Research Article

ICONARP
International Journal of Architecture & Planning
Received 11 September 2017; Accepted 04 November 2017
Volume 5, Issue 2, pp: 216-233/Published 30 December 2017
DOI: 10.15320/ICONARP.2017.32-E-ISSN: 2147-9380

ICONARP

Spatial Agglomeration, Human and Social Capital: The case of Turkey Manufacturing Industry

Özer Karakayacı*

Abstract

Over the last three decades, new planning paradigms have exploded the factors depending on socio-cultural characteristics of space, in contrary to regional science. These paradigms argue the strategy for economic, social development and growth of regions instead of traditional theories which focus on spatial analysis as distance, transportation cost, labour cost. Economic development has not been considered independently from space by these theories and it was emphasized importance of economic actors, institutional and economic infrastructure as well as geographic features for economic performance of a region. Space contributes to increase not only skilled workforce, knowledge spillover and distribution but also social relations and interaction. In other words, the social-cultural and humanity factors relating with geography are major factors affecting on the development and also growing of economic activities. Industrialization as engine of regional development has been benefiting from the advantages offered by spatial features, clustering of economic activities. In this context, clustering of economic activities has been one of the new areas of interest in economic geography. Therefore, it can be said that human-social-spatial resources within a region has had a major role in developing by essays of the new economic geography.

Keywords: *Agglomeration, Human Capital, Social Capital, Manufacturing Industry, Konya-Turkey.*

Assist.Prof,Dr . Selcuk University,
Department of City and Regional Planning,
Konya, Turkey.
E-mail: karakayaci@gmail.com
Orcid ID: http://orcid.org/ 0000-0001-9001-4163

The aim of this paper is to determine the effects of human and social capital in agglomerations of economic activities in case of Konya-Turkey. In this study, the agglomeration tendencies for manufacturing industry in Konya, which have major potentials in terms of human and social capital, are analyzed comparatively depending on survey and secondary resources with using statistical. In this paper, it is answered a question: how can human and social capital bring about geographic concentration in a region?

In this framework, the paper is composed of four chapters. At first, it is involved theoretical background also conceptual explaining about terminology such as agglomeration/clustering, human and social capital. Second, it is called methodological chapter that it involves the determination of variables, explanation analytic methods and techniques, and also giving information relating with the development of Konya manufacturing industry. Third, it is evaluated data getting from analyses and methods techniques. And last, it presents results and evaluations relating with the study findings.

INTRODUCTION

One of the most important subjects concentrated by regional economies is to explore the reasons about the concentration of economic activities in a certain space. The reasons of concentration of economic activities have currently argued with different institutional approaches. It, normally, is claimed that technical and human factors such as taking part in common a space, access to common infrastructure, specialized work-force, and information sharing based on spatial proximity provide positive externalities. Over the last three decades, theoretical discussions are try to explain on local relationships and networks such as cooperation, mutual dependence, institutions arising in certain a space to the accumulation process of economic activities (Marshall, 1920; Porter, 1990; Schmitz, 1999).

Theoretical approaches such as economic geography and endogenous growth theory, which explain the agglomeration of economic activities on local relations and networks, have examined the effects of technology and information, spatial embedding and socio-cultural factors on agglomeration process as spatially (Clercq & Dakhli, 2003; Parts, 2003). Approaches based on economic geography explain the success of economic activities on the importance of social relationship, social networks and trust related to business culture on the further side of benefits of being in a common geography. Indeed, the transition of the advantages of agglomeration in certain a space to competitive environment based on common learning and synergy is possible with strong local specialization, mutual trust and social networks. When economic geography explains this complex relation on

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380

social capital, individual priorities of actors as a part of this relation are explained by human capital.

The role of human and social capital on agglomeration tendencies, therefore, is to be one of the important subjects in economic geography and regional planning literature. From this point of view, it is came out in the wash that inferences of production factors such as physical capital and labour, capital, natural resources, which have focused by traditional approaches, for agglomeration process are inadequate. It is seen that new theoretical approaches have tried to explain the whole of reasons lying behind agglomeration process with human and social capital. The most important difference between these conceptual approaches is that social capital focuses on group features and effects when human capital focuses on individual features. In addition, let's face it that social capital has the role triggering human capital (Edwards & Foley, 1999; Putnam, 1993). In other words, it is the fact that these advantages will affect more quickly the transfer to individuals for the development of actors since the knowledge, skills and learning capacities of communities being high social capital potential will be high.

Being defined as the formal, informal, and institutional networks as a whole which determine the quality and continuity of social relationships based on trust among groups (Karakayacı, 2011), social capital affects individual's social, education, information skills, and ability substantially (OECD, 1998). Therefore, there is an idea that social capital is a factor that enriches the human capital productivity (Karagul & Akcay, 2002).

