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Metin KAYA
University of Bayburt, metinkaya439@gmail.com

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Cover Page Footnote

Dear Editor, Thank you for your elaborate examination of the manuscript. I carefully read all your notes and suggestions, and I revised the text in line with your suggestions. There is just one note that I did not make any changes. You wrote: " [Not clear which results you are talking about? You didn't study violence or delinquency. Make sure you include only relevant findings]" Delinquency and violence are sub-dimensions of school climate variable. It is also given in Table 3. The revised form of the manuscript is attached.

Investigation of Factors Affecting Organizational Innovativeness in Schools

Metin Kaya
University of Bayburt

Abstract

This study examined the relationships between organizational innovativeness levels of schools and school administrators' demographic characteristics, school climate, school leadership, and job satisfaction. To this end, it employed a correlational design. The sample consisted of 808 school administrators working in primary schools, lower secondary schools, and high schools in Turkey. The participants took the Organization for Economic Cooperation and Development (OECD) Teaching and Learning International Survey (TALIS, 2018). The study revealed that demographic characteristics of schools, including school size, adequacy of resources, and personnel, affect organizational innovativeness levels. In addition, school climate and school leadership were significant predictors of organizational innovativeness levels. The other predictors of schools' organizational innovativeness levels were lack of resources and human capital and job satisfaction.

Keywords: Job satisfaction, organizational innovativeness, school climate, school leadership.

Introduction

For the past several decades, innovation practices have gained significance in schools to increase students' motivation and levels of school engagement (Looney, 2009). There are various definitions of the concept of innovativeness. Change and creativity are sometimes used interchangeably and are confused with the concept of innovativeness. According to Omur and Argon (2016), innovativeness represents planned changes. Changes may be unplanned. In addition, innovativeness refers to positive changes, while the concept of change may refer to positive or negative changes. Similarly, the concept of creativity is also often confused with innovativeness. Çelik and Şimşek (2013) argue that these concepts are not the same. Creativity is producing new ideas, while innovativeness is the implementation of these new ideas. The concept of innovativeness is the process of making positive changes for a product, a service offer, a technique, or a process (Baregheh et al., 2009). With regard to educational administration, innovativeness is the process of creating positive changes in a product or process with planning in advance (Serdyukov, 2017).

Organizational innovativeness is the process of creating positive changes in an organization's structure, processes, and outputs in a planned way to ensure the organization's adaptation to changes in its environment (Omur & Argon, 2016). One of the significant elements of education organizations is the school. Therefore, the concept of organizational innovativeness in schools contributes to schools' adaptation to their environments and development (Özdemir, 2013). Akin (2016) suggests that people often perceive school organizational innovativeness as the use of technological equipment in schools. However, innovativeness in schools is not limited to the

use of technological equipment. Innovativeness in schools also involves changes in procedures. This may entail doing a task or procedure with new and different methods.

Previous research has established the link between organizational innovativeness and school climate (Bodur & Argon, 2019; Chang, Chuang & Bennington, 2011a; Preston et al., 2012; Fidan & Oztürk, 2015). The literature has also examined the relationship between organizational innovativeness in schools and employees' job satisfaction (Dağhan, 2019; Ünlü & Aydoğan, 2015). There are studies examining the associations between school administrators' demographic characteristics and organizational innovativeness (Fidan & Oztürk, 2015). Some other studies have investigated the relationships between school districts and school sizes, demographic characteristics of schools, and organizational innovativeness (Chang et al., 2011a; Preston et al., 2012). However, comprehensive studies investigating the factors that affect organizational innovativeness are quite limited.

The present study holistically assesses the demographic characteristics of schools, school administrators' demographic characteristics, and organizational characteristics of schools that affect organizational innovativeness in schools. The demographic characteristics of schools that affect organizational innovativeness in schools include the variables of school size, a lack of resources, a lack of personnel, funding type, school level, and school district. School administrators' demographic characteristics are the variables of gender, education level, and seniority. The organizational characteristics of schools consist of the variables of school climate, school leadership, school administrators' job satisfaction, and organizational innovativeness levels. Hence, this study concomitantly focuses on organizational and demographic factors that affect organizational innovativeness. It may contribute to the literature by identifying factors affecting organizational innovativeness. Furthermore, the results of the present study may contribute to the policies of school improvement and development.

