

# **SME International Performance in Latin America: the Role of Entrepreneurial and Technological Capabilities**

## **Abstract**

SMEs from emerging markets in Latin America are increasingly engaging in internationalization. Nevertheless, there is limited research into how these firms achieve international performance. This study proposes and tests a conceptual model that considers managerial and technology-related capabilities and their impact on international performance of SMEs. The model uses confirmatory factor analysis (CFA) to develop the underlying multi-item constructs and structural equation modeling (SEM) to test the model with data from 233 Chilean SMEs. Specifically, the model considers the role of international entrepreneurial orientation and Internet capabilities on international market performance, taking into account the mediating effect of international entrepreneurial opportunity recognition and technology-related international networks. Results show that international entrepreneurial opportunity recognition and international networks mediate the relationship between international entrepreneurial orientation and Internet marketing capabilities on SME international performance.

**Keywords:** Internet, international entrepreneurship orientation, resource-based view, SMEs, Chile.

# SME International Performance in Latin America: The Role of Entrepreneurial and Technological Capabilities

## 1. Introduction

There has been a rising trend in internationalization among small and medium-sized enterprises (SMEs) in the last decade, and SME international performance has emerged as an important topic for investigation ([Ruzzier, Hisrich, & Antoncic, 2006](#)). Particularly, more and more SMEs from emerging economies are expanding their operations into international markets ([Aulakh, Kotabe, & Teegen, 2000](#)). These firms generate large part of economic growth and new-job creation in emerging markets ([Lyon, Lumpkin, & Dess, 2000](#)). Academics and governments increasingly recognize that gaining a better understanding of the internationalization process of SMEs, especially from emerging markets, is a very important endeavor ([Filatotchev, Liu, Buck, & Wright, 2009](#)). However, prior research into SME internationalization strategy has focused mostly on large multinational enterprises from developed countries ([Olejnik & Swoboda, 2012](#); [Spence & Crick, 2006](#)).

Recent research suggests that superior SME international performance may arise from technological ([Aspelund & Moen, 2004](#)) and entrepreneurial resources and capabilities ([Glavas & Mathews, 2014](#); [Reuber & Fischer, 2011](#)). SMEs focus on internal entrepreneurial capability development in order to overcome their size disadvantage ([Daniel Maranto-Vargas & Gómez-Tagle-Rangel, 2007](#)). In addition, technology, such as the Internet, provides SMEs with specific capabilities that allow organizations to establish a direct interface with customers and suppliers. For example, the Internet supports the international expansion of SMEs ([Gabrielsson & Manek Kirpalani, 2004](#); [Loane, 2005](#); [Mathews & Healy, 2008a](#)), and increases international market growth of firms ([Lu & Julian, 2008](#)). However, how these capabilities impact international performance is still not well understood ([Liao, Kickul, & Ma, 2009](#); [Mostafa, Wheeler, & Jones, 2006](#); [Reuber & Fischer, 2011](#)), and limited empirical research is conducted on the Internet's impact on international performance ([Sinkovics, Sinkovics, & Jean, 2013](#)).

Furthermore, research on SME internationalization conducted in developed countries may not necessarily be relevant for emerging countries such as Latin America due to different environments. Emerging market contexts have lower levels of economic development compared to developed nations ([Wright, Filatotchev, Hoskisson, & Peng, 2005](#)), and the internationalization process of emerging market SMEs may require different resources and capabilities. Consequently, the following research question should be addressed: How do entrepreneurial and Internet-related capabilities affect SME international performance from emerging countries?

This study responds to calls for more research on internationalization of SMEs from emerging markets ([Autio, George, & Alexy, 2011](#); [Coviello, 2006](#); [Coviello & Jones, 2004](#)). Drawing on a resource based view (RBV) and capabilities approach ([Barney, 1991](#); [Teece, 2007](#); [Teece, Pisano, & Shuen, 1997](#)), this paper contributes to our understanding of how the development of entrepreneurial and technological capabilities in SMEs can improve international performance for SMEs from an emerging market. The authors develop a conceptual model, which proposes that international entrepreneurial orientation, international entrepreneurial opportunity recognition, technology-related networks relationships, and Internet technology capabilities contribute to emerging market SME international performance.

This research makes the following theoretical contributions. First, this study tests the relationship between entrepreneurial and Internet based capabilities drawing on a resource based view (RBV) and capabilities approach ([Barney, 1991](#); [Teece, 2007](#); [Teece et al., 1997](#)). Second, this research contributes to the relatively scant but increasing number of empirical studies which investigate the link between internationalization strategy and performance in emerging market contexts ([Calantone, Kim, Schmidt, & Cavusgil, 2006](#)). Finally, this study contributes to the limited empirical research that advises international SMEs on how to be more effective in their efforts and practices ([Sinkovics et al., 2013](#)).

The rest of the paper is organized as follows. First, the current literature on SME internationalization and is examined. The next section explains the methodology and conceptual

framework. Finally, the findings are reported and the paper concludes with a discussion of their implications and suggestions for future research.

