TUARA The Universal Academic Research Journal

The Effect of School Principals' Agile Leadership Behaviors on Entrepreneurial Teacher Behaviors through Innovative Organizations

Fatih Baydar[1]

ARTICLE INFO

Article History:
Received 07.07.2023
Received in revised form 17.09.2023
Accepted
Available online01.10.2023

ABSTRACT

This study aims to reveal the mediating role of innovative organizations in the effect of school administrators' agile leadership behaviors on entrepreneurial teacher behaviors. Based on the relationship between the variables, a model was proposed and tested. Before testing the structural equation modeling (SEM) model, the relational survey model was used to determine the relationship between the variables and the model. The study group consists of 479 teachers working in the Kartal, Tuzla, Maltepe, and Sultanbeyli districts of Istanbul in 2023. According to the research findings, the agile leadership characteristics of school principals positively affect the entrepreneurial behaviors of teachers and the innovative structure of schools. As a result of the analysis of the SEM model, innovative organizations play a partial mediating role between agile leadership behaviors of school principals and entrepreneurial teacher behaviors. This research contributes both theoretically and practically to the effect of agile leadership on teachers' entrepreneurial behaviors and innovative organizational structures, and the effect of innovative organizations on entrepreneurial teacher behaviors. In light of the findings, implications related to agile leadership, teachers ' entrepreneurial behaviors, and innovative organizational structures are discussed, and suggestions are made for future research.

Keywords:[1]
Agile leadership, entrepreneurial behavior, teachers, innovative organizations, innovation

INTRODUCTION

The working conditions of people in modern times present significant opportunities and challenges. The challenges of globalization, rapid technological advances, complex changes in the economy, political instability, and climate change pose a threat to humanity. Organizations that adapt to change in an environment of challenges and uncertainties brought by the age can survive (Joiner, 2019). Therefore, it is important that organizations are led by leaders equipped with modern perspectives such as agile leadership. Due to the emergence of new technologies and the search for new solutions to solve existing problems, flexible and agile leaders are required to increase productivity and overcome inertia in organizations (Boyer & Robert, 2006). In particular, management structures that are closed to change and innovation can create conflict between employes and managers. Instead of the traditional management approach, employes want an active management that allows them to have more say and puts their needs at the center (Mergel, 2016). Active management can be achieved through active leadership in agile environments (Maximini, 2018). The role of active leaders and how to implement them in rapidly changing business environments where innovation is accelerating should be addressed comprehensively.

Agile leaders are active leaders who will lead effectively in environments of rapid change and uncertainty, where many opinions and factors need to be considered together. In addition to being reasonable, agile leaders strive to seek solutions instead of problems, empower people, unlock the potential of other people instead of seeing themselves as the most knowledgeable and intelligent, and make continuous improvements for the organization (Maximini, 2018). Organizations led by these leaders are able to achieve high levels of agility to increase success and maintain innovative capacity (Joiner & Josephs, 2007a). Although it is generally accepted that the focal point of an organization is a vision combined with strategy, it is impossible to talk about productivity if the people in the organization do not take action and the quality of service provided is low. Competencies such as knowledge, experience, desire, motivation, intuition, attitude, professional competence, entrepreneurship, innovation, and comprehension ability that

[1]Aksaray University, fatih.baydar@aksaray.edu.tr, orcid.org/0000-0001-5090-4874

people possess reveal the quality of what they produce (Baydar & Çetin, 2021). To achieve this, along with strategy and vision, organizations should focus on developing the innovative and entrepreneurial capacity of their employes (Guthrie, 2001; Jacobsen & Hofman-Bang, 2005). The transformation of individuals, organizations, and ultimately society into a knowledge society is directly related to increasing the entrepreneurial skills of individuals (Ballestas, 2016). People with high entrepreneurial skills are expected to have characteristics such as leadership, problem solving, acceptance of change, autonomy, risk taking, effective communication, courage, self-control, and creativity. In organizations, these individuals are expected to make a significant contribution by taking initiative and using their imagination (Goss, 2005). The breakdown of traditional schemes and the disappearance of dogmatism are due to the existence of entrepreneurial individuals with these characteristics (Schumpeter, 2003). Thanks to modern leadership approaches such as agile leadership, which respect the potential of the individual and aim to develop it, the intellectual capital of organizations develops and innovation capacity can increase (Baydar & Çetin, 2021). The development of the innovation capacity of organizations is closely related to the leader 's vision, agile leadership, and entrepreneurial characteristics. Educational organizations are considered the center and initiator of change and innovation. Therefore, educational organizations are expected to create a structure in which entrepreneurial, forward-thinking, and innovative behaviors are exhibited (Senge, 2006). As a result, a comprehensive perspective on the contribution of agile leadership in making organizations innovative and increasing the entrepreneurship of employes and other benefits of agile leadership for the organization should be put forward.

AGILE LEADERSHIP

In a changing world, radical changes have been experienced in the activities of organizations because of the increasing competitive environment and the understanding of the importance of human capital in many fields. This situation has forced organizations to use modern management techniques based on traditional understanding (Akkaya, 2020). The most radical change for organizations has been experienced in management culture and leadership approaches, and various definitions have been made regarding this. According to Yukl (2010), leadership is a process related to leadership activities. A leader is a person who builds a team to achieve the goals and objectives of the organization, motivates the team to make emotional and physical efforts (Winson & Patterson, 2006), has the capacity to solve organizational problems (Mumford et al., 2000), and creates, manages, and changes the organizational culture (Schein, 2004). In the modern era, the need for leaders with agile skills to achieve the goals of agile organizations has increased Agile leadership is an approach that involves teamwork, quality, and continuous learning (Breakspear, 2017). According to Joiner (2019), there are four different types of agility. These are context-setting agility, stakeholder agility, creative agility, and self-agility. Context-setting agility identifies the need for change and the desired outcomes. Stakeholder agility seeks to understand and collaborate harmoniously with stakeholders. Creative agility enables analysis and creative thinking to emerge to solve problems as they arise. Self-leadership agility reflects self-agility in behavior and does not hesitate to try new behaviors. Hayward (2018) examined agile leadership in two dimensions. One is enabling/facilitating leadership (learning agility, clarity of direction, empathy and trust, empowerment, collaboration) and the other is disruptive leadership (steadfast in ideas, digitally literate, questioning the status quo, creating new ways of thinking, and close to customer trends). A disruptive leader is someone who interrupts a situation or activity that causes discomfort and problems in the organization. These leaders know how to connect with customers, colleagues, and wider stakeholders and are aware of societal trends.

