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Investigating the Effects of Environmental Factors upon the Technological Leadership Competencies of School Administrators[*]

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Article Information	ABSTRACT
	In this study, it was aimed to investigate the effects of environmental factors such as the technological infrastructure of the school used for educational and administrative processes, physical facilities, economic opportunities, monthly income sources, receiving allowances, intra-school communication status and parent support status upon the technological leadership competencies of school administrators. Relational screening model was used in this study carried out with the quantitative research method. The whole population was accepted as the sample not determining the study sample. The study was carried out with 325 school administrators carrying on their duties in public schools in the city center and districts of Erzincan in 2020-2021 academic year. Among the school administrators, 166 (51.1%) were directors and 159 (48.9%) were vice directors. In the study, "Technology Leadership Competencies Scale for Education Administrators," and "Environmental Factor Form" and "Personal Information Form" developed by the researcher were used as data collection tools. Dummy coding was performed on environmental variables in order to perform correlation and regression analyzes on environmental factors as the categorical variables. Correlation analysis was performed to determine the relationship between the variables, and regression analysis was employed to determine the level of prediction between two variables. It was determined that there was a positive, low level and statistically significant relationship between the technological infrastructure, physical facilities, economic opportunities and intra-school communication used in educational and administrative processes of the school and the technological leadership competencies. A positive, low and statistically significant relationship was also specified between good parental support to the school and technological leadership competencies. It was also revealed that the environmental factors called "Monthly Income Sources of the School" and "School Allowance" had no effect upon technological leadership competencies. It was determined that technological infrastructure of the school, physical facilities, economic opportunities and school's technological infrastructure used in educational and administrative processes at a quite good level predicted technological leadership competencies. However, it was observed that determined predictive levels had an insufficient effect upon technological leadership competencies. **Keywords:** Technological leadership competencies, environmental factors, school administrators

1. INTRODUCTION

As result of the technological developments and changes in national and international arena, countries have to adapt to technological developments in order not to get away from the competitive environment experienced all around the world. The change experienced in the organizations during the adaptational process has been fulfilled in a planned and programmed way in line with the objectives of the organizations (Razzak, 2015: 308; Taş, 2007:184). Therefore, countries have to first integrate the developing technologies into their educational organizations during the adaptational processes in order to raise individuals with the personality and ability of meeting the needs of the age. Because educational organizations refer to structures that respond to the needs of society and prepare future generations for today and tomorrow. In order to increase

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academic success, offer a qualified education, meet the conditions of the age and be at the forefront in a competitive environment, schools need to use the technological developments actively and efficiently integrating them into the educational environments. It has been noticed that the unity of education and technology during the pandemic process is remarkable and has gained vital importance during the lockdown processes. The cessation of face-to-face practice in education and start of distance education practices have been the most important examples of this cooperation and integration. The continuation of education even in the most difficult conditions has been ensured with the integration of education and technology (Kaya, 2006: 25).

It is very important to integrate the developing technologies into educational environments successfully in order to maintain education actively and efficiently during the pandemic process. The most important responsibility during the integration process of educational technologies is upon school administrators. Therefore, the success related to the integration process of educational technologies depends upon the technological leadership competence of school administrators (Cantürk & Aksu, 2017:22; Turan, 2002: 277). In short, school administrators have been expected to represent technological leadership characteristics in order for the process of integrating developing technologies into educational environments to be successful. Technological leadership which has many definitions in the literature has been explained by Durnalı (2019: 402) as leading to use technology efficiently and at the highest level within the scope of planning and administering a successful and efficient educational process. Valdez (2004), on the other hand, has explained technological leadership as the whole of strategies, methods and practices enabling teachers to use developing technologies productively, efficiently and successfully including into the educational processes. Furthermore, Görgülü (2013: 26) has defined technological leader as a person who follows technological innovations and develops himself, a role model and guide for the use of technology, offering solutions for the problems possible to appear during the use of technology, supportive for the use of technology, motivating teachers for the use of technology and ensures their development.

Due to their structure, schools are affected by both in-school variables and the cultures, social structures, economic levels and educational perspectives of the societies in which they exist. For such reasons, it is very important for schools to restructure and change depending upon environmental demands and change requirements (Çalık, 2003:541-542; Uslu-Çetin, 2015:82). Educational administrators should consider various environmental factors while developing organizational policies and strategies to manage change in this process (Şimşek, 1999: 32). Because the main purpose of making a strategic plan is to create interaction between the current resources of the organization and environmental factors (Özdemir, 2019:19). School administrators are both affected by environmental factors and affect environmental factors positively or negatively with the technological leadership characteristics they have while planning and managing change processes in their schools. For this reason, environmental factors affect the administration processes, behaviors and leadership competencies of administrators (Hoy & Miskel, 2015: 416).

School administrators are not possible to adequately demonstrate their technological leadership competencies while integrating developing technologies into educational environments and administrating this process due to the limitations arisen from the environmental factors (Özdemir, 2019: 55). Therefore, educational administrators have been required to develop policies, strategies and practices in order to be successful during the process of change analyzing the environmental factors that influence their competences and organizations. Moreover, it has been considered that school administrators should constantly improve themselves in terms of technological leadership due to the continuous technological developments affecting all areas of life, and environmental factors are also remarkable in this process. Considering the factors such as environment and economy, educational leaders represent the individuals starting and planning the process of change (Uzkurt, 2013: 72) for their organizations, taking important responsibilities in this process (Brooks-Young, 2009; Turan, 2006: 10), and increasing motivation in the process influencing and guiding the employees of the organization (Bakioğlu & Korumaz, 2019: 207–212; Eraslan, 2004).

1.1. Statement of the Problem

Countries have faced many negative situations with the Covid-19 pandemic all around the world in 2019. Rapid changes and developments have been experienced in many areas in all countries in order to overcome the negativities. Technological changes have been remarkable in the areas where developments are experienced. Educational organizations are the leading of the organizations that direct the technological developments in the countries and the new information to be produced. Educational organizations refer to organizations that initiate and implement the process of change experienced differently from other organizations, are affected by this process and affect many different organizations (Aksoy, 2005: 3; Güçlü & Şehitoğlu, 2006:250). Because educational organizations are the ones that both affect and are affected by environmental factors (Argon & Özçelik, 2008:72).