## 2. Literature Review

Advances in information technologies, such as the Internet, are found to facilitate SME internationalization ([Aspelund & Moen, 2004](#); [Reuber & Fischer, 2011](#)). By increasing the quality and speed of communications and transactions, and decreasing costs, these advances have made internationalization more feasible for the resource-constrained SMEs ([Mathews & Zander, 2007](#); [Oviatt & McDougall, 2005](#)). The Internet also has the capacity to enhance the learning process about international markets through faster and more extensive access to relevant information ([Mathews & Healy, 2008b](#); [Morgan-Thomas & Bridgewater, 2004](#); [Petersen, Welch, & Liesch, 2002](#)). Moreover, the extension and low cost of the Internet has enabled SMEs to connect with people and locations all over the world, strengthening international business relationships ([Ruzzier et al., 2006](#)).

Aspelund and Moen ([2004](#)) argue that the Internet can fundamentally reduce communication barriers that often occur for geographically dispersed organizations. Long-term use of the Internet creates the opportunity for cross-border information flows and transactions, while evoking faster foreign market expansion of firms ([Aspelund & Moen, 2004](#); [Petersen et al., 2002](#)). Overall, the Internet is seen as a powerful tool, which can be used to assist firms in overcoming barriers to internationalization ([Sinkovics & Bell, 2006](#)). This is especially true for SMEs given their recognized human and financial resource constraints ([Arenius, Sasi, & Gabrielsson, 2006](#); [Loane & Bell, 2006](#)).

The resource-based view suggests that a firm can attain a competitive advantage by acquiring specific resources ([Dhanaraj & Beamish, 2003](#); [Lu, Zhou, Bruton, & Weiwen, 2010](#)). Barney ([1991](#)) classified resources broadly as “all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc.” (p. 101). This definition partly resulted in a synonymous usage of the terms. We follow the perspective that resources, processes, and capabilities clearly differ from one

another, as resources cannot be a source of competitive advantage by themselves ([Ray, Barney, & Muhanna, 2004](#)). However, not all processes will be a source of competitive advantage for a firm. The resource-based view suggests that processes that exploit intangible firm resources are more likely to be a source of competitive advantage than processes that exploit tangible firm resources ([Barney, 1991](#)).

Capabilities are defined as “a firm’s capacity to deploy resources, usually in combination, using organizational processes, to effect a desired end” ([Amit & Schoemaker, 1993, p.35](#)). From the dynamic capability perspective, capabilities can be understood as a firm’s orientation to integrate and reconfigure its resources and processes and, even more importantly, transform its processes in response to foreign environments to achieve sustainable competitive advantage ([Wang & Ahmed, 2007](#)). Thereby, the term dynamic refers to the capacity of adapting to changing environments and finding innovative solutions to new problems through the adaptation, integration, and reconfiguration of resources and processes ([Teece et al., 1997](#)). Wang and Ahmed ([2007](#)) described the nature of dynamic capabilities as behavioral orientation, whereas Teece et. al. ([1997](#)) considered dynamic capabilities to be an ability or a capacity. Overall, there are many different conceptualizations and definitions of dynamic capabilities, yet this study will use the following definition: “A dynamic capability is the firm’s potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base” ([Barreto, 2010, p.271](#)).

Following a hierarchical perspective, resources could be seen as the base elements ([Wang & Ahmed, 2007](#); [Winter, 2003](#)). Resources are followed by processes, which are based on tangible and intangible resources. Capabilities would follow because they combine resources and processes to achieve a desired objective. Dynamic capabilities build on (mere) capabilities because they combine resources and processes in response to changing environments advantage involves not only the resources owned by a firm but also how the firm integrates, combines, and transforms these resources through dynamic capabilities. Hence, dynamic capabilities are directly linked to firm performance ([Teece et al., 1997](#)).

Moreover, scanning and planning processes are closely linked to entrepreneurship and the discovery of opportunities ([Teece, 2007](#)). Entrepreneurial orientation is viewed as a dynamic capability that has the propensity to sense and seize international opportunities in an innovative, market oriented, and timely manner. The perception of opportunities by the entrepreneur or the principal decision-maker(s) of a SME, corresponds to the creation and use of dynamic capabilities ([Zahra, Sapienza, & Davidson, 2006](#)).

Previous research argues that the internationalization of entrepreneurial SMEs is increasingly facilitated through the use of the Internet ([Etemad, Wilkinson, & Dana, 2010](#)). Internet related capabilities can be framed within the capability framework ([Knudsen & Madsen, 2002](#); [Ray, Muhanna, & Barney, 2005](#)). Internet marketing related capabilities are defined as routines, emergent knowledge, analytic processes, and simple rules to turn information technology into value for the firm ([Zhu & Kraemer, 2002, p.278](#)). Internet marketing capabilities increase the ability of SMEs to transform processes into business activities that support international market performance ([Lewin & Massini, 2003](#)), specially for international firms that operate in fast-changing environments.

