity of the firm's international presence, the greater and more irreversible its commitment to its assets for internationalisation (Camisón and Villar-López, 2010). A fifth of the firms (20%) had over 75% of their sales geared towards exports. Over half of the firms (53%) had export sales contributing at-least 25% of their total sales. In line with the norms defined among advanced countries, a firm is considered to be internationalized when their foreign sales represents at-least 25% of total sales (Ripollés-Meliá et al., 2007; Javalgi and Todd, 2010).

Prior research found that this objective measure, namely export intensity, is positively related with the subjective measure of export performance, namely economic performance (Stoian, Rialp and Rialp, 2011).

5.2 Discussion pertaining to entrepreneurial intensity: Hypothesis 1 and Hypothesis 3

Hypotheses 1 and 3 relates to the **entrepreneurial intensity (EI)** construct. The original hypotheses are stated below together with their sub-hypotheses derived in the previous chapter. The findings are discussed by hypothesis and explanations are offered in relation to the literature.

Hypothesis 1: Entrepreneurial intensity is positively related to international performance.

H1a: Entrepreneurial intensity is positively related to economic performance

H1b: Entrepreneurial intensity is positively related to export intensity

H1a: Entrepreneurial intensity is positively related to economic performance (Supported)

The findings reveal significant correlation between entrepreneurial intensity and economic performance. The study finds that frequency of entrepreneurship activities and risk-taking play an important role in enhancing economic performance. However, it did not find support for innovativeness and proactiveness as factors that enhance economic performance.

The result means that despite not engaging in breakthrough innovations that create new markets and industry redefinition (Morris et al., 2008), exporting firms engage in frequent product, process, and service enhancement activities. Although they may not be at the forefront in pursuing enhanced competitiveness in response to promising foreign market opportunities and actively seeking new opportunities abroad (Lumpkin and Dess, 1996), exporting firms adopt strategies that are more tolerant of potential risks of foreign markets. A risk-taking orientation indicates a willingness to engage resources in strategies or projects where the outcome may be highly uncertain

(Wiklund and Shepherd, 2003). Risk-taking firms in the international arena perceive business situations to be less risky and focus more on opportunities. This may be because these firms take reasonable awareness of the risks involved in foreign markets and employ strategies to calculate and manage the uncertainties (Wiklund and Shepherd, 2005; Certo et al., 2009).

In line with prior research (Zhou, 2007; Patel and D'Souza, 2009), the study found that not all the three dimensions of entrepreneurial orientation seemed to play a role in enhancing economic performance.

H1b: Entrepreneurial intensity is positively related to export intensity (Supported)

Similar to H1a, the study finds that entrepreneurial intensity is significantly correlated to export intensity. However frequency of entrepreneurship activities did not play a role in export intensity. Innovativeness and proactiveness played a role in enhancing export intensity, but there was no support for risk-taking as a factor.

The results show that the other dimensions of EO could compensate for the limited role of risk-taking in advancing export intensity. The firms perceive greater opportunities in the international markets and are open to innovative ways of exploiting opportunities by encouraging new product ideas for the international markets to boost foreign sales. These firms are action orientation toward creating innovative responses to markets needs by proactively anticipating and acting on future client needs in the market, which enables them to gain first-mover advantage ahead of the competition (Lumpkin and Dess, 1996). The top management team pursues a competitive orientation by spending time abroad and attending foreign trade fares in search of new export markets. Whereas innovativeness may be an internal response from a firm, seeking opportunities (proactiveness) to innovate is a complementary activity.

Conclusion regarding Hypothesis 1: Entrepreneurial intensity is positively related to international performance (Supported).

It was expected that the entrepreneurial intensity and international performance among exporting firms will be significantly associated with each other. The empirical study revealed that frequency of entrepreneurial activities is related to economic performance, whereas EO is related to export intensity.

The results showed that in order to achieve financial success and growth, exporting firms have to take risks by frequently engaging in product, process, and service enhancement activities to take advantage of foreign market opportunities (H1a).

On the other hand in order to achieve higher foreign sales as a percentage of total sales, firms have to adopt an entrepreneurial orientation by proactively innovating new products for the international markets to boost foreign sales. The development of entrepreneurial orientation requires organisational members to engage in proactive activities such as spending time abroad and attending foreign trade fares in search of new opportunities (H1b). Innovativeness and proactiveness could compensate for the limited role of risk-taking in advancing export intensity.

In extending the findings of empirical studies among internationalised firms that entrepreneurial orientation is positively related to firm performance (Zhou, 2007; Li et al., 2009; Patel and D'Souza, 2009; Javalgi and Todd, 2010), this study confirms that entrepreneurial intensity is positively related to international performance (H1).

Hypothesis 3: The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics

H3a (i): The relationship between entrepreneurial intensity and economic performance is moderated by environmental hostility

H3a (ii): The relationship between entrepreneurial intensity and economic performance is moderated by environmental dynamism

H3b (i): The relationship between entrepreneurial intensity and export intensity is moderated by environmental hostility

H3b (ii): The relationship between entrepreneurial intensity and export intensity is moderated by environmental dynamism

H3a (i): The relationship between entrepreneurial intensity and economic performance is moderated by environmental hostility (weakly supported)

The results showed weak evidence that environmental hostility moderates the relationship between intense entrepreneurial activity and economic performance. The findings reveal that in an environment characterised by hostility, entrepreneurial intensity is weakly associated with economic performance. As the level of hostility increases, the relation between EI and economic performance tends to become weaker.

The result implies that in a hostile international environment, it becomes less important to pursue aggressive entrepreneurship behaviour in order to achieve growth in market share and greater financial performance. Foreign opportunities are tempered by the constraints imposed by the competitive forces that exist in international environments, such as aggressive government intervention, unfavourable supply conditions, and fierce local rivalries all contributing to hostile international environment. Although the literature suggests that firms will need to adopt EO to

remain competitive (Zahra and Garvis, 2000; Urban, 2010), a possible explanation for the observed moderation effect is that these firms perceive high levels of industry risk and adopt a conservative strategic posture by avoiding commitment of resources aimed at innovation, proactiveness, and risk-taking in the foreign markets. A conservative strategic posture refers to when the top management adopts a style that is decidedly risk-averse, non-innovative, and reactive (Covin and Slevin, 1990). This could mean that the firms opt to simply refine and adapt existing products, services, and technology to better suit current needs rather than develop of new products, services, and technology (Patel and D'Souza, 2009).

H3a (ii): The relationship between entrepreneurial intensity and economic performance is moderated by environmental dynamism (not supported)

The results did not find support for the hypothesis H3a (ii) that the relationship between entrepreneurial intensity and economic performance is moderated by environmental dynamism. This result is contrary to prior research findings. Wiklund and Shepherd (2005) and Urban (2010) found that the dynamism of the environment is important moderator of the EO and business performance. According to (Scheepers et al., 2007) dynamic environments create opportunities for companies to act more entrepreneurially.

A possible reason for the lack of support for this hypothesis may be that certain innovative activities such as R&D do not yield short-term results in performance (Zahra and Bogner, 2000) and therefore it may take some time for a company to realise the benefits of investments in innovation. Another possible reason for the lack of support for this hypothesis may be associated with the low reliability of dynamism scale.

H3b (i): The relationship between entrepreneurial intensity and export intensity is moderated by environmental hostility (weakly supported)

The results showed weak evidence that environmental hostility moderates the relationship between intense entrepreneurial activity and export intensity. The findings reveal that in an environment characterised by hostility, entrepreneurial

intensity is weakly associated with export intensity. As the level of hostility increases, the relation between EI and export intensity tends to become weaker.

The result implies that in international environments with higher levels of hostility, more efforts aimed at pursuing aggressive entrepreneurial behaviour do not result in more export sales. Foreign opportunities are tempered by the constraints imposed by the competitive forces that exist in international environments, such as aggressive government intervention, unfavourable supply conditions, and too many competitors all contributing to hostile international environment.

The literature however suggested that firms need to adopt EO to remain competitive in hostile market environments (Zahra and Garvis, 2000; Urban, 2010). This study found that as the level of environmental hostility increased, the relationship between EI and export intensity weakened. A possible reason for this may be that in international environments with higher levels of hostility, exporting firms simply back track their efforts in those markets and focus on alternative markets, including domestic. International diversification can also generate the resources necessary to support projects, spread the risk and provide additional market. Global geographic diversity determines the firm's overall performance (Zahra and Garvis, 2000).

H3b (ii): The relationship between entrepreneurial intensity and export intensity is moderated by environmental dynamism (not supported)

Similar to H3a (ii), the results did not find support for the hypothesis H3b (ii) that the relationship between entrepreneurial intensity and export intensity is moderated by environmental dynamism. This finding is contrary to the extant literature which suggests that in markets characterised by rapid and dynamic shifts, the unlimited proliferation of new technologies, and the resultant shrinking product life cycles, firms resort to radical product innovation to enhance performance (Zahra and Bogner, 2000)

Environmental dynamism can be defined as the perceived instability of an enterprise's market, due to unpredictable and persistent changes in its external environment. These changes result from the entry or exit of competitors, changes in customers'

needs, and shifts in technological conditions (Lumpkin and Dess, 2001; Scheepers et al., 2007; Urban, 2010). Dynamism reflects the rate and continuity of change within an industry (Zahra and Bogner, 2000).

The high concentration of the firms in high technology sectors (two thirds) in this study may imply that the firms by default are focusing more attention on innovation (Lee et al., 2009; Serra et al., 2011) regardless of whether the environment is dynamic or not. Industries with rapid changes in technology and shorter product life cycles may naturally lead firms to consistently to develop new products in order to gain or maintain a competitive edge (Erensal et al., 2006).

Another possible reason for the lack of support for this hypothesis may be associated with the low reliability of dynamism scale.

Conclusion regarding Hypothesis 3: The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics (partially supported).

The empirical study showed weak evidence that environmental hostility moderates the relationship between intense entrepreneurial activity (EI) and the two performance measures - economic performance and export intensity (Hypotheses H3a (i) and H3b (i)). However, the study did not find evidence that environmental dynamism moderates the relationship between EI and performance - Hypotheses H3a (ii) and H3b (ii).

The findings reveal that in an environment characterised by hostility, entrepreneurial intensity is weakly associated with both economic performance and export intensity. As the level of hostility increases, the relation between EI and performance tends to becomes weaker.

The result implies that it becomes less important for firms to pursue aggressive entrepreneurship behaviour in the international environments with higher levels of hostility in order to grow market share and achieve greater financial performance. In hostile international environments exporting firms may simply back track their efforts in those markets and focus on alternative markets, including domestic. International diversification is a strategy that enables firms to generate the resources necessary to support projects, spread the risk and provide additional market. Global geographic diversity determines the firm's overall performance (Zahra and Garvis, 2000). In response to the perceived high levels of industry risk firms adopt a conservative strategic posture by avoiding commitment of resources and adopt a style that is decidedly risk-averse, non-innovative, and reactive (Covin and Slevin, 1990).

On the contrary, the findings revealed that environmental dynamism did not moderate the relationship between entrepreneurial intensity and performance (both economic performance and export intensity).

Environmental dynamism refers to the perceived instability of an enterprise's market, due to unpredictable and persistent changes in its external environment. These changes result from the entry or exit of competitors, changes in customers' needs, and shifts in technological conditions (Lumpkin and Dess, 2001; Scheepers et al., 2007; Urban, 2010). The research found that among the exporting firms, the level of environmental dynamism did not affect the relationship between EI and performance. The study suggests that it may take some time for firms to realise the benefits of investments in innovative activities when the firms respond to shifts in technological conditions. The study observed that given high concentration of the firms in high technology sectors, these firms naturally lends themselves to radical innovation strategies regardless of whether the environment is dynamic or not. Furthermore the study suggests investments in innovative activities in response to dynamic changes in the environment may take time to pay off.

In conclusion, the study found that international firms rely on entrepreneurial strategies and actions to achieve performance in hostile foreign market environments. However, the study did not find support for the moderating effect of dynamism on the EI-performance relationship. The study therefore found partial support for hypothesis 3.

5.4 Discussion pertaining to pertaining to entrepreneurial capabilities: Hypothesis 2 and Hypothesis 4

Hypotheses 2 and 4 relates to the **entrepreneurial capabilities (EC)** construct. Similar to Section 5.2, the original hypotheses are stated below together with their sub-hypotheses derived in the previous chapter. The findings are discussed by hypothesis and explanations are offered in relation to the literature

Hypothesis 2: Entrepreneurial capabilities are positively related to international performance.

H2a: Entrepreneurial capabilities are positively related to economic performance

H2b: Entrepreneurial capabilities are positively related to export intensity

H2a: Entrepreneurial capabilities are positively related to economic performance (Supported)

The findings reveal significant correlation between entrepreneurial capabilities and economic performance. The study finds that social capital, human capital, and technology play an important role in enhancing economic performance. Social capital is the most important determinant of economic performance, followed by technology and then human capital, with all the variables of these dimensions playing a significant role.

Entrepreneurial capabilities are viewed as a broader range of abilities needed to initiate appropriate action in specific organisational situations and reflect the capacity to initiate and sustain an entrepreneurial dynamism throughout the organisation (Obrecht, 2004). In line with existing literature international entrepreneurship, the study found that human capital, social capital, and technological capabilities are important for economic performance (Autio et al., 2000; Deeds, 2001; Zhou, 2007; Brennan and Garvey, 2009).

H2b: Entrepreneurial capabilities are positively related to export intensity (Supported)

Similar to H2a, the study finds that entrepreneurial capabilities are significantly correlated to export intensity. The findings revealed that social capital and, human capital played a role in enhancing export intensity, however technology did not play a role in enhancing export intensity. In line with previous research, this study confirms that human capital and social capital are among the most essential capabilities for organisational perfomance (Obrecht, 2004).

Further analysis of the findings revealed that all the variables of these dimensions, including technology, played a significant role. However, technology distinctiveness was negatively correlated to export intensity, whereas technology acquisition did enhance export intensity. Technology distinctiveness and technology acquisition are the two variables that combine to form the technology dimension.

Technology acquisition has been defined as the efforts by management to acquire technologies that will augment the firm's ability to compete in international markets, via the creation of superior products and/or processes (Knight, 2001). The results imply that the firms use the technology acquired to compete more effectively, increase operational efficiency, or launch products that better satisfy customer needs and therefore increase their foreign sales. Improved technology is widely regarded as a critical, fundamental lever for allowing firms to innovate and respond to changing conditions in their external environment. The acquired technology may be used to achieve a competitive advantage (Oviatt and McDougall, 2005; Raymond and St-Pierre, 2010).

On the other hand, technology distinctiveness negatively affected firm's foreign sales in international markets as a percentage of overall sales. A possible reason might be that the firms do not necessarily compete in the foreign market on the basis of having unique or superior technology and/or R&D than competitors; they may simply be improving on an existing product/service, or imitates other technologies; or they may

be focusing on other competitive strategies such as pricing, relationships and/or service offering. This perhaps emphasises the challenge for firms in emerging economies to adopt technology and act entrepreneurially.

Conclusion regarding Hypothesis 2: Entrepreneurial capabilities are positively related to international performance (Supported).

It was expected that the entrepreneurial capabilities and international performance among exporting firms will be significantly associated with each other. The empirical study revealed human capital, social capital and technology were positively related to economic performance, whereas only human capital and social capital were related to export intensity. With regards to technology, the results showed that acquired technologies did augment the firms' ability to compete in international markets; however the firms did not perceive themselves to be competing on the basis of superior technology to improve export intensity.

