The Effect of Social Capital on Innovation and Creativity

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Abstract: The purpose of this study is the role of internal social capital in organizational innovation. In order to do research survey method was used. A questionnaire was used to collect research data. The standard questionnaire that its validity was confirmed according to the experts. Its reliability was confirmed by Cronbach's alpha. questionnaire was distributed among the population of 120 Family and nonfamily companies of which 105 questionnaires were collected. Collected data were analyzed by Spss software. Collected data were analyzed by Spss software. The findings indicate that social capital and organizational innovation in nonfamily firms, there is a positive correlation. Among subscales of social capital the cognitive structure of in nonfamily firms close relationship with organizational innovation.

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Introduction

First, as a social issue in the field of domestic and innovation organizations pay. Then the importance of the topic and offered and more purpose, questions and hypotheses and then paid to the definition of the term.

Innovation requires collective effort of all individuals and units within the organization and streamline organizational social capital through collective action to create innovation in an organization (Chen, 2008). The reason for this is that individuals, groups and organizations in the cause of knowledge and relationships and high level of participation and the successful application of new ideas are raised (brooks,2006) In such organizations is encouraging and stimulating collective action guide and coordinate internal, continuous pursuit of common goals guarantees (kootamaki ، 2004).

Social capital is creating competitive advantage (Foosel ، 2006). Innovation Is introduced as one of the main factors in maintaining a competitive management and long term organizational success in the competitive markets. (zang, 2008) and organizations that have the capacity to innovate faster than without innovation organizations will be able to respond to environmental challenges (segara, 2008).

Many studies have been done on the relationship between social capital and innovation, But none in relation to internal social capital and innovation organizations have not discussed. That's why we decided to play the role of social capital in organizational innovation examine.

Records management

Varalinv 2014 in a study entitled The role of internal social capital in innovation in family firms did they reached to this conclusion, non-family social capital by creating a new line like family social capital on organizational innovation is effective and the relationship between family and non-family members, organizational innovation makes it easy and social capital in both direct and positive effects on innovation.

Books in 2009 in a paper entitled "social capital innovation performance in developed countries" to analyze the relationship between the features, characteristics and performance of network innovation. His findings showed that the size of networks and social capital has significant positive impact on innovation performance. Thus, the networks facilitate the interaction between individuals and groups, increased their level of cooperation and coordination and by creating new opportunities for them to improve their innovation performance.

Rezvani In a study in 1390 entitled "The role of social capital organization, attitude toward organizational innovation" in the knowledge-based companies pay descriptive and correlational at Tehran University Science and Technology Park to the conclusion that organizational social capital and organizational innovation orientation, plays a effective and significant role and the relational dimension of social capital is a predictor of willingness to innovate. But cognitive and social capital cannot be a predictor for organizational innovation orientation.

In a study conducted in 2006, Lena and pill, the impact of social capital on innovation activities, to the conclusion that the dimensions of social capital, each with different effects and difference lays on innovative activities and institutional trust by spending more time on innovative activities, facilitate innovation.

Pound (2005) in a study entitled "Social capital and structural aspects of the innovation" concluded that human capital - social and organizational ability and incremental innovation capacity to affect and increase their and Casa (2006) showed social capital especially structural aspects, in the form of non-formal and informal networks of civic engagement has a positive impact on innovation activities.

In study Saeida Ardakani and colleagues in 1392 as identify factors affecting the development of individual innovations carried out in Yazd, concluded that seven factors (interaction, leadership, communication, knowledge, integrity, institutional support and incentives) has a significant effect on innovation and among these variables, knowledge is more effective.

In a study that Namazi and Kerman in 1387 under the impact of ownership on the performance of companies listed on the Stock Exchange did, concluded that Between institutional ownership and firm performance, there is a significant negative relationship. Also a significant relationship was observed between private ownership and performance.

Research method

In the present study researcher tries what is without any intervention or report concludes and concrete results from his position (Naderi and Seafe Naraghi,1384) in this research given that the real objective and systematic description of the role of social capital in family and nonfamily internal organizational innovation is line research is descriptive.