Educational organizations that affect and are affected by their environment are required to enter into the process of organizational change following the technological developments. During the process of change, educational organizations need to change various elements such as hardware infrastructure and objectives and contents of the curricula in order to adapt into environmental changes (Kurşunoğlu & Tanrıöğen, 2006:13). It is essential for educational organizations to complete this compulsory process of change successfully. Because the educational organizations that are successful in this process can ensure their continuity adapting into changes and developments (Terzi, 2016). Educational administrators must

exhibit technological leadership competencies while administrating and directing the change efficiently and successfully during the process of integrating the developing technologies into educational environments in order to reach the goals of the era. Because the technological leader is also the person who leads the implementation of technological developments and informs, guides and motivates all other stakeholders such as teachers, students and parents (Bülbül & Çuhadar, 2012:475; Özkeş, 2015:5). Furthermore, school administrators are expected to display the qualifications of a successful educational leader, a change leader, and a technological leader who rapidly follows and learns developing technologies, improves themselves and integrates new technologies into educational environments successfully (Bülbül & Çuhadar, 2012:476; Güçlü & Şehitoğlu, 2006:242).

Schools are organizations that both affect and are affected by their environment. It is impossible for school administrators who know schools in every aspect and ensure administration as required not to be affected by environmental factors. Environmental factors are remarkable for school administrators to be able to manage change efficiently and successfully, and to display the qualification of a technological leader in this process of change. In this sense, it is very important for school administrators to manage change as a technological leader considering environmental factors. Therefore, it is considered that environmental factors affect the technological leadership competencies of school administrators in every process of education.

The most important of these environmental factors are the technological infrastructure of the school, the physical environment appropriate for creating or developing the technological infrastructure, the economic opportunities of the school (such as income sources, allocation), the socio-economic level of the parents as the most important stakeholders, and the level of support they give to the school. It has been considered in this respect that the effect of environmental factors upon the technological leadership competencies of school administrators is important. It has been determined in the literature review that there no studies have been carried out on the effect of environmental factors upon technological leadership competencies of school administrators. Therefore, the study has been considered to be important in terms of contributing upon the relevant literature as well as providing data on the effect of environmental factors on technological leadership competencies of school administrators. Moreover, it is thought that the study has possibility of contributing upon the change studies and strategies planned to be carried out by the Ministry of National Education (MoNE).

1.2. Purpose of the Study

The purpose of the study was to determine whether the environmental factors (technological infrastructure of the school used in education, the technological infrastructure of the school used in administrative processes, the physical facilities of the school, the economic opportunities of the school, the monthly income sources of the school, the school's status of receiving allocation, in-school communication, the parent support) had any effect upon the technological leadership competencies of school administrators, and if so, to determine the direction and level of effect. For this purpose, the effects of environmental factors upon the technological leadership competencies of school administrators was investigated.

1.3. Problem of the Study

The problem statement of the study was determined to be "What are the level of effect of the environmental factors technological infrastructure of the school used in education, the technological infrastructure of the school used in administrative processes, the physical facilities of the school, the economic opportunities of the school, the monthly income sources of the school, the school's status of receiving allocation, in-school communication, the parent support) upon leadership competencies of school administrators?" The sub-problems of the study were determined as follows in accordance with the problem statement:

1) Is there a significant relationship between environmental factors and technological leadership competencies of school administrators?
2) Do environmental factors predict the technological leadership competencies of school administrators?

2. METHODOLOGY

In this section, there is information about the research model, study group, data collection tools and analyses used on the data.

2.1. Research Model

In this study, the relational screening model as one of the quantitative research models was used to determine the effect of environmental factors upon the technological leadership competencies of school administrators. The relational screening model referred to the whole of the analyses performed for determining the presence and level of any relationships between the predetermined variables (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2017: 232). Ethics committee approval for the study was obtained with the 31/05/2021 dated and 06-10 numbered correspondence of Erzincan Binali Yıldırım University Human Research Ethics Committee.

2.2. Participants

While determining the study group within the scope of the research, no separate sample was specified since the entire target group was accessible. Since the population was accepted as the sample, the study group included administrators and vice administrators carrying on their duties in public schools in Erzincan in 2020-2021 academic year. The demographic characteristics of the participants in the study were presented in Table 1.

Table 1.
Distribution of the Demographic Characteristics Related to School Administrators

Variables	Demographic Characteristics	N (Participants)	% (Percentage)
Level of Education	Bachelor's Degree	248	76.3
	Master's Degree	77	23.7
	Total	**325**	**100.0**
Seniority in Administration	1-5 years	88	27.1
	6-10 years	90	27.7
	11-15 years	65	20.0
	16 years and more	82	25.2
	Total	**325**	**100.0**
Role in Administration	Vice Administrator	159	48.9
	Administrator	166	51.1
	Total	**325**	**100.0**
Type of School	Kindergarten	30	9.2
	Primary school	112	34.5
	Secondary school	93	28.6
	High school and equivalents	90	27.7
	Total	**325**	**100.0**

When Table 1 was analyzed, it was noticed that 248 (76.3%) of the participants had bachelor's degree and 77 (23.7%) had master's degree. It was determined that 159 (48.9%) of the participants who participated into the study worked as Vice Administrator and 166 (51.1%) worked as Administrators. 88 (27.1%) of the participants had 1-5 years, 90 (27.7%) had 6-10 years, 65 (20%) had 11-15 years, 82 (25.2%) participants had 16 years or more seniority in administration. In addition, 30 (9.2%) of the participants worked in kindergarten, 112 (34.5%) in primary school, 93 (28.6%) in secondary school, and 90 (27.7%) in high school or equivalents.

2.3. Data Collection Tools

In order to collect the data to be used within the scope of the research, a data collection tool including personal information questionnaire, environmental factor scale and technological leadership competencies scale was used. There were questions about educational status, administrative role, school type and seniority in management in the personal information section for determining the required demographic characteristics of the participants.

2.3.1. Environmental factor scale

The questionnaire including 10 items was developed by the researchers in order to determine the technological infrastructure of schools used in education and administration, their current physical and socio-economic status, parent support status and in-school communication status of human resources. While developing the questionnaire, the opinions of an expert in the field of measurement and two experts in the field of education administration were asked. In line with the expert opinions, 2 items were excluded, and the other items were made to be more understandable. The final version of the questionnaire included 8 items. The questionnaire was developed in a 5-point Likert type.