Agile leadership includes the capacities of innovation, change management, and visionary leadership. Leaders are expected to be creative and take risks to create innovation in organizations (Baydar & Çetin, 2021). Agile leaders also create synergy among employes and create environments that enable joint creativity to occur (Joiner & Josephs, 2007a). Agile leaders who can make fast, accurate decisions in situations of uncertainty, prioritize innovation and science, provide an environment of trust in the organization, and delegate their authority to other employes when deemed necessary (Cinnioğlu &

Ertuğrul, 2022). Innovation-oriented leaders are expected to set achievable goals for their organizations, to think strategically by seeing the future, and to put forward a common vision (Baydar & Çetin, 2021). It can be said that the development of society as well as organizations and reaching the desired level of welfare depends on the efforts of highly qualified strong leaders who attach importance to knowledge, learning, strategic thinking, and innovation.

Living dynamic organizations should be more flexible and agile against change and developments. Agility is more than the speed of change and transformation for organizations (Kidd, 1994). Organizational agility is the ability to manage the organizational change by adapting to scientific and technological developments (Akkaya, 2020). Organizations that are not flexible, do not conduct continuous improvement studies, and do not care about human and relational capital development cannot create a sense of common vision in employes According to Parker, Holesgrove, and Pathak (2015), agile leaders play a critical role in helping employes grasp the shared vision, make difficult decisions together, and focus on goals. The effects of this leadership approach are that employes are empowered, motivated, do their jobs well, collaborate, and enjoy their work (Macintyre, 2017). Because the importance of leadership for organizations has been widely discussed in recent years, research on leadership and leadership approaches is quite diverse. Many studies have determined that the role of leadership is important in the development, change, innovation, effectiveness, and success of organizations (Baydar, 2022; Cameron, Dutton, Quinn & Wrzesniewski, 2003; Ellet & Teddlie, 2003; Özgenel & Aktaş, 2020; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Murphy, 2007; Çalışkan-Yılmaz & Özgenel, 2023). On the other hand, many studies have identified the impact of agile leadership on organizational structure and human capital (Abbasi & Ruf, 2020; Çalışkan-Yılmaz & Özgenel, 2023; Joiner & Josephs, 2007a, 2007b; Klopper & Pendergast, 2017; Parker et al., 2015; Swisher, 2013; Yazıcı, Özgenel, Koç & Baydar, 2022). Although there has been an increase in research on agile leadership in recent years, it is understood that more research is needed on different variables.

ENTREPRENEURIAL TEACHER BEHAVIOURS

Entrepreneurship research has become a priority in the field of education in recent years and has been accepted worldwide. Following Schumpeter (1942), who defined the concept of entrepreneurship and introduced it to the world as "creative destruction", Christensen developed this idea as "disruptive innovation" (Christensen, Gregersen & Dyer, 2011). In general, entrepreneurial behavior is associated with entrepreneurship, innovation, being proactive, and risk-taking, and is defined as individuals exploring and seizing opportunities for the development of their organizations (Jong, Parker, Wennekers & Wu, 2015). The concept has been tried to be explained through the combination of different disciplines, and how people can acquire entrepreneurial skills and develop entrepreneurial vision is one of the biggest debates today. In its report, the World Economic Forum (2009) described entrepreneurship education as an important tool for development and stated that characteristics such as creativity, initiative, and team spirit should find their rightful place in the school curriculum. Successful entrepreneurs are said to be innovative, capable of making decisions and taking responsibility, determined, autonomous, self-confident, risk-taking, power-seeking, and focused on personal values (McCleland, 1965). An entrepreneurial teacher is someone who is innovative, deals positively with uncertainty, values the opinions of others, and uses practical reasoning to influence innovation in the school organization (Davis, 2022). Entrepreneurs are concerned with the totality of skills, attributes, and behaviors that enable the development of self-confidence to identify and act on opportunities for change. Through these characteristics, entrepreneurs offer their students different paths toward the future and choices based on principles. They help students develop positive attitudes toward the future and become aware of new opportunities and possibilities (Jones, 2019; Vaidya, 2014).

It is important for leaders to shape the organizational climate with a focus on entrepreneurship to turn their followers into entrepreneurial individuals. Expectations for educational organizations to innovate to shape the future are increasing day by day in society. Therefore, educational organizations,

educational curricula, and environments need to be restructured to foster entrepreneurship and creativity in students. Entrepreneurial organizations exhibit agile characteristics. In these organizations, harmony among teachers, organizational acceptance, and the applicability of studies with educational value are easy. It can be said that employes in such organizations adapt to change easily. There is a high correlation between employees ' ability to adapt to change, entrepreneurial behaviors leadership behaviors. Teacher leaders influence colleagues, administrators, and other school stakeholders individually and collectively to increase student achievement and improve teaching and learning practices (York-Barr & Duke, 2004).

