# The Examination of the Relationship Between Teacher Autonomy and Teacher Leadership through Structural Equation Modeling

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# The Examination of the Relationship Between Teacher Autonomy and Teacher Leadership through Structural Equation Modeling

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## Abstract

The purpose of this study was to investigate the relationship between teacher autonomy and teacher leadership. For this purpose, a predictive correlational research method was used. The study was conducted with 571 teachers who were determined through a simple random sampling technique among those working in Turkey during the 2020-2021 academic year. The *Teacher Autonomy Scale* was used to determine teachers' perception of teacher autonomy, and the *Teacher Leadership Scale* was exploited for their perception of teacher leadership. Descriptive analyses such as mean and standard deviation were estimated to determine teachers' perceptions of autonomy and leadership. Pearson product-moment correlation coefficient and structural equation modeling (SEM) was employed to control the relationship between teacher autonomy and teacher leadership. As a result of the study, the participants' teacher autonomy and teacher leadership perceptions were at higher levels. Moreover, it was established that there was a positive and significant relationship between teacher autonomy and teacher leadership. Teacher autonomy was found to be among the factors explaining teacher leadership. Therefore, it can be alleged that teacher autonomy should be promoted to reveal teachers' leadership skills.

**Keywords:** Teacher autonomy, Teacher leadership, Structural equation modelling.

## Introduction

Educational organizations have constantly changed and transformed in line with social requirements and expectations throughout history. Therefore, the expectations from teachers, who are the practitioners of education, have both increased and diversified. The concept of teacher autonomy has been recently emphasized more and more as teachers' level of authority and freedom affects organizational success (Eurydice, 2008). Teachers will have autonomy if they develop their professional potential and skills and their authority (Bustingorry, 2008). They can demonstrate these skills and potentials through their leadership skills (Altınkurt & Yılmaz, 2011). Thus, teacher leadership emerges as a vital concept. The implementation of effective teaching methods, collaboration with colleagues, and increasing the educational milieu's quality are all associated with teacher leadership (Katzenmeyer & Moller, 2009). One of the most crucial bases of social power for leadership is the power of expertise (Raven, 1993). Öztürk (2011) emphasizes that expertise, that is professionalization, is possible by increasing autonomy. It is believed that teacher autonomy should be encouraged and teachers' self-expression should be reinforced for teacher leadership to develop (Emira, 2010). Teacher leaders can be given autonomy and responsibility to contribute to organizational change (Andrew, 1974). It is essential to reveal the relationship between teachers' leadership skills and their autonomy.

In this part of the study, the conceptual framework for teacher autonomy, teacher leadership, and the relationship between these two would be given.

### Teacher Autonomy

A milieu where teachers make decisions and assume responsibilities is a prerequisite for educational organizations to achieve their goals, increase the quality of teachers, support professional development, and enable teachers to demonstrate their leadership skills (Webb, 2002). It is hoped that education and training activities will be of higher quality if teachers' authority is extended within the framework of their roles and responsibilities, and they are provided with an independent working environment (Friedman, 1999; Ingersoll, 2007). It is reported that

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professionalization is among the determinant factors for teacher quality and student achievement, and it is based on teacher autonomy (OECD, 2016). Thus, teachers' level of autonomy in taking initiative is highly remarkable.

It is not possible to make a common definition of teacher autonomy depending on the studies in the literature (Castle, 2004). According to Garvin (2007), autonomy is the flexibility, power, and authority of the teacher's influence on teaching, assessment, and school administration. Ramos (2006) defines teacher autonomy as the ability of teachers to make decisions within the framework of their professional competence in cooperation with the stakeholders of education and to take responsibility for their decisions. Teacher autonomy means that the teacher is willing, well-equipped, and free to evaluate educational activities (Huang, 2007). Çolak and Altınkurt (2017) indicated that teacher autonomy has a comprehensive meaning. The definitions have included power, authority, decision-making, freedom, willingness, cooperation, responsibility, decision-making competence, power, and freedom in related issues to the teacher's school, education, and students.

