Survey of the Relationship between Social Capital and Urban Management (Case Study: Zanjan City in Iran)

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Abstract—The main aim of this paper is studying the significant relationship between social capital and urban management in the city of Zanjan in Iran. Accordingly, partial objectives subordinated to the main purpose of this study are investigating the significant relationship between trust and urban management and also between collaboration and cooperation and urban management. From the perspective of the research methodology, this research is quantitative. In order to test the research hypotheses in addition to reliability and validity tests, spearman and Kendall's tau bivariate correlation are applied with the help of SPSS and LISREL. For data gathering, simple random sampling method is used. The statistical society is Zanjan's citizens and the sample size is 200. The results show that there is the significant relationship between social capital and urban management; there is the significant relationship between trust and urban management; there is the significant relationship between collaboration and cooperation and urban management; there is the significant relationship between trust and collaboration and cooperation.

Index Terms—collaboration and cooperation, social capital, trust, urban management

I. INTRODUCTION

Nowadays, social capital as values, norms, social relationships, and networks of social relations is more effective in cities than other capitals like physical and human capitals. It leads to solidarity among citizens and organizations. Because of the economic functions of urban systems, norms, and social interaction, it is called as capital and definitely social capital.

Higher social capital in an urban management system causes a decrease of costs related to formal processes.

This fact indicates that coordination among members of social systems based on informal norms is becoming an important issue in different societies and it will play gradually more important role in the development of new economic models.

Social capital is a trust-based culture that brings about cooperation between citizens and municipal managers. In other words, a network of trust among citizens is one of the fundamental concepts of social capital. Trust means that urban managers (whether in the realm of policy making - whether in the area of operations) work in order to improve the prosperity, welfare, and development of the city and solve urban problems. In addition, the radius of trust introduced in the social capital concept is dependent on the extent of cooperation and trust between members of an affiliated group. That is, the greater the radius of trust in social groups, social capital will be more.

In this paper in order to find the relationship between social capital including trust, collaboration and cooperation, and urban management, at first, the relevant literatures are reviewed. After determining the indicators of trust, collaboration and cooperation, and urban management, Zanjan city residents are surveyed. Results of validity, reliability and bivariate spearman and Kendall's tau correlation coefficients with using LISREL and SPSS software aligned with the goals of the research questions and hypotheses are presented.

II. LITERATURE REVIEW

Social capital is the set of norms in social systems which lead to promotion of cooperation level among members of society and decrease the level of transaction and communications costs [1]. Social capital is defined by its function and it is not a single identity, but it is a diversity of identities formed of some aspects of social

structures which facilitates playing specific roles within structures for players - either they are individuals or companies [2].

Fukuyama defines social capital as a social norm which strengthens the cooperation between two or more persons and he knows it as the feature of the interaction between two friends. He argues that trust in networks and civil society is a manifestation of social capital, not taken into account the fact that it is a social capital itself. In his view, norms are social capital that leads to cooperation in groups [1]. In other words, social capital can be understood as the result of positive relationships in the community and it is referred to all resources arise in the social relations and make social life more desirable [3].

Social capital consists of friends, colleagues and more general contacts through them everybody acquires opportunities to use his own financial and human capital. Social capital is the concept that is now in the United States and Europe widely discussed and applied. In the tradition of the United States, social capital is formed based on social cohesion, localism democratic participation, and localism community. In contrast, social capital in the view of Europeans look more institution orientated which emphasis on the relationships within the family and its social capital, rights and responsibilities of individuals within the social organization [4].

Using the concept of social capital due to globalization and the weakening of national governments' role has been of interest to policy makers and officials in social policy as applicable solution to the problems of development at the community level [5]. There are various conceptual approaches to social capital such as [6]: 1) theory of social economic which declares safety and civil behavior reinforce stability in social networks and assist to having sustainable economic development; 2) social responsibility approach and ethics which states social capital with regard to the society and its actors clarifies integration and social responsibility. Social capital is based on values and attitudes such as confidence, cooperation, ethics, and compromise; and 3) corporate governance which exposes ethical principles and standards of corporate management has a positive effect on the development of social capital, increasing cohesion, and overcoming the problems of the market.