The purpose of this study was to examine the relationships between schools' organizational innovativeness levels and school administrators' demographic characteristics, school climate, school leadership, and job satisfaction.

The following research questions guided the present study:

- Are there statistically significant relationships among school climate, school administrators' job satisfaction, school leadership, and organizational innovativeness?
- Do schools' demographic characteristics, school administrators' demographic characteristics, school climate, school administrators' job satisfaction, and school leadership significantly predict organizational innovativeness?

Literature Review

Factors Affecting Organizational Innovativeness in Schools

Several factors affect innovativeness in organizations. These factors are nonorganizational factors, that is, environmental factors, and organizational factors. Organizational factors include organizational culture, organizational climate, organizational strategies, organizational communication, organizational leadership, organization structure, and intra-organization support systems or reward systems (Timuroğlu, 2015). Each organization has unique characteristics. Therefore, factors that affect organizational innovation in schools vary.

Özdemir (2013) lists these factors as the quality of work environment, employees' job satisfaction, employees' resistance to change, fear of uncertainty, a lack of resources, and organizational structure.

Halász (2018) offers an organizational innovation model based on the Innova Research Project in Hungary. This model posits that factors affecting organizational innovativeness are internal and external organizational influences. External influences include the regulatory environment, incentives, and attempts to develop the organization. Internal influences are categorized into organization, group, and individual levels. The influences at the level of individuals are related to the capacities and attitudes of internal stakeholders. The influences at the group level include teamwork and relations among individuals. The influences at the level of the organization are organizational culture and climate, organizational leadership, and influences stemming from the organization's capacity.

Similarly, Kirkland and Sutch (2009) group the factors affecting organizational innovation in schools into micro, messo, and macro layers. Micro layer influences include the capacities, education, and personal characteristics of innovative school administrators or teachers. These influences also involve the relationships among internal and external stakeholders of schools. Messo layer influences are primarily related to the administrative structure of schools, school culture, school climate, and infrastructure. Macro layer influences are national education policies, changes in curricula, and various attempts of governments.

The external factors that affect organizational innovation in schools are national education policies, national educational attempts and incentives, and curricular changes at the national level. On the other hand, the internal factors are employees' job satisfaction, organizational leadership, organizational structure, school climate, behaviors and capacities of school staff, and school resources.

School Climate and Organizational Innovativeness

School climate is the psychological atmosphere of the school arising from the interaction of attitudes, emotions, and behaviors of all individuals (teachers, students, school administrators, and other personnel) in the school structure (Cohen et al., 2009; Grazia & Molinari, 2020). As individuals have personalities, so do organizations. The personality of an organization is its climate. As individuals' personalities are different, so are the climates of schools. Each school has its unique climate (La Salle, 2018). The unique features of schools also have a continuous characteristic.

School climate may either encourage organizational innovation or become a factor that blocks it. İşcan and Karabey (2007) argue that autonomy, flexibility, cooperation and teamwork, communication, participation in decision making, reward system, and motivation toward achievement support organizational innovativeness. In a positive or more open school climate, school employees support organizational innovation (Fidan & Öztürk, 2015). Organizational innovativeness is possible when barriers related to school climate are overcome. Therefore, a significant relationship exists between school climate and organizational innovativeness.

School Leadership and Organizational Innovativeness

There are various approaches, theories, and definitions regarding leadership. In general terms, leadership is affecting organization members concerning a particular purpose (Silva, 2016).

School leadership refers to affecting school stakeholders to realize the school's aims (Bush & Glover, 2014). There are also various approaches to school leadership. They include transformative leadership, instructional leadership, charismatic leadership, cultural leadership, and ethical leadership (Northouse, 2018) as well as distributed leadership and system leadership (Harris, 2009; Hopkins, 2007).