Research hypothesis

1. There is a significant relationship between social capital and nonfamily ownership and quality of work.
2. There is a significant relationship between social capital and nonfamily ownership.
3. There is a significant relationship between social capital and nonfamily ownership with profit.

The data collection tool

The questionnaire has two parts, the first part was related to demographic data and the second part contains 15 questions that 6 the first question was related to family firms which has three dimensions: cognitive, behavioral, relational, respectively. And six second question is related to nonfamily firms 6 the second question related to nonfamily companies that has three dimensions: cognitive, behavioral and relational been and the last three questions, family and nonfamily firms have been common questions which was conducted using a Likert scale of five options. Options each question, including completely disagree, disagree, unique, agree and strongly agree is that respectively, from one to five was scored.

Table 1: relevant questions

Factors	questions
Nonfamily factor	questions 1 to 5
Common factor of family and nonfamily	questions 6 to 8

Reliability and Validity of tools

In order to determine the validity of questionnaire used reviews of teachers that by giving questionnaires to a number of professors, verified questionnaire was conducted. Reliability or validity, the degree to which measuring tools, variable, or what the concept should be measured to measure. Reflect concept review and reliability of the questionnaire was based on foreign research has been in the range of 0.7 that of course, the researchers also the reliability of the 0.7 gain, the Cronbakh's alpha coefficient. Reliability, is an expression of Stability results In performing this re-test, to repeat a measurement method. This means that The result is the same answer, every time the variable that is measured with the same tools. Reliability is an important tool to assess its quality (Abedi, 145:2008).

Method of data collection

After verification of the questionnaire, data were collected, the method of collecting information free. Information free refers to the methods in which the researcher to collect information is forced to go the outside environment and referring to people or the environment, and communicate directly with the unit of analysis, that's mean people, ranging from the provinces, institutions, settlements, cases, etc, to collect intended information. (Imani & Ghafarinasab, 2010), In Tehran companies, questionnaire, the email gets to the people and in the same email, they will be asked to complete questionnaires. In state of Yazd with referring to companies and giving questionnaires to patients action was to collected of questionnaire after its completion by them.

Method of decomposition and analysis of data

In this study, decomposition and statistical analysis was based on the level and analyzed using SPSS software version 17 was conducted.

Stability of questionnaire

Cronbakh's alpha was used to determine the reliability of questionnaire. If alpha is greater than 0.7, the questionnaire has acceptable reliability (Moomeni, 2007).

The table, offers Cronbakh's alpha and the number of questions in the questionnaire, and questionnaire variables. Since the Cronbakh's alpha of the questionnaire and variables is greater than 0.7, Therefore, the test is proved to be reliable.

Method of data analysis

In this research, describe the demographic data research using descriptive statistics, frequency table and pie and bar charts described; The data are

analyzed using software SPSS 18, confirmed relationships between variables and factors through modeling techniques PLS is determined using the software smart PLS2 (Is a technology-driven modeling and variance path and to study theories and simultaneously measure provides). This method can be used in the sample volume is small or complex models or distribution of variables is not normal. And In order to test the hypothesis with the aim of at the same time assessing relationships, will be used direct or indirect, between variables.

Table 2: Calculation of the reliability of the questionnaire related questions

Cronbakh's alpha	Number of questions	No. Questions of questionnaire	Variable
0/794	5	1 to 5	Non Family social capital (NFSC)
0/717	3	6 to 8	Innovation Family firm (FFI)
0/845	8		The entire questionnaire

Table 3: Test of normality of variables

	SDFCS	CDFCS	RDNFCS	CDNFCS	FCS	FFI
Number	105	105	105	105	105	105
Z	733/2	386/3	700/2	763/2	776/1	125/3
sig	000/0	000/0	000/0	000/0	004/0	000/0

As a result, use of the Kolmogorov-Smirnov test for all variables, Due to the significant level that is smaller than 0.05, So confidence 95% level, assuming normal is rejected. Therefore, all variables are abnormal

Descriptive Statistics

In this part of the statistical analysis and decomposition, to examines how statistical sample distribution by in terms of variables such as gender, status, marital status, education level, work experience and age are discussed.