The results showed that in order to achieve financial success in international expansion knowledge-based, social-based and technological capabilities are important (Autio et al., 2000; Deeds, 2001; Zhou, 2007; Brennan and Garvey, 2009).

Further analysis of the findings revealed that all the variables of the entrepreneurial capabilities construct, played a significant role international performance, possession of distinct technologies compared to competitors was negatively correlated to export intensity. Investment in distinct technology might be expensive.

This suggests that the firms did not necessarily compete in the foreign market on the basis of having unique or superior technology and/or R&D than competitors; but rather simply improve existing products/services, or imitate other technologies. This perhaps emphasises the challenge for firms in emerging economies to adopt technology and act entrepreneurially in order to boost their export sales.

Hypothesis 4: The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics

H4a (i): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental hostility

H4a (ii): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental dynamism

H4b (i): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental hostility

H4b (ii): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental dynamism

H4a (i): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental hostility (weakly supported)

The results showed evidence that environmental hostility moderates the relationship between EC and economic performance. There was a significant correlation between EC and environment hostility. The findings reveal that in an environment characterised by hostility, entrepreneurial capabilities are associated with economic performance, with social capital being the only important attribute of EC.

As the level of hostility increases, the relation between social capital and economic performance tends to become weaker. A closer look at the relationship shows that social interaction and network ties are the important attributes of social capital in this relationship. Further investigation into the moderation effect revealed that it is the interaction of social interaction (strong ties) that weakens the relationship; Network ties (weak ties) remained a positive contributor to economic performance.

Under foreign environments characterised by hostility, human capital and technology did not play a role in enhancing economic performance. The findings imply that social

capital provides compensating advantages (for technology and human capital) in order to compete viably in unfamiliar hostile markets abroad. Social capital theory explains the ability of actors to extract benefits from their social structures and can be used to supplement the effects of education, experience and financial capital (Venter et al., 2008). The relevance of social capital in this context might be mainly a consequence of the resource limitations arising from the liability of smallness and newness in the foreign markets (Leiblein and Reuer, 2004; Coviello, 2006). In order to remain competitive and to take advantage of new market opportunities, entrepreneurial firms need to gain influence over vital resources without owning them (Oviatt and McDougall, 2005). From an entrepreneurial perspective, social capital is a key driver in providing access to these resources (Yli-Renko et al., 2002; Coviello, 2006; Casillas et al., 2010; Manolova et al., 2010). Social capital can play a role substitutive for more formal institutions in small business environments characterised by lack of market-oriented institutions such as specialized venture capital firms providing entrepreneurial finance (Bauernschuster et al., 2010).

Another possible reason for the importance of social capital is that social relations with foreign contacts may provide information about foreign markets necessary to succeed internationally (Presutti et al., 2007; Agndal et al., 2008). In line with existing research, this study confirms that, in hostile foreign markets, external social capital positively impacts the international growth and economic performance of firms.

The study particularly finds that in a hostile international environment, social interaction and network ties played an important role in enhancing economic performance. However, there was no support for relationship quality as a factor that enhanced economic performance. The relational quality dimension reflects perceived sense of trust and fairness. Social interaction in this study relates close contacts with key foreign contacts (customers, suppliers, marketing and distribution partners, and government agencies); whereas network ties relates to the establishment of networks through key foreign contacts, which can ’open doors’ to other contacts. Accordingly, the social interaction represents strong ties with key foreign contacts whereas the

network ties represent weak ties. Consistent with (Rost, 2011), strong and weak ties are not alternatives but complementary.

Arguments in support of the importance of social interaction and network ties relate to overcoming information asymmetries such as finding clients, suppliers, and investors. Networks facilitate the discovery of international opportunities, allocation of scarce resources, and serve as a brokerage to other unknown networks. In these relationships, trust was not considered important in promoting economic performance. Networking extends the reach and abilities of the individual to capture resources that are held by others and so improve entrepreneurial effectiveness.

As already stated, as the level of hostility increases, the relation between social capital and economic performance tends to become weaker. While Network ties (weak ties) remain a positive contributor to economic performance under hostile environments, social interaction (strong ties) attributes to a weak relationship. The result implies that it becomes less important to maintain strong socially embedded ties when the foreign business environment is characterised by unfavourable supply conditions, lack the abundance of resources, high political and economic instability and/or intensified competition. A plausible explanation is that ties to the same network partners (strong ties) could mean that there are few or no links to outside partners who can potentially contribute innovative ideas (Burt, 1992). In this context, networking may result in a time consuming and costly effort. For instance, the unexpected loss of a core network player (e.g. an important political player or a big client) may result in dependency problems or vulnerability. Furthermore, very close ties may isolate firms from other external sources of knowledge and information (Yli-Renko et al., 2001). Over-embeddedness has been indicated to be a social liability (Burt, 1992; Uzzi, 1997) and a source of redundant information.

On the other hand it still remains important to maintain weak ties (network ties) at arm's length and manage them more intentionally to explore growth (Coviello, 2006). A weak tie-based network relation means that the persons in question may not personally know each other (but may know of each other) and is thus a basis for non-

redundant information (Ulhoi, 2005). This result agrees with the finding among US firms that the use of trade shows and export promotion services complements the firm's internal resources in achieving success in international markets (Wilkinson and Brouthers, 2006)

H4a (ii): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental dynamism

The results showed evidence that environmental dynamism moderates the relationship between EC and economic performance. There was a significant correlation between EC and environmental dynamism. The findings reveal that in an environment characterised by unpredictable and persistent changes in its external such as the entry or exit of competitors, changes in customers' needs, and shifts in technological conditions, entrepreneurial capabilities are associated with economic performance. Internationalisation knowledge, which was itemised by prior international business experience, the ability to determine foreign business opportunities, experience in dealing with foreign customers and managing foreign operations, seems to contribute towards enhancing economic performance. International experience can lead to opportunity identification, market knowledge, and network building, all of which are determinants of internationalisation (McDougall et al., 2003). However, the results do not adequately show what the nature of the relationship seems to be, i.e. whether the strength of the relationship increases or decreases with increasing levels of dynamism. This is perhaps attributable to the low reliability of the dynamism scale.

Foreign institutional knowledge (FIK) and foreign business knowledge (FBK) were not found to be important aspects of human capital in this moderation relationship. Accordingly, knowledge of foreign languages, norms, business laws and regulations which are elements of FIK as well as knowledge of foreign customers, competitors, government agencies which are elements of FBK did not play a role in the moderation relationship between EC and performance in dynamic foreign market environments. The research maintains that these aspects of knowledge as described (FIK and FBK) are

context-specific in nature and will not necessarily change with the change dynamism in the international environment.

However, prior internationalisation experience with the various aspects of the foreign market (internationalisation knowledge) did affect the relationship. This study contends that prior experience in similar markets (similar to the current markets served) resulted in successful economic performance (Camisón and Villar-López, 2010).

H4b (i): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental hostility (weakly supported)

The results showed weak evidence that environmental hostility moderates the relationship between EC and export intensity. There was a significant correlation between EC and environmental hostility. The findings reveal that in an international environment characterised by hostility, entrepreneurial capabilities are weakly associated with export intensity, however none of the dimensions of EC was an important factor as a single unit.

However, the results do not adequately show what the nature of the relationship seems to be i.e. whether the strength of the relationship increases or decreases with increasing levels of hostility. This result is not particularly useful given the low variation in export intensity explained by EC (4%).

H4b (ii): The relationship between entrepreneurial capabilities and export intensity is moderated by the environmental dynamism (weakly supported)

The results showed weak evidence that environmental dynamism moderates the relationship between EC and export intensity. There was a significant correlation between EC and environmental dynamism. The findings reveal that in an international environment characterised by unpredictable and persistent changes in its external such as the entry or exit of competitors, changes in customers' needs, and shifts in technological conditions, entrepreneurial capabilities are associated with export intensity. Although weakly supported, the results seem to suggest that the strength of the relationship increases with increasing levels of dynamism. Internationalisation

knowledge seems to be the important factor contributing towards enhancing export intensity in dynamic environments. International experience can lead to opportunity identification, market knowledge, and network building in markets characterised by rapid and dynamic shifts, all of which are determinants of internationalisation (McDougall et al., 2003).

This result is not particularly useful given the low variation in export intensity explained by EC (6%). Nonetheless, due to the low reliability of the dynamism scale the results should be interpreted cautiously.

Conclusion regarding Hypothesis 4: The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics (supported).

The empirical study showed evidence that environmental hostility moderates the relationship between entrepreneurial capabilities and the two performance measures - economic performance and export intensity (Hypotheses H4a (i) and H4b (i)). Furthermore, the study revealed weak evidence that environmental dynamism moderates the relationship between entrepreneurial capabilities and performance - Hypotheses H4a (i) and H4b (ii). Although the moderation effect of both environmental variables (hostility and dynamism) was weakly supported for export intensity, the effect of dynamism was found to be relatively stronger for economic performance. This means that the relationship between entrepreneurial capabilities and economic performance was more strongly moderated by environmental dynamism than it was for all the other hypothesised moderation relationships for the EC construct.

The results revealed that in foreign environment characterised by **hostility**, **social capital** is the most important attribute of entrepreneurial capabilities associated with economic performance. The relationship was such that as the level of hostility increased, the relation between social capital and economic performance tends to become weaker. A closer look at the relationship showed that social interaction and network ties are the important attributes of social capital in this relationship. Further investigation into the moderation effect revealed that it is the interaction of social interaction (strong ties) that weakens the relationship; whereas network ties (weak ties) remained a positive contributor to economic performance. Human capital and technology did not play a role in enhancing economic performance. The findings implied that social capital provides compensating advantages (for technology and human capital) in order to compete viably in unfamiliar hostile markets abroad.

The significance of social capital is that social relations with foreign contacts may provide information about foreign markets necessary to succeed internationally (Presutti et al., 2007; Agndal et al., 2008). In line with existing research, this study

confirms that, in hostile foreign markets, external social capital positively impacts the international growth and economic performance of firms.

Of the social capital attributes, social interaction and network ties were found to play an important role in enhancing economic performance. However, relationship quality did not in enhance economic performance. The view is that social interaction and network ties are critical to overcoming information asymmetries such as finding clients, suppliers, and investors. Networks facilitate the discovery of international opportunities, allocation of scarce resources, and serve as a brokerage to other unknown networks. Networking extends the reach and abilities of the individual to capture resources that are held by others and so improve entrepreneurial effectiveness. In these relationships, trust was not considered important in promoting economic performance, and hence relationship quality did not play a role.

As already stated, as the level of hostility increases, the relation between social capital and economic performance tends to become weaker. While Network ties (weak ties) remain a positive contributor to economic performance under hostile environments, social interaction (strong ties) attributes to a weak relationship.

The weakening of the relationship between economic performance and social interaction when the level of hostility increased implied that maintaining strong socially embedded ties became less important is such environments. This meant that when the foreign business environment is characterised by unfavourable supply conditions, lack the abundance of resources, high political and economic instability and/or intensified competition, strong embeddedness became a social liability and did not provide benefits for advancing business. It would seem that strong ties resulted in dependency problems, vulnerability, and were a source of redundant information. However maintaining weak ties under hostile foreign environments remained an important source of nonredundant information which can be linked to growth.

The results revealed that in foreign environment characterised by **dynamism**, **internationalisation knowledge** (conceptualised as **prior internationalisation**

experience) was the most important attribute of entrepreneurial capabilities associated with economic performance and export performance. The nature of the relationship with economic performance as the level of dynamism increased could not be established, however with export intensity the results seemed to suggest that the strength of the relationships increased with increasing levels of dynamism. The research acknowledges the low reliability of the dynamism scale and the low explained variation in economic performance (4%) and export intensity (6%), and hence caution in interpreting this result.

As mentioned, it can be noted that relationship with export intensity the level of dynamism showed some evidence to say that relationship between EC (as signified by internationalisation knowledge) and export intensity weakens with increasing levels of dynamism. The researcher suggests that as firms increase the ratio of foreign sales as a percentage of total sales, the exposure to new cultures and languages, and different ways of doing business may amount to increased risk-taking (Welch, 2004) and hence weakens the relationship.

Internationalisation knowledge, which was itemised by prior international business experience, the ability to determine foreign business opportunities, experience in dealing with foreign customers and managing foreign operations, seems to contribute towards enhancing economic performance. The researcher finds that this construct should be renamed **prior internationalisation experience**. Prior international experience can lead to further opportunity identification, market knowledge, and network building, all of which are determinants of internationalisation (McDougall et al., 2003).

Foreign institutional knowledge (FIK) and foreign business knowledge (FBK) were not found to be important aspects of human capital in these moderation relationships within dynamic environments.

FIK was itemised by knowledge of foreign languages, norms, business laws and regulations whereas FBK was itemised by knowledge of foreign customers,

competitors, government agencies. The view is that these aspects of knowledge are context-specific in nature and will not necessarily change with the change dynamism in the international environment, and therefore they did not moderate the relationships.

As already discussed, prior internationalisation experience was the most important attribute of human capital critical in the moderation effect of dynamism on the relationship between EC and economic performance as well as EC and export intensity. This study contends that this prior experience is transferable when the prior environments are similar to the current markets served.

5.5 Conclusion

This chapter discussed in great detail the results for the hypothesis that were formulated and tested in order to estimate the relationships between constructs as stated in the first and second sub-problems in Chapter 1. In order to allow a logical flow of the discussion, the results were discussed following the constructs which formed the independent variables. Section 5.2 discusses the results pertaining to entrepreneurial intensity. Firstly the results pertaining entrepreneurial intensity (H1 and H3); Followed by results pertaining entrepreneurial capabilities (H2 and H4). For each hypothesis, the results for the sub-hypothesis are discussed. At the summit of this section, a presentation of table summary of the outcome of the hypothesis testing is shown. The summary findings are as follows:

Summary discussion regarding Hypothesis 1: Entrepreneurial intensity is positively related to international performance (Supported).

- The empirical study revealed that frequency of entrepreneurial activities is related to economic performance, whereas EO is related to export intensity
- In order to achieve higher export intensity, firms have to adopt an entrepreneurial orientation by proactively innovating new products for the international markets to boost foreign sales
- The study extends the body of literature among internationalised firms based on EO-performance relationship (Zhou, 2007; Li et al., 2009; Patel and D'Souza, 2009; Javalgi and Todd, 2010) by advancing that entrepreneurial intensity is positively related to international performance.

Summary discussion regarding Hypothesis 3: The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics (partially supported).

- The empirical study showed weak evidence that environmental hostility moderates the relationship between entrepreneurial intensity and the two performance

measures - economic performance and export intensity (Hypotheses H3a (i) and H3b (i))

- However, the study did not find evidence that environmental dynamism moderates the relationship between entrepreneurial intensity and performance - Hypotheses H3a (i) and H3b (ii)
- International environments characterised by hostility, entrepreneurial intensity is weakly associated with both economic performance and export intensity
- As the level of hostility increases, the relation between entrepreneurial intensity and performance tends to becomes weaker. This implies that in these environments, it becomes less important to pursue aggressive entrepreneurship in order to grow business and achieve greater financial performance. In hostile international environments exporting firms may simply back slash focus their efforts in those markets and focus on alternative markets, including domestic
- On the contrary, the findings revealed that in an environment dynamism did not moderate the relationship between entrepreneurial intensity and performance (both economic performance and export intensity)
- The research found that among the exporting firms the level of environmental dynamism did not affect the relationship between EI and performance. The study observed that given high concentration of the firms in high technology sectors, these firms naturally lends themselves to radical innovation strategies regardless of whether the environment is dynamic or not. Furthermore the study suggests investments in innovative activities in response to dynamic changes in the environment may take time to pay off.