Distributed leadership

Distributed leadership is a practice of leadership featuring cooperation, participation, and democratic behaviors (Baloğlu, 2011; Nawab & Asad, 2020). The duties and responsibilities of schools are getting complicated. It is very troublesome for a single school leader to cope with these complicated problems. Therefore, school leaders share their duties and responsibilities with their subordinates, meaning that they distribute the duties and responsibilities among the subordinates. This type of school leadership is distributed leadership (Bektaş et al., 2020). Furthermore, distributed leadership has a mediating role in realizing change in schools and adapting to innovativeness (Harris & DeFlaminis, 2016).

System leadership

System leadership is transforming the school system in line with the school's aims (Hopkins & Higham, 2007). System leadership includes a set of roles in order to ensure change at the system level. School administrators' cooperative behaviors and agreeable attitudes are closely related to activate innovation in schools (Hopkins, 2008). Briefly, system leadership is a leadership style that adds the principle of questioning to classical management principles and values. In other words, the duty of questioning joins to the extant duties and responsibilities of school leaders, such as planning, organizing, managing, coordination, and supervision (Hopkins, 2007). System leadership involves seeing and analyzing risks, analyzing threats and opportunities, noticing weaknesses and strengths, in addition to the classical management perspective. With these roles, system leaders adopt a strategic management style (Hopkins & Higham, 2007). Hence, system leaders transform schools in a way to adapt to the environment and future. System leaders realize these through innovative practices in schools (Boylan, 2016).

Realizing innovation in schools is a complex process requiring efficient management. School leaders support innovations on the one hand and manage innovations in schools on the other. School leaders provide participation of school stakeholders in innovations. School leaders are in the position of affecting school stakeholders for realizing innovations (Yıldız & Aykanat, 2016). Schools need to practice a set of innovations to realize their visions. The sustainability of innovativeness is closely related to school administrators' leadership behaviors (Kimmelman, 2010). In this context, there is a significant relationship between school leadership and organizational innovativeness.

Job Satisfaction and Organizational Innovativeness

Job satisfaction is employees' general attitudes toward their jobs (Fritzsche & Parrish, 2005). Job satisfaction refers to satisfaction toward employees' wages, working conditions, workload, job security, supervision, social relation in the work or business environment in an organization (Ali, 2016). In brief, job satisfaction is employees' happiness in the work setting. Job satisfaction has a critical role in realizing individual and organizational aims (Kalkan, 2020). Employees' attitudes toward their jobs affect their behaviors toward new ideas and practices (İspir, 2018). According to Chen et al. (2012), employees' levels of job satisfaction are positively reflected in their organizational innovativeness performance.

Thereby, organizations can better adapt to changing environmental conditions. Schools' innovativeness potential is closely related to the resources they have. Improving schools' capacity for innovativeness depends on the efficiency of their human resources. One of the significant actors of innovation attempts in schools is the school administrator. School administrators' attitudes toward their jobs contribute positively to their schools' innovativeness capacities. Therefore, a significant relationship exists between school administrators' job satisfaction and the level of organizational innovativeness.

Demographic Characteristics and Organizational Innovativeness

School employees' demographic characteristics, such as age, gender, and seniority, affect the practices of organizational innovativeness (Fidan & Oztürk, 2015; Preston et al., 2012). In this context, there is a significant relationship between school administrators' demographic characteristics and organizational innovativeness. On the other hand, organizations' demographic characteristics, such as funding type, school size, school level, and education district, affect organizational innovativeness (Chang, et al., 2011a; Preston et al., 2012).

Research Design

For the purposes of this study, I employed correlational design. Correlational studies examine the relationships between at least two variables (Büyüköztürk et al., 2017).

The dependent variable in this study was the level of organizational innovativeness. Independent variables included demographic variables of schools, school administrators' demographic characteristics, school climate, school administrators' job satisfaction, and school leadership.

