

Innovation capability and internationalization performance of SMEs: The role of institutional pressures

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Abstract

Though technological innovation capability is considered a significant determinant of internationalization performance of SMEs in the developing countries, results to-date are however inconclusive. We theorize, based on expert interviews and literature review, that institutional pressures moderate this relationship. A hypothesized model to be tested in the future is presented.

Keywords: Technical Innovation Capability, Internationalization, Institutional Pressures

Introduction

Internationalization is the process of increasing involvement in international operations of a firm (Welch and Luostarinen 1988). In the emerging markets, where large firms are growingly becoming multinationals (Guillen and Garcia-Canal 2011; Tsai and Eisingerich 2010), small to medium enterprises (SMEs) are also reported to have benefitted from their internationalization efforts (Lee et al. 2012). Pangarkar (2008) determines that degree of internationalization of SMEs improves their business performance. The foreseeable benefits of internationalization have steadily raised SMEs' interest in the developing countries to internationalize.

A number of factors have been found to determine internationalization of firms in the developing economies such as firm size, research and development expenditure, advertising expenditure, business group affiliation (Singh 2009), strategic and dynamic capabilities (Raymond et al. 2010; Li and Ding 2013; Golgeci and Arsalan 2014), ownership advantage and corporate governance (Yiu et al. 2007; Wang et al. 2008), institutional pressures (Cheng and Yu 2008), managers' prior international experience and education level of managers (Sahaym and Nam 2013; Wang et al. 2008) and firms' differentiation strategy (Baldauf et al. 2000).

Technological innovation capability (TIC) is also considered an important determinant of export performance of SMEs (Guan and Ma 2003; Cerrato 2009; Rodriguez and Rodriguez

2005; Raymond and St-Pierre 2011; Wang et al. 2013). Where this has been a central topic of a number of studies in recent years, the results are however inconclusive. For example, a few studies find that TIC of firms positively supports their internationalization performance (Rodriguez and Rodriguez 2005; Cerrato 2009; Wang et al. 2013). However, with an exception of Rodriguez and Rodriguez (2005) the relationship is mostly weakly determined and significant at $p < 0.1$ level. Other studies argue that there exist a number of innovation capabilities in firms and reveal mixed results of the impact these capabilities have on firms' export performance (Guan and Ma 2003; Raymond and St-Pierre 2011).

We invoke institutional theory perspective (Greenwood et al. 2008) to argue that institutional pressures can potentially moderate the impact of innovation capability on the internationalization performance of SMEs. The need to consider the role of institutional perspective in the context of internationalization has been emphasized in literature (Cheng and Yu 2008; Miltenburg 2009; Kumar et al. 2013).

In this paper, we present a hypothesized model linking TICs, institutional pressures and internationalization performance of firms. Rest of the paper is structured like this. Section 2 develops the research model based on theory and section 3 presents research methodology which is being used for testing the model hypotheses.

RESEARCH MODEL

Internationalization

Welch and Luostarinen (1988) suggest that internationalization is the process of increasing involvement in international operations of a firm. They identify that exporting or outward flows (e.g. export objects) from a country constitute only part of the phenomena of internationalization, the other half being, inward flows from outside a country (e.g. regulations, FDIs). They argue that the inward flows impact the moves firms can likely take in a country. Firms internationalize for proactive and reactive motives (Czinkota and Ronkainen 1995). Proactive motives refer to the ideas of seeking physical closeness to customer abroad, attaining international reputation, obtaining tax advantages and developing new sales territories. Reactive motives refer to the ideas of creating competitive pressures, overproduction, or disadvantageous legal changes in domestic market. Contractor (2007) identifies that international expansion is good for a firm for the following reasons: (1) knowledge derived from abroad, (2) accessing or arbitraging cheaper inputs, (3) exploitation of firm-specific assets in foreign markets, (4) accumulation of global market power, (5) international scale, (6) lowering of volatility from geographical diversification, and (7) accumulated internationalization experience.

Technological Innovation Capabilities

Technological innovation capabilities (TICs) are a set of characteristics of a firm that facilitates and supports its technological innovation strategies (Burgelman et al. 2004). TICs are found to improve firm's sales (Yam et al. (2004) and its market position, financial position and firm value (Rubera and Kirca 2012; Calantone et al. 2002; Sher and Yang 2005). The importance of developing TICs in SMEs is also emphasized in literature such as Cakar and Erturk (2010),

Konsti-Laakso et al. (2012), Hoffman et al. (1998), Hughes (1984), Meyer and Roberts (1986), and Hipkin (2004).

