International Journal of Early Childhood Special Education (INT-JECSE)
DOI:10.9756/INTJECSE/V14I5.830 ISSN: 1308-5581 Vol 14, Issue 05 2022

Sustainable Leadership in Innovativeness Climate in Schools

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Abstract

This research investigated the relationship between sustainable leadership and innovativeness climate in schools, to determine the predictability of sustainable leadership to innovativeness climate in schools. The sample of the research consists of 230 teachers from different schools in the Artvin Province. While 41.7% (96) of 230 teachers participating in the study were male, 58.3% (134) were female. The correlational survey model was used. Instrument of the study was comprised of three sections: (i) Personal Information Form containing demographic variables, (ii) Sustainable Leadership Scale (SLS) and (iii) Innovativeness Climate in Schools Scale (ICSS). The results show that regression analysis was used to test the hypotheses, and leadership self-efficacy scale was defined as dependent, individual innovativeness as independent, self-assessment approach as mediator, and gender and grade level as control variables.

Keywords: *Innovativeness Climate, Innovation in Schools, Sustainability, Sustainable Leadership*

1. Introduction

1.1. Innovativeness Climate in Schools

According to Özdemir (2000), innovation is planned in advance, which is planned to have positive results by being brought under control is a specific change. Innovation is change. transition from one state to another planned, controlled and transformed into efficiency; will be obtained The output is not different from the expected. Change is necessary to sustain the existence of society, its members and organizations. It's a reality that needs to come out. So all subordinates of both individuals and societies Being at peace with change, which is one of the most important life dynamics, together with its elements, It is a necessity of the natural life process. Societies and social systems are under the influence of a dynamic of change in parallel with the information and technological processes used. These dynamics, which differ in many areas of life, have to push both our lives and our educational activities to change. All kinds of structures that cannot adapt to this change experience the difficulty of continuing their production or the necessity of disappearing (Beycioğlu, 2004). Because both individuals and societies Since it is a process towards the positive, they are effective to the extent that they change. In the innovation process, the organization owns its own structure, elements in the structure, values may have to change their judgments, working conditions and goals of the organization. This is a change in the perspective of all the structure and human elements in the organization. Because Innovation is not just an idea or concept, it is its implementation and not just for the sake of being changed, but to increase effectiveness (Sultana, 2001).

Like all organizations, educational organizations or schools are also affected by the need for change. is affected. In particular, the school, which is an open system, is against these innovation demands. has a more fragile structure. From this perspective, change in schools is extremely It is a natural and inevitable phenomenon. between the concepts of change and innovation. The difference may also apply to a possible change in the educational organization. Some In situations, change can lead the organization backwards in a way that was not thought of it could be. As Altrichter (2000) points out, school management, teacher education, change in areas such as teaching methods, school supervision and evaluation studies. The concepts of innovation, development, progress and similar under the umbrella of It is possible to speak and hear. Innovation occurs when applications clearly fail to meet expectations. interest. At the same time, different strategies and perspectives can be effective in the innovation policies of organizations in societies. For example, according to Özdemir and Cemaloğlu (2000), one of the main features that distinguishes educational organizations from other organizations is that they have responsibilities to initiate change. In this sense, educational organizations, as privileged organizations within their social organizational structures, have to be prepared and sensitive to change and innovation with their pioneering role. Furthermore, Organizations make innovations according to the conditions of the period in order to keep up with current developments. Today, developments in information and technology are at the forefront factors triggering the innovation. These developments have led to the need to

improve and renew the current situation of organizations (Chen, Huang & Hsiao, 2010; Somech & Drach-Zahavy, 2011).