While a mere Internet presence implies instant internationalization from a technological perspective; this is limited because the successful deployment of a virtual presence is restrained by the functional and organizational capabilities of the firm ([Kotha, Rindova, & Rothaermel, 2001](#)). That is, a website presence does not automatically assume a business is instantly international. Instead, to survive and grow in highly competitive Internet business environments, firms have to search beyond their current resource base ([Liao et al., 2009](#)). Simply redeploying the firm's current resources in dynamic fast-changing Internet environments will not suffice for business performance.

This study aims to make a contribution by extending the RBV ([Barney, 1991](#); [Barney, Wright, & Ketchen, 2001](#); [Barney, 2001](#)) and empirically examine the relationship between firm-level entrepreneurial and technology related capabilities on international performance for SMEs in an emerging market in Latin America. The hypothesized model is presented in Figure 1. The model exhibits four capabilities: international entrepreneurial orientation (IEO), international entrepreneurial

opportunity recognition (IEOR), Internet marketing capabilities (IMC) and technology-related network capabilities (TRNC). The dependent variable is denoted by SME international performance (IP).

**Take in Figure 1 here**

### **3. Hypotheses and conceptual model development**

#### ***3.1 SME International performance (IP)***

Success of an SME in international markets relies heavily on the capacity of the firm to change and adapt to new developments such as Internet-related applications, and embed these developments in the social and technical infrastructures of the firm ([Ruzzier et al., 2006](#)). In this study it is argued that international performance for SMEs is a multi-dimensional construct that incorporates different dimensions of firm performance, such as financial performance and non-financial indicators ([Wiklund & Shepherd, 2005](#)). This study uses the following measures of international SME performance: international sales growth, international market share, and international profitability ([Moen, Madsen, & Aspelund, 2008](#)).

#### ***3.2 International entrepreneurial orientation (IEO)***

Entrepreneurial orientation refers to a firm's strategic orientation in seizing entrepreneurial aspects of decision-making styles and practices ([Wiklund & Shepherd, 2005](#)), while also reflecting how a firm operates ([Lumpkin & Dess, 1996](#)). This concept is one of the most widely accepted firm-level constructs in the entrepreneurship literature ([Wales, Gupta, & Mousa, 2011](#)). The entrepreneurial orientation concept has been advanced by Knight ([2001](#)) who suggested that entrepreneurial orientation can extend to international market environments. International entrepreneurial orientation (IEO) involves seizing international market offerings by taking risks to be more proactive than competitors to gain new international market opportunities ([Jantunen et al., 2005](#); [Wang, 2008](#)).

Research views international entrepreneurial orientation as an antecedent of internationalization ([Knight, 2001](#); [Ripollés-Meliá, Menguzzato-Boulard, & Sánchez-Peinado, 2007](#)), and international performance ([Jantunen et al., 2005](#); [Mostafa et al., 2006](#); [Wiklund & Shepherd, 2003](#)). Firms with an international entrepreneurial orientation engage in innovative, proactive and risk-seeking behaviors in order to achieve the firm's competitive and internationally oriented goals and successful international market performance ([Glavas & Mathews, 2014](#)). Similarly, Zahra and Garvis ([2000](#)) identified those entrepreneurial activities positively influencing the international profitability of US firms. Overall, a majority of scholars indicate that international entrepreneurial orientation can positively influence international market performance (e.g., [Jantunen et al., 2005](#); [Knight, 2001](#); [Moreno & Casillas, 2008](#); [Ripollés-Meliá et al., 2007](#); [Slevin & Terjesen, 2011](#); [Wang, 2008](#)). Thus, the following is stated:

***Hypothesis 1:*** *International entrepreneurial orientation (IEO) is positively related to SME international performance (IP).*

International entrepreneurial orientation has also been found to increase the firm's chance of identifying new means-end relationships, leading to international market opportunity ([Chandra, Styles, & Wilkinson, 2009](#)). Accordingly, international entrepreneurial orientation is also suggested to be instrumental in the development and enactment of key organizational international business processes ([Knight & Cavusgil, 2004](#)). Further, Jantunen et al. ([2005](#)) suggest that an international entrepreneurial orientation supports opportunity recognition in international markets, giving reason to suppose that international entrepreneurial orientation has a positive effect on international performance. Having an international entrepreneurial orientation can prompt the development of international opportunity recognition and exploitation of new market opportunities ([Glavas & Mathews, 2014](#)).

***Hypothesis 2:*** *International entrepreneurial orientation (IEO) is positively related to international entrepreneurial opportunity recognition (IEOR).*



### **3.3 International entrepreneurial opportunity recognition**

Penetrating a new market is an entrepreneurial process because it entails searching for opportunities, recognizing them, and creating exchange relationships in new locations with partners that were not known before ([Chandra et al., 2009](#); [Zahra, Korri, & Yu., 2005](#)). The first time a company enters a foreign market entails risk, resource commitment, and venturing into new market ([Dimitratos & Jones, 2005](#); [McDougall & Oviatt, 2000](#); [Shane & Venkataraman, 2000](#)).