Human capital, as a whole of individual features, is defined as positive values such as information, skill, experience and talent possessed oneself of actors. The values cause to find new technologies and use these technologies affectively, so it contributes to increase the economic growth and to develop country's economy rapidly (Eser & Gokmen, 2009). According to OECD (1998), human capital is defined as a whole of abilities which provides individual and social development, facilitating increased economic prosperity and belonging to workforce such as information and ability.

Together with no accepted definition of social capital in literature, it is accepted as a factor that increases the effectiveness of the capital types such as economic, human, financial, and environmental capital. Putnam (1993) defines the social capital as features which increase the society's effectiveness such as trust, norms and networks of social organization structure.

The effect of social capital on agglomeration process of economic activities firstly come up with the studies of different disciplines such as geographers, sociologists, and economists in the early 20th century. Especially, the studies of sociologist Coleman (1988) and political scientist Putnam (1993) were to be key factor for increasing the interest on social capital in agglomeration of economic activities. In the studies made in different areas, a single definition of social capital has not be admired, researchers have approached and interpreted to social capital differently (Devine & Roberts, 2003; Sabatini, 2005).

Putnam (1993) categorized the social capital in two different ways: bonding social capital and bridging social capital. Putnam (1993); (Putnam, 2000) defines that bonding social capital is linkages among people in similar conditions that are family, close friend, and neighbours; bridging social capital is linkages among more distant relationships that are lost friendships and colleagues, for clearer perception of social capital. In addition, Woolcock (1998); (Woolcock, 2002) defined the third dimension of social capital that includes hierarchical relationship networks among actors in terms of social and economic perception. Linking social capital defined by Woolcock provides that people can get information from people outside their own circle about source, information and idea. According to Woolcock (1998); (Woolcock, 2002), when there is a horizontal network in bridging social capital, it is mentioned vertical network in linking social capital (Field, 2006; Woolcock, 1998, 2002).

Social capital has an important role to occur required ways for acting economic activities and actors jointly and to gain competitive power of economic units. Social capital determines social networks, cultural arrangements and political structure among actors. However, trust should play developer role on networks to arrange these relationships. In spite social capital provides many benefits for economic activities in terms of competition power, production facilities, marketing opportunities and labour advantages, if trust level does not occur among actors, economic activities will not be at a stand in common geography. If there is no trust, social capital will not develop or successful social networks will not be set up.

In many studies, it has been assigned that there is a linear relationship between economic growth and social capital (Karagul & Akcay, 2002). The level of trust has an important role to prevent waste (Grootaert & Bastelaer, 2002) and to decrease transaction costs used by production process (Fukuyama, 1995). In addition, high level social capital has an important role on

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380

regional development strategies (Woodhouse, 2006). Because high level trust facilitates economic development in determining common goals about future among the community.

Thus, human capital is required to be effectively able to benefit from social capital. Human capital, evaluated as information and ability level of employee, and social capital are two different structures that complement each other since if social capital does not become and social responsibility does not develop, human capital could be used against individual interest instead of favour of social interests. Efficiency conditions of human capital and social capital, thus, should be analyzed well (Coleman, 1988).

METHODOLOGY

The studies about urban and regional economy have focused on why economic activities are concentrated by specific areas. Discussions on the shaping process of space has gained speed with agglomeration economies defined as positive externalities occurred economic activities in specific geography by Alfred Marshall. Marshall (1920) thinks that benefit from specialized labour facilities, common infrastructure possibilities, and easy access to information and advantages of different economic facilities are basic causes of agglomeration in specific geographic area. In addition, it is seen that abstract elements such as local specialization, innovative environment, joint learning, social relationships and mutual trust have a decisive effect on agglomeration process. Especially, approaches such as social networks, trust and social capital that are tried to explain in terms of "clustering" over the last three decades debate agglomeration process of economic facilities on basic determinants such as cooperation, deep relationships, multifactor and innovation (Belussi, 2006).

The main purpose of this study is to determine whether human and social capital have a role in agglomeration tendencies in specific area of manufacturing industry activities to be spatial or not. This study has been made as comparative in the sample of manufacturing industry firms in Konya which is one of the important centre in terms of manufacturing industry production and employment in Turkey. Konya was an important centres in terms of commercial and manufacturing industry from Ottoman State to the fall of Ottoman State (1299-1923). In Konya, small-sized production rise with the development of rail road in the 19th century. Hence the existence of 2078 small entrepreneurs is mentioned in 1890s. Gunpowder mill developed in 17th century and first firm of gunpowder mill is located in Konya. Central

[1] It is one of the important centers of Turkey in terms of agricultural potential because agricultural area is smooth and efficient. Konya supplies to 48% of sugar beet production, 16% of wheat production, and 67% of carrot production and also provides approximately 15% of animal production in Turkey. So Konya region is defined as 'granary' of Turkey.