2.3.2. Technology leadership competencies scale for education administrators

The "Technology Leadership Competencies Scale for Education Managers" developed by Banoğlu (2012) was used to determine the technological leadership competencies of the participants in the study. The scale including 32 items within the scope of the International Society for Technology in Education (ISTE) standards had sub-dimensions of visionary leadership, digital-age learning culture, excellence in professional development, systematic improvement and digital citizenship. In order to determine the scope validity of the research scale used in this study, the opinions of academicians in the field of education administration and instructional technologies were consulted. It was decided that this scale could be used for research in terms of its validity features in line with the criticism, opinions and suggestions from the academicians in the field.

The answers given within the scope of the scale developed in a 5-point Likert type were scored within the range of 1-(never), 2-(partly), 3-(moderately), 4-(mostly) and 5-(always). The lowest score possible to be obtained within the scope of the scale

to be used in this study was 32, and the highest score was 160. As result of the reliability analysis performed on the scale, the Cronbach Alpha value was determined by Banoğlu (2012) to be .943 for the whole scale, .93 for the "visionary leadership" dimension, .91 for the "excellence in professional development" dimension, .88 for the "digital citizenship" dimension, .93 for the dimension of "digital-age learning culture" and .79 for the dimension of "systematic improvement."

The reliability analyzes of the research scale were made by considering the scale items. The procedures for the reliability analysis of the scale are shown in detail below. As result of the analyzes performed by the researchers on the scale within the scope of the study, the Cronbach Alpha values were determined to be .97 for the "visionary leadership" dimension, .93 for the "digital-age learning culture" dimension, .97 for the "excellence in professional development" dimension, and .97 for the "systematic improvement" dimension, .96 for the "digital citizenship" dimension, .92 for the dimension of "digital citizenship," and .98 for the whole scale. Because the Cronbach Alpha value determined as result of the analyses on the scale was in the range of $0.80 \le \alpha \le 1.00$, this value indicated the scale to be highly reliable (Büyüköztürk, 2017:171; Kalaycı, 2009:405).

2.4. Data Analysis

Skewness and Kurtosis values were analyzed in order to determine the analyses to be performed on the data obtained within the scope of the study. The Skewness and Kurtosis values in general and sub-dimensions of the scale were noticed to be within the range of +1 / -1 as result of the analyses. Skewness and Kurtosis values obtained from the data in the literature at the range of +3 / -3, +2 / -2 (Garson, 2012: 18-19), +1.5 / -1.5 (Tabachnick & Fidell, 2013:24) or +1 / -1 indicated the data to have normal distribution (Büyüköztürk, 2017: 40-45). It was noticed in accordance with the obtained results that the data revealed a normal distribution and performing parametric tests on the data was decided. The Skewness and Kurtosis values obtained as result of the analysis were presented in Table 2.

Table 2.
Skewness and Kurtosis Values Related to the Scales

Scale	Sub-Dimensions	N	Skewness	Kurtosis
	Visionary Leadership	325	-.708	-.222
	Digital-Age Learning Culture	325	-.677	-.209
Technologic Leadership Competence	Excellence in Professional Development	325	-.836	.181
	Systematic Improvement	325	-.642	-.323
	Digital Citizenship	325	-.815	-.066
	For the Whole Scale	***325***	***-.759***	***-.085***

Dummy coding process was performed to the variables in order to include environmental factors as the categorical variables in the analysis and to achieve correct results in accordance with the purpose and sub-problems of the study. Dummy coding was a method enabling us to reach accurate results using qualitative variables such as title, age, education level, and city of residence in correlation and regression analyses (Grotenhuis & Thijs, 2015:2). Pearson product of moments correlation analysis was used to determine the relationship between the environmental factors and technological leadership competencies, and simple linear regression analysis was performed to determine the predictive levels of environmental factors for technological leadership competencies. Simple linear regression analysis was the type of analysis including an independent variable and a dependent variable (Büyüköztürk, 2017:91). While interpretating the results, the values of $p < .01$ and $p < .05$ were regarded as the level of significance.

3. FINDINGS

This section included the findings and comments on the results obtained analyzing the data collected within the scope of the study in line with the sub-problems.

3.1. Findings and Interpretations Related to the Relationship between Environmental Factors and Technological Leadership Competencies of School Administrators

In this section, environmental factors such as the technological infrastructure of the school used in education, the technological infrastructure of the school used for administrative processes, the physical facilities of the school, the economic opportunities of the school, the monthly income sources of the school, the status of school's receiving allowance, in-school communication status and the parent support and the findings and interpretations related to the presence of a significant relationship between school administrators and their technological leadership competency levels were discussed, respectively.

3.1.1. Findings and interpretations related to the relationship between the "Technological Infrastructure of the School Used in Education" and technological leadership competencies of school administrators

The data related to the correlation analysis performed to determine whether there was a significant relationship between the environmental factor of "Technological Infrastructure of the School Used in Education" and technological leadership competencies of the school administrators who participated into the study were presented in Table 3.

Table 3.
The Relationship between "Technological Infrastructure of the School Used in Education" and Technological Leadership Competencies (Pearson Correlation Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
(1) The technological infrastructure of the school used in education is in a very bad condition.	1					
(2) The technological infrastructure of the school used in education is in a bad condition.	-.071	1				
(3) The technological infrastructure of the school used in education is in a moderate condition.	-.174**	-.257**	1			
(4) The technological infrastructure of the school used in education is in a good condition.	-.158**	-.234**	-.569**	1		
(5) The technological infrastructure of the school used in education is in a very good condition.	-.086	-.127*	-.309**	-.281**	1	
(6) Technological Leadership	-.035	-.099	-.045	.008	.161**	1

**P < .01; * P < .05

When Table 3 was analyzed, a positive and low-level significant relationship was determined between the answer of "The technological infrastructure of the school used in education is very good" and technology leadership competencies (r = .161, p < .01). Moreover, no significant relationship was determined between technological leadership competencies and answers of "technological infrastructure of the school used in education are very bad" (r = -.035, p > .05), "bad" (r = -.099, p > .05), "moderate" (r = -.045, p > .05) and "good" (r = .008, p > .05).