Teacher leaders are often the innovative engines of the school (Leonard, 2013). Creating a culture of innovation is closely related to the development of teachers ' entrepreneurial behaviors. According to Canadian researchers (Scott & Webber, 2013), these entrepreneurial behaviors have four characteristics. These are: i) the generation of knowledge and skills within the organization, ii) future vision, the ability to calculate and implement possible future situations, iii) social intelligence, the ability to communicate effectively and develop constructive relationships with members of the organization and its social environment, and iv) technical skills to manage change and innovation. Therefore, with the onset of change and innovation in organizations, increasing the entrepreneurial behaviors of practitioners such as teachers and administrators, rather than top management and decision makers, has a critical role in solving educational problems (Leonard, 2013). In this context, the fact that the quality of education in schools is low and that educational organizations do not adequately meet the educational needs of the society reveals the need for innovation. Modern approaches such as entrepreneurship, agile leadership, and innovation should be the subject of more research for educational organizations to develop and adapt to the era. In particular, leadership approaches and/or teacher leadership roles, their benefits, development, and growth have become important concepts in recent years. In this context, it is understood that more studies should be conducted on the contribution of entrepreneurial behaviors, one of the important concepts of teacher leadership, to the individual, organization, and education.

MEDIATOR ROLE OF INNOVATIVE ORGANIZATIONS

The role of enabling organizations to adapt to change and act in an innovation-oriented manner for their development and international competitiveness is understood. Schools that value innovation and consider themselves entrepreneurial will try to get to know the personalities of students and teachers and regularly develop strategies to increase innovative thinking. In general, it is said that in innovative organizations, the entrepreneurial aspect of people can be developed by meeting their need for creativity and self-expression (Leonard, 2013). The expected behavior of employes in innovative organizations is to be proactive in the generation, acceptance, and implementation of new ideas, products, or services (Kanter, 1983). In this context, by building an innovative organizational structure, employees ' entrepreneurial behaviors can be revealed and/or developed. Thanks to strong leaders, it is possible to follow innovations and provide innovative combinations of existing resources (Schumpeter, 1942). As it can be understood from here, the emergence of entrepreneurial behaviors of leader followers is closely related to the innovation-oriented structure of organizations. To summarize the general meaning, it can be stated that agile leaders affect both the innovative structure of the organization and the entrepreneurial behaviors of the employes and innovative organizations affect the entrepreneurial behaviors of the employes In this context, when the definitions and researches made in this context are evaluated, it is possible to say that agile leadership affects the entrepreneurial behavior of employes, and this effect is realized through the innovation-oriented structure of organizations. The following hypotheses were determined to test the purpose of the mediating role of innovation-oriented organizations in the effect of school principals ' agile leadership on entrepreneurial teacher behaviors. The theoretical model is shown in Figure 1.

- H1: There is a significant positive relationship between school principals ' agile leadership behaviors and entrepreneurial teacher behaviors.
- H2: There is a significant positive relationship between school principals ' agile leadership behaviors and innovative organization.

- H3: A significant positive relationship exists between the innovation-oriented structure of schools and entrepreneurial teacher behaviors.
- H4: There is a mediating role for innovative organizational structure in the effect of school principals ' agile leadership behaviors on entrepreneurial teacher behaviors.

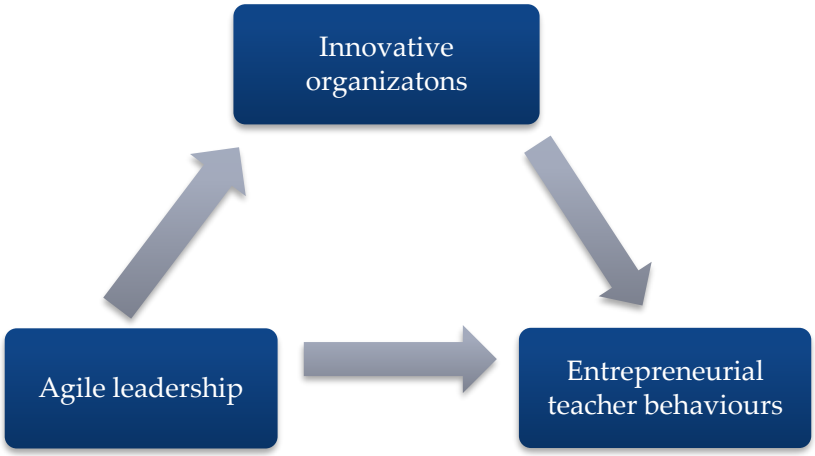


Figure 1. Theoretical Model

METHOD

RESEARCH MODEL

In this study, a relational survey design, a quantitative research method, was used to reveal the relationship pattern between school principals ' agile leadership behaviors and teachers ' entrepreneurial behaviors and innovative organization. A model was proposed depending on the relationship between the variables. In the proposed model, the mediating role of innovative schools in the effect of agile leadership on entrepreneurial teacher behaviors was tested using structural equation modeling (SEM). SEM tests the appropriateness of a model by identifying a model that represents the predictions of the theory between plausible constructs that can be measured in observable variables. This type of analysis is based on regression and factor analysis of observed and latent variables (Kline, 2015). Therefore, the effect sizes between agile leadership and entrepreneurial teacher behaviors and innovative school, innovative school, and entrepreneurial teacher behaviors were also tested.

RESEARCH GROUP

To collect the research data, 479 teachers working in official public schools in Pendik, Tuzla, Adalar, and Maltepe districts of Istanbul province were interviewed. A simple random sampling method, which is one of the random sampling methods, was preferred for determining the number of participants to be applied. This method is the most popular and precise form of probability sampling In this method, each individual has an equal probability of being selected from the universe (Creswell, 2017). We ensured that the selected participants voluntarily participated in the research and answered the questions sincerely. According to Kline (2015), to conduct unidentified SEM analysesanalyzes the sample size should be between 100 and 1000 people, while in general SEM analysesanalyzes the participation of 200 people is considered sufficient. Considering the sample size in this study, it can be seen that the appropriate sample size was reached in order to conduct the analyzes

Looking at the distribution of the sample group according to demographic characteristics, 348 (72.7%) of the 479 participants were female and 131 (27.3%) were male. According to the age variable, 70 (14.6%) of the participants were less than 30 years old, 210 (43.8%) were 30–39 years old, 153 (31.9%) were more than 50 years old. According to the seniority variable, 57 (11.9%) of the participants had less than 5

years of professional experience, 164 (34.2%) had 5–12 years of professional experience, 139 (29%) had more than 20 years of professional experience. According to the education level variable, 434 (90.6%) of the employes have a bachelor's degree and 45 (9.4%) have a postgraduate degree.

