Internationalization of SMEs and Organizational Factors in a Developing Country: A Case Study of ICT Industry of Iran

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Abstract

SMEs as an engine of growth play an important role in developing countries for poverty reduction, the role which has attracted the attention of scholars in recent years. This study explores the effect of firm’s characteristics, resources and top management team characteristics on the internationalization of SMEs. Based on the literature, a conceptual model is proposed in which firm’s resources are assumed as an intervening variable. As a result, the model shows that top management team variable has both a direct and indirect effect on internationalization. In order to survey, top managers of international SMEs in Iran ICT sector were asked to fill in a questionnaire. The resulting data was analyzed through structural equation modeling which leads us to codifying a causal model accordingly. The research results show a direct and indirect positive effect of top management team on internationalization of SMEs, however it indicates that indirect effect of firm’s characteristics is not significant. Finally, a set of guidelines are proposed for internationalization of SMEs in developing countries.

1 The manuscript of the current paper was stolen a year ago and was illegally sent with the title of "INTERNATIONALIZATION OF SMES AND ORGANIZATIONAL FACTORS IN A DEVELOPING COUNTRY: (A CASE STUDY OF ICT INDUSTRY IN PAKISTAN)" to Australian Journal of Business and management Research (AJBMR) for publication. As it was confirmed that it was an infringement of copyright after a series of legal actions, it was promptly removed from AJBMR’s official website. Any further publication of the same content by anyone anywhere is plagiarism. We would like to thank the editorial team of AJBMR for their kind cooperation in removing the stolen manuscript from the journal.
Keywords: Internationalization of SMEs, developing countries, top management team (TMT) characteristics, firm’s resources, firm’s characteristics.

Introduction

Nowadays, radical changes in the business environment have led to a situation where small and medium-sized enterprises (SMEs) represent a sector of growing importance; They play a large and diverse role in the growth of emerging nations and advanced market economies especially in providing employment and driving economic development (Kula and Tatoglu, 2003; McNaughton, 2000). Moreover, integration into the global economy calls for the establishment of a competitive environment; besides, the best way to overcome poverty and inequality in developing countries is moving toward the development of a private sector, in which SMEs play a central part (Hubner, 2000). It is necessary for SMEs in developing countries to internationalize, particularly due to a trend that reduces direct subsidies and government protections (Etemad, 1999). Although, the Iranian government is striving to eliminate this gap and is developing centers to support SMEs, the steps taken have not yet come to fruition. Support for SMEs can certainly be translated into support for entrepreneurial activities.

Despite the above discussion, the article 44th of the Iranian constitution (the privatization and deregulation principle) and the government’s support for the non-oil sector oblige SMEs in Iran to accelerate their internationalization process in order to cope with the new business environment. However, there are a number of disadvantages inherently faced by SMEs in their transition to international environments (Chen and Huang, 2004).

Despite the fact that most empirical studies have focused on these factors, there is still insufficient knowledge about the internationalization of SMEs (Hohenthal et al., 2003) in developing countries (Kuada and Sörensen, 2000). In this paper, we will discuss strategic challenges faced by SMEs in Iran as they are forced to change due to international expansion. More specifically, the objective of this paper is to address the following questions: what are the organizational factors that facilitate internationalization of SMEs Iran? How these factors affect internationalization of SMEs? According to the literature, several major organizational factors are identified in internationalization process: firm’s variables, resources and TMT characteristics (Westhead et al., 2001; Karadeniz and Göçer, 2007). The aim of this study is to focus on exploring the effects of organizational factor on internationalization of SMEs to minimize the existing gap in the literature.