It was possible to mention in accordance with the findings obtained that that technological infrastructure of the school used in education was in a very good condition and school administrators had positive contribution upon technological leadership competencies, but this contribution remained at a very low level. It was also possible to mention that the inadequacy of the technological infrastructures used in education in schools did not prevent technological leadership behaviors of school administrators but supported displaying technological leadership competencies to a small extent when the infrastructure was very good.

3.1.2. Findings and interpretations related to the relationship between "Technological Infrastructure of the School Used in Administrative Processes" and technological leadership competencies of school administrators

The data related to the correlation analysis performed to determine whether there was a significant relationship between the "Technological Infrastructure of the School Used in Administrative Processes" and the technological leadership competencies of the school administrators participating in the research were presented in Table 4.

Table 4.
The Relationship between "Technological Infrastructure the School Used in Administrative Processes" and Technological Leadership Competencies (Pearson Correlation Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
(1) The technological infrastructure used in the school's administration is in a very bad condition.	1					
(2) The technological infrastructure used in the school's administration is in a bad condition.	-.032	1				
(3) The technological infrastructure used in the school's administration is in a moderate condition.	-.088	-.227**	1			
(4) The technological infrastructure used in the school's administration is in a good condition.	-.095	-.246**	-.670**	1		
(5) The technological infrastructure used in the school's administration is in a very good condition.	-.039	-.100	-.273**	-.297**	1	
(6) Technologic Leadership	-.018	-.065	-.070	.036	.116*	1

* P < .05

When Table 4 was analyzed, a positive and low-level significant relationship was found between the answer of "The Technological infrastructure used in the school's administrative process is in very good condition" and technology leadership competencies (r = .116, p < .05). In addition, no significant relationship was determined between technological leadership competencies and answers of the technological infrastructure used in the administration of the school are very bad (r = -.018, p > .05), bad (r = -.065, p > .05), moderate (r = -.070, p > .05) and good (r = .036, p > .05)

It was possible to mention in accordance with the findings obtained that the technological infrastructure used in administrative processes was in a very good condition, and this affected the technological leadership competencies of school administrators at a very low level in a positive way. It was also possible to state that the competencies displayed by the school administrators were independent of the technological infrastructure used in the school's administrative processes, but the developed technological infrastructure supported the technological leadership competences of the school administrators to a small extent.

3.1.3. Findings and interpretations related to the relationship between "Physical Facilities of the School" and technological leadership competencies of school administrators

The data related to the correlation analysis performed to determine whether there was a significant relationship between the "Physical Facilities of the School" and technological leadership competencies of the school administrators participating in the research were presented in Table 5.

Table 5.
The Relationship between "Physical Facilities of the School" and Technological Leadership Competencies (Pearson Correlation Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
(1) The physical facilities of the school are in very poor condition.	1					
(2) The physical facilities of the school are in poor condition.	-.037	1				
(3) The physical facilities of the school are in moderate condition.	-.091	-.178**	1			
(4) The physical facilities of the school are in good condition.	-.112*	-.220**	-.540**	1		
(5) The physical facilities of the school are in very good condition.	-.071	-.139*	-.340**	-.420**	1	
(6) Technologic Leadership	-.084	-.049	-.109	-.011	.195**	1

**P < .01; * P < .05

When Table 5 was analyzed, it was determined that there was a positive and low-level significant relationship between the answer of "The physical facilities of the school are in a very good condition" and technological leadership competencies (r = .195, p < .01). No significant relationship was determined between technological leadership competencies and answers of the physical facilities of the school are very poor (r = -.084, p > .05), poor (r = -.049, p > .05), moderate (r = -.109, p > .05) and good (r = -.011, p > .05).

In accordance with the findings obtained, it was possible to mention that the physical facilities of the school in a very good condition affected the technological leadership competencies of school administrators positively but at a very low level. It was also possible to state that the physical facilities of the school in a very good condition not directly but indirectly affected and supported the technological leadership competencies of the school administrators. It could be revealed that the inadequate physical facilities of the school had no effect upon the technological leadership behaviors of school administrators.

3.1.4. Findings and interpretations related to the relationship between "Economic Opportunities of the School" and technological leadership competencies of school administrators

The data related to the correlation analysis performed to determine whether there was a significant relationship between the "Economic Opportunities of the School" and technological leadership competencies of the school administrators participating in the research were presented in Table 6.

Table 6.

The Relationship between "Economic Opportunities of the School" and Technological Leadership Competencies (Pearson Correlation Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
(1) The economic opportunities of the school are in a very poor condition.	1					
(2) The economic opportunities of the school are in a poor condition.	-.155**	1				
(3) The economic opportunities of the school are in a moderate condition.	-.240**	-.448**	1			
(4) The economic opportunities of the school are in a good condition.	-.154**	-.287**	-.444**	1		
(5) The economic opportunities of the school are in a very good condition.	-.078	-.145**	-.224**	-.144**	1	
(6) Technologic Leadership	-.039	-.061	-.011	.026	.121*	1

* $P < .05$

When Table 6 was analyzed, it was determined that there was a positive and low-level significant relationship between the answer of "The economic opportunities of the school are in a very good condition" and technological leadership competencies ($r = .121$, $p < .05$). No significant relationship was determined between technological leadership competencies and the answers of economic opportunities of the school are in a very poor ($r = -.039$, $p > .05$), poor ($r = -.061$, $p > .05$), moderate ($r = -.011$, $p > .05$), and good ($r = .026$, $p > .05$) condition.

It was possible to mention in accordance with the findings obtained that the economic opportunities of the school at very good conditions had a very low level positive effect upon the technological leadership competencies of school administrators. The inadequacy of the school's economic opportunities did not affect the technological leadership behaviors of school administrators. It was also possible to state that technological leadership was one of the personal competences of school administrators, and therefore not affected from the negative effects of the school's economic opportunities.

3.1.5. Findings and interpretations related to the relationship between "Monthly Income Sources of the School" and technological leadership competencies of school administrators

The data related to the correlation analysis performed to determine whether there was a significant relationship between the "Monthly Income Sources of the School" and technological leadership competencies of the school administrators participating in the research were presented in Table 7.

Table 7.