Besides, urban management is a process that will result in decision-making system. The success or failure of the urban management depends on power, legitimacy and legal, social, and economic structures. This type of management can be a form of local government and self-government for taking people's participation which will lighten the load on government. The composition of the management and urban reflects processes from the planning process to the control of all aspects related to urban in terms of social, economic, and environment and it is the task which has been divided between their organizations and institutions. In Iran, the urban management is urban governance, including the mayor, city council, citizens and civil society institutions. Based upon this fact, large number of institutions involve in the governance of cities [7].

According to the pattern of urban management in Europe, there are three managerial factors: Planning, implementing, monitoring and improvement. However, certain features such as information about urban system, relevant agencies and activities are required for desired urban management. It should also be noted that private sector and the public can participate in improving urban management and thereby it is possible to access funds to improve the economic situation. These functions can influence citizens, the urban environment and the efficiency and production capacity of the city.

In Europe, it is emphasizing that the city's systems should fully evaluated. Urban management that is used in Europe should be compatible with urbanization life cycle which is indicated by increase and decrease in the growth of environment. Physically and economically developed cities require urban management in a manner different from backward and deficient cities.

Management activities under consideration in Europe's urban management are [8]: 1) improving financial management in order to having optimal distribution of urban services; 2) improving urban management in the planning, funding, and implementing issues related to urban solid waste system. It should be invested in municipal solid waste systems, particularly in the collection, disposal, and recycling of solid waste; 3) improving environmental policy and legislation to promote and delegate urban management authorities for planning, funding, and implementing issues related to water and sewage systems, and air quality. In this regard, partnerships between local governments and state agencies in providing environmental services and environmental protection should be strengthen; 4) improving working conditions and social organizations as the improvement of urban environment. In this case, the poor and low-income social class of the population should access to urban lands and have job security; 5) improving the management of social groups for making financial contributions, increasing management efficiency in order to obtain and manage financial and credit services to develop income-generating activities and housing facilities. Also in this field it can be referred to making connection between these partnership groups with the national institutes and strengthening efficiency and increasing the productivity of local government in promoting economic status and living arrangements of the community.

III. RESEARCH MODEL

The overall objective of this study is analyzing the significant relationship between social capital and urban management in the city of Zanjan. The partial objectives of this research are: 1) analyzing significant relationship between trust and urban management in the city of Zanjan; 2) analyzing significant relationship between collaboration and cooperation of the citizens and urban management in the city of Zanjan.

Research questions and hypotheses are consistent with the overall and partial objectives of the research. The main question is: Is there a significant relationship

between social capital and the urban management of the Zanjan city?

Partial questions are: 1) Is there a significant relationship between trust and urban management of the Zanjan city? 2) Is there a significant relationship between collaboration and cooperation and urban management in the city of Zanjan? 3) Is there a significant relationship between trust and collaboration and cooperation in the city of Zanjan?

The main hypothesis is: There is a significant relationship between social capital and urban management in the city of Zanjan.

Partial hypotheses are: 1) There is a significant relationship between trust and urban management in the city of Zanjan; 2) There is a significant relationship between collaboration and cooperation in the city of Zanjan and its urban management; 3) There is a significant relationship between trust and collaboration and cooperation in the city of Zanjan.

According to the hypotheses, research variables are social capital, trust, collaboration and cooperation, and urban management.
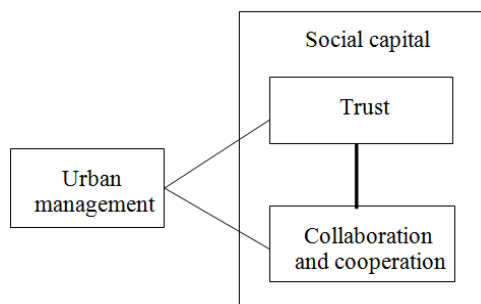

Figure 1.   Research model.