DATA COLLECTION TOOLS

In this study, the Agile Leadership Scale, Entrepreneurial Teacher Behaviors Scale, and Innovative School Scale were used as data collection tools.

Personal Information Form: This includes questions about teachers ' gender, age, seniority, and graduation status.

Agile Leadership Scale: The scale developed by zgenel and Yazc (2020) to measure the agility level of organizations consists of a 5-point Likert-type scale and 34 items. The scale has three dimensions: situational awareness, human relations, and self-awareness. The high score obtained from the scale reveals that organizations exhibit agility. There are no reverse items in the scale. Cronbach 's alpha coefficients calculated from the developers of the scale were.92 and.97, respectively, in this study. Because the reliability values were high and consistent, it was deemed appropriate to use it in this study.

Entrepreneurial Teacher Behaviors Scale: This scale, which was developed by Van-Dam, Schipper, and Runhaar (2010) and adapted into Turkish by Akkaya and etin (2022) to determine the entrepreneurial behaviors of teachers, was prepared as a 5-point Likert-type scale. The scale consists of 13 items and three dimensions (recognizing opportunities, taking initiative, risk taking), and the items are not reverse coded. A high score on the scale reveals that teachers have entrepreneurial behaviors. The Cronbach 's alpha coefficient calculated during the adaptation of the scale was.87 and.84, respectively. Because the reliability values were high and consistent, it was deemed appropriate to use it in this study.

Innovative School Scale: This scale was developed by Aslan and Kesik (2016) to measure the innovative levels of schools. The scale consists of 19 items and three dimensions (innovative atmosphere, administrative support and organizational barriers). A total score can be obtained from the scale, and a high score indicates that schools show innovative organizational characteristics. The Cronbach's Apha reliability coefficient measured during the development of the scale was .85, and in this study it was .85. Because the reliability values were high and consistent, it was deemed appropriate to use it in this study.

DATA ANALYSIS

In this study, correlation and structural equation model analyzes were conducted to determine the mediating role of innovative organizations in the effect of agile leadership on teachers ' entrepreneurial behaviors. Before conducting the SEM analysis, the suitability of the data to normal distribution was checked. For the normality of the data, Leech et al. (2005) stated that when the kurtosis and skewness values are between -1 and +1, and Tabachnick & Fidel (2007) stated that when the kurtosis and skewness values are between -1.5 and +1.5, the data will be accepted as suitable for normal distribution. Values regarding the normality of the data are shown in Table 1.

Table 1. Normality values for agile leadership, entrepreneurial teacher behaviors, and innovative school variables

		Statistic	Std. Error
Agile leadership	Mean	3.38	.026
	Std. Deviation	.561	
	Skewness	-.783	.112
	Kurtosis	-.162	.223
Entrepreneurial teacher behaviors	Mean	3.86	,023
	Std. Deviation	.519	
	Skewness	-.177	,112
	Kurtosis	-.405	,223
Innovative school	Mean	3.70	,025
	Std. Deviation	.542	
	Skewness	-.334	.112
	Kurtosis	-.032	.223

When Table 1 is examined, the skewness value for agile leadership is.783, kurtosis values are.162; skewness value for entrepreneurial teacher behaviors is.177, kurtosis values are.405; skewness value for innovative school is.334, kurtosis values are.032. Because it was seen that these values were between -1 and +1, it was determined that the data were suitable for normal distribution.

Table 2. Reliability coefficients for agile leadership, entrepreneurial teacher behaviors, and innovative school variables

Scales	Cronbach-Alpha	N & Items	Status
Agile leadership	α= .97*	34	Highly reliable
Entrepreneurial teacher behaviors	α= .84*	13	Considerably reliable
Innovative school	α= .85*	19	Considerably reliable

As seen in Table 2, the Cronbach 's alpha reliability coefficients of the scales used in the study vary between .84 and .97. According to Tavşancıl (2006), the scales have quite and highly reliable values.

After the normality of the data and the reliability coefficients of the scales were determined, the correlation coefficients between agile leadership, entrepreneurial teacher behaviors, and innovative school variables were calculated. Then, SEM analyzes were conducted to determine the relationship between the variables and the role of the mediating variable. SEM analysis fulfills the function of determining, testing, and estimating models that reveal the effects of independent variables on the causality of total (direct) and indirect (indirect) relationships with the dependent variable (Özdamar, 2017). To test the SEM model, the mediation model steps proposed by Baron and Kenny (1986) were followed. These steps are as follows: *i)* The independent variable (agile leadership) should affect the dependent variable (entrepreneurial teacher behaviors) and the mediating variable (innovative school). *ii)* The mediating variable (innovative school) should affect the dependent variable (innovative school). *iii)* When the mediating variable (innovative school) is added to the model in the effect of the independent variable (agile leadership) on the dependent variable (entrepreneurial teacher behaviors), the effect of the independent variable on the dependent variable should decrease noticeably or be "0". When the effect value is "0", it is called a full mediator, and when it decreases noticeably, it is called a partial mediator variable and the model is accepted.

FINDINGS

To test the theoretical model, correlation coefficients between agile leadership, entrepreneurial teacher behaviors, and innovative school were calculated and are shown in Table 3.