Including the introduction, this paper has seven sections. The next section reviews the related literature, whereas the third section discusses hypotheses development. The fourth section provides research methodology and the fifth highlights results and analysis. Finally, the paper provides some general discussions and draws conclusions.
Literature Review

The term “internationalization” is ambiguous, and its definitions vary in the scope of phenomena they include (Welch and Luostarinen, 1988; Beamish, 1990). As an example, Calof and Beamish (1995) define internationalization as “the process of adapting firms’ operations (strategy, structure, resource, etc) to international environments”. Reviewing the literature indicates that numerous efforts are made to understand internationalization. Many theories have been presented, some of which have addressed the internationalization of SMEs, but a comprehensive ‘theory of SME internationalization’ is still out of reach. Hence, there is a growing awareness of the need to conduct extensive research on internationalization.

Studies on internationalization of SMEs were started by Uppsala University in order to describe the export behavior of SMEs (Olson and Wiedersheim-Paul, 1978; Wiedersheim-Paul et al., 1978). Then Oviatt and McDougall (1994) proposed a new theory of small business internationalization, which described the international new venture model. Another theory for internationalization of SMEs is the network theory, according to which the development of smaller firms depends on their relationships with others (Coviello and Munro, 1995), and is implemented in the area of international entrepreneurship research as well (Young et al., 2003). In this study, Johanson and Wiedersheim-Paul’s (1975) definition of internationalization process is used, which includes four stages: no regular export activities, export via independent representatives (agents), sales subsidiary, and production/manufacturing.

A research is conducted to identify the effective factors on the internationalization of SMEs. For instance, Calof and Beamish (1995) found that changes in mediating variables (including resources, organization, strategy, and environment) influence the internationalization process. Determinants of a firm’s export behavior are discussed in two broad levels (Aaby and Slater, 1989; Ford and Leonidou, 1991): the external environment level (macro-economic, social, physical, cultural, and political aspects, as well as industry characteristics), and the firm level (the potential effect of the structural and behavioral aspects on exporting) (Leonidou and Katsikeas, 1996). This paper explores organizational (firm) level which is mentioned in Zahra and George model (2002) and encompasses the following factors:

1. Firm variables;
2. Firm resources; and
3. TMT characteristics

Our model is tested in Iran ICT sector SMEs, in which there is great potential but insufficient knowledge of internationalization. Figure 1 indicates the first conceptual model of the effective organizational factors in the internationalization process of SMEs.
Hypotheses Development

In a very competitive environment, it is necessary to identify and understand factors that affect international performance (Kuivalainen et al., 2004). Therefore, in this section, we formulate some hypotheses on organizational factors to explain why some SMEs are more likely to export their goods or services abroad (Westhead et al. 2001). The effect of organizational factors on internationalization of SMEs was the area that attracted some attention in previous and primary studies (Westhead et al., 2002; Sua and Alamo, 2005). Organizational factors refer to forces operating within the firm, affecting (both positively and negatively) its speed and the level of internationalization, such as TMT characteristics, firm-related variables and firm resources. The following section will develop hypotheses about linking various organizational factors to the level of firm internationalization. As it is shown in the next section, we divide these variables to intervening and independent variables.

Intervening Firm resources and internationalization of SMEs

SMEs often lack sufficient resources, capabilities, and market power of traditional multinational enterprises when they want to engage in internationalization (Kaufmann, 1994). For instance, Maleccki and Veldhoen (1993) state that small firms are “most plagued by a holistic problem of inadequate expertise and skills at several levels- managerial, supervisory, production and employees” (Holmlund and Kock, 1998). Therefore, larger firms will have a greater ability to expand resources and absorb risks compared to smaller ones, and may have a higher bargaining power (Erramilli and Rao, 1993). Resource-based theory has implied to mention how SMEs
obtain a differential advantage in international markets and has proposed different resource classifications. For example, Amit and Schoemaker (1993) suggest six main categories of resources: financial (size and type of capital), physical (location, plant, access to raw materials, transportation etc), human (personnel and management), technological (product and process-related), reputation (image, brand, loyalty, trust, and goodwill), and organizational resources (management systems). In this paper, we have divided internationalization resources into tangible and intangible. Tangible resources include: industrial quality (Holmlund and Kock, 1998), higher R and D-to-sales ratio (Burgel and Murray, 1998), higher ratio of employees who spend at least 50 percent of their time on new product development, financial and capital resources (Holmlund and Kock, 1998), received industry grants (Westhead et al., 1998), access to venture capital (Burgel and Murray, 1998) and hardware resources such as machinery, buildings, equipment, raw materials, and transportation. On the other hand, intangible resources include:

1. Reputation (image, brand, loyalty, trust, goodwill) (Zahra et al., 2003).
2. Networking which includes extensive networks (Oviatt and McDougall, 1995), technological networks (Zahra et al., 2003), relationship with research institutions, universities and various expert organizations, and social networks.
3. Software resources including knowledge about exiting technology, manufacturing process, machinery, marketing, buyers and suppliers (Holmlund and Kock, 1998), and
4. Personnel resources.

Hence we formulate the hypotheses as follows:

- $H_a$: Intangible resources are positively related to firm resources.
- $H_b$: Tangible resources are positively related to firm resources.

Firm resources variable has an intervening role on internationalization of SMEs for independent variables (TMT characteristics and firm-related variables), and this study elaborates on this role and attempts to affect internationalization of SMEs.

**Independent Variables**

**TMT Characteristics and Internationalization of SMEs**

Researchers have invariably considered TMT as the principal force behind the start-up, development, maintenance and success of SMEs’ internationalization (Westhead et al., 2001; Lindsay et al., 2003) because of the direct responsibility and involvement in decision making of the firm (Miesenbock, 1988), and TMT role in the expansion of firm’ resources which they have caused. We mention both direct and indirect effects of TMT on internationalization of SMEs, elaborated in the following. Hutchinson et al. (2006) have pointed to two objective and subjective characteristics of management as effective factors on SME internationalization.

As a result, we formulate the hypotheses as follows:
Ha: TMT objective characteristics are positively related to TMT characteristics.
Hb: TMT subjective characteristics are positively related to TMT characteristics.

Objective characteristics, as mentioned in the first hypothesis, consist of diverse management know-how (Westhead et al., 2001), the number of languages spoken by the management, whether the decision maker was born, lived, or worked abroad (Bijmolt and Zwart, 1994; Reuber and Fischer, 1997), foreign work experience (Burgel and Murray, 1998), overseas education (Burgel and Murray, 1998) and managerial parental backgrounds (Westhead et al., 1998), and ability to form formal and informal networks (the personal contacts of managers in certain foreign markets). All of these factors have positive effect on internationalization. In other words, internationalization of SMEs require appropriate resources such as acquisition of new managerial talent experienced in international business or receiving assistance from consulting companies that can offer such expertise (Mughan et al., 200x). In fact, these objective characteristics of TMT help to access and expand knowledge and experience that were absent within the firm (Vida et al., 2000; Rutashoby and Jaensson, 200x). Hence:

H1: TMT characteristics through firm resources have a positive effect on internationalization of SMEs.

Subjective characteristics, as mentioned in the second hypothesis, are comprised of high perception of export advantages and low perception of export barriers (Calof and Beamish, 1995; Rundh, 2003), the personality characteristics of the owner-manager such as creativeness, innovation, risk-taking and proactiveness. These are the qualities that can enable successful development of the firm abroad despite resource deficiency (Fillis, 2001) and lack of a global vision (Oviatt and McDougall, 1995). In fact, these characteristics have an important and direct role on internationalization of SMEs. Hence:

H2: TMT characteristics have a positive effect on internationalization of SMEs.

Firm-related variables and internationalization of SMEs

Researchers have also examined the effects of several firm-related variables such as age, size, location, and origin on SMEs' internationalization. First of all, we focus on their relationships with firm-related variables, and then the role of these variables in internationalization will be discussed.