Sample

The study sample consisted of 808 school administrators who took the Organization for Economic Cooperation and Development (OECD) Teaching and Learning International Survey (TALIS, 2018). TALIS is a survey focusing on teachers' and school administrators' working conditions and learning and teaching processes. TALIS is an international research study implemented every five years by OECD (TEDMEM, 2019). Stratified sampling is used in TALIS surveys for selecting samples. In selecting the stratified sample, 200 schools for each school level (primary, lower, and upper secondary) were identified in the first step. In the second step, at least 20 teachers and school administrators were selected from each school (OECD, 2019). This study used the data of school administrators from the Turkish sample. TALIS selects samples from three different groups. They are school administrators working in primary schools, lower secondary schools, and upper secondary schools (high schools). The sample in this study consisted of 808 school administrators working in these three levels of schools. Table 1 presents the demographic characteristics of the school administrators in the sample and the characteristics of the schools where they worked.

Table 1. Participants' Demographic Characteristics

School administrator characters	N	%	School characteristics	N	%
Gender			**School funding**		
Female*	59	7.34	Publicly*	755	94.14
Male	745	92.66	Privately	47	5.86
Total	804	100	Total	802	100
Age			**School-level**		
Under 40*	146	18.2	Primary*	171	21.16
40–49	412	51.3	Lower secondary	193	23.89
50–60	187	23.3	Upper secondary	444	54.95
61 and above	58	7.2	Total	808	100
Total	803	100			
Level of education			**School location**		
Short-cycle tertiary*	20	2.5	Rural*	79	9.88
Bachelor's	549	68.3	Town	239	29.88
Master's	231	28.7	City	482	60.25
Doctoral	4	0.5	Total	800	100
Total	804	100	**Enrolled students**		
Experience in admin.			under 250*	208	25.97
under 10*	370	46.02	250–499	236	29.46
10 and19	276	34.33	500–749	159	19.85
20 and 29	128	15.92	750–999	76	9.49
30 and above	30	3.73	1000 above	122	15.23
Total	804	100	Total	801	100
			Lack of resources		
			not a problem*	413	52.1
			a bit of a problem	351	44.3
			a problem	29	3.7
			Total	793	100
			Lack of personnel		
			not a problem*	408	51.45
			a bit of a problem	318	40.1
			a problem	67	8.45
			Total	793	100

*Categorical variables taken as reference for regression analysis

As Table 1 shows, 92.66% of the participants were male and 7.34% were female. About half of the participants (51.30%) were between the ages of 40 and 49. Regarding the education level of the participants, 68.30% had a bachelor's degree and 28.70% had a master's degree. The portion of participants who had at most 10 years of school administration experience was 46.02%. With regard to demographic characteristics of schools, 94.14% were publicly funded while 5.86% were privately funded. Of the schools in the sample, 54.95% were high schools, 23.89% were lower secondary schools, and 21.16% were primary schools. Regarding location,

60.25% of the schools were in cities, 23.89% were in towns, and 21.16% were in villages. The portion of schools without a lack of resources was 52.10%, the portion with a partial lack of resources was 44.33%, and the portion with a lack of resources was 3.70%. While 51.45% of the schools did not have a lack of teachers, 40.10% of them experienced a partial lack of teachers, and 8.45% had a lack of teachers.

Data Collection and Analysis

As previously mentioned, I used TALIS (2018) data for the purposes of this study. The data were analyzed using the SPSS 21 package program. First, I combined the sample from three different groups of school administrators from TALIS 2018 using Microsoft Excel. I then organized the combined data set. For this, I removed 15 participants who did not include data. Then, I identified the participants with missing data. I did not allocate automatic data for the missing values. To identify outliers, I resorted to the technique of the Mahalanobis criterion (Esen & Timor, 2019). The data of five participants were not included in the analysis, as their Mahalanobis values were smaller than 0.001. Therefore, the sample of this study consisted of 808 school administrators who came from three different school levels.