In conclusion pertaining to the hypothesis on entrepreneurial intensity and performance

- International firms rely on entrepreneurial strategies and actions to achieve performance in hostile foreign market environments. However, the study did not find support for the moderating effect of dynamism on the EI-performance relationship.

Summary discussion regarding Hypothesis 2: Entrepreneurial capabilities are positively related to international performance (Supported)

- The empirical study revealed human capital, social capital and technology were positively related to economic performance, whereas only human capital and social capital were related to export intensity
- With regards to technology, the results showed that acquired technologies did augment the firms' ability to compete in international markets, however the firm's did not perceive themselves to be competing on the basis of superior technology to improve export intensity
- The results showed that in order to achieve financial success in international expansion knowledge-based, social-based, and technological capabilities are important (Autio et al., 2000; Deeds, 2001; Zhou, 2007; Brennan and Garvey, 2009)
- Further analysis of the findings revealed that all the variables of the entrepreneurial capabilities construct, played a significant role international performance, possession of distinct technologies compared to competitors was negatively correlated to export intensity
- This suggests that the firms did not necessarily compete in the foreign market on the basis of having unique or superior technology and/or R&D than competitors; but rather simply improve existing products/services, or imitate other technologies. This perhaps emphasises the challenge for firms in emerging economies to adopt technology and act entrepreneurially in order to boost their export sales.

Summary discussion regarding Hypothesis 4: The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics (supported)

- Environmental hostility moderates the relationship between entrepreneurial capabilities and the two performance measures - economic performance and export intensity (Hypotheses H4a (i) and H4b (i))
- The study revealed weak evidence that environmental dynamism moderates the relationship between entrepreneurial capabilities and performance - Hypotheses H4a (i) and H4b (ii)
- This means that the relationship between entrepreneurial capabilities and economic performance was more strongly moderated by environmental dynamism than it was for all the other hypothesised moderation relationships for the EC construct
- In foreign environment characterised by hostility, social capital is the most important attribute of entrepreneurial capabilities associated with economic performance. As the level of hostility increased, the relation between social capital and economic performance tends to become weaker
- Social interaction and network ties are the important attributes of social capital in this relationship. The moderation effect revealed that it is the interaction of social interaction (strong ties) that weakens the relationship; whereas network ties (weak ties) remained a positive contributor to economic performance
- Human capital and technology did not play a role in enhancing economic performance. The findings implied that social capital provides compensating advantages (for technology and human capital) in order to compete viably in unfamiliar hostile markets abroad
- Social relations with foreign contacts may provide information about foreign markets necessary to succeed internationally (Presutti et al., 2007; Agndal et al., 2008)

- In line with existing research, this study confirms that, in hostile foreign markets, external social capital positively impacts the international growth and economic performance of firms
- Social interaction and network ties were found to play an important role in enhancing economic performance, however, relationship quality did not
- The view is that social interaction and network ties are critical to overcoming information asymmetries such as finding clients, suppliers, and investors. Trust was not considered important in promoting economic performance, and hence relationship quality did not play a role
- This meant that when the foreign business environment is hostile, strong embeddedness became a social liability and did not provide benefits for advancing business
- It would seem that strong ties resulted in dependency problems, vulnerability, and were a source of redundant information. However maintaining weak ties under hostile foreign environments remained an important source of nonredundant information which can be linked to growth
- In foreign environment characterised by dynamism, internationalisation knowledge (conceptualised as prior internationalisation experience) was the most important attribute of entrepreneurial capabilities associated with economic performance and export performance
- The research acknowledges the low reliability of the dynamism scale and the low explained variation in economic performance (4%) and export intensity (6%), and hence caution in interpreting this result
- The researcher suggests that as firms increase the ratio of foreign sales as a percentage of total sales, the exposure to new cultures and languages, and different ways of doing business may amount to increased risk-taking (Welch, 2004) and hence weakens the relationship
- Internationalisation knowledge has been conceptualised as prior internationalisation experience

- Foreign institutional knowledge (FIK) and foreign business knowledge (FBK) were not found to be important aspects of human capital in these moderation relationships within dynamic environments
- The view is that aspects of FIK and FBK are context-specific in nature and will not necessarily change with the change dynamism in the international environment, and therefore they did not moderate the relationships
- Prior internationalisation experience was the most important attribute of human capital critical in the moderation effect of dynamism on the relationship between EC and economic performance as well as EC and export intensity. This study contends that this prior experience is transferable when the prior environments are similar to the current markets served.

Table 50: Summary of results on hypothesis

Results pertaining to entrepreneurial intensity: Hypothesis 1 and Hypothesis 3

Hypothesis 1: Entrepreneurial intensity is positively related to international performance (Supported)

H1a: Entrepreneurial intensity is positively related to economic performance (supported)

H1b: Entrepreneurial intensity is positively related to export intensity (Supported)

Hypothesis 3: The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics (Partially supported)

H3a (i): The relationship between entrepreneurial intensity and economic performance is moderated by environmental hostility (weakly supported)

H3a (ii): The relationship between entrepreneurial intensity and economic performance is moderated by environmental dynamism (not supported)

H3b (i): The relationship between entrepreneurial intensity and export intensity is moderated by environmental hostility (weakly supported)

H3b (ii): The relationship between entrepreneurial intensity and export intensity is moderated by environmental dynamism (not supported)

Results pertaining to entrepreneurial capabilities: Hypothesis 2 and Hypothesis 4

Hypothesis 2: Entrepreneurial capabilities are positively related to international performance (Supported)

H2a: Entrepreneurial capabilities are positively related to economic performance (supported)

H2b: Entrepreneurial capabilities are positively related to export intensity supported)

Hypothesis 4: The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics (Partially supported)

H4a (i): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental hostility (weakly supported)

H4a (ii): The relationship between entrepreneurial capabilities and economic performance is moderated by environmental dynamism (Supported)

H4b (i): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental hostility (weakly supported)

H4b (ii): The relationship between entrepreneurial capabilities and export intensity is moderated by environmental dynamism (weakly supported)

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The first objective of this chapter is to summarise the findings of this study based on the evidence presented in the previous chapter and draw conclusions based on the findings. The second objective is to provide recommendations to each of the stakeholders (entrepreneurs, companies, researchers, and policy makers). The last section attempts to elicit further research by proposing a few research areas that may be undertaken in the field. The next section discusses the conclusions of the study; the last two sections provide recommendations to stakeholders and suggestions for future research respectively.

6.2 Conclusions of the study

Globalisation of the world economy has encouraged companies to leverage their resources and skills by expanding into existing or new foreign markets (Zahra and Garvis, 2000). The process of discovering and creatively exploiting opportunities that exist outside a firm's national borders in order to obtain competitive advantage has been labelled international entrepreneurship. Exporting is viewed as an attractive mode of venturing into foreign market opportunities (Haahti et al., 2005) and is indeed an entrepreneurial activity since it consist of identifying and exploiting new business opportunities in a new environment (Ripollés-Meliá et al., 2007). Export of products represents the predominant mode of international expansion (Acedo and Casillas, 2007) and is tipped vital for the growth and development of firms in emerging economies (Manolova et al., 2010).

Due to rapid globalisation of world markets, companies of all sizes have been encouraged to expand internationally. Emerging markets are characterised by relatively small, domestic firms with severe resource constraints in terms of financial, technological and personnel resources.

Majority of the empirical work in export and international entrepreneurship is based primarily on firms based in advanced economies (Singh, 2009). Limited research has been conducted in the context of developing countries, including South Africa (Scheepers et al., 2007). Faced with rising competition in their domestic markets, these firms should look into foreign markets as a means to achieve growth and creating a sustainable performance. As already pointed, export is an effective way towards internationalisation, but it requires organisational capabilities. In order to compete effectively on the international stage these firms need to exhibit high level of entrepreneurial behaviour and unique entrepreneurial capabilities (Zhou, 2007). Entrepreneurial behaviour among firms and possession of a broader range of abilities needed to initiate appropriate action in specific organisational situations are necessary.

This study contributes to the international entrepreneurship literature by analysing the relationship between entrepreneurial intensity and capability, taken as independent variables, and their effect on international performance, taken as a multi-item dependent variable. The study utilises a sample of South African exporting firms of any size, industry, and/or age. Furthermore foreign environmental conditions within which these firms operate are measured in terms of their impact on the relationship between the independent variables and international performance.

With reference to the context of the study, the findings of this study are important for the following reasons:

- The findings may have implications to South African firms as well as other developing countries
- Entrepreneurial intensity has not been studied within the context of international entrepreneurship and therefore is still in infancy stage
- Entrepreneurial intensity and capabilities have not been studied together in an integrative study
- The study advances literature in terms of managing internationalised firms under hostile and/or dynamic environments

- International performance is measured as a multi-item measure consisting of economic performance and export intensity
- South African businesses face challenges of international competitiveness, trade deficit, as well as job creation.

In line with prior research on entrepreneurial orientation (Zhou, 2007; Li et al., 2009; Patel and D'Souza, 2009; Javalgi and Todd, 2010), the results of the study showed that entrepreneurial intensity is positively related to international performance. South African exporting firms should enforce different aspect of entrepreneurial intensity depending on the intended performance target they want to reach.

If their objective is to achieve growth and financial performance, exporting firms should engage in frequent product, process, and service enhancement activities. On the other hand, if their objective is to achieve higher export intensity, the firms have to adopt an entrepreneurial orientation by proactively innovating new products for the international markets to boost foreign sales. The development of entrepreneurial orientation would require organisational members to engage in proactive activities such as spending time abroad and attending foreign trade fares in search of new opportunities. However, they should be cautious to avoid taking risks in these environments to avoid losses that could affect their foreign sales revenue.

The study found that entrepreneurial capability among South African exporting firms is positively related to performance. Entrepreneurial capabilities enable management initiate appropriate action in specific organisational situations and reflect the capacity to initiate and sustain an entrepreneurial dynamism throughout the organisation (Obrecht, 2004). In line with existing literature in international entrepreneurship, the study confirms that knowledge-based, social-based, and technological capabilities are important for successful international expansion (Autio et al., 2000; Deeds, 2001; Zhou, 2007; Brennan and Garvey, 2009). The study however, found that in order to improve their export intensity, human capital and social capital are among the most essential capabilities for organisational perfomance (Obrecht, 2004) but technology was not.

The firms did not perceive that competing on the basis of distinct technologies compared to competitors was essential to improve export intensity. This is possibly due to the time lag that it takes to derive benefits from investments in technology intensive activities such as R&D. It is suggested the firms may simply be improving on an existing product/service, or imitate other technologies; or they may be focusing on other competitive strategies such as pricing, relationships and/or service offering. However, in line with the findings, acquisition of internal technologies necessary for operational efficiency, or launching products that better satisfy customer needs, and logistic applications is essential to improving export intensity.

The overall comparison revealed that in the foreign market environment, entrepreneurial capabilities were more important predictors of performance than entrepreneurial intensity. This suggests that entrepreneurial firms must possess compensating advantages in order to compete viably in unfamiliar markets abroad if they are not strong on innovation, proactiveness, and taking risks. Knowledge-based factors enable management the initiative and flexibility to gain influence over vital resources. In line with other research, venture performance is largely determined by its unique resource and capabilities (Deeds, 2001).

Firm behaviour may differ contingent on influences external to the firm. Zahra (2000) states that foreign opportunities, however, are tempered by the constraints imposed by the competitive forces that exist in international environments, such as aggressive government intervention, technological changes, and fierce local rivalries all contributing to hostile international environment.

The study found that international firms rely on different strategies and actions to achieve superior performance in hostile foreign market environments. The result showed that the pursuit of aggressive entrepreneurship behaviour in the international environments with higher levels of hostility is not essential in order to improve export intensity or achieve greater economic performance. In response to the perceived high levels of industry risk, firms adopt a conservative strategic posture by avoiding commitment of resources and adopt a style that is decidedly risk-averse, non-

innovative, and reactive (Covin and Slevin, 1990). Under these conditions exporting firms may simply back track their efforts in those markets and focus on alternative markets. Adoption of an international diversification is a strategy that enables firms to generate the resources necessary to support projects, spread the risk and provide additional market. In line with existing research, global geographic diversity determines the firm's overall performance (Zahra and Garvis, 2000).

The research found that among the SA exporting firms, the level of environmental dynamism in the foreign markets did not moderate the relationship between entrepreneurial intensity and performance. This may be because it may take some time for firms to realise the benefits of investments in innovative activities when the firms respond to shifts in technological conditions. It suggested that given the high concentration of the firms in high technology sectors within our sample, these firms naturally lends themselves to radical innovation strategies regardless of whether the environment is dynamic or not.

The research found that the relationship between entrepreneurial capabilities and international performance is moderated by both environmental hostility and dynamism, with stronger effects manifested for economic performance than for export intensity. In foreign environment characterised by hostility, social capital is the most important attribute of entrepreneurial capabilities associated with economic performance.

The finding revealed that as the level of hostility increased, the relation between social capital and economic performance tends to become weaker. Social interaction and network ties are the important attributes of social capital in this relationship, with social interaction (strong ties) contributing to the fading relationship; whereas network ties (weak ties) remained a positive contributor to economic performance.

Social relations with foreign contacts may provide information about foreign markets necessary to succeed internationally (Presutti et al., 2007; Agndal et al., 2008). Human capital and technology did not play a role in enhancing economic performance under

hostile foreign environments. The findings implied that social capital provides compensating advantages (for technology and human capital) in order to compete viably in unfamiliar hostile markets abroad. In line with existing research, this study confirms that, in hostile foreign markets, external social capital positively impacts the international growth and economic performance of firms.

In line with Burt (2000) the study found that the structural configuration of relationships is more important than the quality of the relationship when the environment is characterised by political and/or economic instability and/or intensified competition. Social interaction and network ties were found to play an important role in enhancing economic performance in hostile foreign environments, however relationship quality did not. The view is that social interaction and network ties are critical to overcoming information asymmetries such as finding clients, suppliers, and investors. Trust was not considered important in promoting economic performance, and hence relationship quality did not play a role. This meant that when the foreign business environment is hostile, strong embeddedness became a social liability and did not provide benefits for advancing business. Firms can overcome the limitations of inadequate information about foreign markets by using their network ties in the targeted markets instead of social ties.

It would seem that strong ties result in dependency problems, vulnerability, and were a source of redundant information. However maintaining weak ties under hostile foreign environments remained an important source of useful information which can be linked to growth. Companies operating in hostile foreign environments are advised not to waste too much time and effort in maintaining close/personal social relations with their key foreign contacts. They should direct their focus on building sparse professional networks with structural holes in order to gain access to vital knowledge and other resources.

In foreign environment characterised by dynamism, internationalisation knowledge (conceptualised as prior internationalisation experience) was the most important

attribute of entrepreneurial capabilities associated with economic performance and export intensity.

The research acknowledges the low reliability of the dynamism scale and the low explained variation in economic performance (4%) and export intensity (6%), and hence caution in interpreting this result is advised.

