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## Social Capital Wealth as a Predictor of Innovative Climate in Schools\*

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### Abstract

This study aimed to investigate the relationship between social capital and innovative climate in secondary schools. Relational model was used in the research. 700 teachers from upper secondary schools were recruited through stratified sampling method. Data were collected through “Social Capital in Schools Scale” and “Innovative Climate in Schools Scale”. Mean, correlation and regression analyzes were used for data analysis. The results of the relationship between concepts revealed a positive high level of correlation between the social capital and the innovative climate in schools. Positive moderate and high significant relationships were found between the dimensions of social capital and the innovative climate of (except for openness to innovation). Finally, it was concluded that the social capital dimensions were a significant predictor of the innovative climate. Results were discussed within the scope of the development of social capital and innovative climate in schools.

**Key words:** Social capital, innovative climate, secondary schools.

### Introduction

Classical organization theory has focused on the importance of physical and human capital in enhancing performance in organizations. However, that the relations between the employees in the organizations based on friendship, sincerity and trust increase the organizational performance has added a new dimension to the existing research. Reasons of the problems related to the relationships between the employees and research on their solution have raised the concept of social capital, which is expressed as the missing link of capital (Cohen & Prusak, 2001; Coleman, 1988b; Field, 2003; Fukuyama, 2005; Nahapiet & Ghoshal, 1998; Portes, 1998; Putnam, 1995). Social interaction networks and voluntary associations developed by individuals who come together without any means of pressure in organizations correspond to the social capital wealth (Cohen & Prusak, 2001; Field, 2003). Strong social capital in organizations plays an important role in organizational success. The importance given to human resources and human values in organizations facilitates the realization of organizational goals.

Cooperation and mutual interaction are common in education organizations, which play an important role in training human beings. Because schools are a whole with internal stakeholders consisting of administrators, teachers and other staff as well as the elements of pressure groups in the environment (Bursalioglu, 2011). The indicators of the social capital in schools can be listed as the relation of the family with the school and their attitudes towards the school, social activities of the employees related to school, participation of students and families in school decisions, communication between communities and school (Catts & Ozga, 2005). In a similar vein, student-teacher and student-parent-teacher relations in schools constitute the context of social capital. Also, the school leaders' relations with workers and the surrounding communities are indicators of the relationship between social capital and education (McGonigal et al., 2007). Parental communication in the family environment is effective in education of the child. On the other hand, social capital plays a critical role in achieving organizational goals in schools where human relations and social processes are decisive. Research on the relationship between social capital and school has usually focused on student achievement (Coleman, 1988a; Hanifan, 1916; Israel, Beaulieu & Hartless, 2001; Teachman, Paasch & Carver, 1996). In addition, research has shown that the strong social capital that individuals possess facilitates finding a job (S. Lee & Brinton, 1996) and their social participation (Sandefur, Meier & Campbell, 2006). According to exiting studies, communication

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and cooperation between the internal and external stakeholders of the school (administrator, teacher, student and parent) increase the school success.

Apart from school success (Coleman, 1988a), social capital affects many factors such as organizational development (Nahapiet & Ghoshal, 1998), motivation of employees (Turan, 2014) and innovation (Turgut & Beğenirbaş, 2013). Among these factors, it is noteworthy to examine the innovative climate, which forms a basis for innovation. Strong communication channels and networks in organizations, trust-based relations, active participation in organizational actions and support for the innovation process contribute to the realization of innovation (Tsai & Ghoshal, 1998). Moolenaar, Daly and Slegers (2010), who support this assumption, state that the supportive role of social bonds, trust and participation has an important function in the innovative climate. Mutual social networks in schools have a valuable potential for innovation. The intensity of social relations contributes to the innovative climate in creation, implementation and dissemination of new knowledge. In fact, administrators who take risks in school development are considered successful. Therefore, the intensity of social networks positively affects teachers' perceptions of the innovative climate (Daly, Moolenaar, Bolivar & Burke, 2010; Little, 2010).