Second, I tested the basic assumptions of regression models. First, I performed the analyses of normality for the distribution of continuous variables. The skewness and kurtosis values regarding the continuous variables were identified to check the normality of the distribution. Kurtosis and skewness values between +2 and -2 indicate that the data are normally distributed (Şencan & Fidan, 2020). The kurtosis and skewness values of the variables in the present study varied between 1.69 and -0.72. So, the continuous variables had a normal distribution. Another basic assumption of regression is the problem of auto-correlation (Yavuz, 2009). In order to test the problem of auto-correlation between the dependent variable and the independent variables, I calculated the Durbin-Watson coefficient (d). It was $d = 2.04$ between organizational innovativeness and independent variables. According to the table of Durbin-Watson coefficients, the interval of $1.91 < d < 2.09$ for $n = 808$, $k = 9$ means there was not an auto-correlation problem. Third, I tested whether there was the problem of multicollinearity among the variables through examining variance inflation factor (VIF) values. The VIF values varied between 1.64 and 1.12. A VIF value less than 10 indicates no multicollinearity problem between independent variables (Field, 2013). Therefore, there was not a multicollinearity problem among the independent variables.

In this study, I identified the relationships among organizational innovativeness and school climate, school administrators' job satisfaction, and school leadership with the Pearson product-moment correlation coefficient technique. Furthermore, I used the hierarchical multiple linear regression analysis technique to test the effect of the demographic characteristics of schools and school administrators, school administrators' job satisfaction, and school leadership levels on organizational innovativeness. The reason for preferring the hierarchical regression technique was to analyze the effects of independent variables on the dependent variable in blocks.

Findings

This section presents the results of the Pearson product-moment correlation coefficients and the hierarchical regression analysis. Table 2 provides the correlation coefficients among the variables.

Table 2. Pearson Product-Moment Correlation Coefficients Regarding the Variables

	1	2	3	4	5	6	7	8	9
1. Academic pressure	1								
2. Stakeholder involvement	.435**	1							
3. School delinquency and violence	-.242**	-.265**	1						
4. Lack of special needs personnel	-.348**	-.223**	.308**	1					
5. Job satisfaction with work environment	.231**	.231**	-.245**	-.177**	1				
6. Job satisfaction with profession	.216**	.192**	-.143**	-.123**	.526**	1			
7. System Leadership	.221**	.182**	.110**	-.06	.185**	.194**	1		
8. Distributed leadership	.315**	.246**	-.152**	-.141**	.273**	.183**	.306**	1	
9. Organizational innovativeness	.415**	.280**	-.176**	-.169**	.247**	.200**	.298**	.436**	1

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

The results of this study showed a positive medium-level relationship between organizational innovativeness and academic pressure, and distributed leadership ($r = .415$; $r = .436$; $p < .01$, respectively). A positive weak relationship was present between organizational innovativeness and stakeholder involvement, job satisfaction with work environment, job satisfaction with the profession, and system leadership ($r = .280$; $r = .247$; $r = .200$; $r = .298$; $p < .01$, respectively). A negative weak relationship was present between organizational innovativeness and "delinquency and violence," and a lack of special needs personnel ($r = -.176$; $r = -.169$; $r = -.115$; $p < .01$, respectively).

Table 3 presents the hierarchical multiple linear regression analysis results testing whether demographic characteristics of schools, school administrators' demographic characteristics, school climate, school leadership, and job satisfaction predict organizational innovativeness. In the hierarchical regression analysis, I first added the school-level variables to the model. School-level variables were demographic characteristics of school (model 1), and school climate (model 2), respectively. Following school-level variables, I added administrator-level variables to the model. These variables were demographic characteristics of school administrators (model 3), job satisfaction (model 4), and school leadership levels (model 5).

Table 3. Hierarchical Regression Analysis Regarding Organizational Innovativeness

	model 1		model 2		model 3		model 4		model 5	
Predictors	B	SE	B	SE	B	SE	B	SE	B	SE
1 Constant	**128.5***	03.0	**79.3***	08.0	**80.5***	08.5	**61.8***	10.0	**35.9***	09.8
School funding										
Private school.	01.6	03.6	-03.4	03.3	-02.7	03.4	-02.9	03.4	01.4	03.2
School location										
town	-00.6	03.1	-00.9	02.8	-0 0.9	0 2.9	-0 1.1	0 2.9	0 1.4	02.7
city	-00.5	03.1	- 00.1	02.8	- 00.4	02.9	- 00.6	02.9	01.4	02.7
Enrolled students										