The Relationship between "Monthly Income Sources of the School" and Technological Leadership Competencies (Pearson Correlation Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
(1) The school has no monthly income source	1					
(2) The school has monthly income of 0-5 thousand TL.	-.785**	1				
(3) The school has monthly income of 5-10 thousand TL.	-.342**	-.111*	1			
(4) The school has monthly income of 10-15 thousand TL.	-.213**	-.069	-.030	1		
(5) The school has monthly income above 15 thousand TL.	-.247**	-.080	-.035	-.022	1	
(6) Technologic Leadership	-.025	-.029	.033	.040	.069	1

**$P < .01$; * $P < .05$

When Table 7 was analyzed, no significant relationship was found between the answer of "The school has no monthly income source" and technology leadership competencies ($r = -.025$, $p > .05$). Furthermore, there was no significant relationship between the answers of the school had monthly income of 0-5 thousand TL ($r = -.029$, $p > .05$), 5-10 thousand TL ($r = .033$, $p > .05$), 10-15 thousand TL ($r = .040$, $p > .05$) and above 15 thousand TL ($r = .069$, $p > .05$) and the technological leadership qualifications.

In line with the findings obtained, it was possible to mention that the environmental factor called as "Monthly Income Sources of the School" did not affect the technological leadership competencies of school administrators in a positive or negative way.

3.1.6. Findings and interpretations related to the relationship between the "School's Receiving Allowance" and technological leadership competencies of school administrators

The data related to the correlation analysis performed to determine whether there was a significant relationship between the "School's Receiving Allowance" and technological leadership competencies of school administrators participating in the research were presented in Table 8.

Table 8.

The Relationship between "School's Receiving Allowance" and Technological Leadership Competencies (Pearson Correlation Analysis)

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
(1) No allowance is subsidized to the school.	1					
(2) Allowance of 0-10 thousand TL is subsidized to the school.	-.776**	1				
(3) Allowance of 10-20 thousand TL is subsidized to the school.	-.273**	-.063	1			
(4) Allowance of 20-30 thousand TL is subsidized to the school.	-.328**	-.075	-.026	1		
(5) Allowance above 30 thousand TL is subsidized to the school.	-.293**	-.067	-.024	-.028	1	
(6) Technologic Leadership	-.086	.083	.042	-.009	.012	1

**P < .01; * P < .05

When Table 8 was analyzed, no significant relationship was determined between the answer of "No allowance is subsidized to the school" and technology leadership competencies (r = -.086, p > .05). Moreover, no significant relationship was found with the technological leadership competencies and the answers of the allowance of 0-10 thousand TL (r = .083, p > .05), 10-20 thousand TL (r = .042, p > .05), 20-30 thousand TL (r = -.009, p > .05) and above 30 thousand TL (r = .012, p > .05) is subsidized to the school.

In accordance with the findings obtained, it could be said that the environmental factor of "School's Receiving Allowance" did not affect the technological leadership competencies of school administrators in a positive or negative way. Moreover, it was possible to state that the technological leadership competencies of the school administrators were not affected from the environmental factor of "School's Receiving Allowance" since the Ministry did not subsidize any allowances to the public schools affiliated to the Ministry of National Education (MoNE).

3.1.7. Findings and interpretations related to the relationship between "In-School Communication" and technological leadership competencies of school administrators

The data related to the correlation analysis performed to determine whether there was a significant relationship between the "In-School Communication" and technological leadership competencies of the school administrators participating in the research were presented in Table 9.

Table 9.

The Relationship between "In-School Communication" and Technological Leadership Competencies (Pearson Correlation Analysis)

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
(1) In-school communication is in a very poor condition.	1					
(2) In-school communication is in a poor condition.	-.013	1				
(3) In-school communication is in a moderate condition.	-.051	-.102	1			
(4) In-school communication is in a good condition.	-.086	-.173**	-.698**	1		
(5) In-school communication is in a very good condition.	-.031	-.063	-.254**	-.430**	1	
(6) Technologic Leadership	-.034	-.024	-.067	-.039	.164**	1

**P < .01; * P < .05

When Table 9 was analyzed, it was determined that there was a positive and low-level significant relationship between the answer of "In-school communication is in a very good condition" and technological leadership competencies (r = .164, p < .01). Furthermore, technological leadership competencies and answers of in-school communication is in a very poor (r = -.034, p > .05), poor (r = -.024, p > .05), moderate (r = -.067, p > .05) and good (r = -.039, p > .05) conditions were not found to be significant.

In line with the findings obtained, it was possible to mention that the technological leadership skills displayed by the school administrators had a very low and positive effect upon the in-school communication at a very good condition. It could be interpreted that school administrators benefited from the in-school communication in a very good condition in order to direct the employees in line with the developing technologies as one of the technological leadership characteristics and to serve as a model. Furthermore, it was also possible to mention that in-school communication in moderate or poor condition did not positively or negatively affect the technological leadership competencies as a personal characteristic.

3.1.8. Findings and interpretations related to the relationship between "Parent Support to the School" and technological leadership competencies of school administrators

The data related to the correlation analysis performed to determine whether there was a significant relationship between the "Parent Support to the School" and technological leadership competencies of the school administrators participating in the research were presented in Table 10.

Table 10.

The Relationship between "Parent Support to the School" and Technological Leadership Competencies (Pearson Correlation Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Parent support to the school is in a very poor condition	1					
(2) Parent support to the school is in a poor condition	-.371**	1				
(3) Parent support to the school is in a moderate condition	-.406**	-.400**	1			
(4) Parent support to the school is in a good condition	-.233**	-.230**	-.251**	1		
(5) Parent support to the school is in a very good condition	-.104	-.102	-.112*	-.064	1	
(6) Technologic Leadership	-.087	-.036	.003	.134*	.055	1

**$P < .01$; * $P < .05$

When Table 10 was analyzed, it was determined that there was a positive and low-level significant relationship between the answer of "Parent support to the school is in a good condition" and technological leadership competencies ($r = .134$, $p < .05$). No significant correlation was found between technological leadership competencies and the answers of parental support to the school is in a very poor ($r = -.087$, $p > .05$), poor ($r = -.036$, $p > .05$), moderate ($r = .003$, $p > .05$), and very good ($r = .055$, $p > .05$) condition.

In accordance with the findings obtained, it could be said that the technological leadership competencies of school administrators were slightly and positively affected from the good parental support to the school. It was possible to mention that parent support to the school at very good or very poor condition did not positively or negatively affect the technological leadership behaviors of school administrators. However, it could be stated that parent support at a sufficient level had slightly positive contribution upon school administrators' displaying their competences.