In order to analyze hypotheses and measure variables, variables are broken in to indicators evaluated through Likert scale (1-4). Variables have been proposed in the Table I.

TABLE I.   INDICATORS OF SOCIAL CAPITAL AND URBAN MANAGEMENT

No.	Indicators of trust
1	The trust of citizens to urban managers
2	The citizens' trust to the performance of organizations in times of crisis
3	The citizens' trust to e-banking services and agencies
4	The trust of citizens to urban transport systems
5	The citizens' trust in the department of environment and preserve the environment
6	The citizens' trust in the various organizations to attract investors to increase the economic level of citizens
No.	Indicators of collaboration and cooperation
7	Rate of easy access of citizens to urban managers
8	The willingness of citizens to cooperate with the council and the municipality
9	The willingness of citizens to cooperate with urban management in the event of natural disasters
10	The willingness of citizens to participate in the preparation of development programs
11	The willingness of citizens to participate in development activities
12	The willingness of citizens to cooperate with different organizations to increase tourist arrivals to the city
13	Collaboration rate of citizens with urban transport organization to reduce traffic on some roads
14	The willingness of citizens to cooperate and coordinate in preserving the environment of their city
15	Collaboration rate of authorities with the citizens to increase the economic level of the city
16	Cooperation rate of citizens in the maintenance and proper use of the services
17	Cooperation rate of citizens in the implementation of cultural programs in the city
18	Rate of interest of citizens in the implementation of training programs to deal with natural disasters
No	Indicators of urban management
19	Citizens' awareness of the urban managers
20	Rate of relationship between citizens and city council
21	The status of the performance of the urban management in provision of facilities
22	The effect of taxation on the development of the city
23	Rate of urban manager's supervision over development projects
24	Information rate of citizens about the future and current development activities in their city
25	Importance degree of arrival of tourists to the city
26	Rate of use of the electronic services by citizens
27	Rate of ease of access to the public transport system.
28	Citizen satisfaction with the cleanliness of their surroundings
29	The willingness of citizens to entrepreneurship in the city
30	Rate of relationship between citizens and organizations that take action in the field of entrepreneurship.
31	Rate of provision of required services to the citizens by urban managers
32	Importance degree of a better organized cultural programs compared to the other cities
33	The willingness of citizens to participate in cultural programs
34	Information rate of citizens about urban management training programs to deal with natural disasters
35	Satisfaction rate regarding the efforts of city authorities to attract investors towards the development of the city

IV.   RESEARCH METHODOLOGY

In this study, research methodology is quantitative and hypotheses are tested based on correlation method. Random sampling technique is used for data collection. The Statistical Society is the citizens of Zanjan and the Number of samples is 200. Data gathering tools in this study are the questionnaires: 1) trust questionnaire, 2) collaboration and cooperation questionnaire, 3) urban management questionnaire.

A.   Validity Analysis

Validity is examined in order to evaluate whether the research questionnaires are able to measure variables or not [9]. One of the most important methods for

determining the validity is confirmatory factor analysis (CFA) which can be performed in LISREL.

CFA is a special form of factor analysis, most commonly used in social research. The objective of CFA is to test whether the data fit a hypothesized measurement model. This hypothesized model is based on theory and/or previous analytic research.

In this study, the results of the CFA are as follows:

$$Rate\text{-}of\text{-}Chi\text{-}Square\text{-}to\text{-}degrees\text{-}of\text{-}freedom = 2.9 < 3 \quad (1)$$

$$Root\text{-}Mean\text{-}Square\text{-}Error\text{-}of\text{-}Approximation(RMSEA) = 0.07 < 0.08 \quad (2)$$

$$Goodness\text{-}of\text{-}Fit\text{-}Index(GFI) = 1.50 > 0.9 \quad (3)$$

$$Ajusted\text{-}Goodness\text{-}of\text{-}Fit\text{-}Index(AGFI) = 1.42 > 0.9 \quad (4)$$

Since the conditions are fulfilled, it can be concluded that the questionnaire included questions of trust, collaboration and cooperation, and urban management is valid. In other words, it can be stated that the questionnaire is a proper measuring tool for measuring research variables.