In this study internationalisation knowledge has been conceptualised as prior internationalisation experience. Foreign institutional knowledge (FIK) and foreign business knowledge (FBK) were not found to be important aspects of human capital in these moderation relationships within dynamic environments. This implies that in dynamic foreign markets knowledge of foreign languages and norms, laws and regulations, host government agencies, and market conditions did not boost performance.

The research suggests that as firms increase the ratio of foreign sales as a percentage of total sales, the exposure to new cultures and languages, and different ways of doing business may amount to increased risk-taking (Welch, 2004) and hence weakens the relationship between FIK and FBK with export intensity. Aspects of FIK and FBK are context-specific in nature and will not necessarily change with the change in dynamism in the international environment, and therefore these factors did not moderate the relationships.

Prior internationalisation experience is the most important attribute of human capital critical in the moderation effect of dynamism on the relationship between entrepreneurial capabilities and economic performance as well as entrepreneurial capabilities and export intensity. This implies that when the foreign business environment is characterised by dynamic changes such as changes in customers' needs, and shifts in technological conditions, prior internationalisation experience among top management can lead to further opportunity identification, market knowledge, and network building, all of which are determinants of internationalisation (McDougall et al., 2003). This study contends that this prior experience is transferable

when the prior environments are similar to the current markets served and therefore it should not be taken for granted that experience in dissimilar foreign markets is sufficient (Autio, 2005; Camisón and Villar-López, 2010).

In conclusion, using an integrative approach that inter-relates entrepreneurial intensity among firms and their capabilities, the research attempted to investigate the antecedents of export intensity and economic performance within a foreign market environmental context.

Although some of the results were weak in terms of a large amount of unexplained variation in the outcome variables, they are acceptable for theoretical and practical purposes.

6.3 Recommendations

- Emerging market exporting firms should be encouraged to adopt international entrepreneurial intensity as the appropriate strategic orientation
- Top management teams of emerging market exporting companies should seek to improve their overall entrepreneurial capabilities in order to overcome obstacles hampering international performance
- South Africa needs to improve its international competitiveness by channelling risk capital towards internationalised firms with pertinent entrepreneurial competencies such as human and social capital and technology acquisition
- South African exporting firms should know the conditions under which different mixes of weak network ties and strong ties lead to specific benefits in their foreign markets
- Policy makers in business, government and educational institutions should put more emphasis on programs that foster the development of entrepreneurial capabilities among executives of exporting firms.

6.4 Suggestions for further research

This research has important implications regarding the antecedent of performance among exporting firms within an emerging market context. In order to elicit further research efforts in the field, the following suggestions for future research are made:

- Although the current study demonstrated statistically significant relationships between independent variables and the performance indicators, the results were not strong (low r-squared). Morris and Sexton (1996) found stronger relationships when more weight is placed on degree versus the frequency of entrepreneurship demonstrated by a firm (Morris and Sexton, 1996). Given the infancy of our understanding of entrepreneurial intensity, future research could advance our understanding and benefit from assigning more weight to EO than to frequency
- Research could investigate whether possession of financial asset impacts international performance among firms
- Research could investigate whether the decision for new ventures to internationalise (at inception) is influenced by the size of its home market or by its production capacity as indicated by Fan and Phan (2007), or by management commitment to exporting as indicated by other researches such as Javalgi and Todd (2010) and Serra et al. (2011) or by the firm's possession of resources (Ibrahim et al., 2004)
- Examine opportunity recognition and exploitation among South African firms in international markets
- Investigate the practice of firms to engage in a range of internationalisation processes such as international networks, research collaboration, labour recruitment, and knowledge transfer
- Research could look into whether involvement in international trade does lead to economic growth or knowledge transfer among the firms and hence across borders as claimed by Mastromarco and Ghosh (2009)
- Investigate whether there are region specific opportunities that (can) enable South African exporting firms to flourish.

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APPENDIX A

Ethics letter

Actual research instrument

APPENDIX B

Consistency matrix

The purpose of this research was to perform an empirical investigation on three main constructs – namely: entrepreneurial intensity, entrepreneurial capabilities, and the environment - among South African exporting firms and the relationship of these factors with international performance.					
Sub-problem	**Literature Review**	**Hypotheses**	**Source of data**	**Type of data**	**Analysis**
The first sub-problem is to examine the relationship between entrepreneurial **intensity** and international performance as well as the moderating effect of environmental hostility and dynamism on the relationship.	(Certo et al., 2009, Green et al., 2008, Hansen et al., 2011, Knight, 2001, Heilbrunn, 2008, Javalgi and Todd, 2010, Keh et al., 2007, Kuratko et al., 2007, Li et al., 2009, Patel and D'Souza, 2009, Scheepers et al., 2007, Racela, 2010, Zhou, 2007) (Balabanis and Katsikea, 2003, Covin et al., 1997, Covin and Slevin, 1998, Covin et al., 2000, Covin et al., 2001, Green et al., 2008, Urban, 2010, Zahra and Bogner, 2000, Patel and D'Souza, 2009)	**Hypothesis 1: Entrepreneurial intensity is positively related to international performance.** **Hypothesis 3: The relationship between entrepreneurial intensity and international performance is moderated by the environmental characteristics.**	Survey questions 10 – 27; 9; 64 – 69. Survey questions 10 – 27; 9; 53-63; 64 – 69.	Nominal; Ordinal; Nominal Nominal; Ordinal; Nominal; Nominal	Correlation Hierarchical regression; Moderation

The purpose of this research was to perform an empirical investigation on three main constructs – namely: entrepreneurial intensity, entrepreneurial capabilities, and the environment - among South African exporting firms and the relationship of these factors with international performance.					
Sub-problem	**Literature Review**	**Hypotheses**	**Source of data**	**Type of data**	**Analysis**
The second sub-problem is to examine the relationship between entrepreneurial **capabilities** and international performance as well as the moderating effect of environmental hostility and dynamism on the relationship.	(Autio et al., 2011, Batjargal, 2007, Bauernschuster et al., 2010, Bhagavatula et al., 2010, Furu, 2000, Gimmon and Levie, 2010, Haeussler et al., 2010, Javalgi and Todd, 2010, Knight, 2001, Leiblein and Reuer, 2004, Lindstrand et al., 2011, Molina-Morales and Martínez-Fernández, 2010, Presutti et al., 2007, Stoian et al., 2011, Raymond and St-Pierre, 2010, Sullivan and Marvel, 2011, Unger et al., 2009, Urban, 2010, Walter et al., 2006, Weerawardena et al., 2007, Yli-Renko et al., 2001, Yli-Renko et al., 2002, , Yli-Renko et al., 2002); (Balabanis and Katsikea, 2003, Covin et al., 1997, Covin and Slevin, 1998, Covin et al., 2000, Covin et al., 2001, Green et al., 2008, Urban, 2010, Zahra and Bogner, 2000, Patel and D'Souza, 2009)	**Hypothesis 2: Entrepreneurial capabilities are positively related to international performance.** **Hypothesis 4: The relationship between entrepreneurial capabilities and international performance is moderated by the environmental characteristics.**	Survey questions 28 – 52; 9; 64 – 69. Survey questions 28 – 52; 9; 53-63; 64 – 69.	Nominal; Ordinal; Nominal Nominal; Ordinal; Nominal; Nominal.	Correlation Hierarchical regression; Moderation.

APPENDIX C

Tables and figures

Table 51: Correlations

	EI	EO	Freq of entrepreneurship	innovation	proactiveness	risk taking	EC	HC	SC	Tech	FIK	FBK	IK	SI	RQ	Net ties	Tech distinctiveness	Tech assimilation	Environmental Hostility	Dynamism	Econ Performance	Export Intensity
EI	1.00	0.97	0.65	0.85	0.83	0.73	0.56	0.47	0.49	0.39	0.32	0.48	0.45	0.33	0.31	0.55	0.27	0.44	0.17	0.08	0.27	0.23
EO	0.97	1.00	0.46	0.87	0.83	0.77	0.47	0.43	0.41	0.30	0.28	0.42	0.42	0.28	0.24	0.49	0.19	0.36	0.16	0.07	0.22	0.26
Frequency of entrepreneurship	0.65	0.46	1.00	0.38	0.45	0.30	0.60	0.42	0.55	0.53	0.32	0.46	0.34	0.38	0.42	0.51	0.43	0.51	0.11	0.10	0.32	0.03
innovation	0.85	0.87	0.38	1.00	0.67	0.50	0.40	0.38	0.32	0.27	0.25	0.34	0.39	0.20	0.16	0.42	0.17	0.33	0.14	0.08	0.11	0.19
proactiveness	0.83	0.83	0.45	0.67	1.00	0.39	0.45	0.41	0.35	0.30	0.25	0.39	0.42	0.32	0.18	0.39	0.20	0.36	0.05	0.00	0.16	0.33
risk taking	0.73	0.77	0.30	0.50	0.39	1.00	0.32	0.27	0.34	0.16	0.18	0.31	0.23	0.17	0.24	0.39	0.10	0.20	0.21	0.09	0.27	0.13
EC	0.56	0.47	0.60	0.40	0.45	0.32	1.00	0.89	0.78	0.73	0.73	0.82	0.82	0.59	0.58	0.72	0.56	0.74	-0.05	0.13	0.42	0.19
Human capital	0.47	0.43	0.42	0.38	0.41	0.27	0.89	1.00	0.56	0.47	0.84	0.92	0.91	0.45	0.37	0.55	0.31	0.54	-0.08	0.06	0.28	0.23
Social capital	0.49	0.41	0.55	0.32	0.35	0.34	0.78	0.56	1.00	0.38	0.43	0.54	0.52	0.76	0.85	0.77	0.24	0.46	-0.02	0.18	0.42	0.24
Technology	0.39	0.30	0.53	0.27	0.30	0.16	0.73	0.47	0.38	1.00	0.38	0.40	0.46	0.24	0.23	0.46	0.91	0.84	-0.01	0.10	0.35	-0.04
Foreign institutional knowledge	0.32	0.28	0.32	0.25	0.25	0.18	0.73	0.84	0.43	0.38	1.00	0.69	0.62	0.36	0.26	0.44	0.25	0.45	-0.08	0.05	0.24	0.16
Foreign business knowledge	0.48	0.42	0.46	0.34	0.39	0.31	0.82	0.92	0.54	0.40	0.69	1.00	0.75	0.40	0.40	0.50	0.25	0.48	-0.07	0.07	0.25	0.21
Internationalization knowledge	0.45	0.42	0.34	0.39	0.42	0.23	0.82	0.91	0.52	0.46	0.62	0.75	1.00	0.43	0.32	0.52	0.33	0.51	-0.07	0.05	0.26	0.23
Social interaction	0.33	0.28	0.38	0.20	0.32	0.17	0.59	0.45	0.76	0.24	0.36	0.40	0.43	1.00	0.50	0.45	0.10	0.35	-0.04	0.14	0.38	0.26
Relationship quality	0.31	0.24	0.42	0.16	0.18	0.24	0.58	0.37	0.85	0.23	0.26	0.40	0.32	0.50	1.00	0.42	0.10	0.34	-0.02	0.17	0.26	0.22
Network ties	0.55	0.49	0.51	0.42	0.39	0.39	0.72	0.55	0.77	0.46	0.44	0.50	0.52	0.45	0.42	1.00	0.39	0.43	0.01	0.13	0.39	0.10
Technology distinctiveness	0.27	0.19	0.43	0.17	0.20	0.10	0.56	0.31	0.24	0.91	0.25	0.25	0.33	0.10	0.10	0.39	1.00	0.55	-0.02	0.03	0.28	-0.22
Technology assimilatio+A40n	0.44	0.36	0.51	0.33	0.36	0.20	0.74	0.54	0.46	0.84	0.45	0.48	0.51	0.35	0.34	0.43	0.55	1.00	0.00	0.15	0.35	0.20
Environmental Hostility	0.17	0.16	0.11	0.14	0.05	0.21	-0.05	-0.08	-0.02	-0.01	-0.08	-0.07	-0.07	-0.04	-0.02	0.01	-0.02	0.00	1.00	-0.07	-0.22	0.06
Environmental Dynamism	0.08	0.07	0.10	0.08	0.00	0.09	0.13	0.06	0.18	0.10	0.05	0.07	0.05	0.14	0.17	0.13	0.03	0.15	-0.07	1.00	0.19	0.17
Economic Performance	0.27	0.22	0.32	0.11	0.16	0.27	0.42	0.28	0.42	0.35	0.24	0.25	0.26	0.38	0.26	0.39	0.28	0.35	-0.22	0.19	1.00	0.03
Export Intensity	0.23	0.26	0.03	0.19	0.33	0.13	0.19	0.23	0.24	-0.04	0.16	0.21	0.23	0.26	0.22	0.10	-0.22	0.20	0.06	0.17	0.03	1.00

Abbreviation	Description
HC	Human capital
SC	Social capital
Tech	Technology
FIK	Foreign institutional knowledge
FBK	Foreign business knowledge
IK	Internationalization knowledge
SI	Social interaction
RQ	Relationship quality

Table 52: Scope versus Intensity of Internationalisation

	Export intensity		
Number of countries your firm is exporting to:	under 25%	25% or more	Total
1 - 5 countries	19	13	32
6 - 10 countries	17	15	32
11 or more countries	20	33	53
Total	56	61	117

Table 53: Speed versus scope of Internationalisation

	Export scope: number of countries exporting to			
Years since firm's inception to make first significant export sales	1 - 5	6 - 10	11 or more	Total
0 - 3 years	11	12	21	44
4 - 6 years	5	6	10	21
7 - 10 years	7	9	5	21
11 - 20 years	6	1	6	13
Over 20 years	3	4	11	18
Total	32	32	53	117

Table 54: Speed versus Intensity of Internationalisation

	Export intensity:		
Years since firm's inception to make first significant export sales	under 25%	25% or more	Total
0 - 3 years	14	30	44
4 - 6 years	11	10	21
7 - 10 years	11	10	21
11 - 20 years	9	4	13
Over 20 years	11	7	18
Total	56	61	117