Innovation is a gradual process that begins with the definition of the problem, continues with the creation of new ideas and thoughts (Scott & Bruce, 1994), and results in the adoption of new thoughts and behaviors by the organization (Damanpour, 1992). Innovation can also take place in the work environment outside of research and development (Oldham & Cummings, 1996). However, the attitudes and behaviors of organizational stakeholders are important in the implementation of innovations (Ren & Zhang, 2015). In this context, the factor affecting the attitudes and behaviors of employees in the innovation process in organizations is expressed as the innovation climate (Polatcan, 2019). Researchers emphasize the importance of innovation climate for employees in organizations to adopt and implement innovative behaviors and practices. (Amabile, Conti, Coon, Lazenby & Herron, 1996; Ekvall, 1996; Jaiswal & Dhar, 2015; Moolenaar, Daly & Sleegers, 2010; Remneland-Wikhamn & Wikhamn, 2011). Innovation climate includes support for innovation, resources and opportunities, initiative of stakeholders, openness to innovation, teamwork and harmony (Amabile et al.,1996; Ekvall, 1996; Hunter, Bedell & Mumford, 2007). In this context, it shows that the attitudes and behaviors of the employees are effective on the basis of the implementation of innovative practices in organizations. initiative offered to the employees is important for the innovation climate. Taking initiative is considered as risk taking, freedom and autonomy for creative thinking, participation in decision-making processes, and seeing mistakes as a learning opportunity. (Ahmed, 1998; Amabile et al.,1996; Anderson & West, 1996; Ekvall, 1996; Remneland-Wikhamn & Wikhamn, 2011).

Organizational resources and opportunities are needed for the implementation of innovation practices Procurement of the necessary tools and materials for innovation, time allowed for innovations, opportunities offered and Quick decisions taken facilitate innovation (Amabile, 1996; Montes et al., 2004). The cooperation of the employees of the organization and their work in harmony contribute to innovative thinking Teamwork is important for employees to share their creative thoughts, brainstorm, solve problems and reveal different ideas (Damanpour, 1992; Ekvall, 1996; West & Sacramento, 2012). Employees' openness to change also plays an important role in the success of innovation practices in organizations. Openness to innovation includes employees' being open to development, challenging the static situation, and their belief that the results of innovations will be positive. (Anderson & West, 1996; Ekvall, 1996; Siegel & Kaemmerer, 1978). As can be seen, the climatic factors that enable the effective implementation of innovation are important for innovation. The intellectual, mental and philosophical foundations of the network of relations between education and social development elements are the debates on education in various societies and at different times in the history of education (Polat & Arabacı, 2015). At this point, it can be said that there are no studies to measure the innovation climate in schools, which is seen as a prerequisite for innovation.

1.2. Sustainability Leadership

Sustainability is the continuation of a certain behavior indefinitely (Çayak & Çetin, 2018). In general, can be defined as the capacity to continue the current operation or situation unlimitedly, and different definitions can be made from ecological, sociological and economic perspectives. The concept of sustainability, with its current usage, came to the fore for the first time in 1972 in the United Nations Environment Programme. Then, as a common goal of the international committee, the United Nations Environment and Development Commission, under the chairmanship of the Norwegian Prime Minister Gro Harlem Brundtland, published the "Common Future" report, also known as the Brundland Report, in 1987 (Ricketts, 2010).

The aim of sustainable leadership is to lead an organization and its members towards sustainable development, to implement socially responsible activities and to use socially responsible entrepreneurial methods. It is expected from school leaders not only to have leadership or management skills related to openness to change, but also to provide orchestration, which includes leadership and management, which can mean coordination between all relevant units and tasks in initiating, managing and evaluating change (Gümüşeli, 2009; Wallace, 2004). The ability of school administrators to meet these expectations or to confirm this perception can be associated with their openness to change. On the other hand, sustainable leadership theory teaches school leaders to look to external forces that can affect the school, from inside and outside the organization, by providing some principles to assist school leaders in pursuing school reforms. Fullan (2004) considers effective school leaders as the keys to large-scale and sustainable education reform. Thus, school leaders learn to deal with problems holistically and recognize the interdependencies of their schools with other institutions and their influence on each other.

We live in a complex and rapidly changing information society and these changes are not easy to control, so it is not easy to make changes in education, but it is very difficult to justify and maintain the changes made. Making educational changes that enhance and enrich their deep learning, especially among students and teachers, is seen as problematic, and maintaining such changes can present some serious challenges to education reformers (Hargreaves & Fink, 2003a). When it comes to change in the school organization, the most important factor is undoubtedly the school administration, in other words, the principal and his assistants, because the widespread discourse that 'a school is only as good as its principal' shows that the administrative competence,

symbolized by the identity of the principal, is effective in the perception of the school about the school (Aksu, 2004).