Table 3. Correlation coefficients for agile leadership, entrepreneurial teacher behaviors, and innovative school variables

Variables	Mean	SD	1	2	3
1-Agile leadership	3.379	.561	-		
2-Entrepreneurial teacher behaviors	3.863	.519	.395**	-	
3-Innovative school	3.754	.542	.562**	.380**	

Table 3 shows that there is a significant positive relationship between agile leadership and entrepreneurial teacher behaviors (r=.395; p<.01), and between agile leadership and innovative school (r=.562; p<.01). On the other hand, there is a significant positive relationship between entrepreneurial teacher behaviors and innovative school (r=.380; p<.01). After determining the significant and positive relationship between the variables, the model was tested. The effect of the independent variable (agile leadership) on the dependent variable (entrepreneurial teacher behaviors) and the mediator (innovative school), and the effect of the mediating variable (innovative school) on the independent variable (entrepreneurial teacher behaviors) were calculated and are shown in Figure 2.

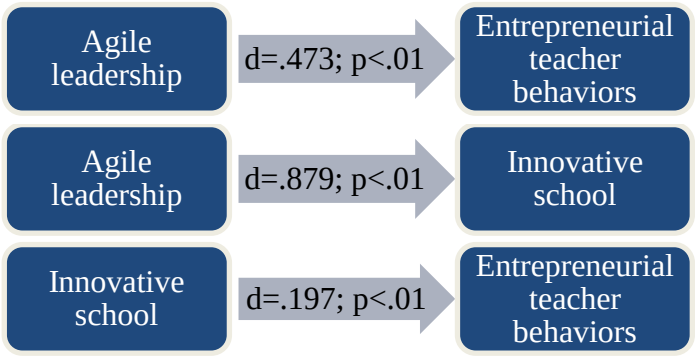
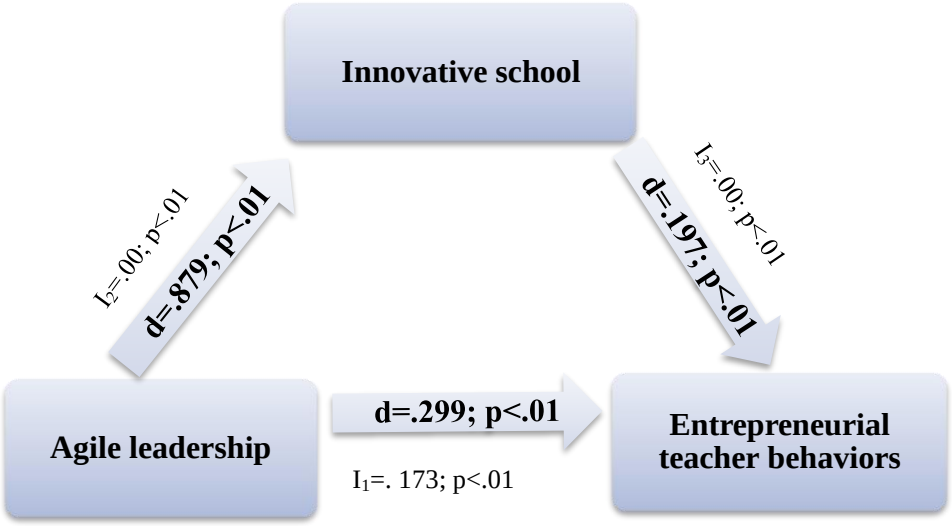


Figure 2. The effect of agile leadership on entrepreneurial teacher behaviors and innovative schools, and the effect of innovative schools on entrepreneurial teacher behaviors

Figure 2, agile leadership influences entrepreneurial teacher behaviors and innovative schools. Innovative schools affect entrepreneurial teacher behaviors. In the relationship between agile leadership and entrepreneurial teacher behaviors, innovative school was added as a mediating variable and the model was tested.



p<.01; d: direct effect, I: indirect effect

Figure 3. Model with the innovative school as the mediating variable

Figure 3 shows that agile leadership has a direct effect on entrepreneurial teacher behaviors and innovative schools. Innovative schools have a direct effect on entrepreneurial teacher behaviors. On the other hand, there is a partial mediating variable between innovative school, agile leadership, and entrepreneurial teacher behaviors (I1=. 173; p<.01). Baron and Kenny (1986), when the independent variable and the mediating variable are evaluated together in mediation tests, the effect between the independent variable and the dependent variable should be "0" or decrease. According to this study, the effect of the independent variable on the dependent variable is shown in Figure 2 (d=.473; p<.01). In Figure 3, the mediator variable was calculated by including it in the model, and it can be seen that this effect decreased at the level of (I1=.173; p<.01). Partial mediation can be mentioned as a remarkable reduction. Agile leadership affects entrepreneurial teacher behaviors both directly and through innovative schools. Innovative schools can be accepted as partial mediating variables in the SEM model. To provide more evidence for the model, we reviewed whether the path (regression) coefficients were significant or not. The obtained values are shown in Table 4.

Table 4. Regression coefficients between the values

		Estimate	S.E.	C.R.	*p*
Innovative school	Agile leadership	1.357	.063	21.469	***
Entrepreneurial teacher behaviors	Agile leadership	.285	.123	2.326	.020
Entrepreneurial teacher behaviors	Innovative school	.122	.073	1.660	.032

Table 4 shows that the SEM model was tested with the addition of three variables, and the path coefficients showing the effect of agile leadership on entrepreneurial teacher behaviors and innovative school and the effect of innovative school on entrepreneurial teacher behaviors were found significant (p<.05). The standardized total, direct, and indirect effects of the variables are shown in Table 5.

Table 5. Coefficients showing the total, direct, and indirect effects of variables

	Standardized Total Effects			Standardized Direct Effects			Standardized Indirect Effects		
	1	2	3	1	2	3	1	2	3
1-Agile leadership	.000			.000			.000		
2-Innovative school	.879	.000		.879	.000		.000	.000	
3-Entrepreneurial teacher behaviors	.473	.197	.000	.299	.197	.000	**.173**	.000	.000

Looking at Table 5, it can be said that innovative schools play a partial mediating role in the relationship between agile leadership and entrepreneurial teacher behaviors (ß= .173; p<0.05). Since more evidence is needed to decide whether the model is compatible or not, the fit indices of the SEM model were examined, and the values determined and the values accepted as reference are shown in Table 6.

