Validation Scale for Measuring Social Capital in Universities

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ABSTRACT
Background: The higher education system has caused a great deal of changes in social, economic and political fields. In addition, universities are social systems which have been known as the center of knowledge and information as well as thinking bases for leading societies. In today’s complex, competitive world, social capital is considered as a competitive advantage for organizations. Objective: The purpose of the present study is to validate a scale for measuring the social capital in universities. The population of the study included all the staffs who were employed in branches of Islamic Azad University in Iran (administrative region 8, 12). The research sample consisted of 595 staffs randomly selected from 6 branches and educational centers using stratified random sampling. The research instrument was Abili and Abilis’ [1] social capital questionnaire which consisted of 24 items with three underlying constructs of cognitive dimension, relational dimension, and structural dimension with Cronbach Alpha of 0.94. Results: The results of factor analysis and principal components analysis, using a varimax rotation, showed that building blocks of social capital includes cognitive (Items 1, 2, 3, 4, 5, and 6), relational (Items 7, 8, 9, 10, 11, 12, and 13), and structural (Items 15, 16, 17, 18, 19, 20, 21, and 22). Conclusion: In this study, structural dimension has the highest level of contribution to the formation of social capital in universities.

INTRODUCTION
Higher education system is one of the most important and complicated products of human achievements. In recent decades, the changes have revolutionized the social systems and organizations; hence, scientific centers, in general, and universities, in particular, are more addressed to satisfy new expectations. Regarding the key role of higher education, Green [18], explains that higher education provides the technical knowledge and skill that industry requires it in future and the fact that governments depend on this knowledge to have an effective and strategic programming. Because of profound changes which have affected our today’s world, the universities, even more than ever, have been in the focus of prolonged international and social discussions which devote to the goals and ideals of universities as well as their roles in guidance and leadership [16].

Literature Review:
The evolution from an industrial society to a knowledge society is characterized by the rapid growth of intangible assets and social activities with regard to tangible resources and physical based processes [21]. Although intuitive, the notion of social capital is difficult to define, particularly at aggregate levels, it could be defined as a sum of current and potential resources incorporated in, available in and derived from the network of relations possessed by an individual or social unity [22]. From a corporative point of view, which means that social unity is the organization, social capital could be understood, according to Bourdieu and Wacquant [8], as a sum of resources accumulated in the organization by a stable network of intraorganizational relationships. In the same vision, Coleman [5], defines the concept as the appropriateness of social structure, strategically legitimizied in the organization. Coleman, J. [13], introduce the term organizational social capital as an attribute of a social entity, and argue that the translation of individual into organizational social capital is crucial for an organization to reap the benefits that develop through its employees’ social exchanges. In this vein, organizational social capital can be understood as a resource reflecting the character of social relations within the firm that is realized through members’ levels of collective goal orientation and shared trust.

The concepts of social capital seem to have been classified into three different groups:

- Cognitive dimension: The cognitive dimension of social capital refers to attributes like a mutual belief or shared paradigm that promotes a common understanding of collective goals and the proper ways of acting in
the social environment [34]. The social capital’s cognitive dimension may enable knowledge sharing in the sense that stories, shared language, customs and traditions can bridge the tacit-explicit division as well as division in terms of; for example, old-timers-newcomers [19]. The cognitive dimension refers to those resources that provide shared representations, interpretations, and systems of meaning among parties. This includes shared language and codes as well as shared narratives, which increase the mutual understanding among individuals and help members to communicate more effectively [12].

- Structural dimension: The structural dimension of social capital focuses mainly on the density of networks and on bridging structural holes (Burt, 1992; Wasserman & Faust, 1994). Structural social capital facilitates information sharing, and collective action and decision making through established roles, social networks and other social structures supplemented by rules, procedures and prerequisites [35].

- Relation dimension: McDonald [26], has tried to include a motivational element into the design of expertise recommender systems. He augmented an expert recommendation system with social networks. So the recommender system would suggest first those experts who had the closest social ties with the person asking.

Researchers highlight social capital as being a crucial resource for accessing, exploiting and leveraging individual and collective knowledge, thereby providing its strategic value for organizations [11]; [30]. Empirical studies have shown social capital to positively influence knowledge search [29], product innovation [34], and inter-unit feedback-seeking [6]. From a conceptual perspective, social capital is argued to affect the creation of intellectual capital due to the social resources (e.g., access to information) embedded within social capital [28].

