

A Study of the Effects of Social Capital on Organizational Innovation

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Abstract:

The present study aimed to examine the effects of social capital on organizational innovation in auto part makers companies. The experts of auto part makers companies (approximately 540 people) formed the study population and for sampling a stratified random sampling method has been applied. 225 people were selected as samples by using Cochran formula. Data were collected by means of distributing questionnaire and data analysis was done in two parts by using structural equation modeling and also LISREL 8.8 software, the two parts are: measurement model and structural part. In the first part the technical characteristics of the questionnaire were examined and have made necessary corrections and in the second part the structural coefficients of the model were used to examine the research hypotheses. The research's results suggest that social capital has a positive and significant effect on the organizational innovation in the study population so as to establish and strengthen innovation in organization should focus on the social capital's aspects and attempt for coordination of the cognitive, structural and relational aspects of social capital in organizations.

Keywords: social capital, organizational innovations, structural aspect, relational aspect, cognitive aspect.

1. Introduction

In recent decades, changes in the field of growing competition and environmental uncertainty has caused large organizations attach greater importance to the issues such as creativity and innovation in organizational levels. In several studies, researchers have suggested that innovation has played a fundamental role in economic development and it is considered as a main source for competitive advantage (Gumusluoglu and Ilsev 2009, Afshari et al, 2011). Several factors influenced innovation process, one of these factors is social environment, such as trust, norms, etc that are jointly known as social capital and has attracted a lot of interest; indeed social capital is referred as the innovation

infrastructure (Kaska 2009). Social capital is regarded as a fundamental concept in understanding organizational innovation, creativity, and dynamisms because of influencing the process of innovation, creativity, team learning, etc and facilitating them (Goyal and Akhilesh 2007). Florida et al (2002) state “when people belong to the community that has a high level of social capital , they tend to work together and are risky and this rich social capital caused to improve innovative activities among them”. Therefore the main issue of this study is determination of the role of various aspects of social capital in organizational innovation which are cognitive, relational and structural in this study and increase innovation in organization by identifying the relationship between them.

2. Literature Research

2.1 Social Capital

The concept of social capital has increasingly attracted the attention of scholars in different areas and it is used in different fields including sociology, anthropology, political science, economics and organizational studies (Alguezaui & Filieri, 2010). Lynch and Kapala (1997), have introduced social capital as the capital accumulation and networks that creates social cohesion, social commitment, and thus a kind of satisfaction in the organization. Nahapiet and Ghoshal (1998), see social capital as a set of valuable resources

that are embedded and raised within a network of personal and organizational relationships.

Nahapiet and Ghoshal (1998), consider three aspects for social capital: relational, cognitive, and structural (Carey et al., 2011). They expressed relational aspect as a kind of personal relationships that people interact with each other because of their experience of interactions. Its most important aspects are: trust, norms, requirements and expectations, and identity. According to the Nahapiet and Ghoshal's idea the cognitive aspect of social capital includes goals, vision, and shared values between agents in a social system. That enables them to get data and classify it into perceptual categories. The

cognitive aspect of social capital reflects the fact that as long as people are interacting with each other as a part of a group they are better able to develop the set of shared goals and ideas for organization. Shared goals and ideas create values which will help to promote integration and create shared responsibility (Leana & pil, 2006).

Based on the Nahapiet and Ghoshal vision, structural aspect is a combination of the relationship between individuals and units, that is to whom and how do they connect. Also Koka and Prescott (2002), studied social capital with a wide range of visions including network characteristics such as association of information and knowledge and social interactions power (Lawson & Cousins 2008); indeed structural capital includes social networks in two forms: formal and informal (Carey et al., 2011).

2.2 Innovation

Innovation is very important for companies and institutes because it can provide a sustainable competitive advantage for them (Weerawardena et al., 2006). Innovation is a realized creative idea (Higgins, 1999). Innovation is a new dynamic process in a given organization and has two aspects: newness and being innovative (Cheung et al., 2012). Innovation is any new idea, method, or goal that is adopted by an organization and eventually runs successfully in the market. Nowadays, innovation is considered as a base of trade achievements in the twenty-first century. Innovation means leaving old patterns and poses the most potential for the organization's growth and expansion (Zheng, 2008). In sum it can be said that innovation is new, productive, and successful changes in the market that will lead to improve organizational performance level.

If an organization is looking for survive and grow, should invent in different types of innovation. Because different types of innovation affected the organization in different ways and cause different results (Siguaw et al., 2006). Several scholars have suggested the different indices of innovation, in an assortment the organizational innovation's indices are: productive innovation that is the provider of the production tools and refers to develop and offer new and improved products and services, administration innovation that is adoption of new or improved methods of production or delivery services, and process innovation that refers to new organizational methods, politics, and forms (Jimenez et al., 2008).

