The Role of Social Capital and Innovation in SMEs' Success: 
A Partial Least Squares Approach

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ABSTRACT

Small and Medium-Sized Enterprises (SMEs) generate a big proportion of GDP in many countries and even more proportion in job creation. These entities also accounted for many innovations introduced to market during recent years. But the problem is their high failure rates. To prevent their failure, it is crucial to identify factors affecting their performance and leads them to success. One of the most neglected factors is social capital. Social capital is the amount of repeated relationships and ties with others and the mutual trust that people and businesses have. In this article we examined the relationship between social capital and firm success and the mediating role of innovation in this relationship. A questionnaire distributed among 51 firms, located in science and technology parks of Tehran, used as data gathering tool. Data analyzed by Partial Least Squares (PLS) method. Results show that the social capital positively affects the firm success. The mediating role of innovation in the relationship of social capital and firm success is also supported by the data.

KEYWORDS: Social Capital, Success, Partial Least Squares.

1. INTRODUCTION

Today’s growing markets in global environment, requires businesses to reexamine their current views about the factors affecting their performance and leads to their success. Abreast other businesses, Small and medium-sized enterprises¹ are subject to these changes. SMEs need to improve their performance like large businesses [18], this improvement in SMEs performance is crucial for many reasons. Small and medium-sized enterprises are known to have a critical role in national and global economy. In United States of America, these enterprises account for a great majority of businesses and Generate about half of GDP in nonagricultural sector [1]. It is also true in Iran. Iranian SMEs generate the vast majority of job opportunities for country and create a big proportion of non-oil exports. But despite their important role in national economy, these businesses experience high rates of failure, 90 percent of Iranian firms fail even before starting their business[4]. Other countries also face the same problem. 20 percent of new businesses face with failure at their first year of activities and these rate reaches to 66 by their sixth[17].

However failure in this amount is unfavorable and may cause to other problems like bankruptcy and its consequences and resources to be wasted. To prevent this, entrepreneurs need to know what the failure is or at the other hand, what causes them to succeed. Success of businesses can be measured base on their performance indexes factors like financial, customer, internal processes, and innovation and learning factors [24]. This measurement is crucial because it is in relation with many other organizational factors. From a managerial point of view, assessment of organizational activities, control, budgeting, motivation, promotion, rewarding and improvement in organization’s activities is related to measuring performance measurement [5].

Measuring performance does not guarantee the better performance. It is also needed to discover what affects business performance. In traditional management view, the number of employees and financial resources and in sum the tangible resources has been considered as the most important business performance improvers. But in recent years, the view is changed to other intangible resources. One of these intangible but effective resources is Social capital. Because of the specifications of Iranian culture in collective activities, this great resource of business

¹ SMEs

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improvement can be used to lead SMEs to higher success rates and reduce the chance of failure. In this study, we are to examine the role of Social Capital in business Performance and the success of SMEs.

LITERATURE AND HYPOTHESIS

Business success

Business success is defined based on the degree to which the satisfactions of stakeholders are sustained[20]. Success of an organization is measured in past works based on many performance or firm related factors. Organizational survival, has also been considered the precondition of organization’s success [23] . For Kaplan and Norton(1992), these performance indexes factors are financial, customer, internal processes, and innovation and learning factors[24]. these performance related factors can also include firm’s environmental and financial measures[27]. But this view has been changed during past years. Kessler (2007) used four objective and subjective criteria. According to this author, businesses’ success can be measured based on Full-time start-up. No negative change in the number of employees in the period between business establishment and the survey, Subjective assessment of the entrepreneur’s track record to date as ‘successful’ or ‘very successful’ and Subjective assessment of future business development as ‘constant’ or ‘expansive’[26]. Other studies also used other measures to determine the success of businesses. Firms’ Years in business, Career satisfaction, Company gross income and survival are examples of success as used in another study[37]. Some studies have narrowed down their scope of success in performance areas of businesses. In this view, success can take place in innovations of established firms[13]. Employment growth is one of the factors assumed as an index for business success. In this view, successful businesses raise the number of their employees during time [38], not just keeping the existing number of employees as mentioned by Kessler(2007).

However success in SMEs has drawn a specific attention. Omerzel & Antoncic (2008) Used Profitability and Growth of SME to measure success of these firms [32]. The growth of SME is also used as a success factor in Chaston and his colleagues’ work [8]. Survival, Growth and ROE, are also the performance indices, used in another work [41]. For the purpose of this study, we will use survival, growth, profitability and positive change in employees’ number as the measures of SME success.