According to Taş (2007), innovations in organizations should be continuous. Because these innovations are of great importance in terms of the development of countries and the qualification of human resources. The development, adoption and application of innovations in schools have an important role in understanding the development of the school. However, there are some obstacles, in other words, square wheels, in front of innovations that should always be done within the organization in terms of innovation. Therefore, the leadership style that the school principal will display is important. Principals in schools have the power, authority and position to affect the innovation climate. Principals who exhibit effective leadership behaviors in an innovative school environment; teachers should be aware of their needs, share the vision of the school with teachers, and create an effective school environment (Kelley, Thornton, & Daugherty, 2005). In addition, school administrators have important duties such as being teaching-oriented, taking decisions with their employees, and supporting the professional development of employees (Van Den Berg & Sleegers, 1996). It is important to reveal the level at which such practices are carried out in schools. For this reason, the role of leadership in sustainability on the innovativeness climate in schools was deemed worthy of this research and formed the purpose of this study (Figure 1). For this purpose, the following hypotheses have been tested.

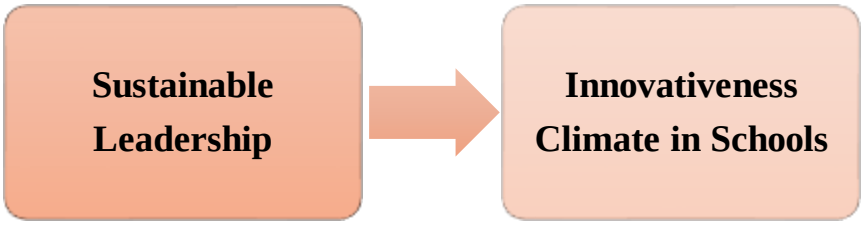

Figure 1. *Research Model*

H_1: There is a positive and significant relationship between sustainable leadership and innovativeness climate.
H_{1a}: There is a positive and significant relationship between cultural sustainability and support for innovation.
H_{1b}: There is a positive and significant relationship between cultural sustainability and resources and opportunities.
H_{1c}: There is a positive and significant relationship between cultural sustainability and taking initiative.
H_{1d}: There is a positive and significant relationship between cultural sustainability and openness to innovation.
H_{1e}: There is a positive and significant relationship between cultural sustainability and teamwork and adjustment.
H_{1f}: There is a positive and significant relationship between administrative sustainability and support for innovation.
H_{1g}: There is a positive and significant relationship between administrative sustainability and resources and opportunities.
H_{1h}: There is a positive and significant relationship between administrative sustainability and taking initiative.
H_{1i}: There is a positive and significant relationship between administrative sustainability and openness to innovation.
H_{1j}: There is a positive and significant relationship between administrative sustainability and teamwork and adjustment.
H_{1k}: There is a positive and significant relationship between economic sustainability and support for innovation.
H_{1l}: There is a positive and significant relationship between economic sustainability and resources and opportunities.
H_{1m}: There is a positive and significant relationship between economic sustainability and taking initiative.
H_{1n}: There is a positive and significant relationship between economic sustainability and openness to innovation.
H_{1o}: There is a positive and significant relationship between economic sustainability and teamwork and adjustment.
H_{1p}: There is a positive and significant relationship between social sustainability and support for innovation.
H_{1q}: There is a positive and significant relationship between social sustainability and resources and opportunities.
H_{1r}: There is a positive and significant relationship between social sustainability and taking initiative.
H_{1s}: There is a positive and significant relationship between social sustainability and openness to innovation.
H_{1t}: There is a positive and significant relationship between social sustainability and teamwork and adjustment.
H_2: Sustainable leadership is a meaningful predictor of innovativeness climate.

2. Methodology

2.1. Research Model

Relational scanning model was used in the research. Relational scanning model is a scanning model that aims to determine the existence of co-change between two or more variables (Karasar, 2014). According to the opinions of the teachers, the relationship between sustainable leadership and innovativeness climate in schools was determined by scales applied to teachers.