3.2. Findings and Interpretations Related to Whether Environmental Factors were Predictors for Technological Leadership Competencies of the School Administrators

Regression analysis is one of the important statistical methods used to find, interpret and explain the relationship between at least one dependent and one independent variable determined within the scope of the research (Ural & Kılıç, 2013: 253). The results of the correlation analysis performed for determined dependent and independent variables should be significant in order to perform the regression analysis (İbili, Yalçın & Özpolat, 2021: 1533). No significant relationship was determined between the environmental factors of "Monthly Income Sources of the School" and "School's Receiving Allowance" and technological leadership competencies as result of the correlation analyses performed to the variables within the scope of the research; therefore, regression analysis could not be performed between these variables.

3.2.1. Findings and interpretations related to whether the school's technological infrastructure used in education was a significant predictor for technological leadership competencies of the school administrators

A simple linear regression analysis was performed to determine whether the technological infrastructure of the school used in education was a significant predictor of technological leadership competencies. The data of the analysis were presented in Table 11.

Table 11.

Simple Linear Regression Analysis Results Related to Predicting Technological Leadership Competencies According to Technological Infrastructure of the School Used in Education in a Very Good Condition

Technologic Leadership Competence	B	Sh	β	t	p
(Constant)	121.918	1.566		77.848	.000
Technological Infrastructure of the School Used in Education in a Very Good Condition	12.593	4.603	.161	2.925	.004
R = .161 R² = .026 F(1/323) = 8.555 p < .01					

According to Table 11, technological infrastructure of the school used in education in a very good condition predicted technological leadership competencies significantly ($p < .01$). The technological infrastructure of the school used in education in a very good condition explained about 2.6% ($R^2 = .026$) of the total variance of technological leadership competence. A one-unit increase at this environmental factor provided a positive 0.161 increase in technological leadership competence.

Within the scope of the findings, it was possible to say that the technological infrastructure of the school used in education had a significant effect upon technological leadership competencies. It could be mentioned that the technological infrastructure used in education in a very good condition enabled school administrators use their technological leadership skills more effectively while integrating new technologies.

3.2.2. Findings and interpretations related to whether the technological infrastructure of the school used in administrative processes was a significant predictor for technological leadership competencies of the school administrators

A simple linear regression analysis was performed to determine whether the technological infrastructure of the school used in administrative processes was a significant predictor of technological leadership competencies. The data of the analysis were presented in Table 12.

Table 12.
Simple Linear Regression Analysis Results Related to the Prediction of Technological Leadership Competencies According to the Very Good Condition of Technological Infrastructure Used in School's Administrative Processes

Technologic Leadership Competence	B	Sh	β	t	p
(Constant)	122.517	1.554		78.831	.000
The Technological Infrastructure of the School Used in Administrative Processes in Very Good Condition	9.911	4.736	.116	2.093	.037
R = .116 R² = .013 F$_{(1/323)}$ = 4.380 p < .05					

When Table 12 was analyzed, it was noticed that the technological infrastructure of the school used in administrative affairs in a very good condition significantly predicted technological leadership competencies (p < .05). It could be stated that the technological infrastructure of the school in a very good condition explained approximately 1.3% (R² = .013) of the total variance of technological leadership competence. Furthermore, a one-unit increase in terms of the technological infrastructure of the school used in the administrative process in a very good condition provided a positive 0.116 increase in the technological leadership competence.

Within the scope of the findings, it was possible to say that the technological infrastructure used in administrative processes of the school had a significant effect upon the technological leadership competencies. It could be revealed that the significant effect upon technological leadership competencies was arisen from school administrators' using technological tools and technology actively as part of their behaviors towards the development of the existing system in the school.

3.2.3. Findings and interpretations related to whether the physical facilities of the school were a significant predictor for technological leadership competencies of school administrators

The data related to the simple linear regression analysis performed to determine whether the school's physical facilities were a significant predictor of technological leadership competencies were presented in Table 13.

Table 13.
Simple Linear Regression Analysis Results on Predicting Technological Leadership Competencies According to the Physical Facilities of the School in a Very Good Condition

Technologic Leadership Competence	B	Sh	β	t	p
(Constant)	120.922	1.630		74.175	.000
Physical Facilities of the School in a Very Good Condition	12.725	3.564	.195	3.570	.000
R = .195 R² = .038 F$_{(1/323)}$ = 12.748 p < .01					

According to Table 13, the physical facilities of the school in a very good condition significantly predicted technological leadership competencies (p < .01). It could be said that the physical facilities of the school in very good condition explained about 3.8% (R² = .038) of the total variance regarding technological leadership competence. Moreover, a one-unit increase in the physical facilities of the school in a very good condition provided a positive 0.195 increase in technological leadership competence.

Within the scope of the findings, it was possible to specify that the physical facilities of the school in a very good condition had a significant effect upon the technological leadership competencies. It could be stated that the existing physical facilities in schools supported the technological leadership behaviors of school administrators in the process of integrating developing technologies into educational environments.

3.2.4. Findings and interpretations related to whether economic opportunities of the school were a significant predictor for technological leadership competencies of the school administrators

The data related to the simple linear regression analysis performed to determine whether economic opportunities of the school were a significant predictor of technological leadership competences were presented in Table 14.

Table 14.

Simple Linear Regression Analysis Results Related to Predicting Technological Leadership Competencies According to the Economic Opportunities of the School in a Very Good Condition

Technologic Leadership Competence	B	Sh	β	t	p
(Constant)	122.719	1.520		80.762	.000
Economic Opportunities of the School in a Very Good Condition	12.781	5.840	.121	2.188	.029
R = .121 R² = .015 F$_{(1/323)}$ = 4.789 p < .05					

When Table 14 was analyzed, it was noticed that the economic opportunities of the school in a very good condition significantly predicted technological leadership competencies (p < .05). It could be said that the economic opportunities of the school in a very good condition explained approximately 1.5% (R² = .015) of the total variance of technological leadership competence. Furthermore, a one-unit increase in economic opportunities of the school in a very good condition provided a positive 0.121 increase in technological leadership competence.

Within the scope of the findings obtained, it was possible to reveal that the economic opportunities of the school in a very good condition had a significant effect upon technological leadership competencies. It could also be stated that the economic opportunities of the school in a very good condition supported the technological leadership behaviors of school administrators, even slightly.