In parallel with the current studies which defend the impact of social capital wealth on innovation, how the social capital wealth in schools contributes to the process of innovation can be presented. Likewise, innovation in organizations can take place with the participation of all employees. Cooperation and communication among individuals provide the sharing of different ideas. At the same time, the sense of trust among the employees sets the stage for the formation of new ideas and increases the adaptation among the employees. At this point, there is a dearth of studies conducted on the contribution of trust-based relations and connections in the innovative climate in the schools. Hence, with this study, the intensity of the links between the vocational learning communities within the school can be effective in the development of employee support in the process of innovation, taking initiative, team work and openness to innovation. Considering the formation and development of social capital in schools and its contribution to the innovative climate, it can be stated that this study will guide other related studies. In conclusion, in this study, it is aimed to create new theoretical and empirical research areas in the field of educational administration by revealing the "relationship between social capital and the innovative climate in schools"

## **Theoretical Framework**

### **Social Capital**

Theoreticians and researchers have attempted to clarify the concept since social capital attracted the attention of many fields of science such as economics, sociology and politics (Bhandari & Yasunobu, 2009; Durlauf, 2002; Farr, 2004). Hanifan (1916), who first proposed social capital, declares that relations such as neighborhood, sincerity and friendship between the families or individuals that make up the society have a concrete value. Coleman (Coleman, 1988b), who handles social capital within the framework of its functions, defines social capital as useful resources that contribute to the cognitive development of children or adults. According to Putnam, who handles social capital in the context of social life and democracy, it is the social organization characteristics that facilitate social trust and social networks and coordinated actions with coordinated actions (Putnam, Leonardi & Nanetti, 1994). As can be seen, the definitions of the pioneers, who were considered to be the classics of social capital, were focused on social relations networks based on cooperation and communication. Besides, according to the OECD, social capital consists of values, shared norms and relationship networks that facilitate cooperation among groups (Healy & Côté, 2001). Furthermore, the World Bank, which deals with social capital from a macro perspective, emphasizes the network ties and social relations that shape the social relations in society (Woolcock & Narayan, 2000).

It can be argued that the majority of attempts to define social capital have developed around the emphasis on the dimensions of the concept. Grooatert and Bastelaer (2002) state that membership in social networks, trust, commitment to norms, cooperation and participation are important in the development of society. Similarly, Kilpatrick, Johns and Mulford (2010) list the determinants of social capital as voluntary participation, shared vision, attitudes and norms, the scope and structure of networks, identifying with the community. In this respect, determining the components and functions of the concept is very important in understanding social capital. Elements such as social relation networks, commitment, trust, participation and cultural memory become prominent in the definition of social capital.

Social interaction networks, which are one of the important elements of social capital, are an important element that helps the realization of individual goals and provide social integration. According to Field (2003), social networks are related to the number of acquaintances and the intensity of their interaction with their environment.

Similarly, Paxton (1999) also points out that formal and informal connections between individuals depend on social networking. Especially, Fukuyama (2005) states that the trust placed in the center of social capital is the capacity arising from its domination in the whole or in a certain part of society. Putnam (1995) argues that individuals who participate in social organizations and have strong neighborly relations develop better relations. According to the author, there is a linear relationship between social trust and social participation. Coleman (1988b) states that there are two important elements of social capital: liabilities and trust. If there is no trust among the members of the organization, it is not possible to talk about the organization. Cohen and Prusak (2001) advocate that trust is a prerequisite for relations, connections, cooperation and commitment. Social capital cannot be talked about in organizations where confidence level is weak. In this context, it seems that pioneers such as Putnam, Coleman and Fukuyama consider trust as one of the key concepts of social capital.

It can be stated that elements such as commitment, participation and cultural memory contribute to the formation and development of social capital. Indeed, Lee and Croninger (2001) utter commitment and identification among the elements of social capital. Cohen and Prusak (2001) consider commitment as the individual's desire to do more, except for the business requirements of the organization. According to the author, cooperation can develop with the identification of trust and mutual understanding. Putnam (1995), on the other hand, explains the element of participation of social capital as an individual's membership in voluntary organizations and associations, and his/her use of political preferences. Print and Coleman (2003) emphasize that the sharing of cultural values and the active participation of these values in democratic processes is very important for participation and commitment. In addition, cultural memory represents the common language, vision and organizational traditions that contribute to the collective action of organizations (Nahapiet & Ghoshal, 1998).