Social capital, Innovation and Performance

Sociologists can be considered as who first introduced the Social capital[29], but Entrepreneurs and their social connections has studied since 80s[21]. Entrepreneurs need both monetary and information resources to run their businesses[19] and this requires them to get advantage of social networks. These networks introduced as the context that entrepreneurship comes to scene[4]. According to concept of social capital theory, people can access to resources which are not accessible for others depending on their different levels of relations in social networks[30]. Access to resources, however, is a competitive advantage that can affect the performance of businesses. Social capital can be defined as a complex of existing or potential resources which is resulted from possessing relatively constant and institutionalized relations based on mutual acquaintance[43]. In another definition, Social capital is defined as embedded resources in social networks[42]. This is a kind of investment in relations that facilitates the exchange of resources[31]. It can be inferred from the mentioned definitions that:

- Social capital occurs in social networks
- These networks are composed of relationships between people
- Relations are relatively institutionalized
- Mutual acquaintance and agreement is needed
- Resource exchange can occur

Social capital has shown positive effects on business success. Social capital improves the ability of business in gathering resources via which improves performance [16]. The success of business is considered to be depended on the ability of managers in building social networks around the firm. The amount of social capital generated by managers is a function of personal and organizational transactions. In addition, it is highly associated with coordination between firm and its partners. Social capital facilitates the flow of information between departments and improves the ability to start new businesses [19]. Abreast the organizational transactions, Social capital plays an important role in interpersonal transactions in marketplace. According to Fafchamps & Minten (2002), the positive effects of social capital on entrepreneurs’ performance arise from 1. Relations with other entrepreneurs, 2. Relations with Lenders, and 3. Family relationships. Social networks also enable entrepreneurs to work in an atmosphere of trust to exchange information and credit and improves the performance by reducing cost of transactions, which can finally lead to better efficiency results[15]. Therefore, we hypothesize that:

\[ H_1: \text{Social Capital positively affects the success of firm} \]
Because of the important role of SMEs in economy and new technologies, the concept of innovation has drawn much attention in SMEs literature. Despite their limited access to resources, these entities often show good innovation results[35]. Social capital has also shown enhancing effects on innovation. Beside the improvement of innovation, social capital determines the degree to which innovations are radical. This radicalness is more severe when social capital takes the form of network of research[28]. The radicalness of innovations are important because research recently has shown that the social network of firms has positively effect on the innovations of firm and these positive effects are more severe when innovations are radical[7]. This issue shows the positive effect of innovation on firm performance strengthened by the degree of radicalness of innovations. In a narrower view, The value creation in terms of innovations created by the firm is affected by the structural dimension (social interaction ties) and Cognitive dimension (shared vision) of social capital[40],[25]. Another study concludes that creating social capital, has association with the enhances innovation by improving knowledge performance of businesses[11]. In Dakhli and De Clercq (2004) work also partially supports the positive effects of social capital on innovation[12]. Zali, et al. (2011), shown more detailed relations between networks of entrepreneurs and innovation. The global network of entrepreneurs, composed of market, professional, experience, job and private network, positively affects innovation[45]. So the second hypothesis of this study presented as below:

\[ H_2: \text{Social Capital positively affects the innovation of firm} \]

Innovation can be considered as a mediating variable in the relationship between social capital and SMEs’ performance. This is supported that the innovation is affected by social capital. The innovation itself affects the performance of businesses. The effect is so clear that innovation applied as a measure of performance and success in many researches[2],[9],[36],[22]. Innovative SMEs show more growth than non-innovative SMEs. The positive effects of innovation, improves not only the financial measures of performance and success (like Sales Turnover and investment), but also it affects the mostly cited success measure that is employment[39],[34]. Strong relation between innovation and firm performance is also exist due to public R&D[46]. Innovation also enhances firm performance via reinforcing distribution efficiency of products and services[6]. Here we state the third hypothesis of this study as:

\[ H_3: \text{Innovation, positively affects the success of firm} \]

Based on the hypothesized relations, the initial model of this study can be presented as below:

**METHOD**

Sampling framework for this study is the firms located in science and technology parks of Tehran, the capital of Iran. 51 firms were selected for the purpose of this study. Reasons for the selection of the mentioned businesses can be listed as: 1. these firms are innovative and run at the edge of recent knowledge in their specific field, 2. documented records exist about their age, innovations, and the markets they activate and 3. Because of their university based foundation, managers of these businesses cooperate well during the study and data gathering process.

For the purpose of this study, we have three constructs that can be classified as latent variables. We hypothesized three causal relationships between these three construct to determine the direct effect of social capital and its indirect effect via innovation on firm success. Social capital was measured based on Wu (2008) in three dimensions and 8 items 1. Repeated transactions (Our firm has close cooperation with other organizations, our firm cooperates with public and private financial institutions and, our firm has constant relationships with public organizations) 2. Network ties (We have constant transactions with our partners, our firm cooperates actively with

Figure I. Conceptual model of study

**METHODOLOGY**

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other active organizations and, our firm tends more to cooperate with the organizations previously cooperated) and 3. Trust (Our partners are not to harm our firm; our partners never treat us as in an opportunistic manner)[44]. These items measured by five-point Likert scale (from 1=completely disagree; 5=completely agree).