It is possible to encounter different classifications and dimensions as in the definition of teacher autonomy. While Pearson and Hall (1993) dealt with two dimensions as, curriculum autonomy and overall teaching autonomy, Friedman (1999) classified four dimensions as teaching and assessment autonomy, autonomy in participating in decisions, professional development, and curriculum. Öztürk (2011) listed the dimensions of planning and implementation of teaching, participation in administrative processes, and professional development. Çolak and Altınkurt (2017), on the other hand, addressed four dimensions, namely the teaching process, the curriculum, professional development, and professional communication as adopted in this study. During the teaching process, teachers should be given full authority in the circumstances such as arranging classroom practices according to the needs of students, planning, preparation, and using materials (Eurydice, 2008). For professional development, teachers need to be provided with autonomy not only within their authority but also in developing their professional skills (Çolak & Altınkurt, 2017). Can (2009) highlights the importance of teachers' taking responsibility in program development according to the school's needs and students beyond the predetermined curriculum.

Öztürk (2011) claims that teachers may become lonely, avoid cooperation, and resist change in cases where they have fallen short of autonomy. On the other hand, professional communication autonomy is defined as the ability of teachers to express their opinions easily without fear and anxiety in their communication with their colleagues, administrators, and parents (Çolak & Altınkurt, 2017). Therefore, it is necessary to embrace teacher autonomy under the dimensions of planning the educational process, curriculum development, professional development, and cooperation, as in the present study.

Teacher autonomy has started to be a remarkable area of interest for educational politicians, administrators, and practitioners during the educational reform process since the middle of the 20th century (Eurydice, 2008). It has been argued that teacher autonomy is limited in Turkey and that educational reforms are overcentralized (Osgood, 2006), that teacher autonomy is constrained by institutional services (Wermke & Höstfält, 2014), and that centralized decisions are supervised by school administrators rather than teachers (Ingersoll & Collins, 2017). It can be asserted that this very situation leads to the inability of teachers to reveal their professional potential and to a decrease in their self-esteem (Özaslan, 2015). Figure 1 presents information about the autonomy levels of schools and teachers in Turkey and different countries.

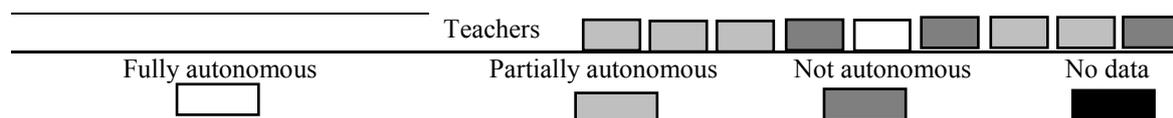| | | Finland | England | Czechia | Germany | Netherlands | Greece | South Korea | The USA | Turkey |
|---|---|---|---|---|---|---|---|---|---|---|
| Determining the content of the compulsory curriculum | School | ▨ | ▰ | ☐ | ▰ | ☐ | ▰ | ☐ | ▨ | ▰ |
| | Teachers | ▨ | ▰ | ▨ | ▰ | ☐ | ▰ | ☐ | ▨ | ▰ |
| Selection of textbooks | School | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ▨ | ☐ |
| | Teachers | ☐ | ☐ | ☐ | ☐ | ☐ | ▰ | ▨ | ▨ | ▰ |
| Selection of teaching methods | School | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ■ | ■ | ■ |
| | Teachers | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ■ | ▨ | ▨ |
| Determination of student evaluation criteria | School | ☐ | ▨ | ☐ | ▨ | ☐ | ▨ | ☐ | ☐ | ▰ |
| | Teachers | ☐ | ▨ | ▰ | ▨ | ▰ | ▨ | ▨ | ▨ | ▨ |
| The use of school budget | School | ☐ | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ |

Figure 1. Autonomy levels of schools and teachers in selected countries (Çolak & Altınkurt, 2017).

Based on Figure 1, it can be argued that teachers in Turkey are not autonomous in determining the content of the curriculum, selecting textbooks, determining the criteria for evaluating students, and determining the school budge. Still, they have partial autonomy in selecting the teaching method.