### **Innovative Climate**

Organizational innovation is defined as the adoption of a new thought or behavior in organizations (Daft, 1978; Damanpour, 1988). More specifically, organizational innovation is expressed as the production, acceptance and application of new ideas, processes, products, services (Rowe & Boise, 1974). Becker and Whisler (1967) describe the use of an idea by one of the organizations with the same objectives. Poole and Van de Ven (2004) argue that innovation, which they see as a part of change, is a product and facilitator of the free exchange of ideas in achieving social and economic progress. The working environment plays an important role in the innovation of individuals. Therefore, organizations need to find suitable working environments that facilitate innovation and enable employees to creativity (Ahmed, 1998). Amabile et al. (1996) state that with an appropriate working environment in the organization, employees tend to increase their creativity and innovation tendencies. The innovative climate consists of elements such as encouraging innovation, taking initiative, challenging to challenges, leadership, teamwork and adaptation, democracy culture, innovative vision and mission, organizational autonomy and freedom (Ahmed, 1998; Amabile et al., 1996).

The innovative climate in schools mostly emerges with the creative ideas of teachers and administrators. The realization of innovation in schools requires teachers to have a shared vision and diversity of knowledge (West & Sacramento, 2012). Sharma (2001) states that the innovative climate in schools is related to the interaction and productivity variables among the employees. The attitudes of the school principals towards innovation, the willingness of the teachers to change and the tendencies of innovation take an important place in the continuation of innovation. According to McGeown (1979), the innovative teacher has characteristics such as entrepreneurship, radicalism, authenticity and flexibility. Teachers' adoption of innovations and their innovative behaviors are related to their tolerance and support to schools, flexibility and openness to new knowledge. Mioduser, Nachmias, Tubin and Forkosh-Baruch (2003) explain that new learning environments beyond the traditional time and space configurations in the school can take place by developing new pedagogical solutions and expanding the school's sources of information. Van der Vegt and Huang (2005) describe climate change as the behaviors and sharing of practices that encourage employees to use new knowledge and methods. In this context, education administrator and employees need to be open to change for innovative climate and school stakeholders' perceptions of developing new knowledge and practices to meet organizational goals are of importance (Moolenaar, Slegers, Karsten & Zijlstra, 2009). Therefore, while educating innovative individuals in schools, innovation and creativity need to be provided from an early age and continuously processed at every step of education. Teachers should know the innovative methods of teaching and put them into practice in their lessons, and they should provide children with innovative thinking and practice skill.

### **Method**

In the present study, in which relational model was used, the relationships between social capital and the innovative climate in secondary schools were examined. The purpose of the relational survey model is to

determine the degree of the relationship between at least two variables. In this model, strong statistical techniques such as correlation and regression were used to measure the relationship between two or more variables (Balci, 2013). In this context, while the dependent variables of this research were composed of the dimensions of innovative climate, social capital dimensions constituted independent variables of the study.

#### Sample

The sample of the study consisted of 16,468 upper secondary school teachers working in Ankara, in 2015-2016. Stratified sampling and simple random sampling were applied in this study. The central districts (Altındağ, Çankaya, Etimesgut, Gölbaşı, Keçiören, Mamak, Pursaklar, Sincan and Yenimahalle) were considered as layers and the number of schools and teachers was determined by random sampling method according to sample size. The sample size of the study can represent at least 377, maximum 644 people at 5% tolerable error level (Şener Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2017). In this context, considering the possible problems that may occur during the application, 700 teachers were recruited and the whole sample was reached. However, during the analysis of the data, it was decided that 11 scale forms were not suitable and analyzes were performed on 689 data. The sample included females (%62,6) and males (%37,4). Considering their education levels, 75.6% of teachers are graduates of undergraduate and higher education schools while 24.4% of them had graduate education. Their occupational seniority and percentage were as follows: 17% was 0-5 years; 10.3% was 6-10 years; 13.1% was 11-15 years; 20.8% was 16-20 years; 38.9% was 21 years or more. According to the working experience variable in schools, 21% of teachers had 0-2 years; 30,9% had 3-5 years; 25,5% had 6-10 years; 22,5% had 11 years or more.