Finally it can be said that social capital facilitates innovation through enhancing and encouraging

cooperation and coordination among various people and units (Nahapiet & Ghoshal, 1998; Brooks & Nafukho, 2006; Goyal & Ahkilesh, 2007; Doh & Acs; 2010). Social capital can influence the organization performance by creating innovation and sharing knowledge, and reducing transaction cost, etc.

Kaska et al (2007) in a study showed that social capital has positive effect on innovation activities, especially its structural aspects in the form of formal and informal networks and civic participation. Morales and Fernandez (2010), in a study titled 'Social Networks: Effects of Social Capital on Firm Innovation' concluded that there is a positive relationship between sectors continuity, social capital and innovation that can suggest good instruction for politicians and individual entrepreneurs. Alguezaui and Filieri (2010), examined the role of social capital on innovation and resulted that social capital's effect on innovation in organization can be both positive and negative. Luno et al (2011), in a research also pointed out that how social capital and knowledge can effect innovation, they concluded that high level combination of social capital with implied knowledge, will lead organization toward innovation. Laursen et al (2012), in a study titled 'Regions Matters: How Localized Social Capital Affects Innovation and External Knowledge Acquisition' concluded that high level of social capital causes higher levels of innovation.

Examining literature research suggests that social capital as an effective and influential factor is associated with innovation. By examining the aspects of each of the two main structures (social capital and organizational innovation) the research hypotheses have been developed in this way:

The primary hypothesis (Ha): social capital effects organizational innovation.

Sub-hypothesis 1 (Hb1): communication and trust between individuals in an organization effects the organizational innovation.

Sub-hypothesis 2 (Hb2): the shared goals and idea of the individuals in an organization effect organizational innovation.

Sub-hypothesis 3 (Hb3): the structural aspect of organization effects the organizational innovation.

Theoretical framework

Theoretical framework of the study has been prepared according to the main objective of the study that is the effects of social capital on organizational

innovation and also research hypotheses and is shown below:

3. Methodology

The present study is practical based on the goal, and also is descriptive-survey based on the terms applied to obtain data, so the poll by people involved in problem (experts working in the auto part makers companies) is used to prove the hypotheses and implementation of findings. Also, it is quantitative based on the collected data, in this regard the questionnaires are distributed to get feedback of experts working in auto part companies and the results have been listed. Since this study examined a cause and effect relationship, the research methodology is causal based on the relationship between variables that Structural Equation Model is used for studying all aspects of conceptual model. This model is the best tool for analyzing the researches that their observed variables have measurement error and also the relationships between variables is complicated. By using this model, on the one hand the accuracy of indices or observed variables can be measured and on the other hand the cause and effect relationship between latent variables and the amount of explained variance can be examined. Structural equation model consists of two parts: measurement model and structural model, and model's variables are divided into two categories: latent variable and observed variable that social capital and organizational innovation are hidden variables and relational, cognitive, and structural aspects are observed variables and are considered as social capital indices. Beside, productive, process and administrative innovation are observed variables that are considered as the criteria for measuring organizational innovation.

The study population consisted of experts working in auto part makers companies in Iran who are about 540 people. The companies were selected as categories in four areas of Iran, east, west, north, and south, based on a stratified random sampling and each category were randomly sampled and eventually 225 people were selected as the sample size by using Cochran formula.

3.1 Data collecting tools: validity and reliability

For measuring social capital variables, data are collected by using Nahapiet and Ghoshal's (1998), standard questionnaire and likert seven-point scale. This questionnaire has a total of 19 questions, 4 questions related to structural aspect, 12 questions related to relational aspect and finally 4 questions related to cognitive aspect, respectively. On the other hand, Jimenez et al (2008), standard questionnaire and five-grade scale is used to measure organizational innovation.

This questionnaire has a total of 9 questions, the first 3 questions related to productive innovation, the 3 next questions related to process innovation, and 3 final questions related to administrative innovation, respectively.

To calculate the reliability of the questionnaire, Cronbach's alpha reliability and composite reliability coefficient were used and each value for each aspect is presented in table 1.

The value of alpha and composite reliability coefficients higher than 0.7 suggested measurement tools have an acceptable reliability. Therefore the questionnaire of this study has an acceptable reliability. After collecting data, at first, conformity factor analysis was done by using Spss 20 software, and none of the factors were eliminated because obtained shared values related to all factors in Communalities' table were greater than 5. In the next step, confirmatory factor analysis was applied by using Lisrel 8.8 to evaluate measurement model.