2.2. Research Sample

The simple random sampling method was used in the study. The sample of the research consists of 230 teachers from different schools in the Artvin Province. While 41.7% (96) of 230 teachers participating in the study were male, 58.3% (134) were female. 5.7% (13) of the teachers participating in the research had 1-5 years, 24.3% (56) 6-10 years, 70% (161) had 11 and more professional seniority. 37.4% (86) of the participant teachers had 1-3 years, 21.7% (50) had 4-6 years and 40.9% (94) had 7 or more years of experience at the school they currently work for.

2.3. Data Collection Tools

A "Personal Information Form" containing demographic variables, "Sustainable Leadership Scale, SLS" and " Innovativeness Climate in Schools Scale, ICSS" was used to collect data in the study. The validity and reliability studies of the scales are given below.

Personal Information Form: The personal information form consists of three questions asking the gender, seniority and employment time at the same school of the participants. These three variables in the personal information form were used as control variables.

Sustainable Leadership Scale (SLS): Its original form was developed by Çayak ve Çetin (2018) with teachers. As a result of Exploratory Factor Analysis (EFA), it was seen that the total variance explained was realized as %66.77. The analyses conducted have confirmed the four-factor structure. As a result of Confirmatory Factor Analysis (CFA), it was seen that the fit indices of the model are p = .00; Chi-squared (χ^2) / degrees of freedom (df) = 3.55, Comparative Fit Index (CFI) = 0.92, Root Mean Square Error of Approximation (RMSEA) = .064. Cronbach's Alpha internal consistency coefficient of the scale was 0.97. As a result of the study, it is seen that a structure consisting of 36 items and 4 factors (cultural sustainability, administrative sustainability, economic sustainability and social sustainability) was obtained. It is a five-point Likert type scale such as "strongly agree (5)", "agree (4)", "neither/nor agree (3)", "disagree (2)" and "strongly disagree (1)". As a result of the analysis made in the present study, KMO value was found to be 0.98. It was revealed that the value obtained as a result of Barlett's Sphericity test was significant ($\chi2$ = 13471,576, p<0.01). It was seen that the total variance explained was realized as 85.11. According to Table 1, the model is seen to be in acceptable and good fit reference intervals (Çokluk, Şekercioğlu, & Büyüköztürk, 2009). Cronbach's Alpha internal consistency coefficient of the scale was found to be equal to 0.99 for the overall scale, 0.95 for cultural sustainability, 0.99 for administrative sustainability, 0.98 for economic sustainability and 0.95 for social sustainability.

Table 1. Fit Indices and Reference Ranges

Fit Indices	Perfect Fit	Acceptable Fit
$\chi2$/df	$0 \leq \chi2/df \leq 2$	$2 \leq \chi2/df \leq 5$
RMSEA	$0 \leq$ RMSEA ≤ 0.05	$0.05 \leq$ RMSEA ≤ 0.08
CFI	$0.97 \leq$ CFI ≤ 1.00	$0.95 \leq$ CFI < 0.97

Innovativeness Climate in Schools Scale (ICSS): The original form was developed by Polatcan (2019) with teachers. As a result of Exploratory Factor Analysis (EFA), it was seen that the total variance explained was realized as %73.23. The analyses conducted have confirmed the four-factor structure. As a result of Confirmatory Factor Analysis (CFA), it was seen that the fit indices of the model are p = .00; Chi-squared (χ^2) / degrees of freedom (df) = 1.65, Comparative Fit Index (CFI) = 0.97, Root Mean Square Error of Approximation (RMSEA) = .051. Cronbach's Alpha internal consistency coefficient of the scale was 0.95. As a result of the study, it is seen that a structure consisting of 32 items and 5 factors (Support for innovation, resources and opportunities, taking initiative, openness to innovation and teamwork and adjustment) was obtained. It is a five-point Likert type scale such as "strongly agree (5)", "agree (4)", "neither/nor agree (3)", "disagree (2)" and "strongly disagree (1)". As a result of the analysis made in the present study, KMO value was found to be 0.96. It was revealed that the value obtained as a result of Barlett's Sphericity test was significant ($\chi2$ = 10947,982, p<0.01). It was seen that the total variance explained was realized as 85.33. According to Table 1, the model is seen to be in acceptable and good fit reference intervals (Çokluk, Şekercioğlu, & Büyüköztürk, 2009). Cronbach's Alpha internal consistency coefficient of the scale was found to be equal to 0.98 for the overall scale, 0.98 for support for innovation, 0.98 for resources and opportunities, 0.95 for taking initiative, 0.65 for openness to innovation and 0.97 for teamwork and adjustment.