3.2.5. Findings and interpretations related to whether in-school communication in a very good condition was a significant predictor for technological leadership competencies of the school administrators

A simple linear regression analysis was performed to determine whether in-school communication in a very good condition was a significant predictor for the technological leadership competencies. The data of the analysis results were presented in Table 15.

Table 15.

Simple Linear Regression Analysis Results Regarding the Prediction of Technological Leadership Competencies According to In-School Communication in a Very Good Condition

Technologic Leadership Competence	B	Sh	β	t	p
(Constant)	121.865	1.568		77.714	.000
In-School Communication in a Very Good Condition	12.703	4.262	.164	2.981	.003
R = .164 R² = .027 F$_{(1/323)}$ = 8.885 p < .01					

When Table 15 was analyzed, it was noticed that the in-school communication in a very good condition significantly predicted the technological leadership competencies (p < .01). It could be mentioned that in-school communication in a very good condition explained about 2.7% (R² = .027) of the total variance of technological leadership competence. Moreover, a one-unit increase in very good in-school communication provided a positive 0.164 increase in technological leadership competence.

Within the scope of the findings obtained, it could be said that in-school communication in a very good condition had a significant effect upon the technological leadership competencies. It could also be mentioned that the reason for technological leadership competencies to be affected at a low level by the level of in-school communication was technological leadership's mostly including individual abilities of school administrators.

3.2.6. Findings and interpretations related to whether parental support to school was a significant predictor for technological leadership competencies of the school administrators

The data related to the simple linear regression analysis performed to determine whether the parental support to the school in a very good condition was a significant predictor of technological leadership competencies.

Table 16.

Simple Linear Regression Analysis Results Related to Predicting Technological Leadership Competencies According to Parent Support to School in a Very Good Condition

Technologic Leadership Competence	B	Sh	β	t	p
(Constant)	123.339	1.497		82.409	.000
Parent Support in a Very Good Condition	8.884	8.994	.055	.988	.324
R = .055 R² =. 003 F$_{(1/323)}$ = .976 p > .05					

When Table 16 was analyzed, it was noticed that parent support to the school in a very good condition did not significantly predict technological leadership (p > .05) competencies. Within the scope of the findings obtained, it was possible to mention that the environmental factor of "Parent Support to the School" did not have a significant effect upon technological leadership

competencies. Therefore, it could be revealed that the active role of parents in the school and the support they provided were not effective upon the technological leadership competencies of school administrators.

4. RESULTS, DISCUSSION AND RECOMMENDATIONS

In this study, the effects of environmental factors determined by the researcher upon technological leadership competences of school administrators was aimed to be analyzed. In this section, conclusions and recommendations were discussed in accordance with the findings obtained as result of the analyses performed within the scope of the research.

4.1. Results of the Relationship between Environmental Factors and Technological Leadership Competencies of School Administrators

No relationship was determined between technological leadership competences and technological infrastructure of the school used in education in a very poor, poor, moderate and good condition. It was determined that there was an insufficient relationship between technological infrastructure of the school used in education and technological leadership competencies. As result of the study, it was revealed that technological infrastructure of the school used in education in a very good condition supported the technological leadership competencies of school administrators, but this support was insufficient. It was specified that school administrators continued to successfully display their technological leadership competencies regardless of the condition of the technological infrastructure used in education in their schools. No study was found regarding these results provided that it was limited with the literature review.

It was determined that there was no interaction between the technological infrastructure of the school used in administrative processes in very poor, poor, moderate and good condition and technological leadership competencies. The relationship that did not meet the expectations was determined between the technological infrastructure of the school used in administrative processes in a very good condition and technological leadership competencies. It could be mentioned in accordance with the results of the study that school administrators successfully continued to display their technological leadership competencies regardless of the condition of technological infrastructure of the school used in administrative processes. No previous studies, though limited to the literature reviewed, were found regarding these results.

It was concluded that there was a relationship not meeting the assumptions between the physical facilities of the school in a very good condition and technological leadership competencies. It was also determined that there was no relationship between the physical facilities of the school in a very poor, poor, moderate and good conditions and technological leadership competencies. According to the results of the study, it could be mentioned that the physical facilities of the school in a very good condition contributed positively upon the technological leadership competencies of the school administrators, but this contribution did not meet the expectations and remained at a very low level. It was also possible to interpret that the existing differences in physical facilities between schools - schools with physical infrastructure in a very poor or good condition - had no effect upon the technological leadership competences of school administrators. Technological leadership competencies were possible to be mentioned as displayed within the scope of personal competences and were independent of the physical facilities of the school. No previous studies regarding these results were found though limited with the literature review.

It was concluded that there was an insufficient relationship between the economic opportunities of the school in a very good condition and technological leadership competencies. No relationship was observed between the economic opportunities of the school in a very poor, poor, moderate and good conditions and technological leadership competencies. It could be revealed in accordance with the results of the study that the economic opportunities of the school in a very good condition had a positive effect upon the technological leadership competences of school administrators, but this contribution was very insufficient. It could be stated that the economic opportunities of the school where administrators carried on their duties in a very good or very poor condition did not have an effect upon school administrators' competence of displaying their skills successfully. Furthermore, school administrators followed technological developments without being affected by the economic opportunities of the school they carried out their duties in, realized their personal and professional development, and used existing information and communication technologies actively and efficiently. No research has been found regarding these results, provided that it is limited to the literature review. No previous studies regarding these results were found though limited with the literature review.

It was concluded that there was no relationship between the monthly income sources of the school and technological leadership competences. It was possible to reveal in accordance with the results of the study that the lack of income sources of the school or the school's having too high income sources did not affect the technological leadership competences of school administrators in a positive or negative way. It could be stated that the school's own income sources -patent, production, garden, etc.- had no effect upon the competence school administrators displayed. No previous studies regarding these results were found though limited with the literature review.

No relationship was determined between the school's receiving allowances and technological leadership competencies. It was possible to mention in accordance with the results of the study that school's receiving allowance did not affect the technological leadership competencies of school administrators in a positive or negative way. It could also be revealed that the

lack of allowance or the amount of allowance subsidized by the Ministry of National Education within the scope of the general budget had no effect upon the efficient use of information and communication technologies or successful administration of technology by school administrators. Moreover, the school's receiving allowance did not affect the technological leadership behaviors since the Ministry of National Education did not subsidize allowances to the schools in general within the scope of the general budget. No previous studies regarding these results were found though limited with the literature review.