Table 4: Demographic

Percent	Abundance	group	Variable
81/9	86	Man	Sex
18/1	19	Female	
89/5	94	Married	marital status
10/5	11	Single	
1	1	Know-how	Education
31/4	33	Expertise	
58/1	61	Masters	
9/5	10	PhD	
1	1	Between 20 and 25 years.	Age
16/2	17	Between 25 and 30 years.	
25/7	27	Between 30 and 35 years.	
23/8	25	Between 36and 40 years.	
33/3	35	Over 40 years	
40	42	Less than 10 years	work experience
32/4	34	Between 11 and 18 years	
21	22	Between 19 and 25 years	
6/7	7	Over 25 years	
100	105	Total	

According to the table above, of the 105 individuals who have the answer, 86 were male and 19 were female. The table shows that about 82 percent male and 18 percent were female, and 90% are married and 10% single. Also, about 33 percent of people above 40 years of age. In terms of education, around 58% have a master's degree, 31% of experts, 10% Ph.D., an associate's degree to be 1%. On the other hand, about 40% of the subjects less than 10

years, 32% between 11 and 18 years, 21% between 19 and 25 years and 7% higher than 25 years of service.

Inferential statistics

Comparison of research variables With mediocre it of the measurement scale

T-test, a sample for comparing the average observed variables of research variables with the theoretical mean of measurement scale, has shown That's according to a significance level of less than 0.05, average all variables meaningful is different from the theoretical mean and according to the average obtained from variables, it can be concluded, average family social capital variables, social capital nonfamily and innovative family-owned company has been larger than 3, so is significantly higher than average.

Table 5: T-test, a sample for research variables

Comparing the mean observed with the amount of constant 3					Variable
The average difference	Significance level	Degrees of freedom	Facts	Average been met	
1/01746	0/000	104	22/642	4/0175	Social capital nonfamily (NFSC)
1/01905	0/000	104	19/312	4/0190	Family Factory Innovation (FFI)

The original model

In this research, from modeling of Structural equation with the help of method of least squares and smart PLS software to test of assumptions and accuracy the original model is used. This method is used for when the sample size is small and or distribution of variables, not normal. In the PLS models two models tested. Exterior model with the measurement model is similar, and internal models whit the structural model (In the structural equation models) is similar. Exterior model, variable operating loads that have been observed, is showing.

Exterior model (Measures model)

In psychology structural equation modeling first, it is necessary, construct validity, be studied. To determine selected practices for measure the variables of interest, have necessary accuracy. For this purpose. The confirmatory factor analysis (CFA), is used. In this way, the loadings of each item with its variable has a value of T, is higher than 1/96. In this case, this item has enough accuracy for measuring the structure or variable is. In the following tables, the amounts of Load factor for items each variable is Brought.

Table 7: Confirmatory factor analysis (the amounts of Load factor and the amount of t) for nonfamily social capital variables

Statistics	standard error	Load factor	Item	Variable
9/854869	0/074080	0/730049	Structural dimension (SDNFCS)	Non Family social capital (NFCS)
21/778097	0/037789	0/822969	Relationship Dimension (RDNFCS)	
24/213300	0/036168	0/875745	Cognitive Dimension (CDNFCS)	

Table 8: Confirmatory factor analysis (the amounts of Load factor and the amount of t) for Innovation factory Family variables