Table 55: Analysis of Variance on speed of Internationalisation

Analysis of Variance on SPEED TO INTERNATIONALISATION

	SS - Effect	df - Effect	MS - Effect	SS - Error	df - Error	MS - Error	F	p	
EI	1.653	4	0.413	64.468	112	0.576	0.718	0.5814	
EC	2.582	4	0.645	73.236	112	0.654	0.987	0.4177	
Environmental Hostility	3.736	4	0.934	140.203	112	1.252	0.746	0.5626	
Environmental Dynamism	1.476	4	0.369	111.613	112	0.997	0.370	0.8294	
EI*Hostility	60.464	4	15.116	7130.385	112	63.664	0.237	0.9167	
EI*Dynamism	17.118	4	4.280	5434.103	112	48.519	0.088	0.9860	
EC*Hostility	29.591	4	7.398	1432.692	112	12.792	0.578	0.6789	
EC*Dynamism	7.415	4	1.854	1158.971	112	10.348	0.179	0.9488	
EO	2.113	4	0.528	78.459	112	0.701	0.754	0.5574	
Frequency of entrepreneurship	1.717	4	0.429	83.975	112	0.750	0.573	0.6830	
Human capital	4.583	4	1.146	99.772	112	0.891	1.286	0.2798	
Social capital	6.565	4	1.641	101.816	112	0.909	1.805	0.1328	
Technology	6.479	4	1.620	133.960	112	1.196	1.354	0.2544	
Freq*Host	81.580	4	20.395	7532.630	112	67.256	0.303	0.8753	
EO*Host	62.352	4	15.588	7410.967	112	66.169	0.236	0.9178	
HC*Host	122.484	4	30.621	5752.406	112	51.361	0.596	0.6661	
SC*Host	130.421	4	32.605	6788.697	112	60.613	0.538	0.7082	
Tech*Host	275.368	4	68.842	6779.895	112	60.535	1.137	0.3427	
Freq*Dynamism	42.692	4	10.673	6035.996	112	53.893	0.198	0.9389	
EO*Dynamism	23.904	4	5.976	5606.969	112	50.062	0.119	0.9754	
HC*Dynamism	104.013	4	26.003	5472.147	112	48.858	0.532	0.7123	
SC*Dynamism	144.617	4	36.154	6399.473	112	57.138	0.633	0.6402	
Tech*Dynamism	193.869	4	48.467	5924.009	112	52.893	0.916	0.4571	
Innovation	3.649	4	0.912	97.681	112	0.872	1.046	0.3868	
Proactiveness	9.897	4	2.474	92.996	112	0.830	2.980	0.0222	p<0.05
Risk-taking	4.629	4	1.157	161.860	112	1.445	0.801	0.5272	
Foreign institutional knowledge	4.252	4	1.063	132.056	112	1.179	0.902	0.4657	
Foreign business knowledge	1.736	4	0.434	114.778	112	1.025	0.423	0.7915	
Internationalisation knowledge	11.490	4	2.873	131.633	112	1.175	2.444	0.0507	
Social interaction	9.613	4	2.403	121.007	112	1.080	2.224	0.0708	
relationship quality	8.171	4	2.043	154.555	112	1.380	1.480	0.2129	
network ties	10.868	4	2.717	207.432	112	1.852	1.467	0.2170	
Technology distinctiveness	19.759	4	4.940	208.978	112	1.866	2.647	0.0371	p<0.05
Technology assimilation	1.376	4	0.344	137.304	112	1.226	0.281	0.8900	

Table 56: Analysis of Variance on SCOPE of internationalisation

Analysis of Variance on SCOPE OF INTERNATIONALISATION

	SS - Effect	df - Effect	MS - Effect	SS - Error	df - Error	MS - Error	F	p	
International EI	1.903	2	0.951	64.218	114	0.563	1.689	0.1893	
EC	1.573	2	0.787	74.244	114	0.651	1.208	0.3026	
Environmental Hostility	1.160	2	0.580	142.779	114	1.252	0.463	0.6305	
Environmental Dynamism	4.065	2	2.032	109.024	114	0.956	2.125	0.1241	
EI*Hostility	136.643	2	68.321	7054.206	114	61.879	1.104	0.3350	
EI*Dynamism	43.153	2	21.577	5408.068	114	47.439	0.455	0.6357	
EC*Hostility	35.614	2	17.807	1426.670	114	12.515	1.423	0.2453	
EC*Dynamism	43.821	2	21.910	1122.565	114	9.847	2.225	0.1127	
International EO	2.757	2	1.379	77.815	114	0.683	2.020	0.1374	
Frequency of entrepreneurship	0.176	2	0.088	85.517	114	0.750	0.117	0.8897	
Human capital	4.796	2	2.398	99.559	114	0.873	2.746	0.0684	
Social capital	1.699	2	0.850	106.681	114	0.936	0.908	0.4062	
Technology	1.256	2	0.628	139.183	114	1.221	0.514	0.5992	
Freq*Host	73.566	2	36.783	7540.643	114	66.146	0.556	0.5750	
EO*Host	163.024	2	81.512	7310.295	114	64.125	1.271	0.2845	
HC*Host	164.469	2	82.234	5710.421	114	50.091	1.642	0.1982	
SC*Host	30.313	2	15.157	6888.805	114	60.428	0.251	0.7786	
Tech*Host	0.855	2	0.427	7054.409	114	61.881	0.007	0.9931	
Freq*Dynamism	107.842	2	53.921	5970.846	114	52.376	1.029	0.3605	
EO*Dynamism	32.641	2	16.321	5598.232	114	49.107	0.332	0.7179	
HC*Dynamism	11.039	2	5.520	5565.120	114	48.817	0.113	0.8932	
SC*Dynamism	106.397	2	53.198	6437.693	114	56.471	0.942	0.3928	
Tech*Dynamism	182.116	2	91.058	5935.762	114	52.068	1.749	0.1786	
Innovation	1.706	2	0.853	99.624	114	0.874	0.976	0.3800	
Proactiveness	8.183	2	4.092	94.710	114	0.831	4.925	0.0089	p<0.01
Risk-taking	0.853	2	0.426	165.635	114	1.453	0.293	0.7462	
Foreign institutional knowledge	8.073	2	4.036	128.235	114	1.125	3.588	0.0308	p<0.05
Foreign business knowledge	4.537	2	2.268	111.977	114	0.982	2.309	0.1040	
Internationalisation knowledge	3.936	2	1.968	139.187	114	1.221	1.612	0.2040	
Social interaction	1.901	2	0.950	128.719	114	1.129	0.842	0.4337	
relationship quality	1.209	2	0.605	161.516	114	1.417	0.427	0.6536	
network ties	9.983	2	4.991	208.316	114	1.827	2.731	0.0694	
Technology distinctiveness	1.551	2	0.776	227.186	114	1.993	0.389	0.6785	
Technology assimilation	1.072	2	0.536	137.608	114	1.207	0.444	0.6426	

Table 57: Analysis of Variance on Intensity of internationalisation

Analysis of Variance on INTENSITY OF INTERNATIONALISATION (Export sales as a % of total sales)

	SS - Effect	df - Effect	MS - Effect	SS - Error	df - Error	MS - Error	F	p	
International EI	3.864	4	0.966	62.257	112	0.556	1.738	0.1466	
EC	3.067	4	0.767	72.751	112	0.650	1.180	0.3234	
Environmental Hostility	2.489	4	0.622	141.450	112	1.263	0.493	0.7411	
Environmental Dynamism	3.997	4	0.999	109.092	112	0.974	1.026	0.3971	
EI*Hostility	275.252	4	68.813	6915.597	112	61.746	1.114	0.3533	
EI*Dynamism	352.917	4	88.229	5098.304	112	45.521	1.938	0.1090	
EC*Hostility	143.780	4	35.945	1318.504	112	11.772	3.053	0.0198	p<0.05
EC*Dynamism	97.856	4	24.464	1068.530	112	9.540	2.564	0.0421	p<0.05
International EO	6.455	4	1.614	74.117	112	0.662	2.438	0.0511	
Frequency of entrepreneurship	0.967	4	0.242	84.726	112	0.756	0.319	0.8644	
Human capital	6.818	4	1.705	97.536	112	0.871	1.957	0.1059	
Social capital	7.246	4	1.812	101.134	112	0.903	2.006	0.0984	
Technology	2.416	4	0.604	138.023	112	1.232	0.490	0.7430	
Freq*Host	151.886	4	37.971	7462.324	112	66.628	0.570	0.6850	
EO*Host	350.400	4	87.600	7122.919	112	63.597	1.377	0.2463	
HC*Host	393.674	4	98.418	5481.217	112	48.939	2.011	0.0977	
SC*Host	421.385	4	105.346	6497.734	112	58.015	1.816	0.1307	
Tech*Host	50.899	4	12.725	7004.364	112	62.539	0.203	0.9360	
Freq*Dynamism	167.831	4	41.958	5910.857	112	52.776	0.795	0.5308	
EO*Dynamism	438.773	4	109.693	5192.100	112	46.358	2.366	0.0571	
HC*Dynamism	406.483	4	101.621	5169.676	112	46.158	2.202	0.0733	
SC*Dynamism	474.994	4	118.749	6069.096	112	54.188	2.191	0.0745	
Tech*Dynamism	97.100	4	24.275	6020.778	112	53.757	0.452	0.7711	
International innovation	6.782	4	1.696	94.548	112	0.844	2.009	0.0981	
International proactiveness	11.818	4	2.954	91.075	112	0.813	3.633	0.0080	p<0.01
Risk-taking	5.409	4	1.352	161.080	112	1.438	0.940	0.4435	
Foreign institutional knowledge	12.273	4	3.068	124.034	112	1.107	2.771	0.0307	p<0.05
Foreign business knowledge	6.433	4	1.608	110.081	112	0.983	1.636	0.1701	
Internationalisation knowledge	9.618	4	2.405	133.505	112	1.192	2.017	0.0968	
Social interaction	9.836	4	2.459	120.784	112	1.078	2.280	0.0651	
relationship quality	8.986	4	2.246	153.740	112	1.373	1.637	0.1700	
network ties	6.442	4	1.611	211.857	112	1.892	0.851	0.4956	
Technology distinctiveness	18.281	4	4.570	210.456	112	1.879	2.432	0.0516	
Technology assimilation	7.032	4	1.758	131.648	112	1.175	1.496	0.2083	

Table 58: Spearman's Rho correlations

Spearman correlations	Growth	Financial	Economic Performance	Export Intensity
Foreign institutional knowledge	0.23	0.24	0.24	0.12
Foreign business knowledge	0.27	0.24	0.26	0.17
Internationalization knowledge	0.25	0.30	0.28	0.25
Human capital	0.29	0.30	0.31	0.21
Social interaction	0.43	0.41	0.43	0.24
relationship quality	0.29	0.29	0.31	0.21
network ties	0.37	0.41	0.40	0.13
Social capital	0.42	0.44	0.45	0.23
Technology distinctiveness	0.30	0.30	0.31	-0.18
Technology assimilation	0.33	0.36	0.34	0.19
Technology	0.37	0.37	0.38	-0.03
International innovation	0.13	0.15	0.13	0.19
International proactiveness	0.18	0.22	0.20	0.32
International risk taking	0.31	0.29	0.30	0.15
International EO	0.25	0.27	0.25	0.25
Frequency of entrepreneurship	0.36	0.37	0.38	0.00
International EI	0.31	0.32	0.31	0.23
Environmental Hostility	-0.14	-0.26	-0.21	0.05
Environmental Dynamism	0.26	0.13	0.20	0.17
EC	0.42	0.43	0.44	0.18
EI*Hostility	0.05	-0.07	-0.02	0.16
EI*Dynamism	0.34	0.22	0.28	0.26
EC*Hostility	-0.01	0.00	0.00	-0.23
EC*Dynamism	-0.05	-0.02	-0.04	-0.22
Freq*Host	0.10	-0.01	0.05	0.05
EO*Host	0.03	-0.08	-0.04	0.19
HC*Host	0.10	-0.02	0.04	0.14
SC*Host	0.19	0.08	0.14	0.18
Tech*Host	0.14	0.04	0.09	0.01
Freq*Dynamism	0.37	0.25	0.33	0.13
EO*Dynamism	0.32	0.20	0.26	0.28
HC*Dynamism	0.36	0.25	0.32	0.28
SC*Dynamism	0.40	0.30	0.37	0.24
Tech*Dynamism	0.40	0.29	0.35	0.09

Table 59: Pearson product moment correlations

Pearson correlations	Growth	Financial	Economic Performance	Export Intensity
Foreign institutional knowledge	0.23	0.23	0.24	0.16
Foreign business knowledge	0.26	0.21	0.25	0.21
Internationalization knowledge	0.23	0.27	0.26	0.23
Human capital	0.27	0.27	0.28	0.23
Social interaction	0.39	0.35	0.38	0.26
relationship quality	0.24	0.26	0.26	0.22
network ties	0.35	0.40	0.39	0.10
Social capital	0.39	0.40	0.42	0.24
Technology distinctiveness	0.28	0.26	0.28	-0.22
Technology assimilation	0.33	0.34	0.35	0.20
Technology	0.34	0.33	0.35	-0.04
International innovation	0.11	0.11	0.11	0.19
International proactiveness	0.12	0.17	0.16	0.33
International risk taking	0.28	0.24	0.27	0.13
International EO	0.21	0.21	0.22	0.26
Frequency of entrepreneurship	0.31	0.30	0.32	0.03
International EI	0.25	0.26	0.27	0.23
Environmental Hostility	-0.16	-0.27	-0.22	0.06
Environmental Dynamism	0.26	0.10	0.19	0.17
EC	0.40	0.40	0.42	0.19
EI*Hostility	-0.03	-0.12	-0.08	0.16
EI*Dynamism	0.34	0.20	0.28	0.24
EC*Hostility	0.05	0.01	0.03	-0.26
EC*Dynamism	0.02	0.01	0.02	-0.24
Freq*Host	0.01	-0.09	-0.04	0.07
EO*Host	-0.04	-0.13	-0.09	0.19
HC*Host	0.02	-0.07	-0.03	0.22
SC*Host	0.08	0.00	0.04	0.20
Tech*Host	0.08	0.00	0.04	0.02
Freq*Dynamism	0.37	0.23	0.31	0.14
EO*Dynamism	0.33	0.19	0.27	0.26
HC*Dynamism	0.35	0.22	0.30	0.25
SC*Dynamism	0.40	0.29	0.36	0.25
Tech*Dynamism	0.39	0.27	0.34	0.09

Table 60: Level 2 regression results for EI-Economic performance with Dynamism

LEVEL 2	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	1.649302	1.031214			4.256837	4.130468		
EO	0.194993	0.150056	0.124654		-0.188718	0.763899	-0.120642	
Frequency of entrepreneurship	0.421992	0.144669	0.278208	**	0.363699	0.693632	0.239776	
Environmental Hostility	-0.309889	0.100663	-0.264783	**	-0.313163	0.101636	-0.26758	**
Environmental Dynamism	0.17854	0.112498	0.135219		-0.458689	0.988075	-0.347394	
Freq*Dynamism					0.01635	0.166842	0.090783	
EO*Dynamism					0.091971	0.179226	0.491511	
R^2 base	0.2004							
ΔR^2	0.003387							
F(4,112) base	7.02***							
F(6,110) with moderator	4.69***							

* p < 0.05; ** p < 0.01; *** p < 0.001. EO: Entrepreneurial orientation

Table 61: Level 3 regression results for EI-Economic performance with Dynamism

LEVEL 3	Base model				Including moderator			
Economic Performance	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	3.418781	0.995892		***	4.830381	3.895418		
innovation	-0.132582	0.172499	-0.095049		-0.173727	0.827261	-0.124546	
proactiveness	0.148422	0.160801	0.107222		-0.226203	0.822424	-0.163413	
risk taking	0.350024	0.110277	0.32165	**	0.563058	0.528478	0.517414	
Environmental Hostility	-0.320738	0.103703	-0.274053	**	-0.309526	0.107193	-0.264473	**
Environmental Dynamism	0.195973	0.11477	0.148423		-0.159333	0.91677	-0.120673	
innovation*Dynamism					0.012546	0.18531	0.071136	
proactiveness*Dynamism					0.090536	0.186528	0.50876	
risk taking*Dynamism					-0.054007	0.12664	-0.311269	
R^2 base	0.1820							
ΔR^2	0.00381							
F(5,111) base	4.94***							
F(8,108) with moderator	3.08**							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Table 62: Level 2 regression results for EI-Export intensity model with Dynamism