Several findings of the studies show that social capital facilitates the creation of new intellectual capital in organizations [32]; [37]; [10]; [29], [7], [31]. Therefore, in order to increase social capital in universities, it should first be measured through a valid instrument. Consequently, necessary managerial actions should be taken. Taking social capital variable as a guarantee to survive and a competitive advantage for universities and the lack of a valid measurement tool for social capital and its components in universities were the main motives of the present research to design a valid instrument that identifies the constructs which form the social capital, measure the variable of social capital in each of the underlying dimensions, and find a way to strengthen the social capital in universities.

The purpose of the present study is to validate a scale for measuring the social capital of universities.

**MATERIALS AND METHODS**

**Research questions:**
- What are the indexes which construct the social capital in universities?
- What items are included in each index?
- Which of these indexes has more contribution in forming social capital in universities?

**Method of the study:**

The population of the study includes all the staffs who work in 6 branches and educational centers of Islamic Azad University. In order to estimate the least volume of sample, \( n = \frac{z^2 \sigma^2}{d^2} \) formula was used. The research sample consisted of 595 staffs randomly selected from 6 branches and educational centers using stratified random sampling.

The research instrument was Abili and Abilis’ (2010) social capital questionnaire which consisted of 24 items with three underlying constructs of cognitive dimension (Items 1, 5, 10, 15, 18, and 22), relational dimension (Items 2, 4, 6, 7, 8, 11, 13, 14, 17, 23, and 24), and structural dimension (Items 3, 9, 12, 16, 19, 20 and 21), with Cronbach Alpha of 0.94.

The researcher has used factor analysis and principal components analysis, using a varimax rotation in order to identify the underlying constructs of social capital.

**Results:**

The preliminary analysis of different indexes of central tendency, variability, and the distribution of the staff’s scores obtained from the questionnaire of social capital and its 3 components show that the distribution of the staff’s scores in the given variables have tendency toward normality.

To answer the research questions, factor analysis procedure was applied. The first step in factor analysis process which is also its first assumption is checking missing data. In this step, subjects number 178, 404, and 565 including three persons altogether were eliminated from statistical analysis so that the factor analysis assumption under the heading of at least missing (0.02) could be observed in each subject. Hence, in this research no item has been eliminated except three subjects. And the given situation shows that there is no need to omit some of the items and it is possible to follow the process of Factor Analysis while having all the items. The second factor analysis assumption denotes enough sample size. In this research, Kaiser- Meyer- Olkin
(KMO) equals 0.955 consequently, the sample size is sufficient. The third factor analysis assumption is normality of multi-variation distribution known as Sphericity. As the Approximate Chi Square equalled 70840548 with the 276 degrees of freedom, it can be stated that the amount of the Approximate Chi Square is statistically significant and the given statistics is significant at least at the 0.999 level of confidence ($\alpha = 0.001$).

According to component matrix of items we can determine both the specific factor of each item and its position in the related factor based on loading factor. After studying table of component matrix precisely, the researcher used Rotation Method so that loading factor of each item can be determined stressing at recognition of each item in one of the 3 factors. Reiterating that in this research, the researcher has followed Exploratory Factor Analysis and has used Principal Component Methods from Extraction of Factors, Varimax Method was applied (table 1). According to Varimax, the researcher was able to determine both the factor to which the item belongs after rotation and the position of each item in related factor with reference to loading factor. This table shows in which factor each item has been located after the rotation. For instance, Items 1, 2, 3, 4 5 and 6 have been located in the third factor (cognitive dimension). To fulfill the purposes of the study to determine the indexes of social capital and its components, the underlying items, and the index with the highest contribution, eventually, 3 factors have been extracted from rotation of factor analysis; in fact, social capital consists of 3 factors respectively as follows: structural dimension, relational dimension, and cognitive dimension. The table also indicates that structural dimension has the highest level of contribution to the formation of social capital in universities.

Table 1: Rotated Component Matrix

<table>
<thead>
<tr>
<th>Factors</th>
<th>Index</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Factor</td>
<td>Structural dimension</td>
<td>15, 16, 17, 18, 19, 20, 21, 22</td>
</tr>
<tr>
<td>Second Factor</td>
<td>Relational dimension</td>
<td>7, 8, 9, 10, 11, 12, 13</td>
</tr>
<tr>
<td>Third Factor</td>
<td>Cognitive dimension</td>
<td>1, 2, 3, 4, 5, 6</td>
</tr>
</tbody>
</table>

Table 2: Results of Factor Analysis of Social Capital Construct

**Discussion and Conclusions:**
**Discussion:**

The higher education system has caused a great deal of changes in social, economic and political fields. In addition, universities are social systems which have been known as the centers of knowledge and information as
well as the thinking bases for leading societies. Social capital is a commodity necessary to guarantee organizational survival and universities' competitive advantage in the complex and competitive world.