In literature, different approaches have been used to conceptualize TICs that results into corresponding sets of capabilities. For example an asset based approach taken by Christensen (1995) implies TICs to be a set of science, product innovation and esthetics design related assets. Similarly, Chiesa et al. (1996) takes a process based approach, accordingly to which TICs are embedded in the activities performed by firms. Table 1 presents a set of approaches (and their corresponding TICs) available in the extant literature.

Table 1 - Approaches for conceptualizing TICs used in extant literature (adapted from Yam et al. 2011).

Conceptual Approach for TIC	Sets of TICs	
Asset Approach – (Christensen 1995)	<ul style="list-style-type: none"> • Science research asset • Product innovation asset 	<ul style="list-style-type: none"> • Esthetics design asset
Process Approach (Chiesa et al. 1996)	<ul style="list-style-type: none"> • Concept generation capability • Process innovation capability • Product development capability • Technology acquisition capability 	<ul style="list-style-type: none"> • Leadership capability • Resources deployment capability • Capability in effective use of system and tools
Process Approach (Burgelman et al. 2004)	<p>Capabilities of a firm in:</p> <ul style="list-style-type: none"> • Resources availability and allocation • Understanding competitor innovative strategy and market • Understanding technological developments relevant to firm 	<ul style="list-style-type: none"> • Structure and culture affecting internal innovative activities • Strategic management to deal with internal innovative activities
Functional Approach (Yam et al. 2004)	<ul style="list-style-type: none"> • Learning capability • R&D capability • Resources allocation capability • Manufacturing capability 	<ul style="list-style-type: none"> • Marketing capability • Organization capability • Strategic planning capability
Competency Approach (Souitaris 2002)	<ul style="list-style-type: none"> • Technical Competences • Organizational Competences 	<ul style="list-style-type: none"> • Market Competences • Human Resource Competences
Functional / Competency Approach (Wang et al. 2008)	<ul style="list-style-type: none"> • R&D capability • Manufacturing capability • Marketing capability 	<ul style="list-style-type: none"> • Innovation Decision Capabilities • Capital capability
Activity / Functional Approach (Panda and Ramanathan 1997)	<ul style="list-style-type: none"> • Strategic Technological Capabilities (Creation, Design and engineering, and Construction capability – w.r.t. construction industry) • Supplementary Technological Capabilities (Acquiring and Supportive capabilities) 	<ul style="list-style-type: none"> • Tactical Technological Capabilities (Production, Marketing, Selling and Servicing capability) • Steering Capability
Dynamic Capability Approach (Branzei and Vertinsky 2006)	<ul style="list-style-type: none"> • Assimilation Capabilities • Acquisition Capabilities 	<ul style="list-style-type: none"> • Deployment Capabilities • Transformative Capabilities

We adopt the functional approach of conceptualizing TICs presented by Guan and Ma (2003). According to this approach innovation capability results as a complex interaction of activities carried out within and between various functional departments of a firm. We subscribe to this approach for multiple reasons: (1) in the developing country firms it is not mandatory that firms have a formal R&D department, they however, realize innovations through teamwork and interactions of various departments, (2) different facets of internationalization i.e. scale and scope are not necessarily impacted by the R&D capacity, and (3) the capability approach presented by Guan and Ma (2003) has been tested in the context of developing country firms.

Institutional Pressures

The central idea of institutional theory is that “organizations are influenced by their institutional context i.e. widespread social understandings (rationalized myths)....thus organizations conform to these understandings and become isomorphic to their institutional contexts in order to gain legitimacy” (Greenwood et al. 2008: pg5-6). An organization is embedded in its own internal institutional environment (Meyer and Rowan 1977; DiMaggio and Powell 1983). In this paper, we take the definition of institutional pressures provided by Cheng and Yu (2008) which are: *coercive* (formal pressures exerted by those the firm depends upon), *mimetic* (representing a firm’s tendency to adopt the successful elements of other firms’ actions in the face of uncertainty), and *normative* (transmission of social facts, generally from external sources such as the professional history).