**Teacher Leadership**

It is a well-known fact that teachers are among the most important elements of the educational process at schools. However, it is now widely accepted that effective leadership is critical for the development of schools (Bellibaş et al., 2020). In the traditional understanding of education, the leadership role in schools is assigned to school administrators due to their official authority. On the other hand, teachers have been appreciated in terms of their educational roles within the classroom. However, like many other organizations, today's schools experience rapid change, and all the stakeholders at school must contribute to the efforts to adapt to this very process. One of the common findings in recent studies on effective leadership is that the authority to lead should not be assumed as unique to the school administrator and should be distributed among the stakeholders within the school (Harris & Muijs, 2003). Today, the concept of school leadership goes beyond traditional organizational management and includes individuals who improve the quality of education in classrooms and change the school culture, as well as school administrators (Beycioğlu & Aslan, 2012) and is reconsidered with a collective approach (Katzenmeyer & Moller, 2009). Therefore, the concept of distributed leadership argues that all individuals at school should be allowed to lead and take responsibility (Lambert, 2003), and the notions of collaborative work and responsibility have gained importance (Frost & Harris, 2003). This paradigm shift in the context of school leadership has led to the prominence of the concept of teacher leadership and its elaboration from different aspects (Darling-Hammond et al., 1995; Smylie, 1995; Bishop et al., 1997; Odell, 1997; Leithwood & Jantzi, 2000; Silva et al., 2000; Mayo, 2002; Frost & Harris, 2003; Harris & Muijs, 2003; Harris, 2003, 2005; Muijs & Harris, 2003, 2006, 2007; Lambert, 2003; Anderson, 2004; Scribner & Bradley-Levine, 2010; Nguyen et al., 2019; Sawalhi & Chaaban, 2019).

Although there are many definitions for the concept of teacher leadership, there is no consensus on the definition as the concept is believed to be handled uniquely for each school context (Wasley, 1991; Sergiovanni & Starratt, 2001; Muijs & Harris, 2003; York-Barr & Duke, 2004; Katzenmeyer & Moller, 2009). In addition to the traditional (formal) roles for teachers, it is observed that divergent (informal) roles have also been included in the definitions of teacher leadership. According to Ward and Parr (2006), teacher leadership, in which all teachers are considered as having the potential to be a leader, is not just about official duties such as group leader, team leader, formateur teacher, expert teacher, etc. Still, it is a further phenomenon covering those official titles. As the main purpose of the educational process at schools is to improve students' learning outcomes, teacher leadership has focused on developing the influential factors on this issue. In this regard, teacher leadership is defined by York-Barr and Duke (2004) as "establishing effective relationships within the school, eliminating the barriers and organizing resources to improve students' educational experiences and outcomes". This definition gives clues that teachers should go out of their classrooms and positively affect other people and processes at school. Danielson (2006), on the other hand, emphasized the skills that teacher leaders should have by describing the concept of teacher leadership as "the set of skills that enable the teacher to influence the outside of the classroom to increase school success while continuing to teach the students". In addition to the teachers' skills, it is also essential to develop the relationships between stakeholders at schools, share information and build a promotive culture for teacher leadership. Therefore, Childs-Bowen et al. (2000) explained teacher leadership as "teachers' contribution to the creation of a learning-based culture at school, their cooperation with their colleagues and support of each other, their leadership behaviours outside the classroom as well as during the teaching process, their development and execution of effective instructional practices for the students". In light of the above definitions, it is clear that a teacher's leadership role prioritizes improving student learning outcomes by implementing and sharing high-quality instructional practices in the classroom, contributing to the professional development of other teachers through good relationships and collaboration, and thus leading the creation of a "learning" based culture in the school.

Harris (2005) stated that the teacher leadership movement is an approach that provides significant benefits to the school, teachers, and students. Teacher leaders contribute to forming a professional working culture at school thanks to their experience and expertise (Kardos & Johnson, 2007). While teaching in their classrooms, they motivate their colleagues (Kılınç & Recepoğlu, 2013) and lead them (Demir, 2020) to ensure that the school achieves its goals. Their colleagues and school administrators respect teacher leaders with successful teaching

backgrounds, and they pass on their knowledge and skills to others in the school community (York-Barr & Duke, 2004), create opportunities for professional learning (Harris & Muijs, 2003), and enhance human capacity. (Harris & Lambert, 2003). Teacher leaders who are the representatives of change at schools (Harris & Muijs, 2005) are also very knowledgeable about the curriculum (Miles et al., 1988) and assist the development of the curriculum (Harris & Muijs, 2003). Teacher leaders with continuous professional development contribute more to school decision-making processes with the knowledge and skills they gain (Katzenmeyer & Moller, 2009). Thus they dedicate themselves more to the development of the school (Gül, 2017). On the other hand, teacher leaders promote student achievement directly or indirectly through their contributions to the school and their colleagues (Leithwood & Jantzi, 2000; Harris, 2005).