2.4. Data Collection

The scales were sent online to teachers. 251 scales were filled in, but 21 of them were deleted from the data set in the assumption analysis. As a result, 230 scales were analyzed.

2.5. Data Analysis

Within the aim of the study, the relationship between the sustainable leadership and innovativeness climate in schools was examined with the Pearson correlation coefficient. Whether sustainable leadership is a significant predictor of innovativeness climate in schools was tested by hierarchical multiple regression analysis using SPSS21. The reason for performing hierarchical multiple regression analysis is to clearly reveal the effect of the main predictor variable determined by controlling the effect of other variables on the predicted variable (Can, 2017). In the present study, the effect of demographic variables on the predicted variable was controlled.

In order to decide whether the regression analysis was suitable for the data set of the research, the assumptions about the regression analysis were tested. Assumption analysis are below:

1. The predictive and predicted variables must be continuous variables measured in at least equal interval scales and show normal distribution (Field, 2009). In order to check whether the variables show normal distribution, mean, mode, median values, and skewness and kurtosis coefficients were examined (Table 2).

Table 2. Descriptive Statistics of Predictive and Predicted Variables

	Mean	Median	Mode	Skewness	Kurtosis
1. Sustainable leadership	132,82	141,00	180,00	-,784	-,385
2. Cultural sustainability	18,25	20,00	25,00	-,681	-,716
3. Administrative sustainability	62,06	67,00	85,00	-,710	-,642
4. Economic sustainability	38,74	41,00	50,00	-1,160	,442
5. Social sustainability	13,76	15,00	20,00	-,433	-,922
6. Innovativeness climate	117,17	122,00	128,00	-,712	,017
7. Support for innovation	33,54	36,00	36,00	-,874	-,122
8. Resources and opportunities	22,04	24.00	24.00	-,865	,028
9. Taking initiative	21,53	23,50	24.00	-,720	-,113
10. Openness to innovation	13,49	13,00	12,00	-,097	,033
11. Teamwork and adjustment	26,56	28,00	28,00	-,812	,092

When Table 2 is examined, it is seen that the mean, median, and mode values are close to each other, and the skewness and kurtosis coefficients were in the range of +1 and -1, as Morgan, Leech, Gloeckner and Barret (2004) suggest. Therefore, it can be said that the distribution did not deviate excessively from normal.

2. There should be a linear relationship between the predictive variable and the predicted variable (Field, 2009). A scattering diagram has been drawn to examine this. The scatter diagram created for the standardized residual values and the predicted values defines a linear relationship as seen in Figure 2.