Innovation was measured by 3 items: 1. Innovation in firm’s processes and Organizational activities (How you evaluate your firm innovative in organizational processes, compared to your closest competitor?), 2. Adoption of recent technologies (How you evaluate your firm in leading edge of technologies?), And 3. Differentiated products with competitors (How you evaluate your products/services to be well differentiated compared to your closest competitor)[33].

As presented before, firm success was measured based on: 1. profitability (How do you evaluate your firm’s net profitability compared to your closest competitors), 2. Growth (How do you evaluate the growth of your firm compared to market average) [32], 3. Positive change in employees’ number [26] and 4. Survival (Years of firm actively operates in market)[23].

Analyzing the relationship between constructs of conceptual model performed by the Partial Least Squares (PLS) approach. This approach is one of the Structural equation modeling methods that allows modeling of relationships based on small sample size.

**ANALYSIS AND RESULTS**

Structural equation modeling presents both the relationship between Constructs and items and also the relationship between constructs. The first is called Measurement model and the second is known as structural model. To evaluate the relationship between elements of model, the adequacy of both measurement model and structural model is needed to be obtained. According to Hulland (1999), the quality of measurement model can be obtained based on three indicators:

1. Reliability of measures and items
2. Convergent validity and
3. Discriminant validity(Hulland, 1999).

For Hulland (1999), factor loading computed by the PLS method must be 0.4 and higher to can treated as a reliable item. If any item does not satisfy this condition, should be laid aside from the research procedure and model analyzed without that. Results for items of constructs of this study presented in the table I.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>Social Capital</th>
<th>Innovation</th>
<th>Success</th>
<th>Composite reliability</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Capital</td>
<td>SC1</td>
<td>0.822</td>
<td>0.583</td>
<td>0.561</td>
<td>0.93</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>SC2</td>
<td>0.760</td>
<td>0.488</td>
<td>0.531</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC3</td>
<td>0.840</td>
<td>0.627</td>
<td>0.551</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC4</td>
<td>0.786</td>
<td>0.603</td>
<td>0.491</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC5</td>
<td>0.855</td>
<td>0.619</td>
<td>0.512</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC6</td>
<td>0.746</td>
<td>0.507</td>
<td>0.582</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC7</td>
<td>0.833</td>
<td>0.668</td>
<td>0.600</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC8</td>
<td>0.841</td>
<td>0.694</td>
<td>0.503</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation</td>
<td>IN1</td>
<td>0.575</td>
<td>0.800</td>
<td>0.589</td>
<td>0.85</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>IN2</td>
<td>0.665</td>
<td>0.879</td>
<td>0.516</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IN3</td>
<td>0.611</td>
<td>0.817</td>
<td>0.456</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>SUC1</td>
<td>0.650</td>
<td>0.642</td>
<td>0.798</td>
<td>0.88</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>SUC2</td>
<td>0.344</td>
<td>0.307</td>
<td>0.745</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUC3</td>
<td>0.567</td>
<td>0.534</td>
<td>0.869</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUC4</td>
<td>0.556</td>
<td>0.493</td>
<td>0.884</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As it has shown in table I, factor loading for all items are higher than 0.4 and satisfies the Cut-off point of Hulland (1999). Cronbach’s Alpha for all three measures are higher than 0.6 and Composite reliability for them, meet the minimum of .808[10].

Second measurement model adequacy indicator is Convergent validity. The Average Variance Extracted (AVE) index is used to determine the convergent validity of Constructs. Table II, shows these indexes for the constructs of model of this study.
Table II. Convergent Validity of Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Capital</td>
<td>0.632</td>
</tr>
<tr>
<td>Innovation</td>
<td>0.666</td>
</tr>
<tr>
<td>Success</td>
<td>0.655</td>
</tr>
</tbody>
</table>

AVE for all constructs is higher than the 0.5 [10], bringing support for the convergent validity for all three measures of this study.

The last quality measure for measurement model is Discriminant validity which shows the degree to which the items of a construct explain their original construct better, compared to the other constructs of model. In order to assess the discriminant validity, the square root of AVE for any construct is compared to the correlation of the construct with other constructs of model[3]. Results for discriminant validities of construct, is presented in table III.

Table III. Discriminant validity

<table>
<thead>
<tr>
<th>Construct</th>
<th>social capital</th>
<th>Innovation</th>
<th>Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>social capital</td>
<td>0.795</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation</td>
<td>0.742</td>
<td>0.816</td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>0.667</td>
<td>0.627</td>
<td>0.809</td>
</tr>
</tbody>
</table>

According to these results, the square root of AVE for all constructs is higher than the correlation of construct with other constructs of model. Based on these results, the quality of measurement model is supported from the mentioned three aspects.