Government has supported small entrepreneurs with industrialization process and establishment of Republic in Konya. 25% of Turkish small entrepreneurs were located in Konya in 1920s. In addition, agricultural production was important potential for Konya and it developed agriculture-based food industry essentially[1]. Manufacturing of agricultural machinery was parallel with acceleration of agricultural mechanization and the development of the first organized industry zone in Konya in 1960s. In addition to gaining dynamism from 1960 to 1980, Konya has continued its traditional agricultural features and the migration from city to metropolis have also continued. In region, there was a boom and many subordinate firms increased in 1965. According to the national plans, there was a tendency to build industrial districts. 34 small industrial sites and 2 organized industrial districts were developed between 1975 and 1990. The number of firms increased between 1960 and 1980, and the firms were in the metallic goods, machine and transportation vehicle production sectors.

In this study, it has been analyzed the relations between the potentials of human and social capital of the region and the agglomeration potential of sub-sectors of the manufacturing industry in Konya. The data were obtained via face to face survey by the manufacturing industry firms in Konya and secondary statistical data. As mentioned in table 1, there are three variables in this study. Numerical data on human and social capital indicators were obtained via face to face survey with 152 manufacturers and the level of geographical concentration is calculated from secondary data received by TURKSTAT.

The firstly, the sub-sectors of manufacturing industry were considered at level of NACE 2.2, and location quotient (LQ) level was calculated in specific to the number of employees in each sub-sector according to TURKSTAT data. Secondly, it was defined human capital indicators for firms and region. The concept of human capital includes knowledge, skill and other qualities of actors, briefly all qualities that a person can execute productively (OECD, 1998). The human capital raised by Schultz (1961) is board concept included human characteristics being gained depends on increasing income. The variables which refer to firm knowledge, skill and qualifications such as firm size and age, entrepreneurial experience and occupation, educational status, research and development opportunities were components of human capital for firms. Apart from these variables, the human capital for the region was investigated by 5 different variables such as the employment structure, historical background, knowledge and information background, skills and qualifications

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380

of employees or managers, potential of physical or technology which reveal knowledge infrastructure, skill and abilities, production wealth.

Thirdly, it was defined social capital indicators for firms. Putnam (1993) stated that the concept of social capital means increasing qualities of the productivity of the society and economic actors. These qualities provide to reach common goals by moving together as more effectively (Putnam, 1995). Social capital comprises relations systems between actors (Putnam, 1993). When considered from this perspective; including reliable relations, a culture based on cooperation and institutional structure of social capital have revealed evaluations of variables such as trust, actor network structure and institutional structure (Edwards & Foley, 1999). In this study, "trust and friends and acquaintances variables" revealed to the quality of relations between actors, "ethnic and religious structure variables" and "various club, groups, institutions and voluntary organization variables" determined the background in institutional relations, "intermediary agents and financial actors variables" regulated trade relations were accepted as social capital variables.

After obtaining the data, the human capital potentials of the firms were reduced to two variables by using factor analysis method. As a result of this analysis, the variables set was regulated according to factor 1 and factor 2. The possible effects of the human and social capital potential on agglomeration trends of firms with factor 1 and factor 2 were analysed as a statistically. The human and social variables of the region consisted of raw data obtained and used as independent variable in model. LQ values of sub-sectors of manufacturing industry in Konya were accepted as dependent variable. The Location Quotient value of sub-sectors of manufacturing industry in Konya and the number of firms interviewed in the context of sub-sectors were given in table 3. Accordingly, if LQ value is less than 1, the sub-sectors are defined as firms being low agglomeration tendency; if LQ value is more than 1, the sub-sectors are defined as firms being high agglomeration tendency. Finally, it was used logistic regression as a statistical analysis for between agglomeration tendencies and social and human capital in case of Konya.