Opportunity recognition is a crucial dimension of entrepreneurship (e.g., [Kiss, Danis, & Cavusgil, 2012](#)). Research suggests that the process of international entrepreneurial opportunity recognition is a critical component of a firm's international market strategy, because it is primarily concerned with the ways in which firms identify and take advantage of new international market opportunity to leverage international market performance ([Chandra et al., 2009](#); [Dimitratos, Voudouris, Plakoyiannaki, & Nakos, 2012](#); [Zahra et al., 2005](#)). Empirical studies of opportunity recognition for entrepreneurial firms have been primarily conducted in a domestic context ([Lumpkin & Lichtenstein, 2005](#); [Shane & Venkataraman, 2000](#)). Scant attention has been paid to the relationship between international opportunity recognition and SME's international performance ([Chandra et al., 2009](#); [Chandra, Styles, & Wilkinson, 2012](#); [Zahra et al., 2005](#)). As such, it is evident that opportunities are recognized, acted on and exploited by international entrepreneurial firms to achieve international firm performance in various ways that are not yet well understood ([Chandra et al., 2009](#)). As such, the following hypothesis can be postulated:

**Hypothesis 3:** *International entrepreneurial opportunity recognition (IEOR) is positively related to SME international performance (IP)*

### **3.4 Technology-related international networks (TRIN)**

Numerous scholars have suggested that network and relationships play an important part in internationalization, particularly allowing SMEs to overcome resource constraints ([Coviello & Munro, 1995](#); [Coviello & Cox, 2007](#); [Lee, 2001](#); [Oviatt & McDougall, 1995](#); [Poon & Jevons, 1997](#); [Rothaermel,](#)

[2007](#)). Research also suggests that firms with extensive international networks internationalize quicker and more successfully than established firms ([Mort & Weerawardena, 2006](#); [Oviatt & McDougall, 1995](#)). The role of international networks as part of international entrepreneurial success is also acknowledged in the literature ([Coviello & Munro, 1995](#); [Dimitratos & Plakoyiannaki, 2003](#); [Loane, 2006](#); [Loane & Bell, 2006](#); [Mort & Weerawardena, 2006](#)). The value of international networking capabilities as an integral part of the explanation of international entrepreneurial success is also widely acknowledged in the literature ([Coviello & Munro, 1995](#); [Dimitratos & Plakoyiannaki, 2003](#); [Loane & Bell, 2006](#); [Mort & Weerawardena, 2006](#)). Developing international networking capabilities can enhance the firm's progression and successful pursuit of opportunities to achieve international market performance outcomes ([Glavas & Mathews, 2014](#)). This is in line with research that argues that networks have a positive influence on the firm's international performance outcomes ([Aspelund & Moen, 2004](#); [Moen et al., 2008](#); [Reuber & Fischer, 1997](#)). As such, the following hypothesis is stated:

***Hypothesis 4:*** *Technology-related international networks (TRIN) are positively related to SME international performance (IP).*

Scholars also suggest that networks can assist firms recognizing and exploiting new international market opportunities ([Loane, 2006](#); [Mort & Weerawardena, 2006](#)). Further, it can be said that developing international networking capabilities also forms an important part of the firm's capability base, one component of a firm's resource bundle that builds towards successful internationalization and exploitation of new international market opportunities, thus driving growth performance outcomes of the firm. Thus, the following is stated:

***Hypothesis 5:*** *International entrepreneurial opportunity recognition (IEOR) is positively related to technology-related international networks (TRIN).*

### **3.5 Internet capabilities**

It is widely acknowledged that technology such as the Internet provides SMEs with new ways to

conduct business, communicate ideas, and exchange information, allowing businesses to improve the efficiency of their internationalization activities ([Aspelund & Moen, 2004](#); [Gibbs & Kraemer, 2004](#); [Loane, 2006](#); [Loane & Bell, 2006](#)). The literature suggests that Internet technology usage is an important and unique capability ([Etemad et al., 2010](#); [Loane, 2006](#); [Reuber & Fischer, 2011](#)). More than the Internet itself, the sustainability of competitive advantage in the international marketplace lies in the firm's ability to re-configure and leverage the capabilities provided by the Internet to achieve successful international market performance outcomes. Further, the Internet has been found to be associated with increased international market performance ([Bell & Loane, 2010](#); [Mostafa et al., 2006](#)). As such, the following can be postulated:

**Hypothesis 6:** *Internet marketing capabilities (IMC) are positively related to SME international performance (IP).*

The importance of networks and relationships in the internationalization of firms operating in an Internet environment is widely accepted ([Bianchi & Mathews, 2015](#); [Knight & Cavusgil, 2004](#); [Loane, 2006](#); [Loane & Bell, 2006](#); [Mathews, Healy, & Wickramasekera, 2012](#)). SMEs utilize the Internet increasingly to develop and maintain international network relations ([Aspelund & Moen, 2004](#); [Mathews & Healy, 2007](#); [Moen et al., 2008](#); [Reuber & Fischer, 1997](#)). It is argued that international virtual networking capabilities substantially enhance the knowledge base of SME entrepreneurial firms by providing businesses with the ability to generate international market performance through Internet environments. Thus, international virtual network capabilities are a valuable resource for SMEs operating in Internet environments ([Coviello & Munro, 1995](#); [Loane, 2006](#); [Loane & Bell, 2006](#); [Poon & Jevons, 1997](#)). As such, the following is postulated:

**Hypothesis 7:** *Internet marketing capabilities (IMC) are positively related to technology-related international networks (TRIN).*

#### **4. Research Methodology**

Hypotheses were tested using an online survey applied to Chilean entrepreneurial SMEs between January and April 2015. The sample frame of 2000 firms was chosen from the National Chilean database of entrepreneurs ([www.ASECH.com](http://www.ASECH.com)). This database was selected as the most comprehensive and current database available of entrepreneurs in Chile. An email invitation presenting the research team, objectives of the study, and the online survey link was sent to participants and yielded a total of 239 responses, with a response rate of 10%. This is considered a reasonable rate given that business surveys normally have poor response rates ([Frazer & Lawley, 2000](#)). A single reminder e-mail was also sent to participants. After eliminating six cases with extensive missing data 233 cases were used to test the proposed structural model.

The survey instrument was a structured questionnaire. The questionnaire was developed in English, then translated into Spanish by one of the research team members, and was then back-translated by a colleague in Chile ([Brislin, 1970](#)). Pre-testing is considered essential prior to administering a questionnaire in order to ensure reliability ([Hair, Bush, & Ortinau, 2000](#)). The survey was pre-tested with a convenience sample of five Chilean exporters, which resulted in minor changes to wording in some questions. To reduce common method bias semantic differential scales and seven-point Likert-type scales were used ([Podsakoff, MacKenzie, Lee, & Podsakoff, 2003](#)). Email was chosen as the distribution method following research highlighting that top managers prefer electronic surveys ([Griffis, Goldsby, & Cooper, 2003](#)).

The owner or the main decision-maker for international activities were chosen as key informants, and were asked to either complete the survey themselves or direct it to the person most responsible for the firm's exporting decisions ([Malhotra, 1996](#)). Only those respondents with knowledge of the firm's internationalization process were eligible to complete the survey ([Mitchell, 1994](#)).

Construct measures were adopted and adapted from existing literature. Specifically, international entrepreneurship orientation (IEO) was measured with a 4-item scale adopted from Cavusgil ([2004](#)), and measured with questions concerning the firm's innovativeness, proactiveness and risk-taking propensities. International entrepreneurial opportunity recognition (IEOR) was adapted from Lumpkin

and Lichtenstein (2005) and Dimitratos et al. (2012) and measured with questions related to the firm's ability to seek out and evaluate new international opportunities. Technology-related international networks (TRIN) was adapted from Wu, Mahajan and Balasubramanian (2003) and Loane (2006) and measured with questions related to the firm's use of the Internet for acquiring, maintaining, developing and strengthening customer relationships. Internet marketing capabilities (IMC) was adapted from Zhu and Kramer (2002), Aspelund and Moen (2004), Gibbs and Kramer (2004) and Liao et al. (2009), and measured with questions regarding the firm's ability to integrate the Internet into the international business activities of the firm. Finally, the dependent variable SME International performance was adapted from Moen et al. (2008), Nummela et al. (2004) and Jantunen et al. (2005) and measured by the extent of increase or decrease in market share, sales growth, international profitability and overall international performance. The scale anchors were derived from a seven-point Likert scale including; (1) significantly increased - (7) significantly decreased, and (1) satisfied - (7) dissatisfied.

Common method variance was assessed by using a variety of scale anchors so that respondents did not simply gloss over questions (Podsakoff et al., 2003). Further, dependent and independent variables were separated and different types of questions asked for each to stimulate a specific response for a particular item (Podsakoff et al., 2003). Furthermore, to reduce common method variance the questionnaire initially mixed positively and negatively worded items. Recoded questionnaire items make all the constructs symmetric and this procedure satisfies the statistical contention of common method bias variance. Applying Podsakoff and Organ's (1986) factor analysis procedure to all constructs results in no single or general factor accounting for most of the variance in the independent and dependent variables. Thus, no common method bias variance issues were identified. To increase content validity established scales or adapted scales were used. Data analysis was used to help differentiate similar scale measures and distinguish accurate measures for specific constructs. Lastly, a two tail T test was used to ensure the data set had no non-response bias issues (Armstrong & Overton, 1977).

## **5. Results**

### ***5.1 Descriptive Statistics***

The respondent data (see Table 2) revealed that 66.1% of firms of the sample was classified as small-sized (1-5 employees); 20% were small-medium sized firms (6-20 employees); and 13.9% were medium-sized (21-200 employees). The majority of firms (81.9%) were established between the years 2000 and 2015 and 12.0% of firms were established between 1980 and 1999. Recent business start-ups established between 2010 and 2015 account for 54.5% of the sample. 32.2% of the sample were goods and manufacturing firms, 10.7% were retail and wholesale business, and 57.1% were services firms. The annual figures indicate that 68.5% of firms receive between US\$10.000 and US\$50.000 of their revenue from international markets, 12.5% of firms receive between US\$50.000 and US\$250.000 of revenue from international markets, and only 8% of firms receive over US\$1.000.000 of revenue from international markets. Furthermore, a total of 77.2% of respondent firms have customers in five countries or less, 4.7% of firms are active in 6 to 10 markets, and 5.1% of firms are active in more than 10 markets. On average, these firms operate in two international markets. The top three international markets for Chilean SMEs are the United States of America (12.8%), Peru (11.4%) and Colombia (11.0%).