If the following conditions are satisfied, the model's fitting will be appropriate: - the significance level obtained from chi-square (p-value) is more than 0.05. - The ratio of chi-square to freedom is less than 3. - The value of root mean square error of approximation (RMSA) is less than 0/05. - The value of comparative fit index (CFI), goodness of fit index (GFI), the adjusted goodness of fit index (AGFI) and non-normal fit index (NNFI) is greater than 6. Figure 2a, presents the measurement model of the research with standardized coefficients, and figure 2b shows the same model with t coefficients. As these two pictures suggest, the amount of p-value is 0.07, root mean square error of approximation is 0.04 and the ratio of chi-square to freedom has been less than 3. Also, figure 2b shows that t coefficients are in range of -1.96 to +1.96 and it does not need to remove any aspect. On the other hand, other output results of the Lisrel suggested that the value of CFI is 0.923; the value of calculated Z is greater 1.96 and the value of GFI, AGFI ARE 0.913 and 0.940. Therefore measurement models related to the two main structures have acceptable fit.

3.2 Data analysis and findings

The cause and effect relationship between social capital and organizational innovation in the form of a structural model has been measured.

Also the relationship between social capital and organizational innovation is direct and significant, that is social capital has a positive effect on organizational innovation, will be fully explained in conclusion.

4. Conclusion and recommendation

As mentioned in the theoretical study, organizations need actuators and various driving for implementing innovation. Social capital of organization is one of these factors. Organizations by means of strengthening their cognitive, structural and capital aspect facilitate the conditions for implementing innovation in organization. In two main hypotheses of the research, it was concluded that the social capital has a positive and significant effect on organizational innovation. This hypothesis by confirming the sub-hypotheses is quitly confirmed, as if confirmed the effect of each aspect of social capital on organizational innovation. The direct and significant effect of social capital on organizational innovation is proved. Thus the first sub-hypothesis suggests the positive and significant effect of relational aspect of social capital on the organizational innovation. It means that the condition for innovation will be more provided by increasing the level of interactions and improving the social network of organization's staff. The second sub-hypothesis suggested the cognitive aspect of social capital has positive and significant effect on

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The Lisrel's output confirms the primary and also the sub-hypotheses and they are shown in table 2. Since all the t values are significant it will prove all hypotheses.

organization's innovation. It means that the shared goals and ideas of the organization's people through cognitive value caused innovation in organization. In the third sub-hypothesis the effect of structural aspect of social capital on organization's innovation showed that the elements of structural aspects of social capital such as network size have a significant effect on innovation.

Hence, due to the fact that social capital – as the most important feature of organization- leads to innovation, it is necessary that managers become conscious of managing the social capital of their organizations by assessing, measuring, and improving its level so by this way in addition to the competitive advantage, can increase the efficiency and effectiveness of organization performance. Also considering that many other factors influence innovation, the researcher in their future studies can examine the effect of each of these factors on organizational innovation and determine the importance of each of them more clear. And finally the next studies can also examine the factors that play the role of a moderator in the relationship between social capital and organizational innovation.

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Table 1: the reliability of measurement tools

Organizational Innovation			Social Capital			Variables
Administrative	Process	Product	Cognitive	Relational	Structural	
0.78	0.75	0.77	0.85	0.81	0.85	Cronbach's alpha
0.84	0.79	0.80	0.89	0.85	0.86	CR

Table 2: confirms the primary and also the sub-hypotheses

Result	t-value	standardized coefficient	hypotheses
Accept	21.15	0.77	social capital & organizational innovation
$\chi^2 = 22.85$	df=8	RMSEA= 0.043	GFI= 0.92 AGFI= 0.92
Accept	33.18	0.82	Structural & organizational innovation
Accept	19.16	0.76	Relational & organizational innovation
Accept	33.17	0.80	Cognitive & organizational innovation
$\chi^2 = 22.21$	df=8	RMSEA= 0.041	GFI= 0.94 AGFI= 0.92