In addition, through descriptive statistics such as mean and standard deviation, means for all questions are higher than 2.5 and standard deviations of all the questions are above one. Thus it could be concluded that the questions do not need to be modified or deleted.

B. Reliability Analysis

Reliability analysis could be used to determine whether the chosen measurement tool measures the subject accurately or not. Reliability Analysis examines the extent to which measurement is reliable or capable of repetition. For example, it checks if the same questionnaire in the city of Zanjan is used, the same result is obtained or not. That is, reliability refers to the rate of stability and internal consistency of the components of a concept and also the rate of similarity of results in case of the repetition of a measurement tool in the same conditions [10].

The most important and widely used method for measuring the reliability is Cronbach's alpha method in SPSS. Cronbach's alpha generally increases when the correlations between the items increase. Some professionals insist on a reliability score of 0.70 or higher. In this study, the variables are trust, collaboration and cooperation and urban management. And Cronbach reliability analysis is performed to test whether questions of each variable are correlated together and have internal consistency or not.

As shown in the Tables II-IV, Cronbach's alpha coefficient for the variables, trust, collaboration and cooperation and urban management of the city, are respectively 0.719, 0.729, and 0.736. Since these values are greater than 0.7, it could be said that questionnaires have high reliability. That is, questionnaires accurately measures variables and the results could be repeated.

TABLE II. RELIABILITY TEST OF TRUST

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.719	.715	6

TABLE III. RELIABILITY TEST OF THE COLLABORATION AND COOPERATION

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.729	.725	12

TABLE IV. RELIABILITY TEST OF THE URBAN MANAGEMENT

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.736	.736	17

C. Statistical Hypothesis Test

In order to examine the significant relationship, bivariate correlation coefficients could be used. Since the variables–trust, collaboration and cooperation, and urban management–are based on ordinal scale, spearman and Kendall's tau correlation tests as nonparametric correlations can be used. They are used to measure the association between two measured quantities.

D. Spearman Correlation Coefficient

Spearman correlation coefficient measures the correlation between two ordinal variables based on their ranks [11]. For a sample of size n, the n raw scores X_i, Y_i converted to ranks, x_i, y_i, and ρ is computed from:

$$\rho = 1 - \frac{6 \sum d_i 2}{n(n^2 - 1)} \quad (5)$$

where $d_i = x_i - y_i$ is the difference between ranks.

In this research, test of significance in two–tailed is selected. This is because the main and partial hypotheses of this study are about investigating the significant relationship. Significant coefficients in the error level less than 0.01 with sign (**) are displayed.

The results based on the Table V are as follows:

A- There is a significant relationship between trust and urban management. Based on the results, spearman correlation coefficient between trust and urban management is equal to 0.557 in the error level lower than 0.01. Therefore, this hypothesis of Fig. 2 is confirmed.
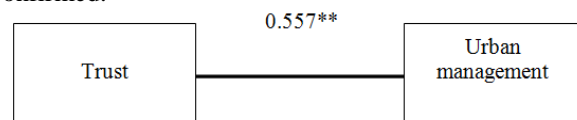

Figure 2. Significant relationship between trust and urban management.

B- There is a significant relationship between collaboration and cooperation of citizens and urban management. Based on the results, spearman correlation coefficient is equal to 0.617 between collaboration and

cooperation of citizens and urban management in the error level lower than 0.01. Therefore, this hypothesis of Fig. 3 is confirmed.
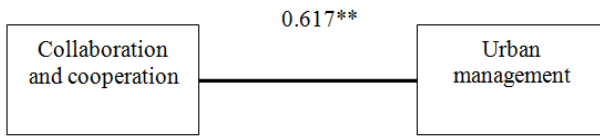

Figure 3. Significant relationship between collaboration and cooperation and urban management

C- There is a significant relationship between trust and

collaboration and cooperation. Based on the results, spearman correlation coefficient is equal to 0.426 between collaboration and cooperation of citizens and urban management in the error level lower than 0.01. Therefore, this hypothesis of Fig. 4 is confirmed.
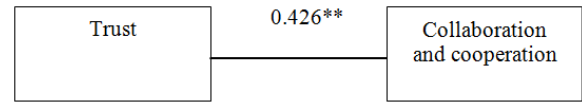

Figure 4. Significant relationship between trust and collaboration and cooperation.