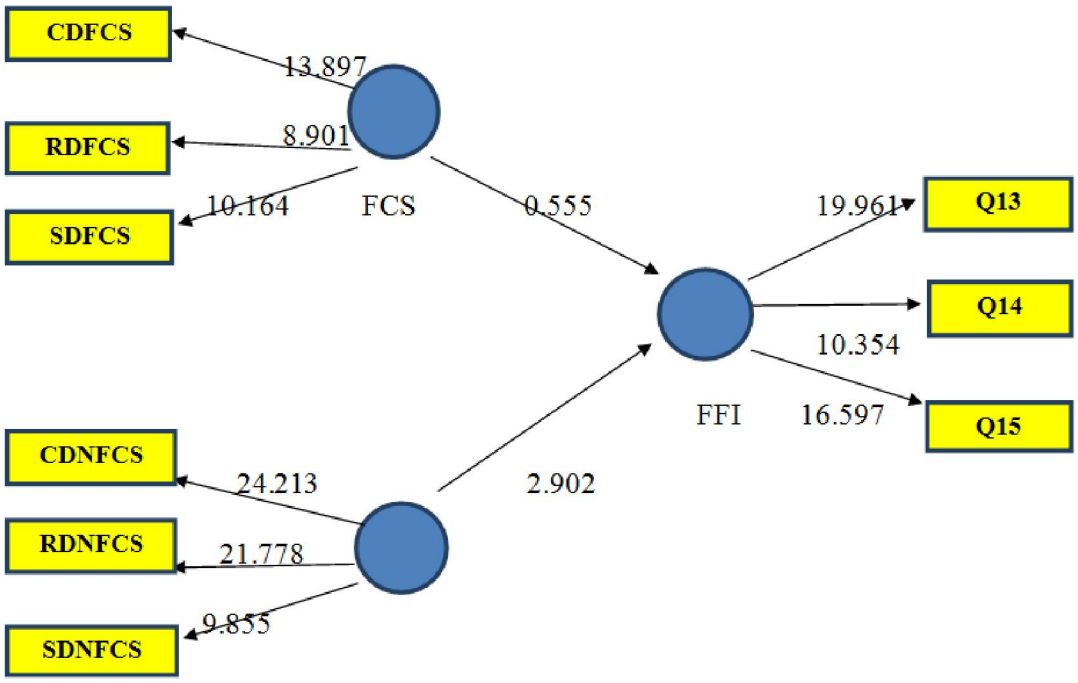
Statistics	standard error	Load factor	Item	Variable
19/961454	0/040817	0/814766	Q13	Innovation factory Family (FFI)
10/353617	0/072111	0/746606	Q14	
16/597373	0/049309	0/818400	Q15	

All item have statistics were bigger than 1/96, so, none of the items are not the target model. So, with all the items (questions) we will continue and we pay to examine models. However, on the basis of factor loadings, the index that has the highest load factor, In measuring the corresponding variable which has a greater share and index which has smaller coefficients, In measuring the structure, the share of it is less.

Output original model (Paths coefficient and t-value)

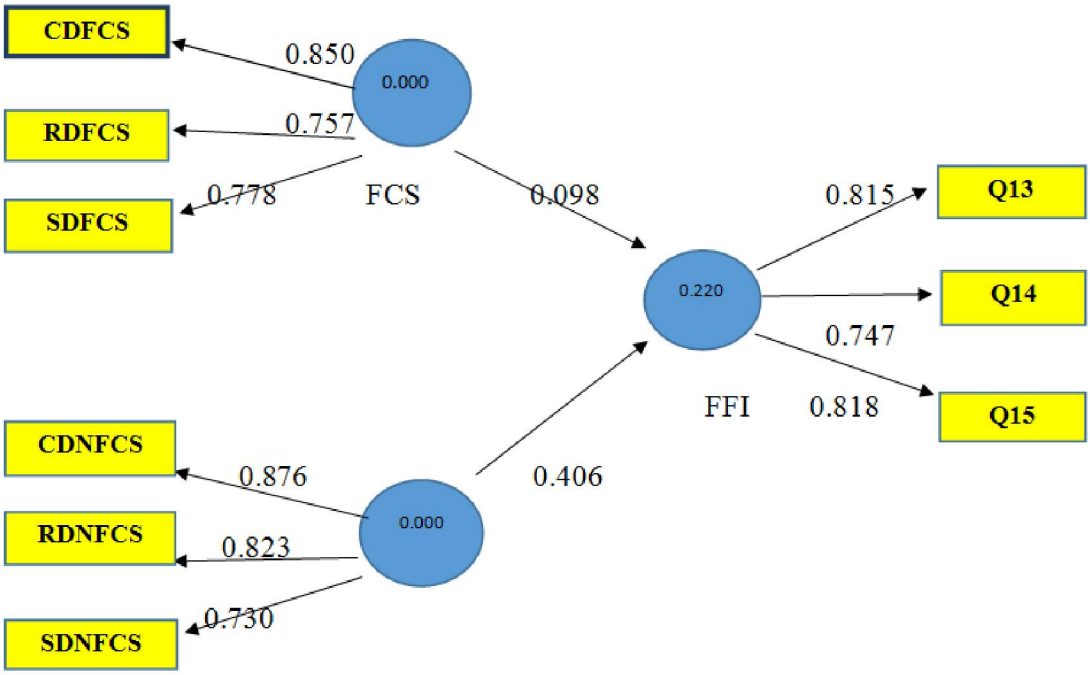
By using internal model, to examine the hypothesis can be paid. By comparing t calculated for path of each coefficient, can be paid to confirm or reject research hypotheses. Thus, if the absolute value of t- value is bigger than 1/96, at 95% confidence level and if the t- statistics is larger than 2/58, Path coefficient in the 99% confidence level is significant. The results of the research conceptual model, in case of the significant coefficients in the figure below it has been shown.