Table 6. Fit and reference values of the proposed model

	χ^2	*df*	*p*	χ^2/df	RMR	SRMR	GFI	AGFI	NFI	TLI	CFI	RMSEA
Model	81.163	23	.000	3.529	.035	.062	.965	.931	.970	.966	.978	.073
Value Reached				Perfect	Perfect	Perfect	Perfect	Perfect	Perfect	Perfect	Perfect	Acceptable

χ^2=Chi-square; df=degree of freedom; p<.01; RMR= Root mean square residuals; SRMR= Standardized root mean square residual; GFI= Goodness-of-fit index; AGFI=adjusted goodness-of-fit index; NFI=standardized fit index; TLI=Turker-Lewis Index; CFI= Comparative Fit Index; RMSEA= Root mean square error of approximation.

When the values and reference values determined in the SEM model in Table 6 are examined, the model meets the recommended fit values. When the results are analyzed, it is seen that the p value is significant. The sources in the literature were taken into consideration to determine the recommended fit values (Hu & Bentler, 1999; Kline, 2015; Tabachnick & Fidell, 2007). When all the criteria were evaluated together, the proposed theoretical model proved to be a valid model. In other words, agile leadership influences entrepreneurial teacher behaviors through the innovative school.

CONCLUSION and DISCUSSION

This study aimed to determine the mediating role of innovative schools in the effect of agile leadership behaviors of school administrators on entrepreneurial teacher behaviors. When the findings for this purpose were examined, it was found that there is a significant positive relationship between the agile leadership behaviors of school administrators and the entrepreneurial behaviors of teachers and innovative schools. In addition, there is a significant positive relationship between the innovation-oriented structure of schools and entrepreneurial teacher behaviors. It was determined that innovative schools are a partial mediating variable in the effect of agile leadership on entrepreneurial teacher behaviors. The results will be discussed by taking into account the empirical and theoretical research in the literature in general.

The importance of leadership has been better understood by organizations in recent years, and scientific research on leadership has increased. In leadership research (Baydar, 2022b; Cameron et al., 2003; Ellet & Teddlie, 2003; Özgenel & Aktaş, 2020; Leitwood et al., 2004; Murphy, 2007; Yılmaz & Özgenel, 2023), for the development and efficiency of organizations, it is necessary to empower employees in these organizations, to create an innovative climate for the production of new ideas, processes, and services, and to ensure that human resources act proactively. Agile leaders are needed for this. For an organization to achieve its goals and objectives, it is important to have leaders who build teams and motivate them (Winson & Patterson, 2006). Agile leaders should make teamwork continuous to ensure quality and continuous learning (Breakspear, 2017). Teamwork directs team members to make decisions and put them into practice with higher motivation (Baydar, 2022a). By encouraging teachers to be proactive and take responsibility for the decisions and work done, their entrepreneurial behaviors can be improved. It should be recognized that good teachers are committed to innovative ideas, take responsibility for their own learning and teaching, and are the heart of entrepreneurial schools (Leonard, 2013).

Entrepreneurship has been a priority area of study in the field of education in recent years. Entrepreneurial behavior is associated with innovation, being proactive, and taking risks (Jong et al., 2015). According to the research findings, teachers ' entrepreneurial behaviors are positively affected by the innovative focus of the organization. Innovative schools try to know their teachers and students well and create favorable environments for them to think innovatively. The development of people 's creativity and self-expression skills is possible in innovative organizations. It is seen that some administrators and teachers in educational organizations are quite innovative and even build a new school environment according to themselves. This does not mean that they are creative, but that they are entrepreneurs who encourage others to innovate. Entrepreneurial leaders surround themselves with innovation and are able to recognize a good idea when they see it and put it into practice (Leonard, 2013). The application here is not about starting a new business or making new investments in the education sector, but about teachers demonstrating entrepreneurial behaviors in the course of their duties. Teachers can act like entrepreneurs in various steps during their duties (Van-Dam et al., 2010). What was expected from the teacher here was to make more effort for the school to achieve its goals, to develop ideas and policies to increase efficiency in education, and to take the initiative for their implementation (Akkaya & Çetin, 2022). Entrepreneurial teachers are open to innovation, recognize opportunities, take risks and initiatives, and have the ability to start and sustain a project (Ho, 2018). On the other hand, starting a new process, making changes, and innovating can be painful for teachers. Because although change and innovation in organizations are troublesome, both administrators and teachers should accept that every innovation has its own difficulties. Auerswald (2012) explains this situation with the statement "If you are making someone angry, it is probably not innovation". Although innovation practices are challenging, agile leaders and leading teachers should be aware that they are vital for the survival of the organization, and measures should be taken to strengthen the culture of innovation.

It is a noteworthy suggestion of this study that schools should focus on practices that will create an innovative school climate in which agile leadership behaviors are exhibited in strengthening teachers ' entrepreneurial behaviors. Since the effects of agile leadership and innovative schools on entrepreneurial teacher behaviors have been clearly identified, it is recommended that the traditional approaches of current school administrators should be taken under control with contemporary approaches and that they should undergo comprehensive training to become contemporary administrators. In this regard, policy makers and decision-makers should take steps to train administrators equipped with contemporary management values such as agile leadership by reviewing administrator training, selection and appointment policies, and international practices. As seen in the findings of this research, strong leader behavior significantly affects the organization and organizational structure significantly affects human capital. The role of the leader in schools should be strengthened in the education system, and school management should become a professional profession. Based on contemporary approaches such as agile leadership, research based on leader –organization–employee cooperation can be designed to consider various factors by making different provinces, countries, and even continent differences the subject of research.

Declarations

Conflict of Interest

No potential conflicts of interest were disclosed by the author(s) with respect to the research, authorship, or publication of this article.