Table1. Codes, Definition, Qualification and Type of Variables

Vari.	Codes of Variables	Questions for the Variables	Qualification of the Data	Type of the Data
Human Capital Variables for firms	FirmSize	How many people work in your firm?	1 small-scale firms 2 medium-scale firms 3 large-scale firms	Code
	FirmAge	When did your firm establish?	Year	Number
	EduBack	What is your educational background?	1 not to be literate 2 to be literate 3 primary school 4 high school 5 university graduate	Code
	Experience	How many years have you experience in this occupation?	Year	Number
	Profession	What is your profession or job?	1 Farmer 2 Tradesmen 3 Worker 4 civil servant 5 Educationist 6 Apprentice 7 Master 8 Technician 9 Engineering	Code
	R&D	What is the proportion of expenditure of your firms for research and development within total expenditure?	Per cent	Number
	SkillLabor	How many engineering or skilled people work in your firm?	Number	Number
Human Capital Variables for Region	EmpBackg.	In the decision to produce in this region, to what extent are influence division of labour, specialization the employment structure of the firms in Konya?	Five Point Likert	Code
	HistBackg.	In the decision to produce in this region, to what extent is influence the firms' historical background in Konya?	Five Point Likert	Code
	InfoBackg.	In the decision to produce in this region, to what extent is influence knowledge and information background in Konya?	Five Point Likert	Code
	SkillBackg.	In the decision to produce in this region, to what extent is influence skills and qualifications of employees or managers in Konya?	Five Point Likert	Code
	PhysBackg.	In the decision to produce in this region, to what extent is influence potential of physical or technology (machinery and equipment, opportunities) in Konya?	Five Point Likert	Code
Social Capital Variables for Firms	Friend	In the decision to produce in this region, How important is friends and acquaintances?	Five Point Likert	Code
	Colleague	In the decision to produce in this region, is the fact that your colleagues are in this region or close the actors to carry out similar activity a factor?	Five Point Likert	Code
	Memorg	In the decision to produce in this region, How important is membership in various club, groups, institutions and voluntary organization?	Five Point Likert	Code
	Memeth	In the decision to produce in this region, to what extent do you agree that you desire to be close to various ethnic and religious foundations?	Five Point Likert	Code
	Interagent	In the decision to produce in this region, how important is to be close to intermediary agents and financial actors?	Five Point Likert	Code
	Trust	In the decision to produce in this region, How important is the reputation to the actors such as collaborative actors, colleagues, supplier and subcontracting firms?	Five Point Likert	Code
Spatial Agg.	LQ	According to sub-sectors, it is levels of geographical accumulation of manufacturing industry in Konya.	Index	Code

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380

FINDINGS

Firstly, human capital variable of firms are came down to 3 factors by factor analysis. Factor percentages obtained by factor analyses actualized in the ratio of 29,612% for factor 1, %25,846 for factor 2 and %14,998 for factor 3 (table 2). Accordingly, factor 1 and factor 2 have a representation level of %55,458 of human capital variables. The potential of firm's human capital evaluated on factor 1 and factor 2, because of that factor 3 is related to only one variable and the cumulative variance value of factor 1-2 is above 50%. Factor 1 includes variables such as firm's size, entrepreneur's education level, firm's research and development opportunities and qualified labour; factor 2 includes variables such as firm's age and experience. Therefore, factor 1 was defined as cognitive factors and factor 2 was defined as scaled factors.

In other words, firm' human capital variables were defined on 2 variables that are size-based factors and cognitive-based factors. Firms getting into the act in manufacturing industry in Konya, therefore, are evaluated according to size-based factors in the ratio of %25,846, and cognitive-based factors in the ratio of %29,612 in terms of human capital potential (table 2). As a result of the analyses, when human capital potential for 68 firms are be explained by size-based factors, cognitive-based factor are dominant in 84 firms. In this stage, human capital potential of firms depending on size-based factors and human capital potential of firms depending on cognitive-based factors find a chance to be analysed separately. Therefore, survey data were separated two groups as size-based and cognitive-based factors.

In parallel, LQ analyses were made to determine the agglomeration levels of Konya manufacturing industry sub-sectors. As a result of the analyses made by employee numbers in 21 sub-sectors in Nace 2.2 level, firms that have LQ level below to 1 were approved as firms which do not have agglomeration tendency. Accordingly, when there is an agglomeration tendency in 7 sub-sectors, there is not an agglomeration tendency in 14 sub-sectors in manufacturing industry of Konya. 64 surveys were realized with firms which have agglomeration tendency and 88 surveys were realized with firms which do not have agglomeration tendency. The number of firms interviewed in the context of sectors and sub-sectors which have agglomeration tendency and do not have agglomeration tendency are given in Table 3.

Table 2. Total Variance and Component Score Coefficient Matrix according to Factor Analysis

Component	Extraction Sums of Squared Loadings			Component Score Coefficient Matrix						
	Total	% of Variance	Cumulative %	FirmSize	EduBack	R&D	SkillLabor	FirmAge	Experience	Profession
1	2,162	29,612	29,612	,395	,423	,395	,302	,005	,004	,141
2	1,887	25,846	55,458	,032	,068	-,065	-,071	,578	,568	,004
3	1,095	14,998	70,456	,340	-,142	-,350	-,157	-,054	-,013	,792
4	0,680	9,314								
5	0,579	7,930								
6	0,468	6,410								
7	0,430	5,890								
Extraction Method: Principal Component Analysis.										