As adopted by the present study, the concept of teacher leadership was found to have three dimensions by Beycioğlu & Aslan (2010). Accordingly, *institutional development* is the dimension that changes the structure of the leadership responsibilities that mostly belong to the principal and refers to the participation of teachers in various administrative activities. These include such practices as coordinating some of the decisions taken and auditing the processes. According to the *professional development* dimension, the teacher leader creates an impact on their students and colleagues by exhibiting pioneering and exemplary behaviours while developing professionally. The dimension of *collaboration with colleagues* is based on teachers' assistance and support to their colleagues. The teacher leader attempts to increase educational effectiveness by guiding the newly appointed teachers, leading the formation of cooperative working groups, and in line with the emerging professional and institutional needs.

### The Relationship Between Teacher Autonomy and Teacher Leadership

It can be argued that teachers occupy a relatively important position in terms of their duties and responsibilities among the actors that influence the educational and teaching process and have different roles in schools, as the systematic and organized structures that have emerged to meet the educational needs of societies. Due to the changes in various fields in recent years, expectations regarding education stakeholders have also altered, and new roles and responsibilities have been imposed on teachers both inside and outside the school. Teachers' participation in decisions has become vital for schools to reach their curriculum-related goals and to establish an effective decision-making mechanism (York-Barr & Duke, 2004). Furthermore, as stated above, the concept of "teacher leadership" has found a place in the educational administration literature, based on the idea that the authority to lead should not be considered unique to the school administrator and should be distributed among the stakeholders within the school (Harris & Muijs, 2003). Therefore, creating the environment, conditions, and culture that will allow teachers to lead at schools has gained importance. Katzenmeyer and Moller (2009) listed the characteristics of promotive school culture for teacher leadership as focusing on professional development, respecting teachers for their contribution to the organization, removing barriers to autonomy, encouraging professional cooperation, participation in decision-making processes, effective communication, and creating a satisfactory work environment for teachers. Leithwood et al. (1996) pointed out that one of the ways to offer teachers opportunities to lead school improvement is to provide teachers with autonomy by school leaders.

Similarly, Wenner and Campbell (2017) voiced that teacher autonomy can be effective in developing teacher leadership, and school administration that grants an appropriate level of autonomy to teacher leaders is of key importance to achieve this. Teacher leadership necessitates an autonomous job description at school and in the classroom (Barth, 1990). That's why, autonomy liberates teachers from traditional bureaucratic teaching processes and encourages them to use their innovative ideas and decisions for the development of all teaching processes (Jumani & Malik, 2017). Teachers need autonomy to provide the best opportunities for students in terms of education and training, exhibit leadership qualities in the face of immediate problems (Blanchard, 2007), and overcome stubborn obstacles created by school culture (Johnson & Donaldson, 2007). Araşkal and Kılınç (2019) uttered that school administrators are crucial in the emergence of teacher leaders in terms of supporting the autonomy of teacher leaders, and providing teacher leaders with the opportunity to try different teaching methods and techniques, to develop professionally, and to cooperate. Therefore, it is believed that teacher autonomy is influential in the emergence of teacher leadership behaviours and there may be a possible relationship between these two concepts.

### *Purpose of the Study*

The present study aimed to examine the relationship between teacher autonomy and teacher leadership. The characteristics such as teachers' taking decisions on matters related to their profession, displaying professionalism, being aware of their authority and roles, using their professional capacity and skills for the development of

students, and organizing the working environment are related to teacher autonomy. The ability of teachers to exhibit these skills and behaviours and to influence the stakeholders of education is about leadership skills. The examination of relevant literature yielded that no specific study has directly examined the relationship between teacher autonomy and teacher leadership except those on the relationship between leadership and autonomy. In this regard, it is expected that the present study will contribute to the literature and give an idea about the practices of practitioners and policymakers in the relevant field. It is also hoped that the study may form the basis for new research. In line with this main purpose, answers to the following questions were sought.