The basic model in significant numbers (t-value)



The numbers on the directions, shows the amount of t-value for each direction. To determine the significance of each path directions, its necessary, the amount of t each direction is higher than 1/96. In this analysis, t- value for direction of non-family social capital to innovation family company, was higher than 1/96 and thus, are significant in 95% confidence level.

The basic model in path coefficients



Numbers written on the lines, actually, is β coefficient of the regression equation between variables, that is the path coefficient. Number within each circle, amount of R^2 model shows that Former variables have been entered via the arrow to the circle. The coefficient of determination for innovation

variable of family company, the value is 0.22 And show that family social capital variables and learn and grow together, have been able to explain 22% of changes of family company innovation. According to the standard multiplier and t – value, it can be said, family social capital variables on the variable of family company innovation.

Internal model (structural model)

Assumption were examined in terms of the internal model and the structural model direction, was assessment. Test each hypothesis by examining symbols, size and statistical significance of path coefficients (b) between of each latent variable, with variable is dependent. All sizesr, This coefficient the path is higher, the impact predictive latent variable, of the dependent variable more will be. under consideration, by foreseeing the results of the relationship between independent variables and dependent, using the coefficient related, to check Significant of effects between research variables, can be paid. in order to Check significant path coefficient or (β), Have significant t value for each path coefficient adhered to attractive significant amount of t- value For each route Factor It should be attention, for this reason Bot Estrping method was used that For the purpose of re-sampling, In both the 500 and 800 samples were simulated the results show that in both cases, In meaningful or meaningless parameter has not changed And the results have strong credit. **(Johnson, 2001: 217 – 245) & (Nunnally, 1997).**

Table 9: Effects of a straight line as variables research in the original model

open sampling t- value			standard error	Average	β	Direction
3/162660	2/985325	2/901616	0/140021	0/424877	0/406288	⇦ NFCS FFI

Given that, the amount of t – value for path of non-family social capital the innovative family-owned company, is greater than 1/96, it shows that at 95% confidence level, path of nonfamily social capital on innovation factory family, have had significant effect.

Measuring internal model

The effect size measure (f^2)

Table 10: The effect size (f^2)

f^2	R_y^2 (X excluded)	R_Y^2(Xincluded)	Direction
0/142308	0/109	0/22	Non-Family social capital ⇦ innovation factory family

According to the table above, size of the impact of social capital variables Family on innovation factory family, been weak and the average impact of non-family social capital variables on innovation factory family, is confirmed.

Criterion Q^2

Assess the overall value of the original model (Quality indicators)

Table 12:

Quality indicators	**Variables**
0/659058	Non-Family social capital

This benchmark shows that how much variability index, explained by Structure related to own and the average share index, used for determining convergent validity.