Table 3. Konya Manufacturing Industry Indicators and Location Quotient

NACE 2.2. Code	Employee Num.		LQ	LQ Code	The Number of Firms Surveyed
	Konya	Turkey	Konya		
Manufacture of food products and beverages	8408	281537	1,470	1	11
Manufacture of tobacco products	0	8772	0,000	0	14
Manufacture of textiles	3276	410020	0,393	0	12
Manufacture of wearing apparel; dressing and dyeing of fur	3193	311105	0,505	0	2
Tanning and dressing of leather	0	44199	0,000	0	9
Manufacture of wood and cork, except furniture	1889	79959	1,163	1	14
Manufacture of paper and paper products	485	31855	0,750	0	4
Publishing, printing and reproduction of recorded media	569	45152	0,620	0	3
Manufacture of coke, refined petroleum and nuclear fuel	0	1088	0,000	0	3
Manufacture of chemicals and chemical products	906	85240	0,523	0	6
Manufacture of rubber and plastics products	1955	82803	1,162	1	4
Manufacture of other non-metallic mineral products	2309	132512	0,858	0	8
Manufacture of basic metals	4687	71150	3,243	1	8
Manufacture of fabricated metal products, except machinery	4047	140354	1,420	1	17
Manufacture of machinery, office and computer machinery	6023	148331	1,999	1	3
Manufacture of electrical machinery, radio, television	334	50764	0,324	0	2
Manufacture of medical, and optical instruments, and clocks	115	15734	0,360	0	2
Manufacture of motor vehicles, trailers and semi-trailers	3540	81402	2,141	1	7
Manufacture of other transport equipment	38	11395	0,164	0	6
Manufacture of furniture	1940	118406	0,807	0	15
Manufacturing not elsewhere classified	1	602	0,082	0	2
Total	43715	2152380			152

Sources: prepared by using the data of TURKSTAT (2012)

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380

Due to were taken LQ value expressing the agglomeration tendency of firms, firms having agglomeration tendency were coded as 1, firms not having agglomeration tendency were coded as 0. 21 firms in size-based and 43 firms cognitive-based are dominant firms showing agglomeration tendencies (table 4).

Table 4. The Number of Firms Surveyed in terms of human capital factors determined by factor analysis and LQ Score

	Scaling Factors	Cognitive Factors
LQ >= 1	21	43
LQ < 1	47	41

Lastly, it were comparatively analysed whether human and social capital variables have effects on agglomeration tendencies of firms. As mentioned above, the study aims to obtain the findings with logistic regression in respect of social and human capital potentials of the region for testing agglomeration tendencies of firms being characterized on size-based and cognitive-based factors in Konya manufacturing industry. As can be seen in table 5, the coefficient of logistic regression analysis in all models is statistically significant. In other words, all of statistical analyses describe the dependent variables of independent variables over amount 35 percent.

As expected, although human and social capital potential can be said to have a significant effect on agglomeration tendencies in Konya manufacturing industry, the statistical results show that some components of independent variables have not the effect on agglomerations. 'InfoBackground' and 'SkillBackground', for example, have not any effects on agglomeration tendencies for firms being size-based factors dominated in terms of human capital. However, concerning for example 'EmployBackground', PhysBackground' and 'HistBackground' for firms being size-based factors dominated in terms of human capital, the regression coefficients is positive values. The independent variables have impact on increasing to the dependent variables. A one-unit increase in 'EmployBackground', PhysBackground' and 'HistBackground' will lead to an increase the tendency to spatial agglomeration of firms about more than 1,5 times (2,291 times in EmployBackground, 1,731 times in PhysBackground, 1,632 times in HistBackground). It, therefore, can be said that human capital factors such as employment structure, physical conditions, and historical background of firms have an important role on spatially clustering of firms being firms being size-based factors dominated in terms of human capital in Konya. Also, it can be analysed that social capital components such as 'trust' and 'friend' have

positively a direct effect in agglomeration tendencies of the firms. As can be seen in the analysis results, it has been found cooperation atmosphere based on relations of trust and friendship in the region to be a determining factor in the spatial location of firms. Besides, there is a no significant effect on agglomeration tendencies of firms being size-based factors dominated in social capital components, as 'Interagent' and 'Memorg'. Namely, the intensity of actors such as intermediary agents, various club, groups, institutions and voluntary organization in Konya is not associated with spatial concentration of these firms (table 5).