Ha: Firm’s size is positively related to firm-related variables.
Hb: Firm’s age is positively related to firm-related variables.
Hc: Location is positively related to firm-related variables.
Researchers discuss that these variables affect the internationalization of SMEs. Obviously, firm-related variable improvement leads to the reinforcement of firm’s resources. In other words, firm-related variables through firm resources affect internationalization of SMEs. The size is the first firm-related variable, and the most important measure for size is the number of full-time employees (which is positively related to its exportation capabilities) (Katsikeas, 1994; Bonaccorsi, 1992; Karadeniz and Gocer, 2007; Zahra et al., 2000). Indeed, the firm size shows available resources which collect different types of export information which can increase the possibility of internationalization (Bonaccorsi, 1992).

Firm’s age is another variable that has been studied. Based on the Uppsala model, firms will gradually increase their foreign market commitments as they gain knowledge and experience in such markets (Johanson and Vahlne, 1990). The gradual acquisition of knowledge about foreign markets, cultures, languages, and distribution systems reduces the perceived risk of performing business in these markets and motivates SME’s to follow internationalization. Researchers have pointed out the positive correlation between the firm age and internationalization (Zahra et al., 2000; Burgel and Murray, 1998) particularly in SME domain. However, some researchers argue that knowledge-based firms are born globally (Knight and Cavusgil, 1996), and younger firms are most likely to become exporting firms (Autio et al., 2000). Nevertheless, Iran’s ICT industry under study in this paper is a young industry with SMEs not generally born and though their entry into international environment will take a long time. Hence, the age of a firm may be an important factor in explaining the internationalization of small firms.

The third variable is location. Firms which are located in high-facility regions solely seek customers in growing domestic markets (Keeble et al., 1992). However, this variable does not have the same role in the present study since all of our case studies are located in urban areas and big cities. It follows that firm-related variables enable firms to acquire export-related information and use export information sources. Overall, these resources will develop tangible and intangible resources resulting in the development of export and internationalization. Hence:

H3: Firm-related variables through firm resources have a positive effect on internationalization of SMEs.

The Conceptual Model

The previously discussed relationships may be investigated by specifying an appropriate path analysis model (Bollen, 1989) as depicted in Figure 2 (modification of Figure 1 based on the new relationships discussed above). It should be pointed out that all the variables in Figure 2 are considered as latent (non-observable) variables throughout this study.
Methodology

The Sample

The empirical evidence presented in this paper is part of a larger research project on the internationalization of SMEs in ICT industry. To test the hypothesized model, a questionnaire was mailed to the top management team of SMEs operating in ICT industry. Out of 250 questionnaires, 120 (or 50 percent) were usable for analysis. The strategy of collecting completed questionnaires was exclusively through peer-to-peer communications of the research team with the managers.

Statistical Methods

Path analysis (also known as structural equation modeling) is a useful tool for evaluating the relationships among a set of variables and has been used by a number of researchers. The statistical methods used in this study regard the variables as latent variables, measured by questionnaire queries. Cronbach alpha coefficient is used to assess the reliability of the measuring instrument. The questionnaire was pre-tested in order to check for the content validity. Indeed, we used content validity of 8 variables in level three (see Table 1). The content validity is the extent to which the measure captures the different facets of a construct. Agreement should be sought on the content adequacy among the researchers who developed the measure – in addition to support from experts and/or the literature. While literature is important, it may not cover all aspects of the construct. Evaluating face validity of a measure
(that is, the measure “on its face” seems like a good translation of the theoretical concept) can indirectly assess its content validity. Face validity is a matter of judgment and must be assessed before data collection. One approach used to quantify face validity involves a panel of subject-matter experts and the computation of Lawshe’s (1975) content validity ratio \((CVR_i)\) for each candidate item in the measure. \(CVR_i\) is computed as follows:

\[
CVR_i = \frac{n_e-n/2}{N/2}
\]

Where \(n_e\) is the number of subject-matter experts denoting the measurement item \(i\) as “essential”, and \(N\) is the total number of subject-matter experts in the panel.