1. What is the level of teacher autonomy perception of the participating teachers?
2. What is the level of teacher leadership perception of the participating teachers?
3. Is there a significant relationship between teacher autonomy and teacher leadership?
4. Does teacher autonomy significantly predict teacher leadership?

## Method

### Research Model

The predictive correlational research method, among correlational research designs, was adopted in the study. In predictive correlational studies, the relationships between variables are examined and one of the variables is attempted to be predicted based on the other(s) (Frankel & Wallen, 2006). The relationship between teacher autonomy and teacher leadership was tested through Structural Equation Modeling (SEM). SEM is a powerful statistical method based on developing a theory by examining the relationships between variables (Byrne, 2010). In this regard, the study aimed to reveal the predictive relationship between teacher autonomy and teacher leadership.

### Population and Sample

The research population consisted of teachers working at public primary schools in the central districts of Gaziantep, one of the metropolitan cities in southeast Turkey. The study was carried out with 571 teachers who were determined through a simple random sampling technique among those working in the central districts of Gaziantep during the 2020-2021 academic year. Bryman and Cramer (2005) claim that reaching five times the number of items used in the study would be sufficient for the sample size. The sample size was considered adequate as the total number of items in the scales used in this study is 42. Information on the demographics of the participating teachers was presented in Table 1.

Table 1. Demographics of participating teachers

| Variable | Sub-group | N | % |
|---|---|---|---|
| Gender | Male | 262 | 45.9 |
| | Female | 309 | 54.1 |
| Age | Between 20-30 | 208 | 36.4 |
| | Between 31-40 | 233 | 40.8 |
| | Between 41-50 | 105 | 18.4 |
| | 51 and over | 25 | 4.4 |
| Level of education | Undergraduate | 498 | 87.2 |
| | Graduate | 73 | 12.8 |
| Professional seniority | Between 1-10 years | 305 | 53.4 |
| | Between 11-20 years | 184 | 32.2 |
| | Between 21-30 years | 74 | 13.0 |
| | 30 years and over | 8 | 1.4 |
| Working years at school | Between 1-5 years | 398 | 69.7 |
| | Between 6-10 years | 132 | 23.1 |
| | 11 years and over | 41 | 7.2 |
| Type of school | Primary school | 264 | 46.2 |
| | Secondary school | 307 | 53.8 |
| Teaching field | Pre-school teacher | 35 | 6.1 |
| | Primary school teacher | 221 | 38.7 |
| | Subject matter teacher | 315 | 55.2 |
| | Total | 571 | 100 |

As seen in Table 1, 262 (45.9%) of the participating teachers were male, 309 (54.1%) were female, 208 (36.4%) were between the ages of 20-30, 233 (40.8%) were between the ages of 31-40, 105 (18.4%) were between the ages of 41-50, 25 (4.4%) were 51 years old and over. According to the level of education, 498 (87.2%) of them were undergraduates and 73 (12.8%) were graduates. Based on the variable of professional seniority, 305 (53.4%) had between 1-10 years, 184 (32.2%) had between 11-20 years, 74 (13%) had between 21-30 years, 8 (1.4%) had 31 and more years of seniority. For working years at school, 398 (69.7%) have been working at the same school for 1-5 years, 132 (23.1%) for 6-10 years, 41 (7.2%) for 11 years, and more. According to the type of school, 264 (46.2%) worked at primary schools and 307 (53.8%) of them worked at secondary schools. Based on the variable of the teaching field, 35 (6.1%) were pre-school teachers, 221 (38.7%) were primary school teachers and 315 (55.2%) were subject-matter teachers.

**Data Collection Instruments**

The research data were collected through the scales chosen following the purpose of the study and the demographic survey form developed by the researchers. The purpose of the study was submitted to the participants with the data collection instrument. It was emphasized that the research data would only be used for scientific purposes, the participation was voluntary, and there was no need to include private information. The items were asked to be answered sincerely to obtain valid and reliable results. The study used the Teacher Autonomy Scale and the Teacher Leadership Scale as data collection instruments and collected information on demographics. The scales and the validity and reliability results are presented below.