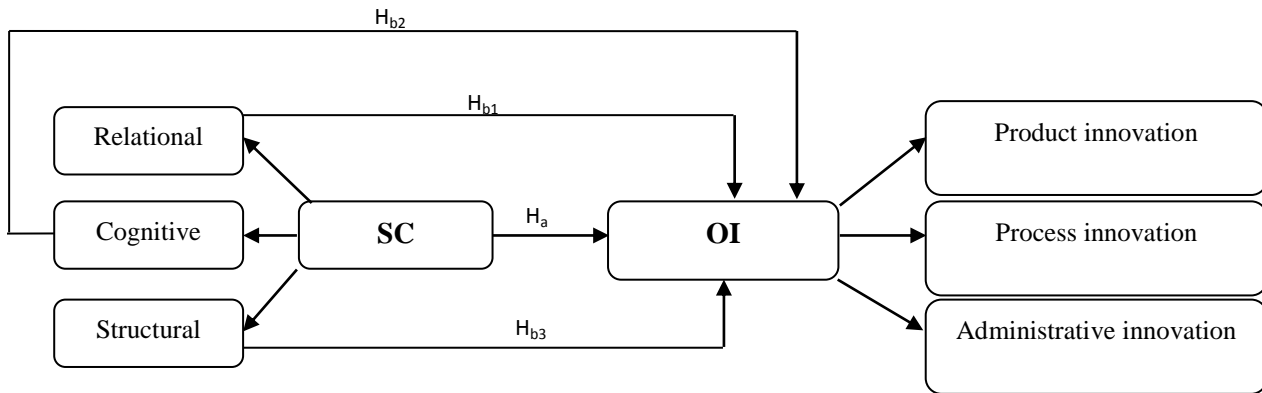
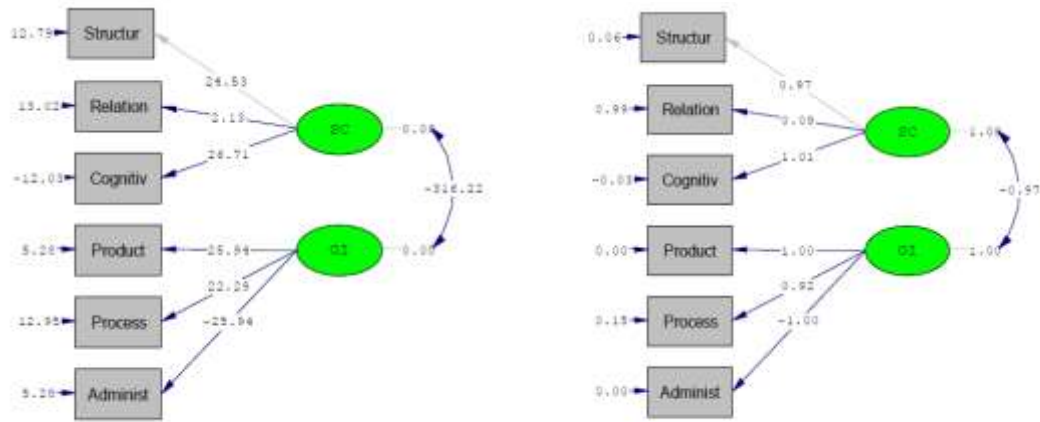


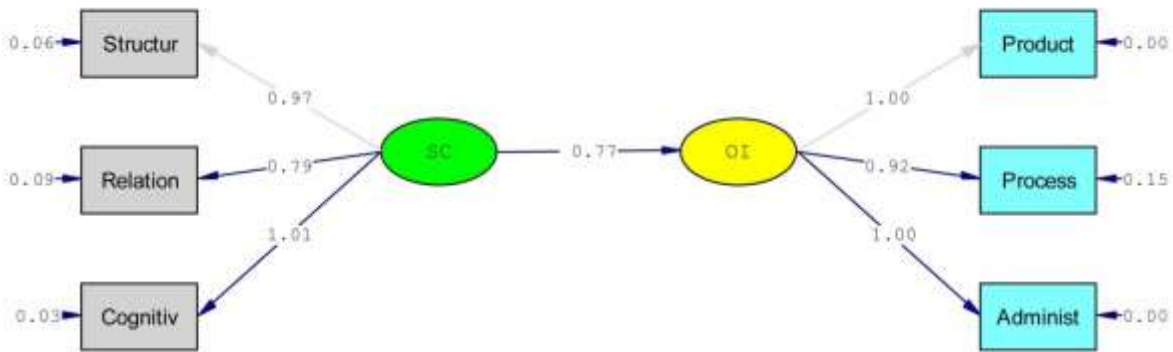
Figure1: conceptual model



Chi-Square=23.8, df=8, P-value=0.07000, RMSEA=0.040 Chi-Square=23.8, df=8, P-value=0.07000, RMSEA=0.040

Figure 2b: measurement model with t

Figure 2a: measurement models with



Chi-Square=22.85, df=8, P-value=0.00000, RMSEA=0.043

Figure 3: structural equation model (standardized coefficients)