Lawshe (1975) has further established minimum \(CVR_i\) for different panel sizes. Calculated \(CVR_i\) were then compared to the level required for statistical significance. For example, a minimum \(CVR_i\) value of .75 was necessary for statistical significance at \(P<.05\) based on nine panelists.

\[
N= 29, \ n_e= 25, \ CVR= 0.79
\]

<table>
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<th>Level3</th>
<th>Level2</th>
<th>Level1</th>
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Table1. Instrumental survey

**Results**

**Reliability**

To measure the reliability of instruments, a Cronbach alpha coefficient was calculated for each scale used. As shown in Table 2, the values for all the instruments are above 0.5 which is regarded as an acceptable minimum level for further analysis. According to Nunnally (1976, in site, Gilbert and Churchill 1979), “low” for alpha depends on the purpose of the research, and researches which are in early stages satisfy reliabilities of 0.50 to 0.60.
Confirmatory factor analysis involves the specification and estimation of one or more putative models of factor structure, each of which processes a set of latent variables (factors) to account for covariance among a set of observed variables (Lee, 1999). The measure model of three variables (Top management team, resources and Firm-related variables) is tested by confirmatory factor analysis. The results are indicated in Table 3.

The adequacy of the model fit was determined by using the indices, including the goodness-of-fit index (GFI), NFI, root mean square error of approximation (RMSEA), Chi-Square/ df and T-value. Chi-Square /df ratio adjusts the Chi-Square test to control the sample size, and values exceeding 3 suggest poorer fitting models. Many researchers interpret GFI scores in the .80 to 0.89 ranges as representing reasonable fit; scores of 0.90 or higher are considered evidence of good fit (Doll et al., 1995). As with the GFI, levels above 0.90 for NFI imply adequate fit. The RMSEA is an average difference per degree of freedom expected to occur in the population, with lower values indicating a better model fit (Pedhazur and Schmelkin 1991) and with lower values of 0.08, T-value scores must be higher than 1.96. Results indicate a suitable validity of variables.
Path Analysis with Latent Variables

The model depicted in Figure 2 was fitted to the observed data. For this purpose the Lisrel 8.53 software was used, by specifying an analysis based on the covariance matrix with maximum likelihood estimation. The resulting maximum likelihood estimates with their associated significance information in terms of T-values are shown in Figure 3. In this figure it is evident that TMT characteristics (TMT) exerts a direct and significant positive influence (point estimate 0.42; T-values= 2.44> 1.96) on internationalization of SMEs (Int.). Also, indirect influence of TMT through firm’s resource on internationalization of SMEs is positive and significant (point estimate 0.24; T-values= 2.23> 1.96). Indirect influence of factors is measured by the following command in Lisrel.

LISREL OUTPUT: RS SC MI EF

In addition, Indirect influence of firm’s characteristics through firm’s resource on internationalization of SMEs is positive but not significant (point estimate 0.19; T-values= 1.93< 1.96). Direct influence of firm’s resource as one of the by-results is positive and significant (point estimate 0.49; T-values= 2.54> 1.96).

Top management team (TMT) variable has positive and significant relationships with objective characteristics and subjective characteristics. Firm characteristics variable has positive and significant relationships with firm’s age, size and location. Firm resource variable has positive and significant relationships with tangible and intangible resources.