#### Instruments

*Social Capital in Schools Scale.* The scale was developed by Polatcan (2017) and had 31 Likert type items (Strongly Disagree = 1 and Strongly Agree = 5). The scale consists of commitment, social interaction ties, trust, participation, and cultural memory. High scores from the scale show that social capital is high in schools. Kaiser-Meyer-Olkin (KMO) value of .93 and Bartlett-Sphericity Test ( $X^2=4036.97$ ;  $p = .00$ ) were found to be suitable for exploratory factor analysis (EFA). As a result of the EFA, the factor load values of the “commitment” dimension were between .62 and .77 and the total variance explained was 15.24%; the factor load values of the “social interaction ties” dimension were between .45 and .75 and the total variance explained was 16.48%; the factor load values of the “trust” dimension were between .65 and .72 and the total variance explained was 12.70%; the factor load values of the “participation” dimension were between .41 and .79 and the total variance explained was 9.01%; and the factor load values of the “cultural memory” dimension were between .63 and .85 and the total variance explained was 11.40%. The results of the confirmatory factor analysis for the validation of the factors of social capital scale in schools were found to be acceptable in the five-dimensional structure ( $X^2/sd = 1.53$ ,  $RMSEA=.032$ ,  $GFI=.90$ ,  $AGFI =.87$ ,  $CFI=.96$ ). The reliability coefficients of the social capital scale were .90 for the commitment, .91 for the social interaction ties, .92 for the trust, .74 for the participation, and .89 for the cultural memory. The reliability coefficient of the whole scale was .94.

*Innovative Climate in Schools Scale.* The scale was developed by Polatcan (2017) and had 32 Likert type items (Strongly Disagree = 1 and Strongly Agree = 5). The scale consisted of five dimensions: support for innovation, resources and facilities, taking initiative, openness to innovation, teamwork and adaptation. Higher scores in the scale show that the level of innovation climate in schools was high. KMO value (.94) and Bartlett Sphericity Test ( $X^2 = 6243.07$ ;  $p = .00$ ) calculated for construct validity were found to be suitable for EFA. As a result of the EFA, the factor load values of the “support for innovation” dimension were between .63 and .78 and the total variance explained was 20.88%; the factor load values of the “resources and facilities” dimension were between .63 and .88 and the total variance explained was 15.56%; the factor load values of the “taking initiative” dimension were between .73 and .86 and the total variance explained was 14.86%; the factor load values of the “teamwork and adaptation” dimension were between .49 and .71 and the total variance explained was 12.87%; and the factor load values of the “openness to innovation” dimension were between .72 and .88 and the total variance explained was 9.05%. The results of the confirmatory factor analysis for the validation of the factors of the innovative climate in schools scale were found to be acceptable in the five-dimensional structure ( $X^2 /sd = 1.65$ ,  $RMSEA = .051$ ,  $GFI=.86$ ,  $AGFI = .83$ ,  $CFI = .97$ ). The reliability coefficients calculated for the factors of innovative climate scale were .95 for support for innovation, .94 for resources and facilities, .93 for taking initiative, .91 for teamwork and adaptation, and .83 for openness to innovation. The reliability coefficient calculated for the whole scale was .95.

#### Data Analysis

SPSS 22 package program was used for data analysis. The average values were assigned to the missing data before the data analysis. On the other hand, the normality and homogeneity values of the items were examined

when deciding whether to use the parametric or non-parametric test methods. For normal distribution of data, mod, median and mean, skewness and kurtosis coefficients, Q-Q Plot graphs, Kolmogorov-Smirnov analysis were examined. Levene test was applied for homogeneity of the data (Büyüköztürk, 2011). In accordance with these criteria, it was observed that the mean, median and mode values of the data were close to each other in all dimensions and the skewness coefficients and the kurtosis coefficients were distributed between -1 and 1. When Levene test results were examined for homogeneity of data according to the independent variables, it was found that significant difference was greater than  $p > .05$  in all dimensions; however, Kolmogorov-Smirnov normality analysis was found to be significant in some dimensions at the level of  $p > .05$ . In the light of these results, it was decided to use Pearson correlation and multiple regression analyzes for parametric test methods.

## Results

### Findings on Relationship between Social Capital and Innovative Climate in Schools

The results of the correlation analysis for the relationships between the dimensions of social capital and innovative climate in schools were given in Table 1.

Considering the dimensions of social capital, when Table 1 was examined, while teachers' perception of social interaction was at the highest level ( $\bar{x} = 3.45$ ), their perception of participation was at the lowest level ( $\bar{x} = 2.87$ ). In addition, the highest mean score for the reform climate of the teachers was in the dimension of openness for innovation ( $\bar{x} = 3.56$ ), while the lowest mean score was at the initiative level ( $\bar{x} = 2.86$ ).