In this study, in order to assess the social capital, Abili [1], social capital questionnaire was applied which contains 3 scales of structural dimension, relational dimension, and cognitive dimension. The results of factor analysis and principal components analysis, using a varimax rotation, showed that building blocks of social capital includes cognitive, relational, and structural. The 3 factors which were used to assess the social capital in this study agree with the theories and studies carried out in and out of Iran. Some of the similar studies done in the same field are as follows: Azizi [4], Pérez-Luño et al [30], Gorton[17], Sinha [33], Ameri Dahabady, A. [3], Yang [38], Merlo et al [27], Sinha [33], Jafariyan [20], and Nahapet and Ghoshal[28]. In order to assess the social capital, they have also administered the questionnaires covering the structural, relational and cognitive dimensions.

Conclusion:

Regarding the research background and the related theories, the three factors involved in social capital show that the social capital scale almost generally covers the underlying factors. Hence, it can be concluded that the results obtained from the administration of the tool and the level of social capital in universities determined by the application of the tool as well as its validity are generally acceptable. The increasing need of universities for determining the level of social capital from the one side and the lack of valid instrument of the social capital from the other side were the main causes of doing the present study. In addition, the research was done to identify the precise and complete dimensions, aspects and factors which make social capital through measuring the validity of a scale which was designed and administered to the staff of higher education institutions. In this way, it is possible to locate the theoretical position of social capital and identify the importance of the variables which have been introduced by different theories as the factors which form social capital. The ultimate purpose of the study, then, is to design and administer a valid tool which can determine the extent of social capital in higher education institutions.

According to Eurostat [15], knowledge society is characterized by the relevant growing of intangible assets and social activities; due to the above-mentioned factors, social capital is one of the forms of capital of the World Bank classification that is acquiring the greatest level of importance. As Lesser and Cothrel [25], note that, social activities have an eminent role in the knowledge-based economy. They are a set of critical resources that enable the creation of essential competences. Moreover, social activities increase the capacities for the creation, sharing and management of knowledge generating sustainable competitive advantages [9]. Bueno’s findings are in line with those presented by Adler and Kwon, in this respect, social capital provides the organization with values such as solidarity and cooperation, especially when interactions fix patterns of obligations and expectations based on rules of reciprocity and equality [2], As Lazerson [23], remarks that social capital solves conflicts, improves consensus with surrounding organizations, enhances the understanding with public administration, supports the development of business strategy, mitigates the imperfections of information in the market, and reduces transaction costs.

According to Emdady M, and et al [14], social capital represents the value of human connections based on confidence and on personal networks with a community vocation. Without social capital innovation, the sharing of knowledge and productivity can be dramatically reduced. According to Koening [22], social capital facilitates the behavior rules of the organization, reducing transaction costs and promoting cooperation. These reasons justify the introduction of social capital into intellectual capital.

The questionnaire administered here also enjoys some psychoanalytic features, specifically construct validity. These are some of the reasons which lead the researcher to recommend that the same study be carried out not only in Islamic Azad University but in all other universities and its findings, in turn, be taken into consideration in those universities. In addition, with regard to the research findings of the present research and in order to increase the social capital in Islamic Azad Universities, it is suggested to increase the different dimensions of social capital including structural, relational and cognitive aspects, moreover, regarding the dominant and leading role of the structural dimension in building the social capital at universities, following suggestions are offered.

- The employees' ideas should be welcomed.
- The staff members receive constructive and legitimate criticism among themselves.
- While confronted by problems, efficient and reliable methods are devised and followed.
- Employees express and share the viewpoints and they also have access to the required information in order to reach informed decision.
- The staff members facilitate the inter-unit assistance and help among themselves.
- Employees voluntarily provide the required information for their colleagues.
- The close cooperation is encouraged in terms of the organizational issues and problems.
In conclusion, with regard to the crucial importance of the social capital as a competitive advantage, it's proposed that similar studies are carried out in different universities of the world and the newly-proposed results in this research can be effectively employed to enhance the social capital.

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