The measures of fitness of the model are depicted in Figure 3. Both the Chi-Square test statistical value (50.29) and the 95 percent confidence interval for the population discrepancy function value suggest that the Null hypothesis of a perfect fit is rejected at a level of significance of 0.05. Chi-Square/ df (1.026) is lower than 3, which is reasonable. The RMSEA value of 0.016, values of NFI (0.90) and GFI (0.92) are higher than 0.9 which indicate a reasonable fit to the data.
Figure 3. Empirical evaluation of the proposed causal model

Conditions of Variables

Statistical test of one-sample T-Test is used in order to explore a suitable and not-suitable variable and the results are given in Table 4. However, the questionnaires which were evaluated on a Likert scale of five points, therefore higher mean's points of 3 for variables express a suitable condition and is nearing 3 and lower of it are respectively average and not-suitable condition. The results of test show that all variables have suitable and average condition except of internationalization variable. Because international SMEs in Iran's ICT industry are going through their embryonic stages of internationalization, result of Not-suitable to internationalization variable is rational.
<table>
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<th>Mean</th>
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<td>Internationalization</td>
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<tr>
<td>TMT</td>
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<td>suitable</td>
</tr>
<tr>
<td>Resource</td>
<td>3.37</td>
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<table>
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<tr>
<th>Firm characterizes</th>
<th>Size</th>
<th>Suitable</th>
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<tr>
<td></td>
<td>Mean= 10.7</td>
<td>Average</td>
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<td></td>
<td>Median=10</td>
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<tr>
<td>Location</td>
<td>3.58</td>
<td>Suitable</td>
</tr>
</tbody>
</table>

Table 4. Condition of variables based on one-sample T-Test

Discussion of Empirical Findings

This paper elaborated on the effect of some variables which are known for their positive relationship with internationalization of SMEs in the context of developing countries. Related research focuses on the impact of organizational factors (firm resources, firm-variables and TMT characteristics) on the internationalization of SMEs. However, the direct impacts of TMT characteristics are growing due to the important role of think-style, making decision mode and other subjective characteristics of managers, particularly, SMEs. Most studies have explored the role of resources as a key factor for internationalization, but paper results show that TMT characteristics, particularly subjective characteristics (0.42), have more effect than other ones on internationalization. Findings of Rundh (2003) and Fillis (2001) support the positive relationship TMT characteristics with internationalization in the subjective characteristics field. Consideration of subjective characteristics helps to understand why subjective characteristics of TMT have a more significant effect than objective characteristics of TMT on internationalization. Because the ICT’s firms are high-tech and novice, so they need to be actuated and stimulated toward international markets. This act requires creativity, innovation, risk-taking and proactiveness. However, more effect of subjective characteristics against objective characteristics that are related to resources was supported by Fillis (2001) because he expressed the successful development of the international firm abroad depends on the personality characteristics of the owner-manager despite resource deficiency.

In the present study, remarkable results were found which indicate the ineffectiveness of firm-related variables on internationalization of SMEs (0.19; 1.93< 1.96) compared with our hypothesis. The ineffectiveness was supported by Autio, Spienza, and Almeida (2000) because they expressed information and knowledge-based firms are born globally and younger firms are most likely to be exporting firms. Indeed, ICT’s firms in Iran are able to be internationalized by fewer employees which merit at a shorter time.
Conclusion

The internationalization of SMEs is a serious subject in all countries and in particular in Iran. the results of many researchers and studies show that one of the most factors associated with the success of Hi-Tech SMEs in the competitive markets is internationalization of SMEs, particularly, in developing countries because of niche market in globally market and other reasons such as lack of resources in these countries. The aim of this research was to elaborate what factors lead to internationalization of SMEs in Iran; therefore, the present paper studied the impact of the independent variables (TMT and firm-related variables) through intermediate variable (Firm’s resources) on the internationalization of SMEs in ICT sector. Analytical results of our research found out (1) positive effects of TMT variables on the internationalization of SMEs, and (2) ineffectiveness of firm-related variables on internationalization of SMEs. Another emphasis of research showed lack of resources (tangible and intangible) is not a barrier in process of internationalization; rather the attitude of TMT is very important factor in process of internationalization of SMEs in Iran. Hence, in Iran as a developing country, it is required to pay more attention to the TMT by improving the entrepreneurial knowledge capability and skills development, networking and establishment of entrepreneurial communities and membership at those in order to maximize the speed of internationalization.

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