When the correlation coefficients between the variables were examined, it was observed that commitment in schools had a moderate positive relationship with social interaction ties ( $r = .60; p < .01$ ), trust ( $r = .59; p < .01$ ), participation ( $r = .52; p < .01$ ), cultural memory ( $r = .59; p < .01$ ), support for innovation ( $r = .68; p < .01$ ), resources and facilities ( $r = .59; p < .01$ ), and taking initiative ( $r = .60; p < .01$ ). Social interaction ties had a moderate positive relationship with trust ( $r = .61; p < .01$ ), participation ( $r = .54; p < .01$ ), cultural memory ( $r = .58; p < .01$ ), support for innovation ( $r = .67; p < .01$ ), resources and facilities ( $r = .58; p < .01$ ), taking initiative ( $r = .59; p < .01$ ), and teamwork and adaptation ( $r = .68; p < .01$ ); however, had a low positive relationship with openness to innovation ( $r = .36; p < .01$ ).

It was noted that commitment in schools had a moderate positive relationship with participation ( $r = .55; p < .01$ ), cultural memory ( $r = .53; p < .01$ ), support for innovation ( $r = .70; p < .01$ ), resources and facilities ( $r = .62; p < .01$ ), taking initiative ( $r = .63; p < .01$ ), teamwork and adaptation ( $r = .71; p < .01$ ); however, had a low positive relationship with openness to innovation ( $r = .32; p < .01$ ). Participation dimensions had a moderate positive relationship with cultural memory ( $r = .54; p < .01$ ), support for innovation ( $r = .60; p < .01$ ), resources and facilities ( $r = .57; p < .01$ ), taking initiative ( $r = .57; p < .01$ ), and teamwork and adaptation ( $r = .50; p < .01$ ); however, had a low positive relationship with openness to innovation ( $r = .33; p < .01$ ). Cultural memory dimension had a moderate positive relationship with support for innovation ( $r = .66; p < .01$ ), resources and facilities ( $r = .59; p < .01$ ), taking initiative ( $r = .62; p < .01$ ) and teamwork and adaptation ( $r = .65; p < .01$ ); however, had a low positive relationship with openness to innovation ( $r = .28; p < .01$ ).

It was found that support for innovation dimension had a low positive relationship with openness to innovation ( $r = .46; p < .01$ ); had a moderate positive relationship with resources and facilities ( $r = .62; p < .01$ ), taking initiative ( $r = .60; p < .01$ ), teamwork and adaptation ( $r = .55; p < .01$ ); and had a high positive relationship with social capital ( $r = .80; p < .01$ ) and innovative climate ( $r = .89; p < .01$ ). Resources and facilities dimension had a moderate positive relationship with taking initiative ( $r = .66; p < .01$ ), openness to innovation ( $r = .42; p < .01$ ), teamwork and adaptation ( $r = .58; p < .01$ ), and social capital ( $r = .71; p < .01$ ); however, had a high positive relationship with innovative climate ( $r = .88; p < .01$ ).

Taking initiative dimension had a moderate positive relationship with openness to innovation ( $r = .44; p < .01$ ), teamwork and adaptation ( $r = .63; p < .01$ ), social capital ( $r = .72; p < .01$ ); but had a high positive relationship with innovative climate ( $r = .87; p < .01$ ). Openness to innovation dimension had a moderate positive relationship with teamwork and adaptation ( $r = .40; p < .01$ ), social capital ( $r = .33; p < .01$ ) and innovative climate ( $r = .53; p < .01$ ). Teamwork and adaptation dimension had a high positive relationship with social capital ( $r = .77; p < .01$ ) and innovative climate ( $r = .84; p < .01$ ). A high positive relationship was found between social capital and innovation climate ( $r = .82; p < .01$ ).

Table 1. Results of correlation analysis between social capital and innovative climate