LEVEL 2	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.300473	1.090625			-4.03647	4.345743		
EO	0.478482	0.158701	0.305942	**	0.39066	0.803712	0.24979	
Frequency of entrepreneurship	-0.199542	0.153004	-0.131579		0.59396	0.729784	0.39166	
Environmental Hostility	0.034597	0.106462	0.029567		0.04465	0.106933	0.03816	
Environmental Dynamism	0.212437	0.11898	0.160925		1.28831	1.039573	0.97591	
Freq*Dynamism					-0.19713	0.175538	-1.09481	
EO*Dynamism					0.02064	0.188567	0.1103	
R^2 base	0.1052							
ΔR^2	0.013023							
F(4,112) base	3.29*							
F(6,110) with moderator	2.46*							

* p < 0.05; ** p < 0.01; *** p < 0.001. EO: Entrepreneurial orientation

Table 63: Level 3 regression results for EI-Export intensity model with Dynamism

LEVEL 3	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	-0.877787	1.019656			-3.74646	3.970461		
innovation	-0.131378	0.176616	-0.094205		-0.04671	0.843198	-0.033494	
proactiveness	0.533329	0.164638	0.385363	**	1.19712	0.838268	0.864992	
risk taking	0.003133	0.112908	0.002879		-0.31888	0.538659	-0.293088	
Environmental Hostility	0.070363	0.106178	0.060134		0.05255	0.109258	0.044907	
Environmental Dynamism	0.236045	0.117509	0.178809	*	0.95226	0.934431	0.721354	
innovation*Dynamism					-0.02542	0.18888	-0.144172	
proactiveness*Dynamism					-0.15991	0.190121	-0.898809	
risk taking*Dynamism					0.08215	0.12908	0.473587	
R^2 base	0.1421							
ΔR^2	0.011649							
F(5,111) base	3.68**							
F(8,108) with moderator	2.45*							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Table 64: Level 2 regression results for EC-Export intensity model with Hostility

LEVEL 2	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	0.087526	0.999481			4.363306	3.185922		
Human capital	0.323748	0.156549	0.235584	*	-0.829384	0.609249	-0.603523	
Social capital	0.228083	0.148373	0.169141		0.043214	0.632107	0.032046	
Technology	-0.2717	0.120443	-0.229359	*	0.249051	0.497631	0.21024	
Environmental Hostility	0.098715	0.104103	0.084364		-0.814429	0.65584	-0.696025	
Environmental Dynamism	0.197179	0.11931	0.149367		0.205811	0.11856	0.155905	
HC*Host					0.242423	0.124147	1.3236	
SC*Host					0.037569	0.130518	0.222606	
Tech*Host					-0.106114	0.104663	-0.634909	
R^2 base	0.1325							
ΔR^2	0.040676							
F(5,111) base	3.39**							
F(8,108) with moderator	2.83**							

* p < 0.05; ** p < 0.01; *** p < 0.001.

Table 65: Level 3 regression results for EC-Export intensity model with Hostility

LEVEL 3	Base model				Including moderator			
Export Intensity	**B**	**SE**	**Beta (ß)**	**p**	**B**	**SE**	**Beta (ß)**	**p**
Intercept	1.302522	0.82315			2.082303	2.294537		
Technology distinctiveness	-0.427174	0.093086	-0.460209	***	-0.348311	0.443197	-0.375248	
Technology assimilation	0.517995	0.120876	0.434524	***	0.302495	0.537259	0.253751	
Environmental Hostility	0.066157	0.098367	0.056539		-0.107104	0.483971	-0.091533	
Environmental Dynamism	0.158865	0.112467	0.120343		0.162756	0.114036	0.12329	
Technology distinctiveness*Host					-0.016098	0.091788	-0.106585	
Technology assimilation*Host					0.045863	0.110582	0.283547	
R^2 base	0.2122							
ΔR^2	0.001335							
F(4,112) base	7.54***							
F(6,110) with moderator	4.98***							

* p < 0.05; ** p < 0.01; *** p < 0.001.