Technological Innovation Capability and Internationalization

TIC is considered an important determinant of ‘export’ (or for this matter ‘internationalization’) performance of firms (Hitt et al. 1997). A number of prior studies have explored this relationship (Guan and Ma 2003; Ozcelik and Taymaz 2004; Rodriguez and Rodriguez 2005; Wang et al. 2008; Cerrato 2009; Raymond and St-Pierre 2011; Kylaheiko et al. 2011; Wang et al. 2013). The results however, have been inconclusive. For example, some studies find that TIC of firms positively and significantly supports their internationalization performance (Ozcelik and Taymaz 2004; Rodriguez and Rodriguez 2005). Other studies have identified that the relationship is mostly weak at $p < 0.1$ level (Cerrato 2009; Wang et al. 2013). Wang et al. (2008) however, suggests that innovation capability of firms negatively determine international orientation of firms. On the other hand, Kylaheiko et al. (2011) find an insignificant relationship. It should be noted that these studies adopt ‘asset based approach’ to innovation capability (table 1).

Other studies take a functional approach of conceptualizing innovation capability and group them into *core capabilities* (R&D, manufacturing, and marketing capabilities) as well as *supplementary capabilities* (learning, resource allocation, organizing and strategic planning capabilities) (Guan and Ma 2003; Raymond and St-Pierre 2011). These studies show mixed results of the impact these capabilities have on the internationalization performance of firms. The inconclusiveness of these results calls for the need to study this relationship further.

One reason of this inconclusiveness is the way internationalization performance has been conceptualized in these studies. Prior studies conceptualize internationalization performance mostly in terms of export performance of a firm i.e. the intensity of export sales compared to

total sales. This definition of export performance partially captures the depth but not the breadth of the internationalization performance of firms. The extant literature on internationalization reports to have used about fifty different measures of internationalization performance (Sousa 2004) that belong to the dimensions of geographical scope, market scope, export performance, import performance, structural measures (physical), structural measures (financial), attitudinal indicators and speed of internationalization. We contemplate that various dimensions of TICs as suggested by Guan and Ma (2003) would lead to different dimensions of internationalization.

Developing country firms pursuing internationalization are involved in the following activities, exporting (one or more product lines to a geographical region or more), developing assets in the foreign markets (warehousing, trans-locations), partnering with other firms for selling and marketing. Thus, export intensity does not capture in true sense the internationalization efforts of developing country firms these days. Internationalization performance has to be conceptualized beyond export intensity to include elements that capture both scale (depth to which an activity is carried out) and scope (breadth of activities) of the internationalization performance of firms. Through a careful analysis of extant literature, interviews with industry personnel, and our own understanding of the activities in which developing country firms are mostly involved, we define internationalization scope to cover: geographic scope (Hitt et al. 1997), alliance scope (Lu and Beamish 2001), and market performance (Sahaym and Nam 2013), whereas the internationalization scale is defined to cover: export performance (Sullivan 1994) and product performance (Ruzzier et al. 2007)

Thus, adopting the functional approach of conceptualizing TICs, we propose that different TICs lead to different aspects of internationalization performance of a firm. Specifically, we propose that core TICs (i.e. R&D, manufacturing and marketing capabilities) will have a positive relationship with internationalization scale of a firm. Similarly, supplementary TICs (i.e. learning, resource allocation, organizing, and strategic planning capabilities) will have a positive relationship with internationalization scope of a firm. Thus we hypothesize that:

H1: Core TICs will have positive relationship with internationalization scale of firms.

H2: Supplementary TICs will have positive relationship with internationalization scope of firms.

Institutional Pressures, Technological Innovation Capabilities and Internationalization Performance

The varying results obtained about the relationship between TICs and internationalization performance suggests the need of moderating variables as well. Institutional pressures can play this role.

In the context of SMEs in the developing countries, institutional pressures (coercive, normative and mimetic) have been found to positively influence internationalization performance of firms (Cheng and Yu 2008; Li and Ding 2013). Institutional pressures cause firms in domestic countries to follow rules and standards to even govern relationships with export market firms (Svendsen and Haugland 2011). More recently, firms from the emerging markets are shifting

from exporting to outward foreign direct investments. Gaffney et al. (2014) investigate that emerging market multinationals' decision to take outward FDI decisions can be explained partially by institutional changes in their home countries.

The need to consider institutional pressures along with innovation and internationalization has been emphasized in the literature. For example, Kumar et al. (2013) argue that innovation capability of a firm does not necessarily lead to its internationalization unless a firm faces institutional pressures to internationalize. The moderating impact of foreign assets, government relationship, business group affiliation and marketization has been studied on the relationship between R&D intensity and export intensity (Yi et al. 2013). Yi et al. (2013) have not studied the impact of various other institutional factors that exist in the external and internal environments of developing country firms such as regulatory benefits, customer and competitor pressures, and pressures arising from industry/trade organizations. These factors belong to all three forms of institutional pressures identified by DiMaggio and Powell (1983). Thus we propose that all three forms of institutional pressures i.e. coercive, normative and mimetic will moderate the TICs and internationalization performance relationship. Thus:

H3: Institutional pressures positively moderate the impact of TICs on internationalization.