	Mean	Sd.	1	2	3	4	5	6	7	8	9	10	11	12
1)Commitment	3,42	,92	1											
2)Interaction ties	3,45	,91	,601**	1										
3)Trust	3,20	,99	,598**	,613**	1									
4)Participation	2,87	,98	,526**	,548**	,559**	1								
5)Cult. memory	3,43	,92	,593**	,580**	,536**	,540**	1							
6)Support	3,17	,90	,683**	,675**	,707**	,608**	,669**	1						
7)Resources	3,06	,98	,596**	,580**	,621**	,575**	,591**	,623**	1					
8)Initiative	2,86	1,02	,601**	,598**	,638**	,573**	,623**	,600**	,668**	1				
9)Openness	3,56	,99	,302**	,359**	,319**	,334**	,286**	,465**	,426**	,447**	1			
10) Teamwork	3,24	,94	,666**	,687**	,736**	,505**	,653**	,551**	,588**	,634**	,409**	1		
11) S.Capital	3,27	,94	,841**	,860**	,869**	,777**	,820**	,802**	,713**	,728**	,337**	,776**	1	
12)Innovativeness	2,97	,57	,687**	,697**	,728**	,624**	,688**	,894**	,883**	,877**	,534**	,840**	,821**	1

\*\*Significant at p&lt;.01 level.

### Findings on Prediction of Innovative Climate

Table 2 presents the results of the multiple regression analysis for prediction of support for innovation dimension.

Table 2. Regression analysis results on prediction of support for innovation

Variables	B	St. Error	$\beta$	t	p
Constant	-.224	.144	-	1.554	.121
Commitment	.257	.048	.251	6.222	.000
Interaction Ties	.269	.059	.195	4.601	.000
Trust	.114	.044	.109	2.629	.002
Participation	.143	.039	.134	3.677	.000
Cult. memory	.201	.048	.155	4.142	.000
R=0.699		R <sup>2</sup> =0.488			
F <sub>(5-683)</sub> =130.216		p=.000			

Considering Table 2, it was seen that social capital had a significant relationship with support for innovation, social interaction ties, trust, participation and cultural memory dimensions ( $R = .70, p < .05$ ). These predictive variables explain 48% of the total variance of teachers' perception of support for innovation. Commitment ( $\beta = .25, p < .05$ ), social interaction ties ( $\beta = .20, p < .05$ ), trust ( $\beta = .11, p < .05$ ), participation ( $\beta = .13, p < .05$ ) and cultural memory ( $\beta = .16, p < .05$ ).

Table 3 shows the results of the multiple regression analysis for prediction of resources and facilities dimension.

Table 3. Regression analysis results on prediction of resources and facilities

Variables	B	St. Error	$\beta$	t	p
Constant	.047	.153	-	0.308	.758
Commitment	.309	.051	.262	6.115	.000
Interaction Ties	.143	.062	.104	2.289	.002
Trust	.078	.046	.075	1.687	.002
Participation	.216	.041	.203	5.215	.000
Cult. memory	.181	.052	.140	3.502	.000
R=0.645		R <sup>2</sup> =0.416			
F <sub>(5-683)</sub> =97.300		p=.000			

According to Table 3, there was a significant positive correlation between dimensions of social capital in school (commitment, social interaction ties, trust, participation, cultural memory) and resources and facilities dimension ( $R = .64, p < .05$ ). These variables explained 41% of the variance of the resources and facilities dimension. Dimensions of social capital in schools, such as commitment ( $\beta = .26, p < .05$ ), social interaction ties ( $\beta = .10, p < .05$ ), trust ( $\beta = .08, p < .05$ ), participation ( $\beta = .20, p < .05$ ) and cultural memory ( $\beta = .14, p < .05$ ), predicted resources and facilities positively and significantly.

Table 4 shows the results of the multiple regression analysis for prediction of taking initiative dimension.

Table 4. Regression analysis results on prediction of taking initiative

Variables	B	St. Error	$\beta$	t	p
Constant	-.145	.158	-	0.919	.358
Commitment	-.252	.052	.211	4.832	.000
Interaction Ties	.165	.064	.119	2.574	.001
Trust	.095	.048	.090	1.987	.037
Participation	.223	.043	.206	5.209	.000
Cult. memory	.186	.053	.143	3.501	.000
R=0.629		R <sup>2</sup> =0.396			
F <sub>(5-683)</sub> =89.552		p=.000			

When Table 4 was examined, a significant relationship was found between commitment, social interaction ties, trust, participation, cultural memory dimensions and taking initiative dimension ( $R = .63, p < .05$ ). These predictive variables explained 40% of the variance in teachers' perceptions of taking initiatives. Dimension of social capital, such as commitment ( $\beta = .21, p < .05$ ), social interaction ties ( $\beta = .12, p < .05$ ), trust ( $\beta = .09, p < .05$ ),



participation ( $\beta=.21, p<.05$ ) and cultural memory ( $\beta =.14, p<.05$ ), predicted resources and facilities positively and significantly.