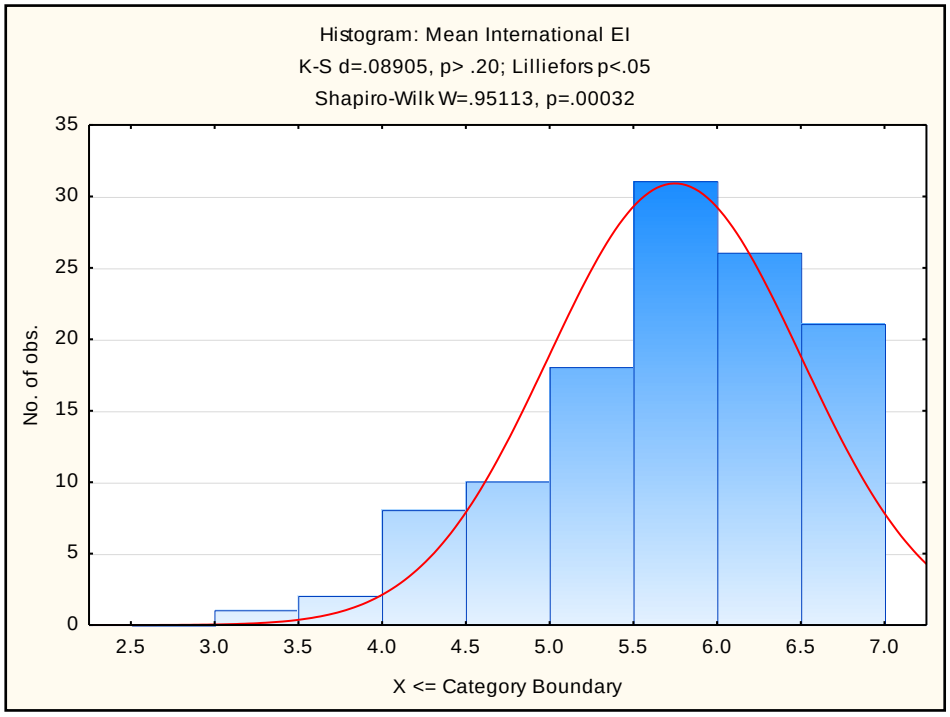

Figure 30: Frequency distribution for EI

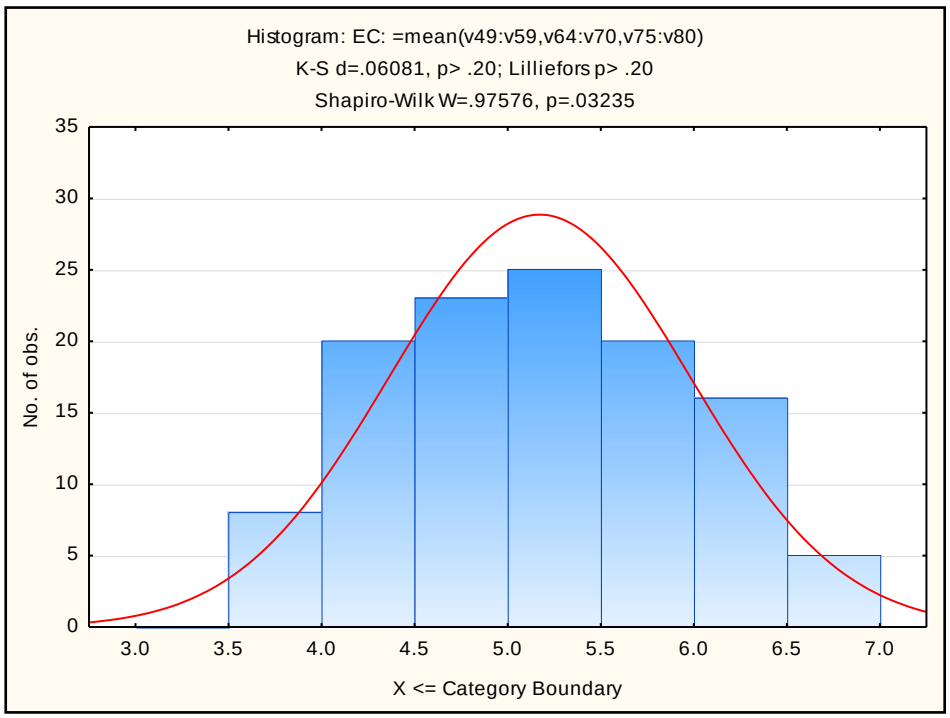

Figure 31: Frequency distribution for EC

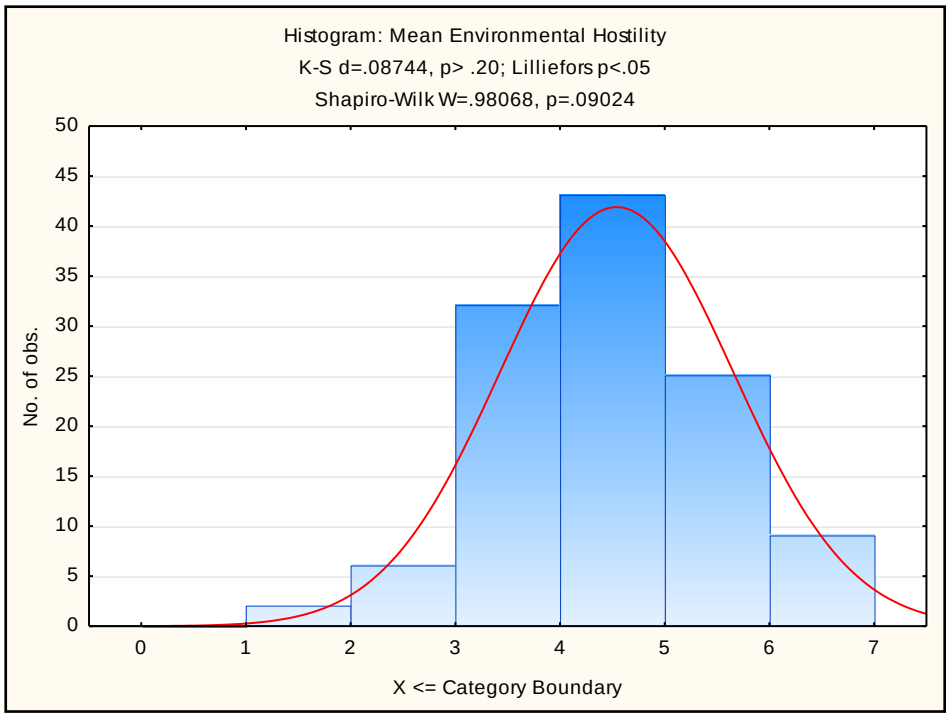

Figure 32: Frequency distribution for Hostility

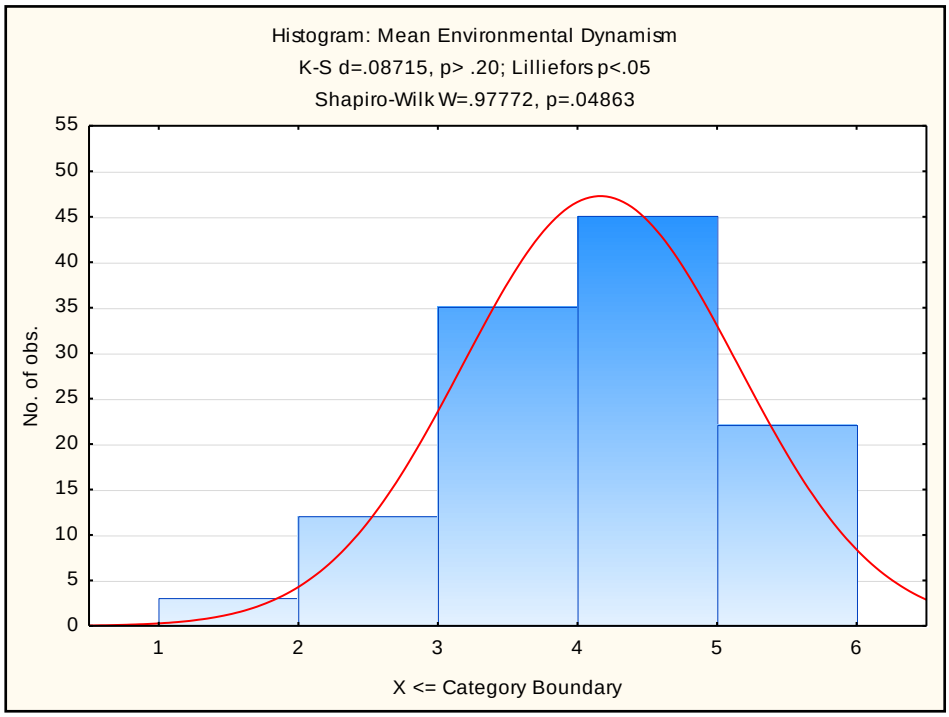

Figure 33: Frequency distribution for Dynamism

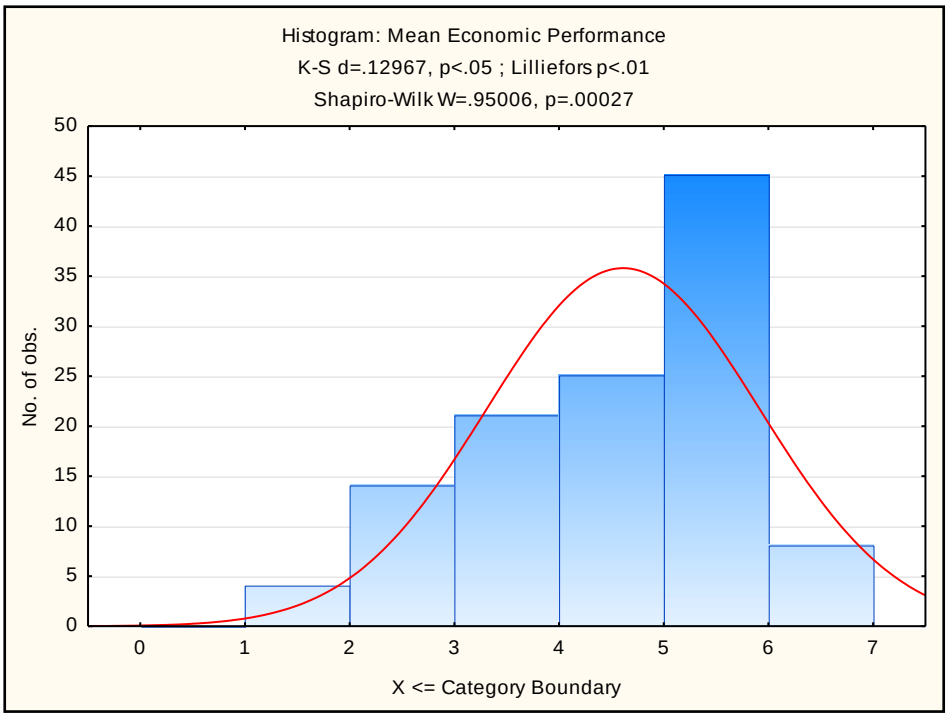

Figure 34: Frequency distribution for Economic performance

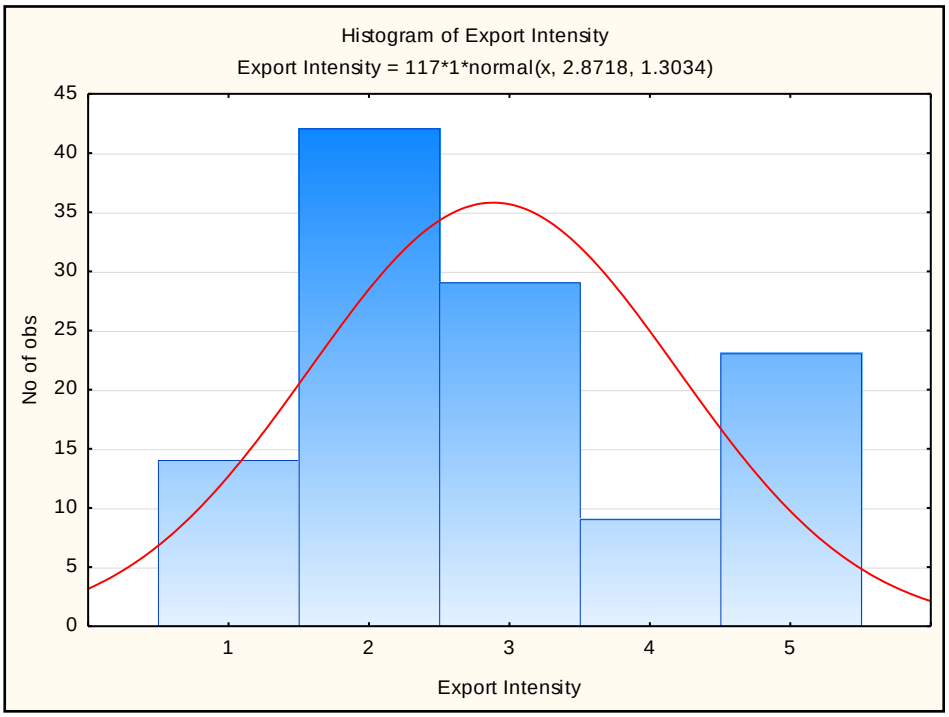

Figure 35: Frequency distribution for Export intensity

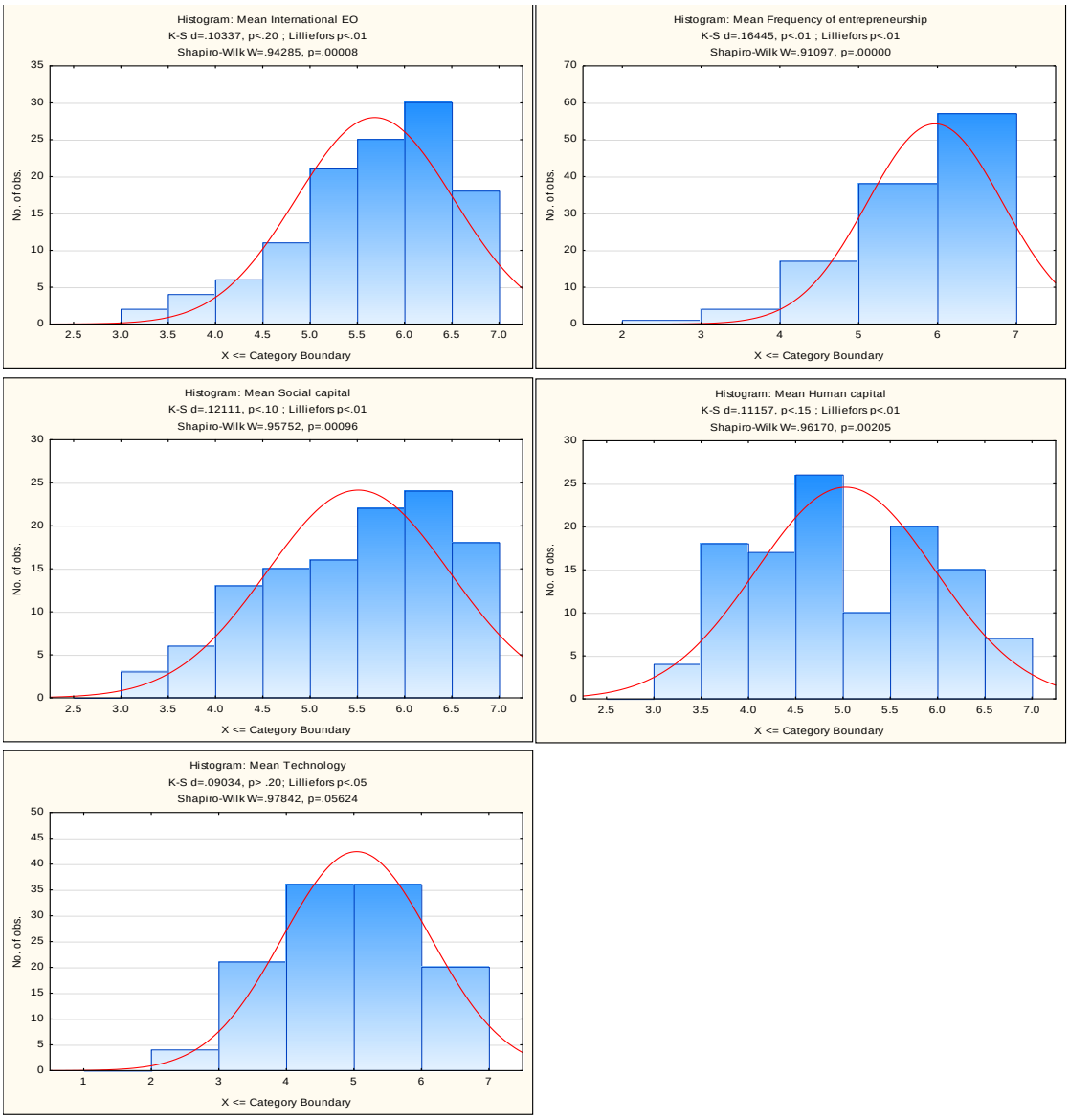

Figure 36: Frequency distribution for level 2 variables

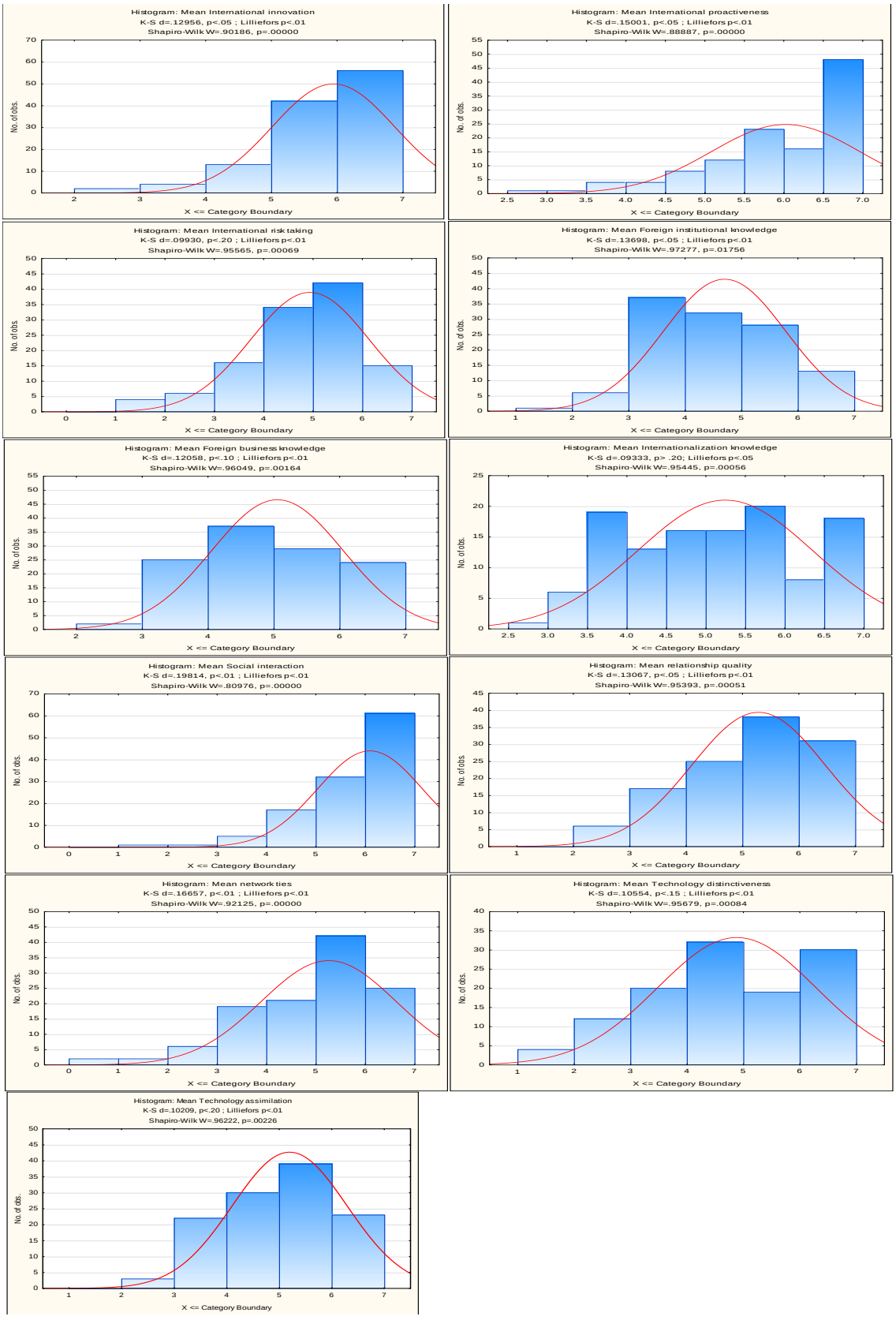

Figure 37: Frequency distribution for level 3 variables

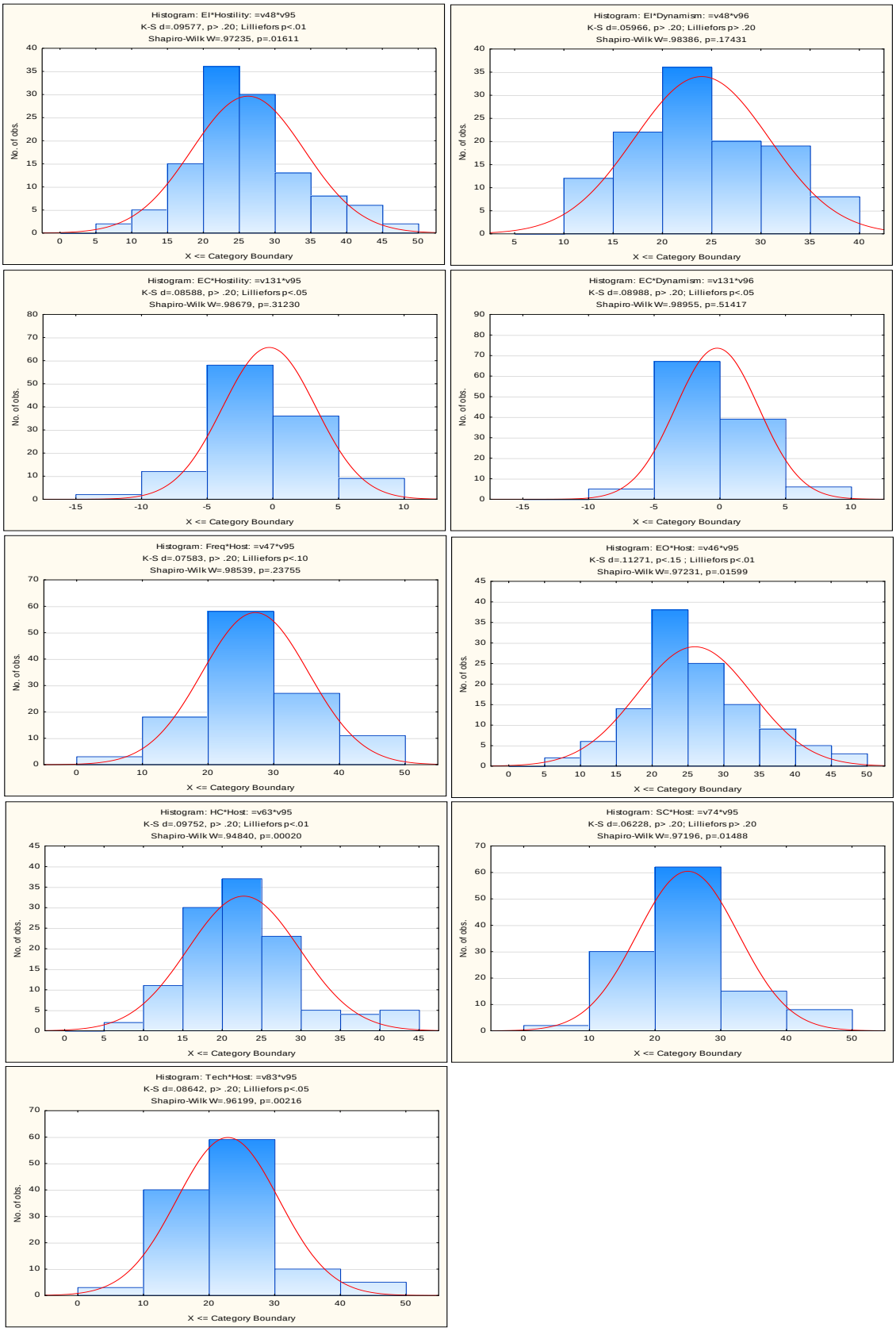

Figure 38: Frequency distribution for interaction terms

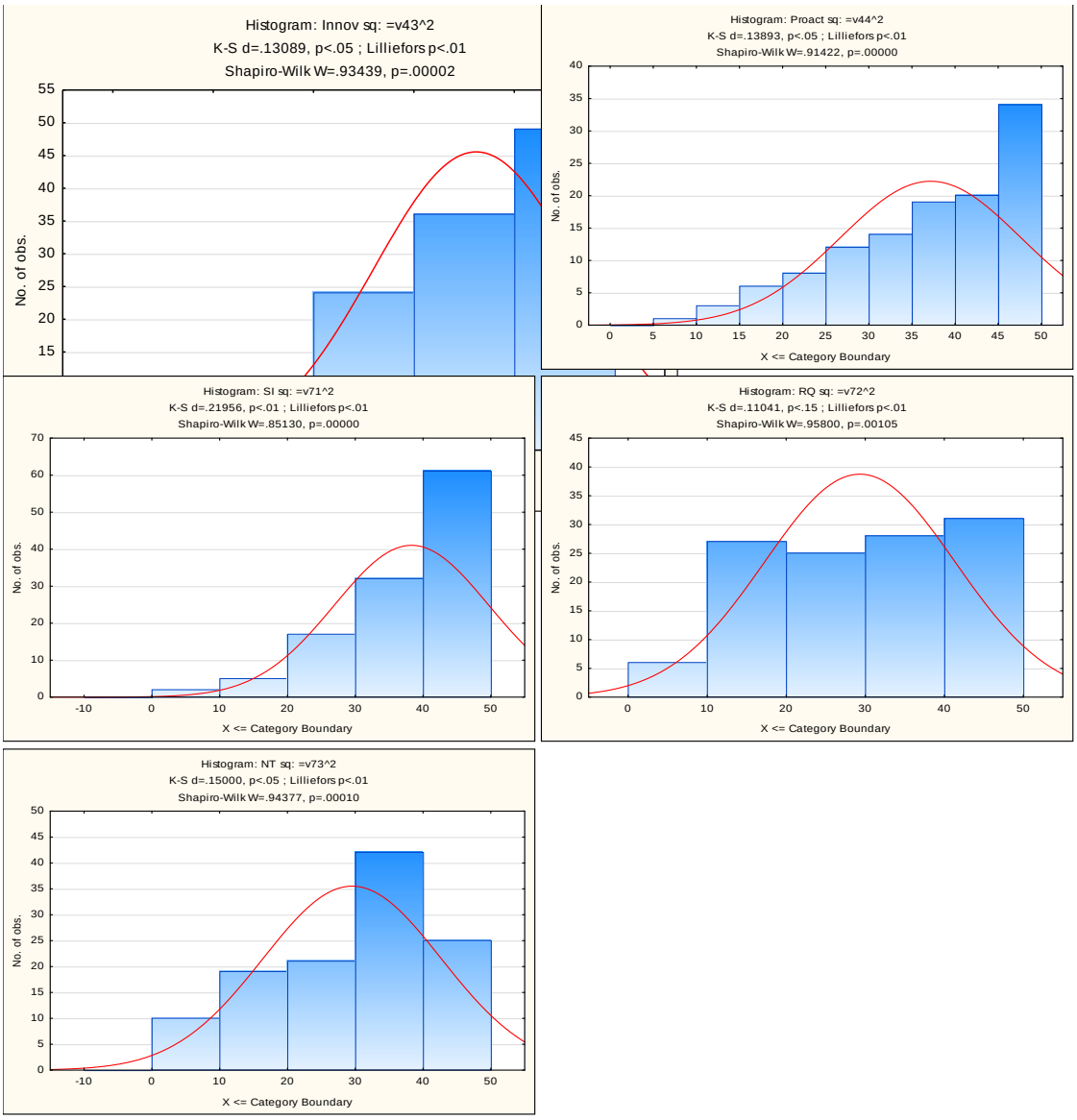

Figure 39: Frequency distribution for transformed level 3 variables