The empirical results associated with firms being cognitive-based factors dominated in terms of human capital indicate that human and social capital potential of the region have importantly the effect on spatial concentration of firms since there is a significant relations between all components of human capital, except for 'PhysBackground', and firm location selection for firms being cognitive-based. However, the regression coefficients for 'InfoBackground' and 'HistBackground' are negative values. The independent variables have an impact on reducing the dependent variables. In other words, a one-unit increase in 'InfoBackground' will decrease about 1.661 (1/0.602) times and a one-unit increase in 'HistBackground' will decrease about 1.504 (1/0.665) times the agglomerations tendency of firms being cognitive-based factors. On the other hand, the empirical results indicate that neither 'Trust' as component of social capital, nor 'Friend' show directly any significant on the agglomeration tendencies of these firms in Konya. Notwithstanding, components of social capital such as 'Interagent' and 'Memorg' have positively a direct effect of district firm' agglomeration tendencies in Konya. One-unit increase in the variable 'Interagent' and 'Memorg' will affect more than two times (2,244 times and 2,162 times) the agglomeration tendencies of firms being cognitive-based factors dominated in terms of human capital. The variables, thus, seem to be of great use for the firms in Konya (table 5).

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380

Table 5. The Relationship among Agglomeration Tendencies and Human and Social Capital Potential of Konya Manufacturing Firms

	Logistic Regression for Firms Being Size-Based Factors Dominated in terms of Human Capital				Logistic Regression for Firms Being Cognitive-Based Factors Dominated in terms of Human Capital			
	B	**S.E.**	**Sig.**	**Exp(B)**	**B**	**S.E.**	**Sig.**	**Exp(B)**
EmployBackground	*,829*	*,389*	*,033*	*2,291*	*1,400*	*,427*	*,001*	*4,057*
InfoBackground	,088	,282	,754	1,092	*-,508*	*,271*	*,062*	*,602*
SkillBackground	,139	,208	,504	1,149	*,345*	*,122*	*,005*	*1,412*
PhysBackground	*,549*	*,271*	*,043*	*1,731*	,280	,259	,280	1,323
HistBackground	*,490*	*,254*	*,054*	*1,632*	*-,408*	*,250*	*,093*	*,665*
Constant	***-6,255***	***1,638***	***,000***	***,002***	***-2,676***	***1,271***	***,035***	***,069***
	Omn. Model Coef.	**Chi-square**	**Sig.**		**Omn. Model Coef.**	**Chi-square**	**Sig.**	
	Step	27,634	,000		**Step**	30,380	,000	
	Block	27,634	,000		**Block**	30,380	,000	
	Model	27,634	,000		**Model**	30,380	,000	
	-2 Log LH.	**Cox & Snell R^2**	**Nagelkerke R^2**		**-2 Log LH.**	**Cox & Snell R^2**	**Nagelkerke R^2**	
	56,436	,334	,471		86,021	,303	,405	
	B	**S.E.**	**Sig.**	**Exp(B)**	**B**	**S.E.**	**Sig.**	**Exp(B)**
Trust	*,609*	*,278*	*,028*	*1,839*	,041	,195	,833	1,042
Friend	*,972*	*,314*	*,002*	*2,645*	,235	,207	,257	1,265
Interagent	-,215	,267	,422	,807	*,808*	*,285*	*,005*	*2,244*
Memorg	,055	,248	,826	1,056	*,771*	*,226*	*,001*	*2,162*
Constant	***-5,764***	***1,940***	***,003***	***,003***	***-4,401***	***1,165***	***,000***	***,012***
	Omn. Model Coef.	**Chi-square**	**Sig.**		**Omn. Model Coef.**	**Chi-square**	**Sig.**	
	Step	19,229	,001		**Step**	28,675	,000	
	Block	19,229	,001		**Block**	28,675	,000	
	Model	19,229	,001		**Model**	28,675	,000	
	-2 Log LH.	**Cox & Snell R^2**	**Nagelkerke R^2**		**-2 Log LH.**	**Cox & Snell R^2**	**Nagelkerke R^2**	
	64,840	,246	,367		87,726	,289	,386	

DISCUSSION AND CONCLUSION

As mentioned above, aim of this paper is to explore the empirical evidence the effect of human and social capital on agglomerations of manufacturing firms. More specifically, in empirical case study has been examined the relations between human and social capital potential and agglomeration tendencies of firms in Konya. As expressed theoretical backgrounds, agglomerations could be characterized within the bounds of possibility offered by human and social potential of a region. It, thus, can be said that firms not only can use the existing resources and opportunities of the region, but also would like to use the new information resources collected by local institutions, association, NGO, social networks

being in the region. Thus, when gathering of economic activities in a specific place are explained in terms of various advantages of places which are emphasized on agglomeration and urbanization economies, economic approaches such as income distribution, affecting regional development disparities, externalities which will occur as a result of gathering firms related each other in same place, environmental factors and to benefit from incentive features were handled with non-economic approaches such as human and social capital.