Table 5 displays the results of the multiple regression analysis for prediction of openness to innovation dimension.

Table 5. Regression analysis results on prediction of openness to innovation

Variables	B	St. Error	$\beta$	t	p
Constant	3.708	.161	-	12.309	.000
Commitment	-.168	.059	.133	2.789	.003
Interaction Ties	-.076	.074	.056	.937	.349
Trust	-.166	.056	.172	2.964	.003
Participation	-.033	.043	.035	.771	.441
Cult. memory	-.129	.058	.117	2.230	.002
R=0.325		R <sup>2</sup> =0.106			
F <sub>(5-683)</sub> =16.136		p=.000			

According to Table 5, a significant relationship was found between commitment, social interaction ties, trust, participation, cultural memory dimensions and openness to innovation dimension ( $R=.33, p<.05$ ). These predictive variables accounted for 11% of the variance in teachers' perceptions of openness to innovation. Dimensions of social capital in schools, such as commitment ( $\beta =.13, p<.05$ ), trust ( $\beta =.17, p<.05$ ) and cultural memory ( $\beta =.12, p<.05$ ) predicted openness to innovation positively and significantly. The dimensions of social interaction ties ( $\beta =.06, p>.05$ ) and participation ( $\beta =.03, p>.05$ ) did not significantly predict openness to innovation.

Table 6 presents the results of the multiple regression analysis for prediction of teamwork and adaptation dimension.

Table 6. Regression analysis results on prediction of teamwork and adaptation

Variables	B	St. Error	$\beta$	t	p
Constant	.330	.131	-	2.524	.012
Commitment	.201	.043	.191	4.673	.000
Interaction Ties	.303	.053	.247	5.711	.000
Trust	.240	.039	.258	6.086	.000
Participation	-.077	.035	.080	2.149	.003
Cult. memory	.192	.044	.167	4.363	.000
R=0.684		R <sup>2</sup> =0.468			
F <sub>(5-683)</sub> =120.239		p=.000			

When Table 6 was examined, a significant relationship was found between commitment, social interaction ties, trust, participation, cultural memory dimensions and teamwork and adaptation dimension ( $R=.46, p<.05$ ). These predictive variables account for 11% of the variance in teachers' perceptions of openness to innovation. Dimensions of social capital in schools, such as commitment ( $\beta=.19, p<.05$ ), trust ( $\beta=.24, p<.05$ ) and cultural memory ( $\beta =.16, p<.05$ ) predicted team work and adaptation are positive and significantly.

Table 7 displays the results of the multiple regression analysis for prediction of innovative climate dimension.

Table 7. Regression analysis results on prediction of innovative climate

Variables	B	St. Error	$\beta$	t	p
Constant	.456	.065	-	6.965	.000
Social capital	.797	.020	.838	40.191	.000
R=0.838		R <sup>2</sup> =0.662			
F <sub>(1-687)</sub> =1615.332		p=.000			

In Table 7, when the correlations between the predictive variable of social capital and the predictor of innovative climate in schools were examined, it was observed that social capital and the climate of innovation are highly predicted ( $\beta =.83, p<.05$ ). The social capital explained about 66% of the total variance.

## Results and Discussion

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There is a moderate and positive relationship between dimensions of social capital (commitment, social interaction ties, trust, participation, and cultural memory) and dimensions of innovative climate (support for innovation, resources and facilities, taking initiative, and teamwork and adaptation). There is a moderate positive relationship between the dimensions of social capital. Hence, Putnam (1995), Fukuyama (2005), Cohen and Prusak (2001) and Nahapiet and Ghosal (Nahapiet & Ghoshal, 1998) state that the high trust, commitment and participation in the organization increase the potential of social interaction ties. Likewise, the authors attributed the weakness of social interaction ties among employees to the fact that the commitment, trust and participation in the organization were low. In this context, it was observed that the findings were positive in a way appropriate to the literature, but the relationship was not strong enough. On the other hand, it was determined that there was a strong positive relationship between the total social capital and the total innovative climate. Based on this finding, the increase in the level of social capital will increase the level of innovative climate. In other words, the decrease in the level of social capital will decrease the level of innovative climate. As a matter of fact, the findings of the impact of social capital on innovative behavior that Turgut and Beğenirbaş (2013) found in their study on hospitals confirm the findings of the current research.