	enrolled (250-499)	**08.3***	02.2	**07.8***	02.0	**08.1***	02.0	**07.6***	02.0	**06.2***	01.9
	enrolled (500-799)	**05.1***	02.5	**05.1***	02.3	**05.5***	02.3	**05.0***	02.3	**04.7***	02.1
	enrolled (750-999)	03.3	03.2	**06.9***	03.0	**08.0***	03.0	**07.3***	03.0	**06.9***	02.8
	enrolled(1000+)	04.0	02.9	**05.7***	02.7	**06.4***	02.8	**05.9***	02.8	**05.8***	02.6
	School-level										
	lower school	-00.7	02.3	02.6	02.2	02.9	02.2	02.9	02.2	03.6	02.0
	high school	-02.6	02.2	01.4	02.0	01.7	02.0	01.4	02.0	01.4	01.9
	Lack of resources										
	Resource (a bit prob.)	**-07.8***	01.6	**- 05.4***	01.6	**- 05.2***	01.6	**- 05.0***	01.6	**- 05.0***	01.4
	Resource (a prob.)	**-10.3***	04.3	- 06.7	04.3	- 06.1	04.4	- 05.1	04.3	**- 08.1***	04.0
	Lack of personnel										
	Personal (a bit prob.)	**-05.2***	01.7	00.1	01.7	00.3	01.7	00.6	01.7	00.7	01.5
	Personal (a prob.)	-02.5	03.2	01.1	03.2	01.7	03.2	01.6	03.2	03.1	03.0
2	**School climate**										
	Academic pressure			**03.1***	00.3	**03.2***	00.3	**03.0***	00.3	**02.2***	00.3
	Stakeholder involvement			**00.9***	00.3	**00.9***	00.3	**00.8***	00.3	00.4	00.3
	Delinquency and violence			**-01.0***	00.5	**- 01.1***	00.5	**- 00.9***	00.5	- 00.7	00.5
	Lack of special needs person.			00.3	00.4	00.2	00.5	00.2	00.5	00.1	00.5
3	**Gender**										
	male					-01.9	02.7	- 01.8	02.7	- 00.3	02.5
	Level of education										
	bachelor					-00.6	01.6	- 00.9	01.6	- 01.3	01.5
	master					-11.8	11.2	- 07.6	11.3	- 10.8	10.5
	Years of experience										
	exp.(10-19)					-01.3	01.7	-01.5	01.7	- 01.2	01.5
	exp.(20-29)					-00.2	02.2	-00.5	02.2	00.2	02.0
	exp.(30+)					02.6	04.4	02.1	04.4	03.7	04.1
	Age										
	age(40-49)					03.8	02.1	03.5	02.1	04.1	01.9
	age(50-59)					- 00.7	02.4	- 01.3	02.4	00.0	02.3
	age(60+)					- 06.4	03.7	- 06.8	03.7	- 05.9	03.5
4	**Job satisfaction**										
	Job satis. with work environ.							**01.2***	00.5	00.3	00.4
	Job satis. with profession							00.4	00.4	00.2	00.4
5	**School leadership**										
	System Leadership									**01.6***	00.4
	Distributed leadership									**02.5***	00.3

Predictors	R	R^2	ΔR^2	F	ΔF
model 1	0.26	0.07	0.07	**4.10**	**4.10**
model 2	0.48	0.23	0.17	**14.51**	**41.27**
model 3	0.49	0.24	0.02	**9.79**	1.72
model 4	0.51	0.26	0.01	**9.33**	**4.50**
model 5	0.60	0.36	0.10	**13.96**	**56.98**

*****significant at the 0.05 level (2-tailed)

Model 1 was statistically significant ($\Delta F = 4{,}10$; $p < .05$). In other words, demographic characteristics of schools significantly predicted their organizational innovativeness levels. Demographic characteristics of schools explained 5% of the change in their organizational innovativeness ($R^2 = 0.07$). The schools with 500–749 enrolled students and 250–499 enrolled students were more effective than those with fewer than 250 enrolled students ($B = 0.83$; $B = 0.5$; $p < .05$, respectively). The schools without resource problems were more effective in organizational innovativeness than schools that had partial resource problems or that had resource problems ($B = -0.78$; $B = -1.03$; $p < .05$, respectively). Schools that experienced partial or full resource problems had lower levels of organizational innovativeness. On the other hand, the schools that did not experience a lack of personnel were more effective than the schools that experienced a partial lack of personnel ($B = -0.52$; $p < .05$).