Agglomeration of economic activities can be evaluated as a result of learning process with information exchange, interaction among firms, mutual dependence among actors. It is necessary to coexist spatially new competition advantages such as increasing mutual dependence of firms, transferring technology, information spillover and innovation and perform dependent using common place (Asheim, 1996; Malmberg, 1996). Cooperation and ability to act jointly is depend on social strength that is multitude of socio-psychological values such as common culture, social relations, solidarity networks, individual connections, trust, and faith of strength communication among firms and institutions (Amin, 1999; Steiner, 1998). These values provide not only firms to integrate with human capital component such as information, skill and experience easily but also qualify existing human capital potential. Therefore regions being rich in terms of social and human capital potential, geographic and historical accumulation make an attractive effect on agglomeration of economic activities.

Analyses in case of Konya manufacturing industry showed that firm's human and social capital potential have a decisive influence in agglomeration process in specific area of firms. Spatial conditions such as region' embedded information, local institutions and associations, research infrastructure and culture, information potential, codified information level and production culture has strengthened the firms' innovative and competitive structure (Crewe, 1996; Molina-Morales, 2005). However, spatial behaviour patterns are different from others according to human capital elements. For example, it was identified that structural elements such as region's employment structure, physical and technological opportunities and historical accumulation are determinant in firms' agglomeration process of the firms which are defined according to size-based factors. In other words, firms being size-based factors are in agglomeration tendency with using opportunities presented by location economies since localization is associated with knowledge spillovers within a region (Marshall, 1920). Thus, it is to cause of agglomerations the presenting positive externalities in terms of workforce opportunities,

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380

consisting alternatives in terms of supplier and customer and advantages occurred by historical accumulation.

Agglomeration process of economic activities is a complex situation so it cannot be explained only with human capital elements. Because advantages presented by local economies can transform economic output with the nature of networks among actors. Agglomeration tendencies of actors are explained with networks among actors such as deep relationship and cooperation (Porter, 1998), multi-actors and mutual dependence (Rosenfeld, 1996), relevant and supportive institutions (Feser, 1998). Because complex social relationship networks occurred in specific area provide the success of firms with densifying production, information and cooperation networks in spatial level. In case of Konya, we can be said that these socio-cultural elements have a decisive effect on agglomeration tendencies of firms. As seen in the analyses, it was identified that bonding social capital elements such as trust and friendship relations are decisive in agglomeration tendencies of firms being size-based factors. Therefore, it can be the relationships among actors showing homogeneous features to determine agglomeration tendencies in firms which are dominant in terms of size-based factors.

In contrary, agglomeration tendencies of firms being dominant in terms of cognitive-based factors show differences in terms of both human capital and social capital potential. In agglomeration tendencies of the firms are more decisive the relationships with actors which have different roles than the relationships among homogenous groups. In other words, regions which have different information channels and sources have an effect on firms' agglomeration tendencies. Because firms would like to be more competitive and innovative for articulating global networks and these basic way is to have the potential mechanism to modernize and develop local information. Therefore, firms in which cognitive-based factors are dominant would like to be in regions in which they can reach new information sources easily. Desire for articulation to these social networks of firms being dominant cognitive-based factors brings about using opportunities of region's human capital and information infrastructure. Although the nature of human capital and information infrastructure of the region and articulation ability to the sources of social networks are a separate study, it can be said that firms being cognitive-based can attribute a meaning to space with willing to use more qualified networks and human capital referring to knowledge/information, ability, skill and capacity in spatial tendency of the firms. In other words, firms that are gathering as

spatial have tendency to give a meaning to place in the context of their own dynamics and potentials.

In conclusion, Konya was to be manufacturing industry focus as a result of the advantages of location and urbanization economies. However, the possible contribution on sustainable regional development with having more competitive and innovative structure of manufacturing industry in Konya can be explained with socio-cultural and socio-economic potentials provided by space. Therefore, space presenting positive advantages for several production organizations with geographic and historical accumulation has brought up the agglomeration processes in Konya which are rich information in terms of human and social capital. In other words, specialization level and network type organization potential increase mutual dependence in firms and enforce to gather together with new competitive advantages such as technology transfer, information spill-over, and innovation. However, when thinking that this study is based on empirical and statistical method, obtained outputs should be tested with the studies which will be made descriptive and in-depth. Because the studies on the meaning of agglomeration tendencies on abstract concepts such as social capital, information-ability and experience with quantitate methods can lead to methodological problems or faults.

REFERENCES

Amin, A. (1999). An institutionalist perspective on regional economic development. International Journal of Urban and Regional Research, 23(2), 365-378.

Asheim, B. T. (1996). Industrial districts as 'learning regions': A condition for prosperity. European Planning Studies, 4(4), 379-401.

Belussi, F. (2006). In search of a useful theory of spatial clustering: agglomeration versus active clustering. In B. T. Asheim, P. Cooke, & R. Martin (Eds.), Clusters and regional development (pp. 69-89). UK: Routledge.