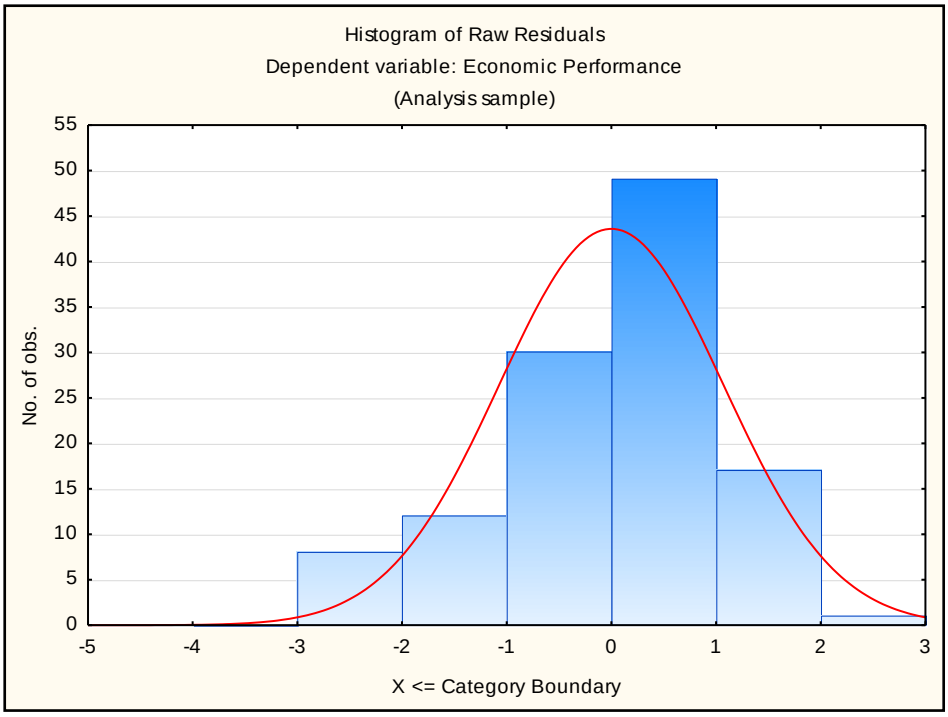

Figure 40: Histogram of residuals of social interaction with economic performance - Hypothesis 4a (i)

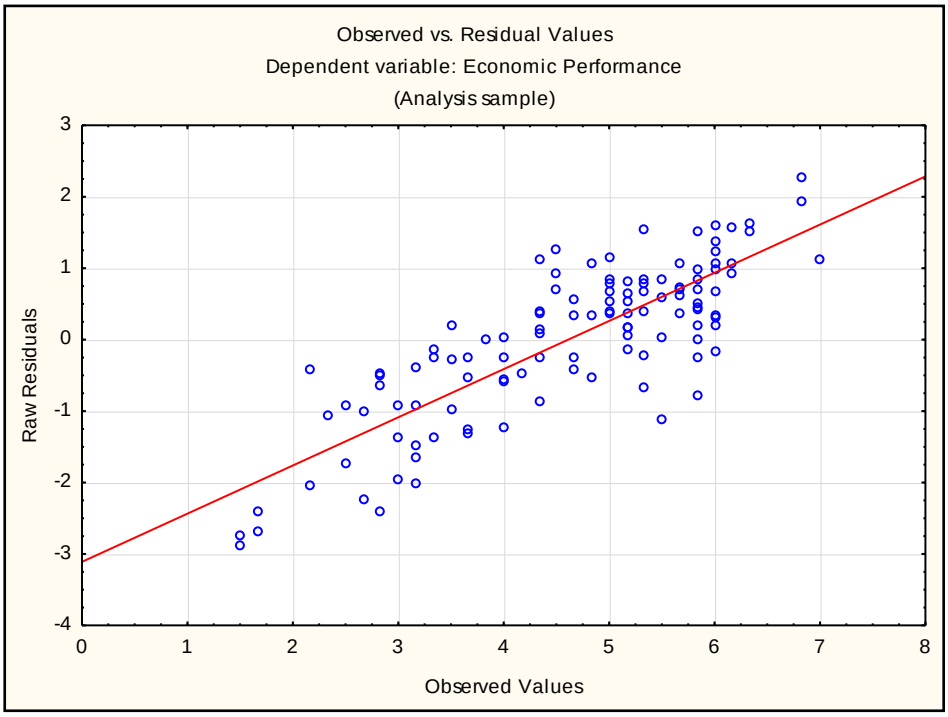

Figure 41: Observed versus Residual values of social interaction with economic performance - Hypothesis 4a (i)

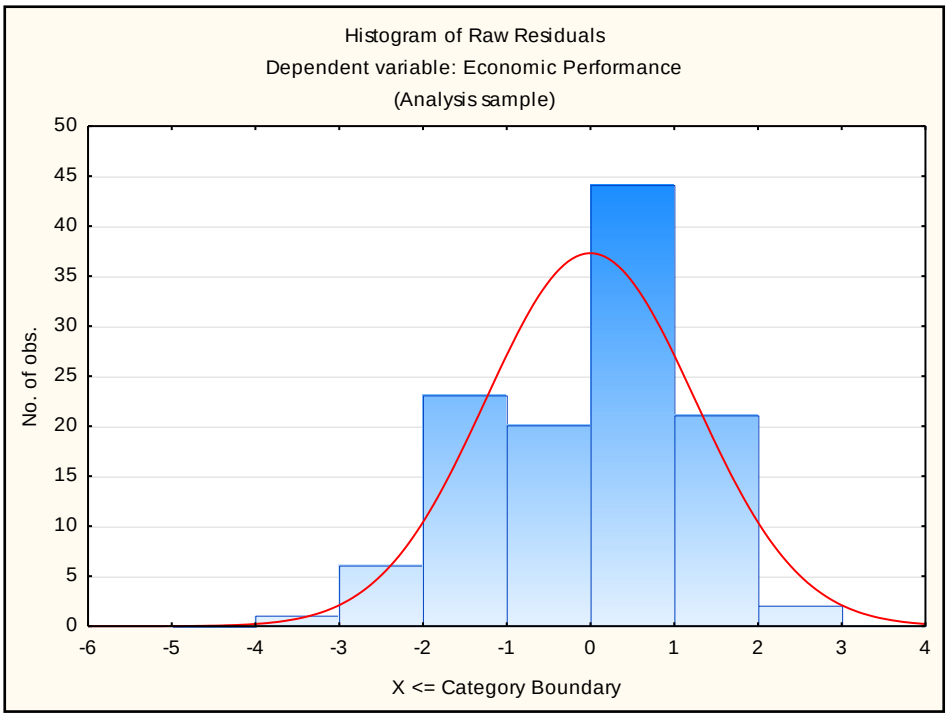

Figure 42: Histogram of residuals of internationalisation knowledge with economic performance - Hypothesis 4a (i)

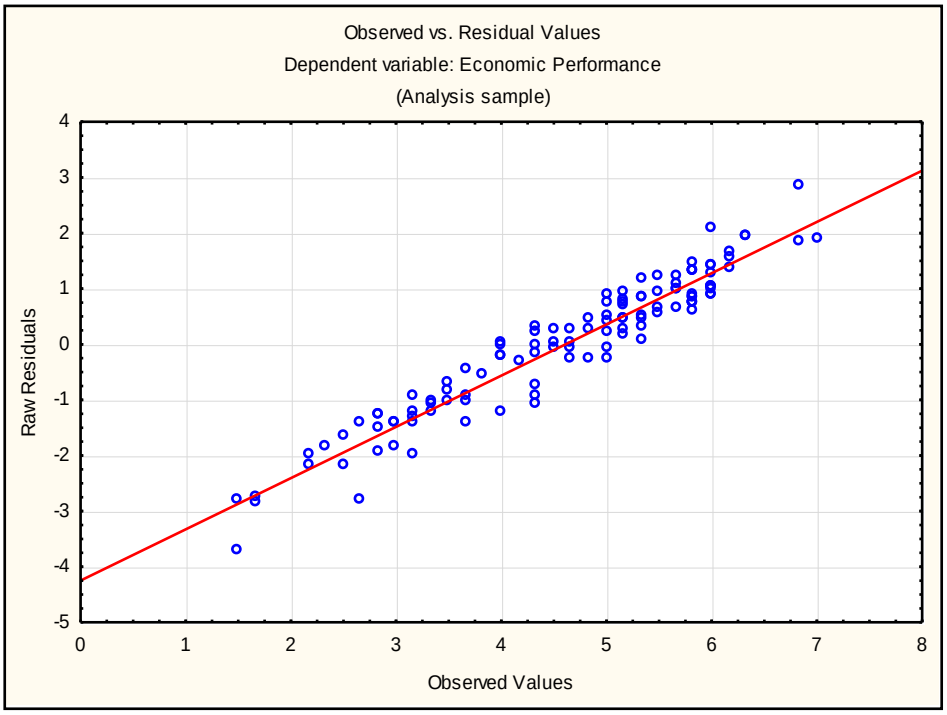

Figure 43: Observed versus Residual values of internationalisation knowledge with economic performance - Hypothesis 4a (i)

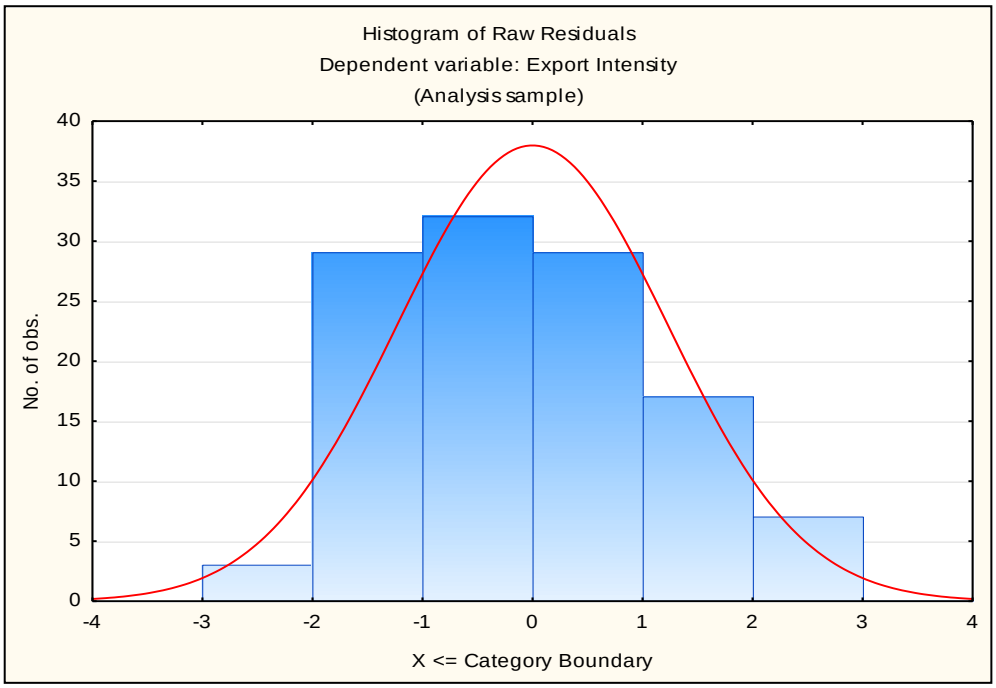

Figure 44: Histogram of residuals of proactiveness with export intensity - Hypothesis 3b (i)

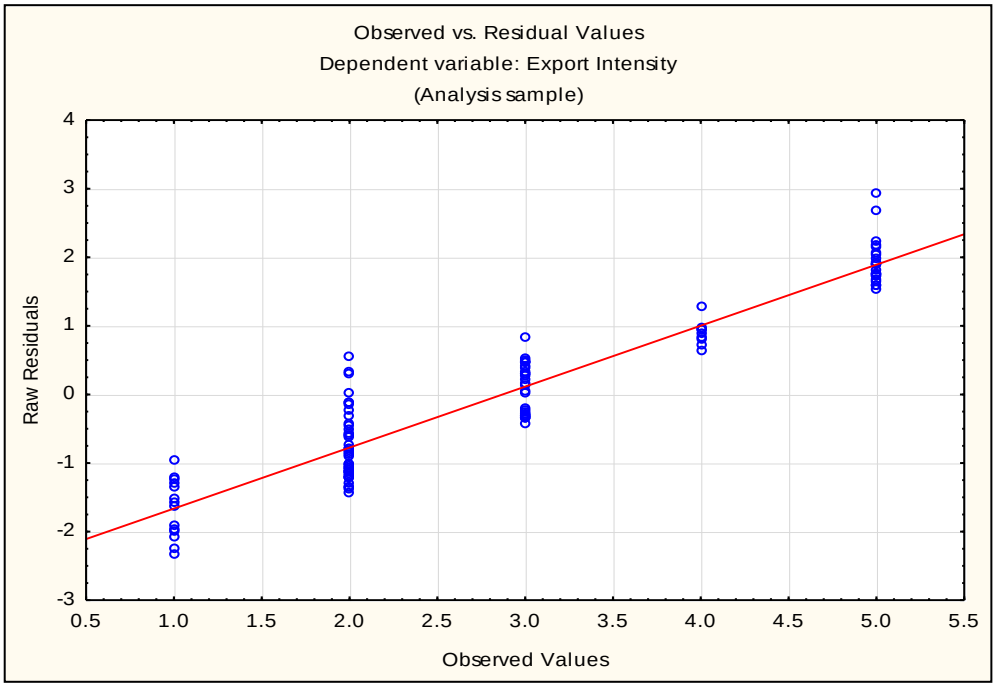

Figure 45: Observed versus Residual values of proactiveness with export intensity - Hypothesis 3b (i)