Model 2 was significant ($\Delta F = 41.27$; $p < .05$). This meant that school climate significantly predicted the organizational innovativeness of schools. The school climate explained 17% of the organizational innovativeness of schools ($\Delta R^2 = .17$). Academic pressure and stakeholder involvement contributed positively to the model ($B = 0.31$; $B = 0.09$; $p < .05$, respectively), while delinquency and violence contributed negatively to the model ($B = -0.10$, $p < .05$).

Model 3 was not statistically significant. The demographic characteristics of school administrators did not predict organizational innovativeness. Model 4 was statistically significant ($\Delta F = 4.50$; $p < .05$). School administrators' job satisfaction predicted organizational innovativeness. School administrators' job satisfaction explained 1% of the change in the organizational innovativeness ($\Delta R^2 = .01$). Job satisfaction with the work environment contributed positively to the model ($B = 0.12$; $p < .05$).

Model 5 was statistically significant ($\Delta F = 56.98$; $p < .05$). School leadership significantly predicted the level of organizational innovativeness. School leadership explained 10% of the change in organizational innovativeness ($\Delta R^2 = .10$). System leadership and distributed leadership contributed positively to the model ($B = 0.16$; $B = 0.25$; $p < .05$, respectively).

Discussion, Conclusion, and Recommendations

This study examined the factors that affect organizational innovativeness in schools based on school administrators' perceptions.

The results of this study demonstrated that the demographic characteristics of schools affect organizational innovativeness levels. The salient demographic characteristics were the number of students enrolled (or school size), adequacy of resources, and adequacy of human resources (personnel).

Fidan and Öztürk (2015) report that organizational innovativeness level does not differ in terms of funding types and districts of schools. Chang et al. (2011a) reveal that school districts affect organizational innovativeness levels of schools. The results of this study support the same conclusion, that is, that there is not a significant difference between organizational innovativeness level and high numbers of enrolled students; or that few numbers of enrolled students while a medium level of school size (500–999) has a positive effect on organizational innovativeness level. In other words, the findings of this study suggest that school size affects organizational innovativeness. Chang et al. (2011a) identify that school size is related with school innovativeness. Preston et al. (2012), on the other hand, report that there was not a

significant relationship between school size and organizational innovativeness. This contradiction may result from the fact that the school sizes were different from each other.

The results of this study testify to the limitations schools experience in terms of resources, which affect organizational innovativeness levels negatively. The fact that resources should be adequate for practices of organizational innovativeness in schools to be realized may explain this finding. Similarly, the partial lack of personnel affects organizational innovativeness levels negatively. Furthermore, there was not a significant relationship between a high level of lack of personnel and organizational innovativeness in schools. This may stem from the impossibility of realizing organizational innovativeness in schools where a high level of personnel limitation exists.

The results of this study suggest that demographic characteristics such as school size, the inadequacy of resources, and personnel affect organizational innovativeness. A medium-level school size eases practices of organizational innovativeness in schools. A lack of resources and personnel in schools is a barrier to realizing organizational innovation practices in schools. Therefore, the distribution of students in schools should be planned beforehand, considering population density in school districts to increase schools' innovativeness potential. In addition, resource inadequacies should be addressed in cooperation with parent-teacher associations. In this cooperation, school administrators should be encouraged to take on a leadership role.