TABLE V. SPEARMAN BIVARIATE CORRELATION TEST

			Trust	Collaboration and cooperation	Urban management
Spearman's rho	Trust	Correlation Coefficient	1.000	.426**	.557**
		Sig. (2-tailed)	.	.000	.000
		N	200	200	200
	Collabora-tion and cooperation	Correlation Coefficient	.426**	1.000	.617**
		Sig. (2-tailed)	.000	.	.000
		N	200	200	200
	Urban management	Correlation Coefficient	.557**	.617**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	200	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

TABLE VI. BIVARIATE SPEARMAN CORRELATION TEST FOR THE MAIN HYPOTHESIS

			Urban management	Social capital
Spearman's rho	Urban management	Correlation Coefficient	1.000	.868**
		Sig. (2-tailed)	.	.000
		N	200	200
	Social capital	Correlation Coefficient	.868**	1.000
		Sig. (2-tailed)	.000	.
		N	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

Due to the confirmation of the partial hypotheses, the main hypothesis is also confirmed. The results are shown in the Table VI. In this case, social capital has a significant relationship with urban management with the spearman correlation coefficient equal to 0.868 in error level lower than 0.01.

The correlation coefficient is 0.868, which is higher than 0.85, indicating a close relationship between social capital and urban management (see Fig. 5).
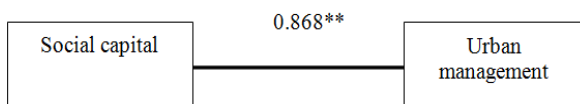

Figure 5. Significant relationship between social capital and urban management

E. Kendall Tau Correlation Coefficient

The Kendall tau correlation coefficient is like spearman correlation coefficient, a measure of correlation between two ordinal-level variables [11]. It is a measure of the agreement between two rankings [12]. The Kendall T coefficient is defined as:

$$\tau = \frac{\text{(number of concordant pairs)-(number of discordant pairs)}}{\frac{1}{2}n(n-1)} \quad (6)$$

Any pair of observations (x_i, y_i) and (x_j, y_j) are said to be concordant if the ranks for both elements agree: that is, if both $x_i > x_j$ and $y_i > y_j$ or if both $x_i < x_j$ and

$y_i < y_j$. They are said to bediscordant, if $x_i > x_j$ and $y_i < y_j$ or if $x_i < x_j$ and $y_i > y_j$. If $x_i = x_j$ or $y_i = y_j$, the pair is neither concordant nor

discordant. The coefficient must be in the range $-1 \le \tau \le 1$.

The findings based on bivariate correlation test of Kendall's tau are described in Table VII.

TABLE VII.   BIVARIATE CORRELATION TEST OF KENDALL'S TAU

			Urban management	Trust	Collaboration and cooperation
Kendall's tau_b	Urban management	Correlation Coefficient	1.000	.423**	.464**
		Sig. (2-tailed)	.	.000	.000
		N	200	200	200
	Trust	Correlation Coefficient	.423**	1.000	.322**
		Sig. (2-tailed)	.000	.	.000
		N	200	200	200
	Collaboration and cooperation	Correlation Coefficient	.464**	.322**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	200	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

In this research, test of significance in two – tailed is selected. This is because the main and partial hypotheses of this study are about investigating the significant relationship. Significant coefficients in the error level less than 0.01with sign (**) are displayed.