Funding

No specific grant was given to this research by funding organizations in the public, commercial, or not-for-profit sectors.

REFERENCES

Abbasi, S., & Ruf, T. (2020). Reduction of the fluctuation rate in multi-project organizations through agile leadership. *Management, 8*(2), 128-133. https://doi.org/10.17265/2328-2185/2020.02.005

Akkaya, B. (2020). Review of leadership styles in perspective of dynamic capabilities: An empirical research on managers in manufacturing firms. *Yönetim Bilimleri Dergisi, 18*(36), 389–407. https://doi.org/10.35408/comuybd.681427

Akkaya, R., & Çetin, M. (2022). Girişimci öğretmen davranışları ölçeği: Bir ölçek uyarlama çalışması. *Milli Eğitim Dergisi, 51*(234), 1473-1490. https://doi.org/10.37669/milliegitim.853723

Aslan, H., & Kesik, F. (2016). Yenilikçi okul ölçeğinin geliştirilmesi: Geçerlik ve güvenirlik çalışması. *Kuram ve Uygulamada Eğitim Yönetimi, 22*(4), 463-482. http://dx.doi.org/10.14527/kuey.2016.018

Auerswald, P. (2012). If you're not pissing someone off, you're probably not innovating, para. 1–2. https://hbr.org/2012/05/if-youre-not-pissing-someone-o

Ballestas, C. L. (2016). Aspectos de innovación schumpeteriano: El emprendimiento, el perfil del empresario en el contexto social. *Dictamen Libre*, *1*(17), 73–80. https://doi.org/10.18041/2619-4244/dl.17.3082

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. https://doi.org/10.1037/0022-3514.51.6.1173

Baydar, F., & Çetin, M. (2021). The model of relationships between intellectual capital, learning organizations, and innovation-oriented organizational structures in educational organizations. *Eurasian Journal of Educational Research, 94*, 265-294. https://doi.org/10.14689/ejer.2021.94.12

Baydar, F. (2022a). The relationship between participation in administrative decisions and school effectiveness: An empirical study on teachers. *International Journal of Psychology and Educational Studies, 9*(1), 143-152. https://dx.doi.org/10.52380/ijpes.2022.9.1.630

Baydar, F. (2022b). The role of educational leaders in the development of students' technology use and digital citizenship. *Malaysian Online Journal of Educational Technology, 10*(1), 32-46. http://dx.doi.org/10.52380/mojet.2022.10.1.367

Boyer, M., & Robert, J. (2006). Organizational ınertia and dynamic ıncentives. *Journal of Economic Behavior & Organization*, *59*(3), 324-348. https://doi.org/10.1016/j.jebo.2004.06.024

Breakspear, S. (2017). Embracing agile leadership for learning-how leaders can create ımpact despite growing complexity. *Australian Educational Leader, 39*(3), 68-71. https://search.informit.org/doi/10.3316/aeipt.219755

Cameron, K. S., Dutton, J. E., Quinn, R. E., & Wrzesniewski, A. (2003). Developing a discipline of positive organizational scholarship. K. Cameron, J. Dutton, & R. Quinn (Eds.), In *Positive organizational scholarship: foundations of a new discipline* (pp. 361-370). CA: Berrett-Kohler

Christensen, C. M., Gregersen, H. B., & Dyer, J. H. (2011). *The innovator's DNA: Mastering the five skills of disruptive innovators*. Harvard Business School Press Books.

Cinnioğlu, H., & Ertoğrul, R. (2022). Konaklama işletmelerinde çalışanların çevik liderlik algılarının örgütsel özdeşleşme üzerindeki etkisinde işe adanmışlığın aracılık rolü: Antalya örneği. *Alanya Akademik Bakış, 6*(3), 2599-2626. https://doi.org/10.29023/alanyaakademik.1070939

Creswell, J. W. (2017). *Nicel ve nitel Araştırmanın planlanması, yürütülmesi ve değerlendirilmesi* (Çev. H. Ekşi). Edam.

Çalışkan-Yılmaz, F., & Özgenel, M. (2023). Agile leadership as an antecedent of school effectiveness: A relational investigation on teachers. *Journal of Education and Future, 23*, 27-40. https://doi.org/10.30786/jef.1071657

Davis, J. P. (2022). *How to become an entrepreneurial teacher: Being innovative, leading change*. Routledge

Ellett, C. D., & Teddlie, C. (2003). Teacher evaluation, teacher effectiveness and school effectiveness: Perspectives from the USA. *Journal of Personnel Evaluation in Education, 17*(1), 101-128. https://doi.org/10.1023/A:1025083214622

Goss, D. (2005). Schumpeter´s legacy: Interaction and emotions in the sociology of entrepreneurship. *Entrepreneurship Theory and Practice*, *29*(2), 205-219. https://doi.org/10.1111/j.1540-6520.2005.00077.x

Guthrie J. (2001). The management, measurement and the reporting of intellectual capital. *Journal of Intellectual Capital*, *2*(1), 27-41. https://doi.org/10.1108/14691930110380473

Hayward, S. (2018). *The agile leadership. How to create an agile business in the digital age?* Kogan Page Limited.

Ho, C. S. M. (2018). Conceptualizing teachers' entrepreneurial behavior: An exploratory review. *International Journal of Liberal Arts and Social Science, 6*(1), 14-28. https://www.ijlass.org/data/frontImages/articles/Vol.6No.1/2.14-28.pdf

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling, 6*(1), 1-55. https://psycnet.apa.org/doi/10.1080/10705519909540118

Jacobsen, K., & Hofman-bang, P. (2005). *Entelektüel sermaye IC rating modeli*. ARGE Danışmanlık.

Joiner, B. (2019). Leadership agility for organizational agility. *Journal of Creating Value, 5*(2), 139-149. https://doi.org/10.1177/2394964319868321

Joiner, B., & Josephs, S. (2007a). *Leadership agility: Five levels of mastery for anticipating and initiating change*. Jossey-Bass.