*Teacher Autonomy Scale*

Within the scope of the study, the "Teacher Autonomy Scale" developed by Çolak and Altınkurt (2017) and consisting of four sub-dimensions and a total of 17 items was used to determine teachers' perception of autonomy. The sub-dimensions were teaching process autonomy (6 items), curriculum autonomy (5 items), professional development autonomy (3 items), and professional communication autonomy (3 items). Each item in the scale was graded with "strongly disagree" (1), "disagree" (2), "moderately agree" (3), "agree" (4), "strongly agree" (5) on a Likert-type five-point scale. Within the scope of this study, it was concluded that the goodness of fit indices, $x^2/Df$= 4.17, RMR= .046, RMSEA= .075, GFI= .91, AGFI= .87, CFI= .91, IFI= .91, was acceptable based on the confirmatory factor analysis performed to test the construct validity of the scale (Cokluk et al., 2012).

*Teacher Leadership Scale*

Within the scope of the study, the "Teacher Leadership Scale" developed by Beycioğlu and Aslan (2010) and consisting of three sub-dimensions and a total of 25 items was used to measure the teacher leadership perception of the participants. The sub-dimensions were institutional development (9 items), professional development (11 items), and collaboration with colleagues (5 items). Each item in the scale was scored as "Never" (1), "Rarely" (2), "Sometimes" (3), "Often" (4), "Always" (5) on a Likert-type five-point scale. Within the scope of this study, it was concluded that the goodness of fit indices, $x^2/Df$= 4.21, RMR= .051, RMSEA= .076, GFI= .85, CFI= .90, IFI= .90, was acceptable based on the confirmatory factor analysis performed to test the construct validity of the scale (Çokluk et al., 2012).

Table 2 demonstrated the Cronbach's alpha internal consistency coefficients (reliability coefficients) estimated in the original and present studies.

Table 2. Cronbach's Alpha internal consistency coefficients

| Scales | Sub-dimensions | Number of Items | Internal Consistency Coefficients | |
|---|---|---|---|---|
| | | | Original study | Present study |
| Teacher Autonomy Scale | Teacher Autonomy | 17 | 0.91 | 0.88 |
| | Teaching process | 6 | 0.82 | 0.77 |
| | Curriculum | 5 | 0.82 | 0.80 |
| | Professional development | 3 | 0.85 | 0.83 |
| | Professional communication | 3 | 0.78 | 0.73 |
| Teacher Leadership Scale | Teacher Leadership | 25 | 0.91 | 0.94 |
| | Institutional development | 9 | 0.79 | 0.90 |
| | Professional development | 11 | 0.85 | 0.91 |
| | Collaboration with Colleagues | 5 | 0.73 | 0.86 |

According to Table 2, the Cronbach's alpha reliability coefficients in this study ranged from .73 to .94. Cronbach alpha reliability coefficients above .70 are assumed to be satisfactory for an ideal scale (Pallant, 2020). Accordingly, it can be asserted that the reliability coefficients of the Teacher Autonomy Scale with its sub-dimensions and the Teacher Leadership Scale with its sub-dimensions were decent.

**Data Analysis**

This study used descriptive statistics such as mean and standard deviation to determine the participants' perceptions of teacher autonomy and teacher leadership. The relationship between teacher autonomy and teacher leadership was examined through Pearson product-moment correlation. The correlation coefficients between 0.70-1.00 were found to be high, those between 0.70-0.30 were found to be moderate, and those between 0.30-0.00 were found to be low (Büyüköztürk, 2012). On the other hand, structural equation modeling (SEM) was conducted to determine the common variance between teacher autonomy and teacher leadership. Several fit indices were used to decide whether the model predicted by structural equation modeling was supported by the research data. Regarding the goodness criteria for the fit indices in the structural equation modeling with observed and latent variables, it is considered to be a perfect fit when the $x^2/Df$ index is less than two, and an acceptable fit if it is less than five while the RMSEA between .08 and .05 is acceptable, and less than .05 is regarded to be a perfect fit (Meydan & Şeşen, 2014). IFI, NFI, and NNFI (TLI) fit indices between .90 and .95 are acceptable fit, and the values of .95 and over indicate a perfect fit; GFI and AGFI indices between .85 and .90 are acceptable fit, and .90 and over illustrate a perfect fit; SRMR index of less than .08 is acceptable fit, and a value of .05 and below suggests a perfect fit; CFI index of .95 and over is acceptable fit, and .97 and over means perfect fit (Byrne, 2010; Kline, 2011).