Another finding of the study is that school climate affects organizational innovativeness levels positively. Stakeholder involvement and academic pressure experienced in educational environments affect organizational innovativeness positively. However, delinquency and violence in schools affect organizational innovativeness negatively. Bodur and Argon (2019) identified a medium-level relationship between school climate and organizational innovativeness. Preston et al. (2012) also revealed that stakeholder involvement was in a relationship with organizational innovativeness. On the other hand, Fidan and Ozturk (2015) and Chang et al. (2011a) put forth that innovative school climate was related with teachers' creativeness. The results of this study echo similar findings.

Therefore, a school climate that is open to stakeholder involvement and focuses on academic achievement is critical for realizing organizational innovativeness. Besides, violence in schools not only affects school climate negatively but also is a barrier to innovativeness. Based on these results, school administrators may encourage school stakeholders to participate in school administration. Projects unique to the school for preventing violence could be developed with guidance services in schools. Thereby, school administrators and teachers may have a secure school environment. In addition, parental involvement in the projects aiming to prevent school violence should be ensured. Programs to raise parents' awareness levels regarding school violence need to be carried out. Finally, social activities for students should be organized.

Regarding job satisfaction, the findings of this study demonstrate that school administrators' levels of job satisfaction affect organizational innovativeness positively. School administrators' satisfaction with the school environment affects organizational innovativeness positively. The studies on the relationship between school administrators' job satisfaction and organizational innovativeness behaviors are limited. Dağhan (2019) spotted a high level of relationship between teachers' job satisfaction and organizational innovativeness. Ünlü and Aydoğan (2015) revealed a weak relationship between work-life quality in higher education institutions and organizational innovativeness behaviors. İspir (2018) and Chen et al. (2012) reported a weak relationship between employees' job satisfaction and innovative behaviors.

The aforementioned studies testify to a significant relationship between organizational innovativeness and job satisfaction. The findings of this study echo similar results. As school administrators' work satisfaction levels increase, so do the innovativeness capacities of their schools. Therefore, the physical environments of schools should be improved in cooperation with parent-teacher associations. This should also involve school tools and equipment. Besides, activities to reinforce social support among employees should also be provided in schools. Activities organizing schools' physical environment need to be added to school development plans.

Finally, the findings of this study demonstrate that school leadership affects organizational innovativeness levels positively. There is a significant relationship between organizational innovativeness and both system leadership and distributed leadership behaviors. Existing research provides evidence for significant relationships between organizational innovativeness and transformational leadership in schools (Chang, Hsiao, & Tu, 2011b), leadership styles in schools (Park, 2012), and distributed leadership (Zafer-Gunes, 2016). Supriadi et al. (2020) conclude that in the COVID-19 period, transformational and transactional leadership have affected organizational innovativeness positively.

Furthermore, organizational innovativeness is closely intertwined with organizational change and creativity. Existing research testifies to the significant relationship between organizational change and school climate (Benţea, 2013) and between creativity and school climate (Murtada, 2020). The findings of this study show similar results. Both system leadership and distributed leadership behaviors in school administrators increase the capacity of organizational innovativeness. In line with these findings, decision makers can organize in-service training activities to improve school administrators' leadership skills. They can also organize in-service trainings regarding the management of innovativeness for school administrators. School administrators should encourage teachers to participate in school administration.

Limitations

There are several limitations to this study. First, the datasets could have been original, instead of the use of secondary (TALIS) data. Additional variables, such as, for instance, participants' socioeconomic backgrounds, could have been considered in relation to organizational innovativeness. The TALIS data were collected based on school administrators' perceptions alone, which limits this study in terms of considering other stakeholders. Schools are complex organizations, and in this regard, teachers are important actors when it comes to the practice of innovativeness. Therefore, further studies can necessitate the inclusion of teachers as participants in order to broaden our understanding of the factors affecting organizational innovativeness.

Metin Kaya earned his master of arts degree at Yeditepe University, Turkey, in 2010 and his doctor of philosophy degree at Eskişehir Osmangazi University, Turkey, in 2016. He is currently working in the educational sciences department at Bayburt University, Turkey. His academic interests and working areas include teacher training, school enhancement and development, and classroom management. He can be reached at metinkaya439@gmail.com.

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