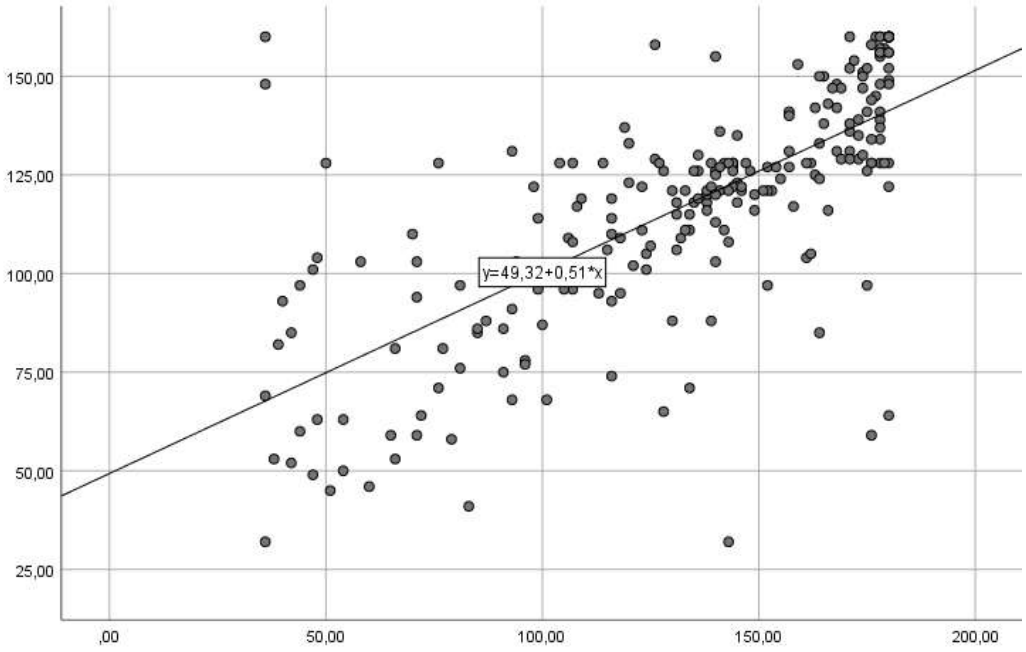

Figure 2. Graph Regarding the Existence of Linear Relationship

3. Variance amplification factor (VIF) values should be less than 10 and tolerance values should be greater than 0.2 (Field, 2009). The variance amplification factors (VIF) and tolerance values were examined, it was seen that the VIF values were less than 10 (between 1.014-1.254) and the tolerance values were greater than 0.2 (between 0.797-0.986).

4. Mahalanobis distances were calculated to ensure the equation model fit. In the study, the number of independent variables was 1 and Mahalanobis distance point was 6.63 for $p = 0.01$ (Can, 2017). 21 extreme values above 6.63 were deleted from the data. With the deletion of these data, the sample decreased to 230.

3. Findings

A hierarchical multiple regression analysis was conducted to determine the predictability of sustainable leadership to innovativeness climate in schools. Before the regression analysis, the correlations between these variables were examined. Then, the direct effect between variables was investigated by the hierarchical regression analysis. As a result of the first analysis, correlations between variables are presented in Table 3.

Table 3. Correlations Between The Variables

Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1. Sustainable leadership	1	.929*	.985*	.953*	.912*	.712*	.739*	.715*	.635*	.393*	.541*
2. Cultural sustainability		1	.895*	.848*	.845*	.680*	.725*	.693*	.608*	.377*	.482*
3. Administrative sustainability			1	.906*	.873*	.708*	.729*	.705*	.640*	.372*	.556*
4. Economic sustainability				1	.843*	.644*	.671*	.660*	.546*	.377*	.487*
5. Social sustainability					1	.676*	.704*	.662*	.630*	.399*	.489*
6. Innovativeness climate						1	.945*	.944*	.927*	.690*	.850*
7. Support for innovation							1	.922*	.855*	.543*	.698*
8. Resources and opportunities								1	.849*	.589*	.714*
9. Taking initiative									1	.596*	.740*
10. Openness to innovation										1	.582*
11. Teamwork and											1

adjustment

*p<.01

As seen in Table 3, there are moderate, positive and significant relationships between sustainable leadership, cultural sustainability, administrative sustainability, economic sustainability, social sustainability and innovativeness climate in schools (r =.712, r =.680, r =.708, r =.644, r =.676, p<.01). There are moderate, positive and significant relationships between sustainable leadership, cultural sustainability, administrative sustainability, economic sustainability, social sustainability and support for innovation (r =.739, r =.725, r =.729, r =.671, r =.704, p<.01). There are moderate, positive and significant relationships between sustainable leadership, cultural sustainability, administrative sustainability, economic sustainability, social sustainability and resources and opportunities (r =.715, r =.693, r =.705, r =.660, r =.662, p<.01). There are moderate, positive and significant relationships between sustainable leadership, cultural sustainability, administrative sustainability, economic sustainability, social sustainability and taking initiative (r =.635, r =.608, r =.640, r =.546, r =.630, p<.01). There are moderate, positive and significant relationships between sustainable leadership, cultural sustainability, administrative sustainability, economic sustainability, social sustainability and openness to innovation (r =.393, r =.377, r =.372, r =.377, r =.399, p<.01). There are moderate, positive and significant relationships between sustainable leadership, cultural sustainability, administrative sustainability, economic sustainability, social sustainability and teamwork and adjustment (r =.541, r =.482, r =.556, r =.487, r =.489, p<.01). Accordingly, the H_1, H_{1a}, H_{1b}, H_{1c}, H_{1d}, H_{1e}, H_{1f}, H_{1g}, H_{1h}, H_{1i}, H_{1j}, H_{1k}, H_{1l}, H_{1m}, H_{1n}, H_{1o}, H_{1p}, H_{1q}, H_{1r}, H_{1s}, H_{1t} hypotheses were accepted.