Clercq, D. D., & Dakhli, M. (2003). Human capital, social capital, and innovation: A multi-country study. Gent: Vlerick Leuven Gent Management School.

Coleman, J. S. (1988). Social capital in and the creation of human capital. American Journal of Sociology, 94, 95-120.

Crewe, L. (1996). Material culture: Embedded firms, organizational networks and the local economic development of a fashion quarter. Regional Studies, 30(3), 257-272.

Devine, F., & Roberts, J. M. (2003). Alternative approaches to researching social capital: A comment on van Deth's measuring social capital. International journal of research methodology, 6, 93-100.

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380

Edwards, B., & Foley, M. (1999). Is it time to disinvest in social capital? Journal of Public Policy, 19(2), 141-173.

Eser, K., & Gokmen, C. E. (2009). Beşeri sermaye'nin ekonomik gelişme üzerindeki etkileri: Dünya deneyimi ve Türkiye üzerine gözlemler. Sosyal ve Beşeri Bilimler Dergisi, 1(2), 1309-8012.

Feser, E. J. (1998). Enterprises, external economies, and economic development. Journal of Planning Literature, 12(3), 283-302.

Field, J. (2006). Sosyal sermaye (B. Bilgen & B. Şen, Trans.). İstanbul: İstanbul Bilgi Üniversitesi.

Fukuyama, F. (1995). Trust: The social virtues and the creation of prosperity. London: Hamish Hamilton.

Grootaert, C., & Bastelaer, V. T. (2002). The role of social capital in development: An empirical assessment. Cambridge: Cambridge University Press.

Karagul, M., & Akcay, S. (2002). Ekonomik büyüme ve sosyal sermaye: Ampirik bir kanıt. İktisat İşletme ve Finans, 17(198), 82-90.

Karakayacı, O. (2011). Role of social capital in success of industrial clusters: The case of mechanical engineering industry of Ankara and Konya. (PhD), Yildiz Technical University, İstanbul.

Malmberg, A. (1996). Industrial geography: Agglomeration and local milieu. Progress in Human Geography, 20(3), 392-403.

Marshall, A. (1920). Principles of economics. London: MacMillan.

Molina-Morales, F. X. (2005). The territorial agglomerations of firms: A social capital perspective from the Spanish tile industry. Growth and Change, 36(1), 74-99.

OECD. (1998). Human capital investment. Paris: CERI Publishing.

Parts, E. (2003). Interrelationships between human capital and social capital: implications for economic development in transition economies. Tartu-Estonia: Tartu University Press.

Porter, M. (1990). The competitive advantage of nations. New York: The Free Press.

Porter, M. (1998). On competition. Boston: Harvard Business Press.

Putnam, R. D. (1993). Making democracy work: Civic traditions in modern Italy. Princeton: Princeton University Press.

Putnam, R. D. (1995). Bowling alone: America's declining social capital. Journal of Democracy, 6(1), 65-78.

Putnam, R. D. (2000). Bowling alone: The collapse and revival of American community. New York: Simon and Schuster.

Rosenfeld, S. A. (1996). Does cooperation enhance competitiveness? Assessing the impacts of inter-firm collaboration. Research Policy, 25(2), 247-263.

Sabatini, F. (2005). Measuring social capital in Italy: An exploratory analysis: AICCON Working Paper Series.

Schmitz, H. (1999). Global competition and local cooperation: Success and failure in the Sinos Valley, Brazil. World Development, 27(9), 1503-1514.

Schultz, T. W. (1961). Investment in human capital. The American economic review, 51(1), 1-17.
Steiner, M. (1998). Clusters and regional specialisation: on geography technology and networks. Paper presented at the European Research in Regional Science 8, London.
TURKSTAT. (2012). İmalat Sanayi Sayımı. Ankara.
Woodhouse, A. (2006). Social capital and economic development in regional Australia: A case study. Journal of Rural Studies, 22(1), 83-94.
Woolcock, M. (1998). Social capital and economic development: Toward a theoretical synthesis and policy framework. Theory and society, 27(2), 151-208.
Woolcock, M. (2002). Social capital in theory and practice: where do we stand? In J. Isham, T. Kelly, & S. Ramaswamy (Eds.), Social capital and economic development: Well-being in developing countries (pp. 18-39). New York: Edward Elgar.

Resume

Ozer Karakayacı; B.Arch, M.Sc., PhD. He received his B.Arch and MSc. in City and Regional Planning from Selcuk University, Faculty of Agriculture (1996-2003). He earned his PhD. degree in Regional Planning from Yildiz Technical University (2011). He is currently working as an Assistant Professor at Selcuk University. Major research interests include regional planning, economic geography, social capital, industrial geography.

DOI: 10.15320/ICONARP.2017.32 – E-ISSN: 2147-9380