It was concluded that there was a relationship not meeting the expectations between the in-school communication in a very good condition and technological leadership competences. No relationship was determined between in-school communication in a very poor, poor, moderate or good condition and technological leadership competences. According to the results of the study, it was possible to state that in-school communication in a very good condition positively supported technological leadership competences of the school administrators, but this support did not meet the expectations. In addition, it was possible to reveal that the in-school communication in a very good condition supported technological leadership competences of school administrators while guiding human resources on technology issues and being a role model. No previous studies regarding these results were found though limited with the literature review.

It was concluded that there was an insufficient relationship between the parental support to the school in a good condition and technological leadership competences. No relationship was found between parental support to the school in a very poor, poor, moderate or very good condition and technological leadership competences. According to the results of the study, it was possible to mention that the parental support to the school in a good condition positively supported technological leadership competences of school administrators, but this support remained at a very low level and did not meet the expectations. It could be proved that parent support was remarkable at every stage of the educational process but had no effect upon the success of school administrators in displaying their technological leadership competences. No previous studies regarding these results were found though limited with the literature review.

4.2. Environmental Factors' Predicting the Technological Leadership Competences of School Administrators

The results obtained within the scope of the study revealed that the correlation values between the environmental factors of "Monthly Income Sources of the School" and the "School's Receiving Allowance" and technological leadership competencies were not sufficient. Therefore, the predictive status of these environmental factors upon technological leadership competences was not regarded. No previous studies regarding these results were found though limited with the literature review.

The technological infrastructure of the school used in education and administration in a very good condition predicted technological leadership competences at a certain efficiency. In accordance with the results of the study, it was possible to conclude that technological infrastructure of the school used in education and administration in a very good condition was quite efficient upon technological leadership competences. In addition, due to the inadequacy of the correlation values related to the school's technological infrastructure used in education and administration in a very poor, poor, moderate and good conditions, the predictive status of technological leadership competences was not regarded. No previous studies regarding these results were found though limited with the literature review.

It was concluded that the physical facilities of the school in a very good condition predicted technological leadership competence to a certain extent. In line with the results of the study, it could be said that the physical facilities of the school in a very good condition were efficient upon technological leadership competences. Furthermore, the predictive status of technological leadership competences was not considered due to the inadequacy of the correlation values related to the physical facilities of the school in a very poor, poor, moderate and good conditions. Therefore, it was possible to reveal that the physical facilities of the school in a very poor, poor, moderate and good condition had no effect upon technological leadership competences. No previous studies regarding these results were found though limited with the literature review.

The economic opportunities of the school in a very good condition predicted the technological leadership competence to a certain extent. In accordance with the results of the study, it was possible to mention that the economic opportunities of the school in a very good condition had a certain effect upon technological leadership competences. Moreover, the predictive status of technological leadership competences was not regarded because the correlation values of the economic opportunities of the school in a very poor, poor, moderate and good condition were inadequate. Therefore, it could be stated that the economic opportunities of the school in a very poor, poor, moderate and good condition had no effect upon technological leadership competences. No previous studies regarding these results were found though limited with the literature review.

It was concluded that in-school communication in a very good condition predicted technological leadership competence to a certain extent. In accordance with the results of the study, it could be concluded that in-school communication in a very good condition was efficient upon technological leadership competences. The predictive status of technological leadership competences was not regarded since the correlation values of in-school communication in a very poor, poor, moderate and good condition were not sufficient. Therefore, it could be interpreted that in-school communication in a very poor, poor,

moderate and good conditions had no effect upon technological leadership competences. No previous studies regarding these results were found though limited with the literature review.

It was concluded that good parent support to the school did not predict technological leadership competencies. In addition, due to the inadequacy of the correlation values related to the parents support to the school in a very poor, poor, moderate and very good condition, the predictors of technological leadership competences were not analyzed. Therefore, it could be stated that parent support to the school in a very poor, poor, moderate, good and very good conditions did not have any effect upon technological leadership competences. No previous studies regarding these results were found though limited with the literature review.

According to the results of the study, school's technological infrastructure, physical facilities, economic opportunities and in-school communication used in education and administration in a very good condition contributed upon technological leadership behaviors of school administrators. It was noticed that the environmental factor as "Physical Facilities of the School" was more efficient rather than other environmental factors for the development and displaying of technological leadership competences of school administrators. In developing technologies and changing world, environmental factors have had an impact and contributed positively upon school administrators' successful development and change of themselves and their organizations.

4.3. Recommendations

The recommendations below were offered in accordance with the results of the study:

1. The Ministry of National Education should offer in-service training related to the analysis and effective use of environmental factors for the school administrators.
2. Further studies can be carried out on technological leadership competencies of school administrators increasing the number of environmental factors analyzed within the scope of the study.
3. There has been no study in the literature investigating the effect of environmental factors upon technological leadership competencies. Further studies can be carried out in different provinces or throughout Turkey.
4. This study was carried out using only quantitative method. Similar studies can be carried out using qualitative or mixed methods in order to obtain more in-depth information.
5. Further studies can be carried out including teachers, students or parents in the study group besides school administrators.
6. Different and more comprehensive studies can be conducted to examine the effects of environmental factors determined within the scope of the research on different types of leadership.
7. Ensuring that specialization trainings are given to school administrators on the skills of technological leadership, communication and following the developments of the age.

Research and Publication Ethics Statement

This article was produced from the thesis titled as "Investigating the Effects of Environmental Factors upon the Change Management and Technological Leadership Competences of School Administrators" which accepted at Erzincan Binali Yıldırım University, Social Sciences Institute, Educational Sciences Department, Educational Administration Master's Program. It was declared by both authors that the article was prepared adhering to the principles of research and publication ethics. In addition, the 31/05/2021 dated and 06-10 numbered ethics committee approval was obtained for the study with the letter of the Human Research Ethics Committee of Erzincan Binali Yıldırım University.

Contribution Rates of Authors to the Article

The researchers contributed equally to the study having the opportunity of carrying out a joint study during the preparation of the master's thesis referred in the study and publication ethics statement as an article.

Statement of Interest

As the authors of the study, we do not have any statement/conflict of interest.

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