A hierarchical multiple regression analysis was conducted in order to investigate the effect of sustainable leadership on innovativeness climate in schools. Gender, seniority and employment time at the same school were added to the regression equation in the first step as control variables. Analysis findings are shown in Table 4.

Table 4. Hierarchical Multiple Regression Analysis Results Regarding the Prediction of Sustainable Leadership to Innovativeness Climate

Model		**Dependent Variable (Innovativeness Climate)**					
	Predictive Variables	B	ShB	β	t	*p*	R^2
1st Step (Enter Method)	(Constant)	130,117	9,959		13,065	,000	.010
	Gender	-,914	4,121	-,015	-,222	,825	
	Seniority	-5,161	3,776	-,101	-1,367	,173	
	Employment time at the same school	,983	2,435	,029	,404	,687	
2nd Step (Enter Method)	(Constant)	50,848	8,728		5,826	,000	**.512***
	Gender	2,659	2,908	,044	,914	,361	
	Seniority	-3,564	2,658	-,070	-1,341	,181	
	Employment time at the same school	1,930	1,713	,057	1,126	,261	
	Sustainable leadership	,512	,034	**,714***	15,226	**.000***	

*p<.01

As seen in Table 4, as a result of the hierarchical multiple regression analysis made after controlling the gender, seniority and employment time at the same school variables, according to teachers' perceptions the sustainable leadership significantly predicted the innovativeness climate in schools (β =.714). 51.2% of the variance in the innovativeness climate is explained by this model (R^2 model =.512 p<.01). Almost all of the variance in the model where demographic variables do not make a significant contribution is provided by sustainable leadership (R^2 change =.502 p<.01). In this direction, the second hypothesis (H_2) of the study was accepted.

4. Discussion, Results and Suggestions

There have been enourmous changings and innovations which affect the schools in many ways so far. In fact, in order to manage changes and innovations for the development of their schools, school leaders should ensure that education can be sustained while carefully observe all factors affecting the school and its environment. For this reason, in this study the research conducted to demonstrate a correlation between the school's innovation climate and school leaders' sustainable leadership skills, and the findings indicated that according to teachers' perceptions of the sustainable leadership significantly predicted the innovativeness climate in schools.

The experiment provides a new insight into the relationship between sustainable leadership, cultural sustainability, administrative sustainability, economic sustainability, social sustainability and innovativeness

climate in schools which are found to be moderate, positive and significant (r =.712, r =.680, r =.708, r =.644, r =.676, p<.01). When we compare these results with the results of previous researchers Hargreaves and Fink (2006) who argued that the ultimate goal of leadership in sustainability is to create knowledge sharing schools, trusting societies and professional learning communities, also added four educational sustainability components that support leadership, it can be said that the results are in parallel with this study. In addition, it is believed that sustainable leadership can be described as "one of the key factors" that underlines the long-term development of the school, likely Davies (2007) also suggested that sustainable leadership fosters a leadership culture based on the moral purpose of the school, which ensures success that is accessible to all. Sustainable leadership aims to move schools from their current state to an improved one. While doing this, they want to make sure that the changes tried to be made are not temporary and that they will settle in the organization and become a business model. It would seem that they cannot be dependent on a single leader, and in the beginning, a single leader may act as a catalyst for change. Lastly, a new strategy will only be sustainable if it is adopted by a large group of leaders and school staff.