#### **Insert Table 2 here**

Most respondents in this study were owners/founders of an SME or top managers, responsible for key decision-making within the firm, and 54.3% were aged between 30 and 49 years. Regarding the level of education of respondents, 71.1 % of the sample had obtained a university or postgraduate degree. The majority of respondents in the questionnaire (70.5%) indicated that they had less than five years of international experience, while 6.6% of the sample indicated over 10 years of international experience, 98% of firms used the Internet for email purposes and 72.3% of firms indicated extensive use of email applications within the firm.

### ***5.2 Structural Equation Modeling***

Confirmatory factor analysis (CFA) eliminated a total of five items with factor loadings below the accepted ( $> .7$ ) level (Hair et al., 2010). The summary of model fit for the full structural model indicates that the data had a good fit with the model (CMIN  $\chi^2/df = 2.291$ , IFI = .952, CFI = .952, TLI = .943 and RMSEA = .075) (Hair, Black, Babin, & Anderson, 2010; Kline, 2005). The summary is shown in Table 3.

**Insert Table 3 here**

To establish internal consistency and reliability, all Cronbach's Alpha ( $\alpha$ ) coefficients exceeded the optimal level of ( $> .7$ ) (see Table 4). The CR values for each factor also exceeded the acceptable threshold level of ( $> .7$ ) (Hair et al., 2010). The values for the Average Variance Extracted (AVE) also exceeded the threshold of ( $> .5$ ), indicating convergent validity (Hair et al., 2010).

**Insert Table 4 here**

#### **5.4 Hypotheses Testing**

The results of this study show that for hypothesis 1, international entrepreneurial orientation (IEO) is not significantly related to SME international performance (IP) ( $\beta = .017$ ,  $p = .883$ ). Thus, Hypothesis 1 is not supported. For hypothesis 2, international entrepreneurial orientation (IEO) is positively related to international entrepreneurial opportunity recognition (IEOR) ( $\beta = .57$ ,  $p = .000$ ). Therefore, Hypothesis 2 is supported. Further, for hypothesis 3, international entrepreneurial opportunity recognition (IEOR) is positively related to SME international performance (IP) ( $\beta = .46$ ,  $p = .000$ ). Therefore, Hypothesis 3 is also supported. Regarding hypothesis 4, Technology-related international networks (TRIN) are positively related to SME international performance (IP) ( $\beta = .22$ ,  $p = .042$ ). Thus, Hypothesis 4 is supported. For hypothesis 5, International entrepreneurial opportunity recognition (IEOR) is positively related to technology-related international networks (TRIN) ( $\beta = .69$ ,  $p = .000$ ). Therefore, Hypothesis 5 is supported. Furthermore, for hypothesis 6, Internet marketing capabilities (IMC) are not significantly related to SME international performance (IP) ( $\beta = .03$ ,  $p = .690$ ). Therefore, Hypothesis 6 is not supported. Regarding hypothesis 7, Internet

marketing capabilities (IMC) are positively related to technology-related international networks (TRIN) ( $\beta = .20$ ,  $p = .001$ ). Thus, Hypothesis 7 is supported. The results are shown in Table 5 and Figure 2.

**Insert Table 5 and Figure 2 here**

## **6. Discussion and Conclusions**

This study draws on RBV and a capabilities approach ([Barney, 1991](#); [Teece, 2007](#); [Teece et al., 1997](#)) to develop and test a conceptual model that considers the impact of firm and technological capabilities on the international performance of SMEs in a Latin American context. Based on data collected from Chilean SMEs, the findings of this study contribute to previous research which suggests that firm and technology related capabilities have a positive impact on the international performance of SMEs ([Morgan-Thomas, 2009](#)). In particular, Internet technology capabilities positively influence relationship-based capabilities, which in turn increase international performance.

The results from this study demonstrate a contribution of international entrepreneurial orientation in improving the international market performance of the firm. In particular, the results signify that international entrepreneurial orientation is fully mediated by both technology-related international networks and international entrepreneurial opportunity recognition. The results show a mediated model whereby international entrepreneurial orientation does not share a direct relationship with SME international performance, as previously predicted by a number of scholars ([Knight, 2001](#); [Wang, 2008](#); [Wiklund & Shepherd, 2005](#); [Zahra & Garvis, 2000](#)). Instead, the results signify that international entrepreneurial orientation is a firm-level capability that influences the deployment of technology-related capabilities for the firm's international market performance.