After assessment of measurement model, the overall model or structural model should be analyzed from some aspects. To determine the overall goodness of fit (GOF) of model, the geometric mean of average of communalities and average of Rsquares can be used[14] as below:

$$GOF = \sqrt{\text{average Communalities} \times \text{average Rsquares}}$$

For this study, communalities and Rsquares are presented in the table IV.

Table IV. Overall goodness of fit

<table>
<thead>
<tr>
<th>Construct</th>
<th>Communalities</th>
<th>Rsquares</th>
<th>GOF</th>
</tr>
</thead>
<tbody>
<tr>
<td>social capital</td>
<td>0.613</td>
<td></td>
<td>0.5888</td>
</tr>
<tr>
<td>Innovation</td>
<td>0.654</td>
<td>0.480</td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>0.705</td>
<td>0.575</td>
<td></td>
</tr>
</tbody>
</table>

Results show that the GOF for model of this study is 58.88 percent which is more than Cut-Off point of 0.36[3], and good enough to support the global goodness of fit for the model of this study.

Structural relations between constructs of this study show that social capital has a positive (γ = 0.450) and significant (T= 2.781, > 1.96) effect on firm success, bringing support for first hypothesis of this study. Results mean that the more a firm’s social capital in terms of repeated transactions, network ties and trust the firm has, the more likely to gain better success results compared to possessors of less social capital.

Analysis for second hypothesis of this study (H2) revealed that Social capital positively affects the innovation of firms (γ = 0.742 and T= 12.266, > 1.96). That shows that the innovations released by the firm are higher when the aggregate of a firm’s repeated transactions and network ties and the amount of trust between firm and its owners is high and second hypothesis of this study (H2) supported.

Success also is affected positively by the innovations occurs in the firm. Results for testing the third hypothesis of this research show that higher levels of innovation in the firm, causes higher success of firm (γ = 0.293 and T= 2.058, > 1.96). This finding supports the third hypothesis (H3).

Results for hypothesis testing and other coefficients of the structural model, summarized in table below.

Table V. Structural Model -Bootstrap

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Entire Sample estimate</th>
<th>Mean of Subsample</th>
<th>Standard error</th>
<th>T-Statistic</th>
<th>Support / reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social capital</td>
<td>Success</td>
<td>0.45</td>
<td>0.4506</td>
<td>0.1618</td>
<td>2.7805</td>
<td>supported</td>
</tr>
<tr>
<td>Social Capital</td>
<td>Innovation</td>
<td>0.742</td>
<td>0.756</td>
<td>0.0605</td>
<td>12.2663</td>
<td>supported</td>
</tr>
<tr>
<td>Innovation</td>
<td>Success</td>
<td>0.293</td>
<td>0.3023</td>
<td>0.1423</td>
<td>2.0584</td>
<td>supported</td>
</tr>
</tbody>
</table>
Results of hypothesis testing reflected in the figure II.

Figure II. Results of hypothesis testing

Conclusion

In this article we were to investigate the relationship between social capital and firm performance and the mediating role of Innovation in small and medium-sized enterprises. The idea that small firms need to find better ways of improving their performance like large businesses is going to be stronger[18].this need for gaining better performance results from the economic importance of these entities[1]. But in Iran these businesses face great failure[4] like many other countries [17]. The problem is laid in the factors affecting their performance. Social capital is one of the most neglected factors in business performance. Nevertheless, among those few works around the impact of social capital on business success, fewer works considered the innovation as a mediating variable.

The direct effect of social capital on firm success resulted from hypothesis testing in this study. Based on our results, social capital positively affects the success of the firm. These findings are also consistent with the literature reviewed for the purpose of this study. Social capital improves the ability of firm to gather resources to activate[16], enables managers to broaden their transactions, strengthen the ability of firm to coordinate with partners, facilitates the flow of information between departments of firm and improves the start of new businesses by the firm[19].

Social capital also has shown a mediated effect on firm success via Innovation. Social capital causes firm to access to more resources[16], both financial and non-financial[15] including information for research and development of new products/services. simultaneously, the degree to which innovations are radical is determined by the level of the social capital a business possesses[7],[12]. The severe radicalness of innovations resulted from using research networks, causes firm to activate at the edge of technologies and show better performance and success results.

In sum, the social capital is a great capital which managers can gain by setting more and quality ties with other parties in the market, having repetitive transactions with partners and maintaining high level of trust between firm and its stakeholders and other partners. Results of possessing such setting, based on the results of this study, can be better performance, innovative products and services and finally higher success probability and less failure chance.

Finally it is recommended to managers of firms that by creating good ties with other parties in the market, developing old methods of transactions to repeated and efficient transaction methods and building and maintaining mutual trust between the firm and market role players, lead their business toward success and reduce the chance of failure for these entities.

REFERENCES