The data contributes a clearer understanding of support for innovation of sustainable leadership in innovativeness climate in schools. The school principal's perspective should be renewed, renewing and learning (for continuous change) since by this way manager will be functional in terms of realizing the school and its goals. As Fullan (2004) stated, in order to be competent in change dynamics, administrators and teachers must be experienced and skilled in change agents. Not only, school administrator should apply what s/he has learnt, lead in learning, make common decisions, see the innovation needs, reflect this to the school, prove a safe and friendly working environment for everyone, but also, pursue new visions for their school, try to present the technological innovations of the age to the whole school, exhibite sufficient flexibility in every subject. Furthermore, it should be a leader who accepts the school as a whole and tries to implement change initiatives.

Another key point the of the research the economic sustainability, and it would underline that today's societies accept that the increase in the quality of education has a causal effect on the economic, social, political and cultural development of the society in which the individual lives. Parallel to this, a link is established between the increase in the level of education in the society and productivity, and it is believed that the individual contributes to the society in which he lives, to the extent of the education he receives. Some researchers have suggested that in this context, various scientific studies have revealed that there are linear relationships between the quality and level of education and economic growth, political and social development, which are the elements of development (Çakmak, 2008; cited in Polat & Arabacı, 2015). Also our findings suggest that sustainable leadership theory teaches school leaders to look to external forces that can affect the school, both from within and outside the organization, by providing some principles to assist school leaders in pursuing school reforms. Previous research also suggested that Mourkogiannis (2005) school leaders learn to deal with problems holistically and recognize the interdependencies of their schools with other institutions and their influence on each other. Just like the lens of a camera, sustainable leadership changes their focus and makes it easier for them to look at problems in the short-term and long-term.

The results indicate that the innovation climate includes supporting the creative ideas of the employees, the resources and opportunities provided for innovation, the freedom and autonomy granted to the teachers, and teamwork based on cooperation and harmony. In this respect, it is necessary to determine the perceptions or opinions about the innovation climate in schools and to reveal the problems related to the innovation climate. Smilarly, (Ahmed, 2016) mentioned that sustainability in leadership is the ability to maintain organizational values more persuasively and effectively. In this context, the sustainability of leadership in the field of education means a more systematic, well-defined and willing leadership. Because education is an endless process that continues throughout life, it is seen as a sustainable process on its own.

Another crucial finding of the research has been indicated as teamwork and adjustment which would seem important to maintain the attention and efforts that seek continuous improvement in sustainable leadership. Many reseachers stated, successful sustainable school leaders place sustainability at the heart of the school and thus become an overarching factor in all aspects of the school and its external relations (Jackson, Birney, Edwards, Gayford, Mehta, Morgan, Reed & Riley, 1986). Therefore, it would appear that sustainable educational leadership is not self-focused. They believe in cohesion, cooperation, and learning and participates in social formation. Sustainable educational leadership avoids all factors that can weaken the learning process, also they bring actionable and adoptable ways for teachers and students for research and practice. They reveal and polish talent early rather than late career (Hargreaves & Fink, 2003b).

Lastly, findings highlight that sustainable leadership is defined as a morally long-term development strategy of the school, with the principle of education for all. In this context, the school should be characterized by features such as a passion for continuous improvement, balancing between past tradition and innovations, thinking about the process, encouraging the participation of all members of the organization, developing strategic measures to ensure success, and establishing school-community partnerships (Davies, 2007; Hargreaves & Fink, 2006; Epstein, Galindo & Sheldon, 2011; cited in Iliško & Badyanova, 2014).

Consequently, this article represents apush toward understanding the result of the hierarchical multiple regression analysis made after controlling the gender, seniority and employment time at the same school variables, and according to teachers' perceptions the sustainable leadership significantly predicted the innovativeness climate in schools. Almost all of the variance in the model where demographic variables do not make a significant contribution is provided by sustainable leadership.

The methodological choices were constrained by the teachers and administrators working in public schools affiliated to the Directorate of National Education in Turkey in the 2022-2023 academic year. Also, the research is limited to public kindergarten, secondary and high schools, but it does not include private sector schools. The research is limited to the study group, and it is limited to the relevant research method. For further research reserchers may establish a new way for the methodology of the research. It would be meaningful to conduct the next study by a qualitative research method for deeper information about the sustainable leadership or innovative school climate. Also, researchers should take into account for future studies the effects of sustainable leadership on organizational behaivours or some other variables.

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