### **6.1 Theoretical contribution**

The results of this study contribute to the literature by expanding the extant research on SME



internationalization and assessing the impact of firm and technology related capabilities on international performance of SMEs in an emerging Latin American context. These results are important because they empirically test theories predominately developed in first world countries, in the context of a vigorous, emerging Latin American marketplace which increasingly attracts foreign investment. The findings suggest that researchers should not assume that SMEs in less developed countries, particularly those from Latin America, are not engaging with the benefits of technology.

## ***6.2 Managerial contributions***

## ***6.3 Limitations and future research***

Some limitations may affect the generalizability of the results of this study. First, the findings consider SME managers' perceptions at a single point in time, and thus the study does not capture phenomena that may occur over time. In addition, the response rate of participants is not very high (10%), yet similar to response rates reported by other export performance studies using email-based questionnaires ([e.g., Diamantopoulos & Kakkos, 2007](#)). Future research could aim to validate the findings of this study in other Latin American country contexts.

Several opportunities for future research arise from this study. For example, replicating the study in other Latin American countries where firms have a large take up of the Internet, such as Argentina, Brazil, or Mexico, can improve generalizability of the findings. Additionally, one can extend the findings by investigating how other variables act as moderators or mediators in further explaining export market growth. Finally, future research examining these constructs with longitudinal data can

provide a richer understanding of the relationships between them.

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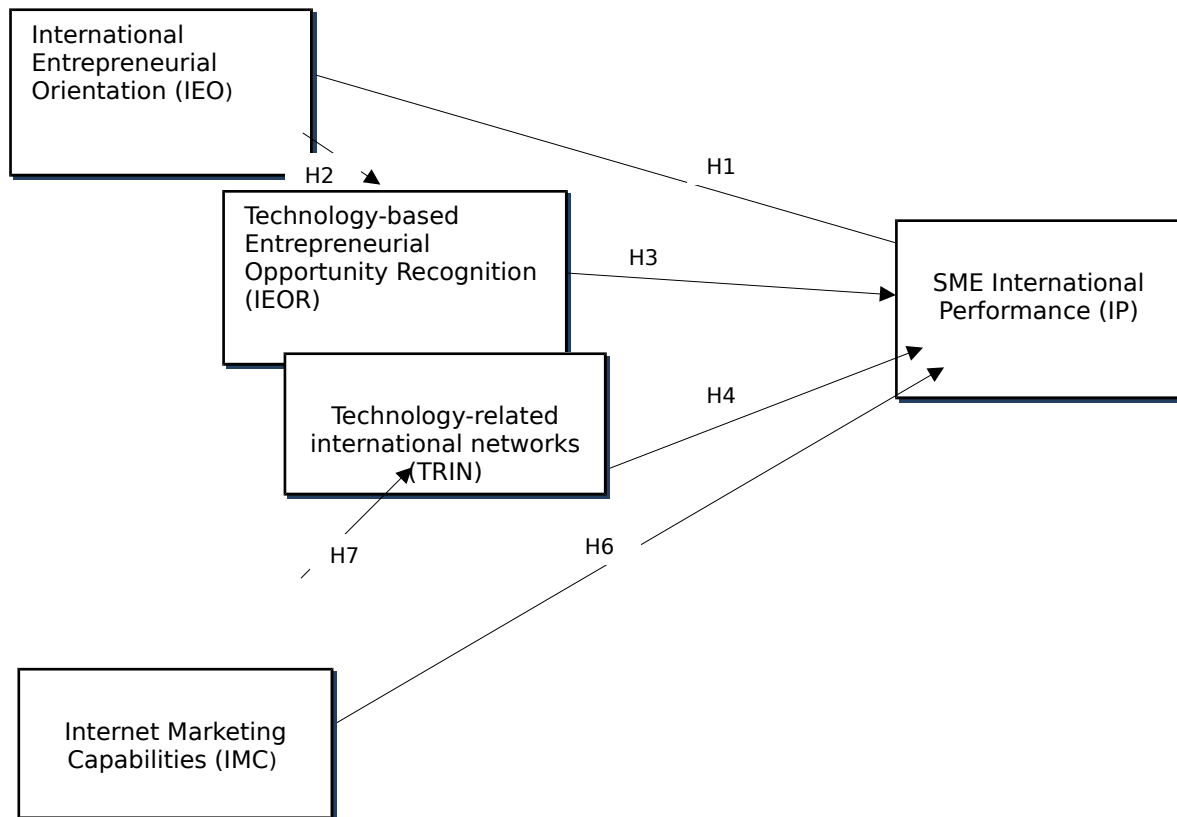
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**Figure 1. Hypothesized model**





*Note. IEO = International entrepreneurial orientation. IEOR = International entrepreneurial opportunity recognition. TRIN= technology-related international networks, IMC= Internet Marketing Capabilities, IEP = International entrepreneurship performance.*

**Table 1. Profile of respondents (N=233)**

<b>Profile</b>	<b>Parameters</b>	<b>Number</b>	<b>Percentage (%)</b>
Nationality of the owner/respondent	Chilean	218	93.6 %
	Other	15	6.4%
Age of the owner	18-29	44	18.9%
	30-39	63	27.0%
	40-49	68	29.2%
	50-59	40	17.2%
	60 or above	18	7.7%
Level of education	No formal education	3	0.1%
	TAFE/college	13	5.6%
	High school	30	12.9%
	Undergraduate	86	36.9%
	Postgraduate	101	43.3%
Previous years of export experience	No experience	90	38.6%
	1-5 years	74	31.8%
	Between 5 to 10 years	15	6.4%
	10+ years	54	23.2%