The results based on the Table VII are as follows:

A-Trust has a significant relationship with urban management. Based on the results of Kendall tau correlation coefficient, there is a significant relationship between trust and urban management equal to 0.423 in error level lower than 0.01. Therefore, this hypothesis of Fig. 6 is confirmed.
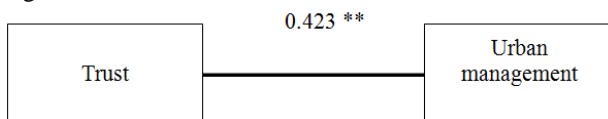

Figure 6.   Significant relationship of trust with urban management

B- Collaboration and cooperation of citizens has a significant relationship with urban management. Based on the results of Kendall tau correlation coefficient, there is a significant relationship between collaboration and cooperation of citizens and urban management equal to 0.464 in error level lower than 0.01. Therefore, this hypothesis of Fig. 7 is confirmed.
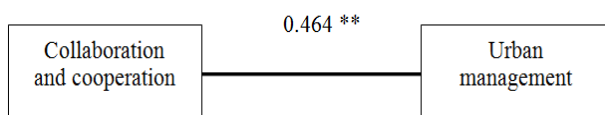

Figure 7.   Significant relationship of collaboration and cooperation with urban management

C- There is a significant relationship between trust and collaboration and cooperation. Based on the results of Kendall tau correlation coefficient, there is a significant relationship between trust and collaboration and cooperation equal to 0.322 in error level lower than 0.01. Therefore, this hypothesis of Fig. 8 is confirmed.
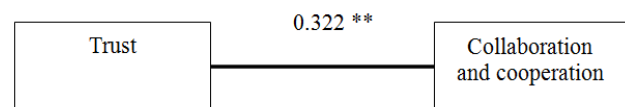

Figure 8.   Significant relationship of trust with collaboration and cooperation

TABLE VIII.   BIVARIATE CORRELATION TEST OF KENDALL TAU FOR MAIN HYPOTHESIS

			Urban management	Social capital
Kendall's tau_b	Urban management	Correlation Coefficient	1.000	.709**
		Sig. (2-tailed)	.	.000
		N	200	200
	Social capital	Correlation Coefficient	.709**	1.000
		Sig. (2-tailed)	.000	.
		N	200	200

**. Correlation is significant at the 0.01 level (2-tailed).
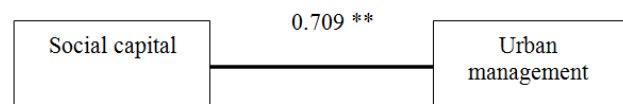

Figure 9.   Significant relationship of social capital with urban management

Due to the confirmation of the partial hypotheses, the main hypothesis of Fig. 9 is also confirmed. The results are shown in the Table VIII. In this case, social capital has a significant relationship with urban management with the Kendall tau correlation coefficient equal to 0.709 in error level lower than 0.01.

V.   CONCLUSION

Based on the research findings, it can be concluded that through increasing the trust of the citizens to urban managers, the performance of organizations in times of crisis, electronic services of banks and agencies, public

transportation systems, measures of environmental organizations in protecting the environment and measures of various organizations to attract investors to increase the economical level of citizens in the city of Zanjan, the performance of urban management will be increased. Because the results of correlation tests of spearman and Kendall tau confirm the hypothesis that trust has a significant relationship with urban management.

Besides, enhancing the trust of citizens impacts on the improvement of collaboration and cooperation with the city council and the municipality in the event of natural disasters, in preparing development programs and activities, for the arrival of tourists to the city ,in reducing traffic on some roads, in protecting their urban environment, in improving the city's economy, in maintenance and use of services, in cultural programs execution in the city, in educational programs to deal with natural disasters. Because the results of the spearman and Kendall tau correlation coefficients both endorse the hypothesis, that there is a significant relationship between trust and the collaboration and cooperation. In addition, improvement of collaboration and cooperation based on the results of the spearman and Kendall tau correlation coefficients has a significant relationship with the urban management.

Since trust and collaboration and cooperation of citizens form the concept of social capital and improvement of social capital according to the results of the spearman and Kendall tau correlation coefficient leads to improvement in the performance of urban management; therefore, urban managers in order to improve their performance in the city can increase and improve social capital in the city or in other words trust and collaboration and cooperation between citizens and municipal authorities.

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