The resultant hypothesized research model is presented in Figure 1.

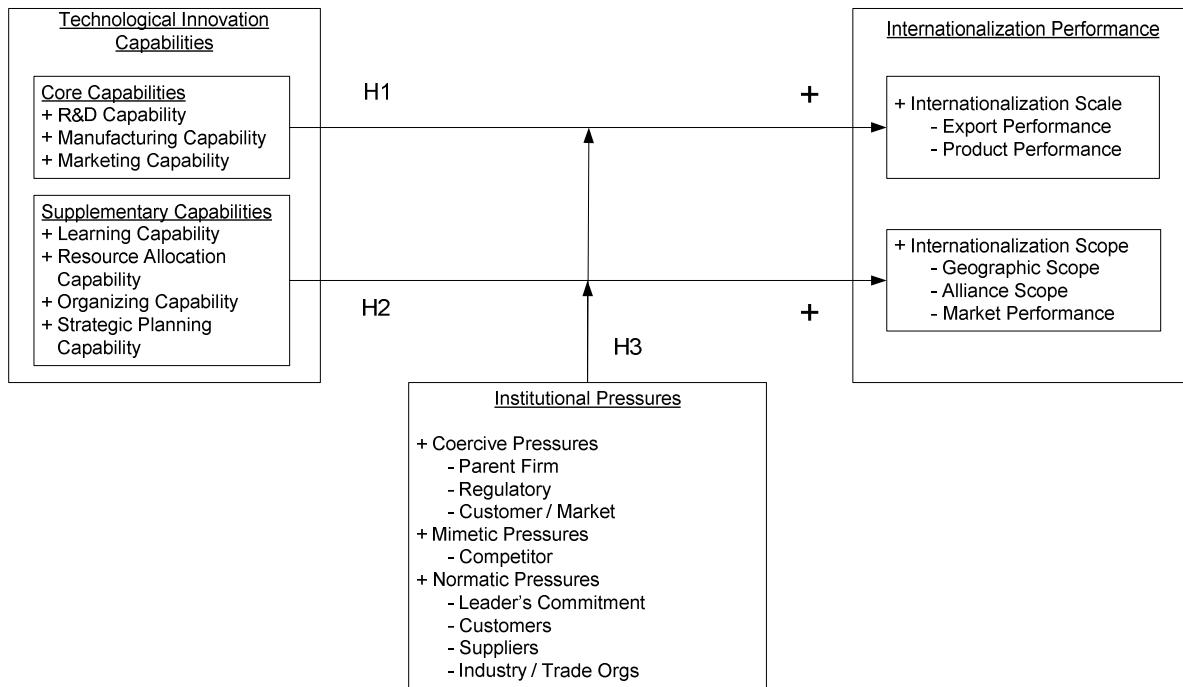


Figure 1 - Moderation effect of institutional pressures on the relationships between innovation capabilities and internationalization performance

RESEARCH METHODS

Data Collection

We plan to collect data from SMEs belonging to textiles, apparel, leather goods, and sports goods industrial sector as per the International Standard Industrial Classification (ISIC 2008). Data will be collected from multiple middle-to-senior managers from each firm such as production manager, R&D manager, and marketing manager.

Measures

Various measures for dependent and independent variables are adapted from the existing literature. For example, for internationalization scope we adopt relevant items from the following papers: Hitt et al. (1997); Lu and Beamish (2001); and Sahaym and Nam (2013); and for internationalization scale: Sullivan (1994) and Ruzzier et al. (2007). Similarly, for TICs operationalization of Yam et al. (2004) has been adopted. A number of papers were used to select items for institutional pressures, Cheng and Yu (2008); Li and Ding (2013); Czinkota and Ronkainen (1995); Khalifa and Davison (2006); Cadogan et al. (2001); and Zhu et al. (2012).

Data Analysis

Direct relationships (hypotheses H1 and H2) between TICs and internationalization performance will be tested using structural equation modeling technique while the moderation effects of institutional pressures (hypothesis H3) will be tested using Smart PLS.

Summary and Future Work

This paper provides a theoretical model for explaining moderation effect of institutional factors in the relationship between technological innovation capabilities and internationalization performance. Resultantly, various hypotheses are generated to be tested in future.

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