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Size of Firm (No. Employees)	1-5	154	66.1%
	6-20	46	19.7%
	21-200	21	9.0%
	Between 200-250	12	5.2%

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Business Sector	Goods	58	66.1%
	Services	150	19.7%
	Retailing/wholesale	25	9.0%

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**Table 2: Construct measures**

<b>Constructs</b>	<b>Items</b>	<b>Mean</b>	<b>Sd.</b>
<b>International entrepreneurial Orientation (IEO)</b> <b>(<math>\alpha = .893</math>)</b>	6Our firm views the world as the marketplace	5.33	1.70
	7Our firm's culture is to explore and pursuing new international business opportunities	5.33	1.67
	8Our top management constantly communicates its mission of being successful in international markets	4.74	1.79
	9Our top management develops resources to achieve goals in international markets	4.62	1.80
	14Our entrepreneurs place great importance on the drive of to enter international markets	5.21	1.98
<b>International entrepreneurial opportunity recognition (IEOR)</b> <b>(<math>\alpha = .887</math>)</b>	35Our firm actively seeks out new international market opportunities	4.94	1.99
	36When we see a new international market opportunity we invest resources to exploit the new international opportunity	4.52	1.96
	37We pursue international opportunities regardless of the resources the firm may have	4.95	1.89
	38The firm has many formal or informal processes that evaluate the effectiveness of its activities in international markets	4.08	2.02
<b>Internet marketing capabilities (IMC)</b> <b>(<math>\alpha = .827</math>)</b>	26Investment in technology has lead to greater international sales?	4.55	1.91
	27The firm has strong IT operations capabilities	4.69	1.96
	28The firm has the technological infrastructure and competencies to engage in e-commerce initiatives?	4.49	2.02

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<b>Technology-related Network (TRIN) (<math>\alpha = .967</math>)</b>	29	My firm uses the Internet to maintain international customer relationships	4.98	2.15
	30	The firm uses the Internet to strengthen existing international relationships	4.91	2.12
	32	The firm uses the Internet to acquire new international customers	4.66	2.10
	33	The firm uses the Internet to enter new international country market(s)	4.75	2.11
	34	The firm uses the Internet to enhance our firm's international performance	4.64	2.12
<hr/>				
<b>SME</b>	40	The performance of our firm has improved in international market share	3.97	1.78
<b>International Performance (IP) (<math>\alpha = .946</math>)</b>	41	The performance of our firm has improved in international growth	4.02	1.81
	43	The performance of our firm has improved in international profitability	3.88	1.80
	45	I am satisfied with the international activities of our firm of the last 5 years	3.78	1.84

**Table 3: Means, standard deviations, and correlation matrix**

	<b>Mean</b>	<b>St. Dev.</b>	<b>IP</b>	<b>IEO</b>	<b>IEOR</b>	<b>IMC</b>	<b>TRIN</b>
IP	3.91	1.81	1	0.45**	0.63**	0.44**	0.62**
IEO	5.05	1.79	0.45**	1	0.61**	0.38**	0.57**
IEOR	4.62	1.97	0.63**	0.61**	1	0.56**	0.73**
IMC	4.58	1.96	0.44**	0.38**	0.56**	1	0.599**
TRIN	4.79	2.12	0.62**	0.57**	0.73**	0.59**	1

*Note. IEO = International entrepreneurial orientation. IEOR = International entrepreneurial opportunity recognition. TRIN=Technology related international networks. IMC= Internet Marketing Capabilities. IEP = International entrepreneurship performance.*

*\*\* Correlation is significant at the 0.01 level, \* Correlation is significant at the 0.05 level.*

**Table 4: Model fit and hypotheses testing**

Model	Overall fit					P- value>.05
	Model fit indices					
	$\chi^2$ /DF CMIN	RMSEA	IFI	CFI	TLI	
Proposed Model	1.149/ 134	.033	.976	.968	.975	.000 sig.

Independent Variable		Dependent Variable	B (st. est)	p	Hypotheses
IEO	<b>H1</b>	IP	.02	.883	Not Supported
IEO	<b>H2</b>	IEOR	.57	.000	Supported
IEOR	<b>H3</b>	IP	.46	.000	Supported
TRIN	<b>H4</b>	IP	.22	.045	Supported
IEOR	<b>H5</b>	TRIN	.69	.000	Supported
IMC	<b>H6</b>	IP	.03	.690	Not Supported
IMC	<b>H7</b>	TRIN	.20	.001	Supported

*Note. IEO = International entrepreneurial orientation. IEOR = International entrepreneurial opportunity recognition. TRIN=Technology related international networks, IMC= Internet Marketing Capabilities, IEP = International entrepreneurship performance.*