Redundancy criteria (Redundancy index)

Table 13:

Redundancy index	**Variables**
0/033477	**innovation factory family**

An accurate measure for measure of value structural part structural equation models, the amount of the average redundancy regarding endogenous structures is in a model. This value that is shown in red, the structural model is an appropriate indicator value and calculate the total value of model is used, the amount of red to research model is equal to 0.03 that the amount of relatively poor will be shown.

Criterion GOF (Goodness on Value)

With using of geometric mean of R^2 and Share index average, the amount of GOF For the entire

model, 0/376 amount was calculated that show, the total value of the model is too strong.

Table 14: Summary of path coefficients, The coefficient of determination, t – value and result the original model assumptions

result	coefficient of determination	T - value	Summary of path	the original model assumptions
Confirmation	**0/22**	2/902	0/406	Non-Family social capital ⟹ innovation factory family

Standard GOF (Goodness of fit)

Using geometric mean R2 and Share index average for the total amount of GOF 516/0 amount was calculated, which shows the overall fit of the model is too strong.

Summary path correlation coefficients, t-statistics and hypothesis sub-model results

SIG	The coefficient of determination	T	Path coefficient	Sub model assumptions
Confirmed	0/38	073/2	353/0-	structure dimension of non-family and social capital ← Innovation Family
Rejection		645/1	193/0	The relational dimension of non-family and social capital ← Innovation Family
Confirmed		013/4	508/0	Of family social capital dimension cognitive ← Innovation Family

Research hypotheses Test

After reviewing the original model, evaluated the hypothesis that if the absolute value of the t-statistic is less than1/96 the null hypothesis can be concluded and if the absolute value of the t-statistic is greater than 1/96 the null hypothesis is rejected and the original model is tested in a given sector.

Hypothesis (1): non-family social capital has an impact on the family business innovation

H0**: non-family social capital has no impact on the family business innovation**

H1**: non-family social capital has an impact on the family business innovation**

According to Table Absolute value of t-statistic the 2/902 and greater than 1/96, then the null hypothesis is rejected. This means that in 95% of social capital nonfamily family firm has a significant impact on innovation and value equal to 0/41 and the positive is impact (direct). This means that with increasing levels of social capital nonfamily, the innovative family-owned company also increased.

After reviewing the sub-models, hypotheses have been evaluated model assumptions in this part of sub-models testediness.

Hypothesis (1-1): nonfamily social capital structure has an impact on innovation of the family firm

H0: **nonfamily social capital structure has no impact on innovation of the family firm**

H1: **nonfamily social capital structure has an impact on innovation of the family firm**

According to Table Absolute value of t-statistic the 073/2 and greater than 96/1, then the null hypothesis is rejected at the level of 95% social capital structure nonfamily has a significant impact on innovation of family firm. This means that with increasing levels of social capital structure nonfamily later reduced the family company innovation.

Hypothesis (1-2): The relationship between social capital nonfamily has an impact on family business innovation

H0: **The relationship between social capital nonfamily has no impact on family business innovation**

H1: The relationship between social capital nonfamily has an impact on family business innovation

According to Table Absolute value of t-statistic is to1/645 and the smaller the value1/96, then the null hypothesis is not rejected at the level of 95% social capital relationship nonfamily has no significant effect on family company innovation.

Hypothesis (1-3): nonfamily cognitive social capital has an impact on innovation of family business

H0: **nonfamily cognitive social capital has no impact on innovation of family business**

H1: **nonfamily cognitive social capital has an impact on innovation of family business**

According to Table Absolute value of t-statistic the 4/013 and greater than 1/96, then the null hypothesis is rejected Ie the 95% confidence level cognitive social capital nonfamily has a significant impact on family firm innovation and value impact to 0/51 is positive (direct).

Research limitations

The research with social capital and organizational innovation variables together have been very little studied so access to records related to research, is considered one of the main limitations of this study.

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