Dimensions of social capital in school (commitment, social interaction ties, trust, participation, and cultural memory) predicted the dimensions of innovative climate (support for innovation, resources and facilities, taking initiative, and teamwork and adaptation). In parallel with this study Dakhli and Clercq (2004) found that networks and trust dimensions of social capital are a strong predictor of innovativeness. Landry, Amara and Lamari (2002), found that social capital, social networks, trust and social participation have an impact on the innovation of enterprises. However, dimensions of social capital (commitment, social interaction ties, trust, participation, and cultural memory) were weak predictors of openness to innovation of innovative climate. According to Coleman (1988b), trust, cooperation and communication are easier in closed ties. This facilitates teamwork and adaptation among employees. Burt (1997) advocates that with the effect of individual's position and mediation in social structure, the individual can easily find opportunities to access information in a network, use the information in the way he wants to and can transmit information in the hands of others. As stated by Çekmecelioğlu (2005), there should be teamwork and adaptation, and autonomy in organizations to promote innovation through innovative climate. In the light of this information, education administrators play an important role in promoting innovation and in providing an appropriate innovative climate. Including teachers in decision-making processes, ensuring cooperation between teachers and providing a democratic working environment are among the indicators of the innovative climate in schools. In this context, the cooperation between the school stakeholders and the information sharing as a result of this interaction are effective in the realization of innovative practices in schools.

Social capital in schools is a strong predictor of the innovative climate. In parallel with this study, Landry, Amara and Lamari (2002) determined that social capital had an impact on the innovation processes of enterprises. Similarly, Frank, Zhao, and Borman (2004) found that social capital wealth was effective in reforming education and implementing reforms. Indeed, McElroy (2002) states that the collective competence of social capital empowered the learning capacity and innovation of organizations. Moolenaar et al. (2010) found that school principals' transformational leadership characteristics intensify social networks in schools; thus, facilitate the appropriate innovative climate and its practices. In their research on the relationship between transformational leadership levels of school principals and innovative climate in schools, they found that transformational leadership was positively associated with the innovative climate of schools. In addition, the position of schools in social networks was associated with the innovative climate. In their research comparing the Netherlands and the United States education policies, Moolenaar et al. (2009) found similarities in the policies of both countries in terms of the development of the school and supporting student achievement. According to them, the process of innovation has a cyclical nature developed through social interaction. In this context, for the development of innovations, a supportive organizational climate, discussion culture and cooperation opportunities are critical. In an innovation-focused environment, school members are willing to take risks and accept possible failures. In this way, the interaction between teachers with the encouragement of school principals in schools will enable the sharing of innovative and creative ideas through socio-cultural activities that strengthen cooperation. Therefore, trust-based co-operation networks established among the teachers will be able to form a basis for innovative ideas and practices in the teaching process.

## Recommendations

Considering suggestions in terms of study results, school administrators should support the activities of school-family unions and organize activities that contribute to the development of parents. The innovation can take place when the employees perform their duties in the best way in schools, participate in the decision, and when the superiors and the superiors get support from each other. In this respect, school administrators should provide all incentives to contribute to the professional development of teachers and support the ideas of creative teachers. School administrators have an important role to help teachers take initiative in school. School administrators should respect the original ideas of the teachers, give importance to the expertise in the division of labor and see the mistakes made as an opportunity to learn. According to the literature, the increase in the adaptation and cooperation among the teachers contribute to the development of innovative thinking. In this context, school administrators should give teachers responsibility and encourage cooperation. Due to the education received, teachers are expected to be more innovative. Therefore, the school administrators should benefit from the expertise of the teachers for the development of the school.

Institutions such as the World Bank and the OECD are working to increase social capital in the society. In this respect, studies on increasing social capital can be conducted in schools by all institutions and organizations concerned with education in Turkey. This research is a descriptive study aiming to determine the opinions of teachers about social capital and innovative climate levels. Cross-sectional and longitudinal researches can be conducted to test the level of both concepts in school. This research was carried out in upper secondary schools. Social capital of higher education institutions which is center of innovation and the effects of these capitals on innovation can be investigated. Social capital and innovation are concepts related to intellectual capital, cultural capital, sharing knowledge, entrepreneurship, job satisfaction, creativity and organizational performance. The relationship between the social capital and the innovative climate can be research subject.

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