Joiner, B., & Josephs, S. (2007b). Developing agile leaders. *Industrial and Commercial Training, 39*(1), 35–42. http://dx.doi.org/10.1108/00197850710721381

Kanmaz, A., & Uyar, L. (2016). The Effect of school efficiency on student achievement. *International Journal of Assessment Tools in Education, 3*(2), 123-136. https://doi.org/10.21449/ijate.239551

Jones, C. (2019). *How to teach entrepreneurship*. Edward Elgar.

Jong, J. P. J., Parker, S. K., Wennekers, S., & Wu, C. (2015). Entrepreneurial Behavior in Organizations: Does Job Design Matter? *Entrepreneurship Theory and Practice, 39*(4), 981–995.

Kanter, R. M. (1983). *The change masters: Innovation and entrepreneurship in the American Corporation*. Simon & Schuster, Inc.

Kidd, P. T. (Ed.). (1994). *A 21st century paradigm. In agile manufacturing: Forging new frontiers*. Addison-Wesley.

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. The Guilford Press.

Klopper, C., & Pendergast, D. (2017). Agile leadership and responsive ınnovation in ınitial teacher education: An Australian case study. *International Journal for Cross-Disciplinary Subjects in Education, 8*(3), 3160-3168. https://doi.org/10.20533/ijcdse.2042.6364.2017.0424

Leech, N. L., Barrett, K. C., Morgan, G. A., & Clay, J. N., & Quick, D. (2005). *SPSS for intermediate statistics: Use and interpretation*. Lawrence Erlbaum Associates Publishers.

Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). How leadership ınfluences student learning. The Wallace Foundation. http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Documents/How-Leadership-Influences-Student-Learning.pdf

Leonard, J. (2013). *Innovatıon in the schoolhouse: Entrepreneurial leadership in education*. R & L Education.

Macintyre, D. (2017). Agile leadership: Foundation for organizational agility. *Cutter Busıness Technology Journal, 30*(8), 3–35.

Maximini, D. (2018). *Agile leadership in practice*. Spriger

McClelland, D. C. (1965). N achievement and entrepreneurship: A longitudinal study. *Journal of Personality and Social Psychology, 1*(4), 389–392.

Mergel, I. (2016). Agile innovation management in government: A research agenda. *Government Information Quarterly, 33*(3), 516–523. https://doi.org/10.1016/j.giq.2016.07.004

Mumford, M. D., Zaccaro, S. J., Harding, F. D., Jacobs, T. O., & Fleishman, E. A. (2000). Leadership skills for a changing world: Solving complex social problems. *The Leadership Quarterly, 11*(1), 11–35. https://psycnet.apa.org/doi/10.1016/S1048-9843(99)00041-7

Murphy, J., Elliott, S. N., Goldring, E., & Porter, A. (2007). Leadership for learning: A research-based model and taxonomy of behaviors. *School Leadership and Management, 27*(2), 179-201. https://doi.org/10.1080/13632430701237420

Özdamar, K. (2017). *Eğitim, sağlık ve davranış bilimlerinde ölçek ve test geliştirme yapısal eşitlik modellemesi*. Nisan.

Özgenel, M., & Aktaş, A. (2020). The effect of school principals' leadership styles on teacher performance. *International Journal of Leadership Studies: Theory and Practice, 3*(2), 1-18. https://dergipark.org.tr/en/pub/ijls/issue/56102/721883

Özgenel, M., & Yazıcı, Ş. (2020, Temmuz 25-26). *Marmara çevik liderlik ölçeğinin geliştirilmesi, geçerlik ve güvenirlik çalışması*. Anadolu 4. Uluslararası Sosyal Bilimler Kongresi, Diyarbakır, Türkiye.

Parker, D. V., Holesgrove, M., & Pathak, R. (2015). Improving productivity with self-organised teams and agile leadership. *International Journal of Productivity and Performance Management, 64*(1), 112-128. http://dx.doi.org/10.1108/IJPPM-10-2013-0178

Schein, E. H. (2004). *Organizational culture and leadership* (3rd ed.). Jossey Bass.

Schumpeter, J. (1942). *Capitalism, socialism and democracy*. Harper and Brothers.

Schumpeter, J. A. (2003). *Capitalism, Socialism and Democracy*. Routledge

Scott, S., & Webber, C. F. (2013). Entrepreneurialism for Canadian principals: Yesterday, today and tomorrow. *Journal of Research on Leadership Education, 8*(1), 113–136. https://doi.org/10.1177/1942775112443438 ,

Senge, P. (2006). *The fifth dimension: The art and practice of the learning organization*. Doubleday.

Swisher, W. (2013). Learning agility: The "X" factor in ıdentifying and developing future leaders. *Industrial and Commercial Training, 45*, 139-142.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (481-498). Allyn and Bacon.

Tavşancıl, E. (2006). *Tutumların ölçülmesi ve SPSS ile veri analizi*. Nobel.

Vaidya, S. (2014). *Developing entrepreneurial life skills: Creating and strengthening entrepreneurial culture in indian schools*. Springer.

Van-Dam, K., Schipper, M., & Runhaar, P. (2010). Developing a competency-based framework for teachers' entrepreneurial behaviour. *Teaching and Teacher Education, 26*(4), 965-971. http://dx.doi.org/10.1016/j.tate.2009.10.038

Yazıcı, Ş., Özgenel M., Koç, M. H., & Baydar, F. (2022). The mediator role of employee voice in the effect of agile leadership on teachers' affective occupational commitment. *SAGE Open*, *12*(3), https://doi.org/10.1177/21582440221119480

York-Barr, J., & Duke, K. (2004). What do we know about teacher leadership? Findings from two decades of scholarship. *Review of Educational Research, 74*(3), 255-366. http://dx.doi.org/10.3102/00346543074003255

Yukl, G. (2010). *Leadership in organizations* (7th ed.). Prentice Hall.