Kurtosis and skewness values were examined to determine whether the obtained data were normally distributed. The obtained data were analysed using SPSS 22.0 and AMOS 21 software packages. According to Tabachnick and Fidel (2007), kurtosis and skewness values between -1.5 and +1.5 point out that the data are normally distributed. This study observed that the kurtosis and skewness values for the variables ranged between -1 and +1 and it was decided that the research data had a normal distribution.

# Findings

This section initially submitted descriptive statistics and correlation coefficients regarding teacher autonomy with its sub-dimensions and teacher leadership with sub-dimensions. Then, the findings related to the structural equation modeling for determining the common variance between teacher autonomy and teacher leadership were included.

**Descriptive Statistics and Correlation Coefficients Between the Variables**

Descriptive statistics and correlation coefficients related to teacher autonomy and teacher leadership with their sub-dimensions, in line with the first three research questions to be answered for the study's main purpose, were given in Table 3.

Table 3. Descriptive statistics and correlation coefficients between the variables

| | X | Df | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Teacher autonomy | 4.10 | 0.54 | 1.00 | | | | | | | | |
| 2. Teaching process | 4.26 | 0.54 | .85** | 1.00 | | | | | | | |
| 3. Curriculum | 4.10 | 0.67 | .83** | .66** | 1.00 | | | | | | |
| 4. Professional development | 3.84 | 0.91 | .76** | .49** | .48** | 1.00 | | | | | |
| 5. Professional communication | 4.04 | 0.75 | .64** | .40** | .33** | .44** | 1.00 | | | | |
| 6. Teacher leadership | 4.05 | 0.58 | .50** | .37** | .42** | .39** | .39** | 1.00 | | | |
| 7. Collaboration with colleagues | 4.10 | 0.70 | .46** | .37** | .41** | .32** | .35** | .83** | 1.00 | | |
| 8. Institutional development | 3.61 | 0.79 | .44** | .29** | .38** | .40** | .33** | .91** | .66** | 1.00 | |
| 9. Professional development | 4.38 | 0.52 | .43** | .36** | .35** | .29** | .35** | .87** | .66** | .64** | 1.00 |

**p< 0.01

The examination of the perception levels of the participants regarding teacher autonomy with its sub-dimensions in Table 3 yielded that the teaching process sub-dimension was at the level of "strongly agree" (X= 4.26) while teacher autonomy, curriculum, professional development, and professional communication were at the level of

"agree" (X= 3.84 – 4.10). When the perception levels of teacher leadership with its sub-dimensions were examined, it was observed that the professional development sub-dimension was at the level of "strongly agree" (X=4.38) while teacher leadership, institutional development, and collaboration with colleagues were at the level of "agree" (X=3.61 – 4.10). It was concluded that the correlation coefficients between the variables indicated a significant positive relationship. It was determined that there was a moderately positive and significant relationship (r=.50; p<0.01) between teacher autonomy and teacher leadership.

Structural equation modeling was used to determine the common variance between teacher autonomy and teacher leadership, in line with the 4th research question to be answered for the study's main purpose. The goodness of fit indices obtained from the analysis and the acceptable and perfect fit limits were given in Table 4.

Table 4. The goodness of fit indices in the study and acceptable and perfect fit limits

| Fit Index | Perfect fit limit | Acceptable fit limit | The values obtained in this study | Result |
|---|---|---|---|---|
| $\chi^2/Df$ | $\leq 3$ | $\leq 5$ | 4.53 | Acceptable fit |
| GFI | $\geq .90$ | $\geq .85$ | .97 | Perfect fit |
| AGFI | $\geq .90$ | $\geq .85$ | .93 | Perfect fit |
| RMSEA | $\leq .05$ | 0.06-0.08 | .07 | Acceptable fit |
| SRMR | $\leq .05$ | 0.06-0.08 | .03 | Perfect fit |
| CFI | $\geq .97$ | $\geq .95$ | .97 | Perfect fit |
| NFI | $\geq .95$ | $\geq .90$ | .97 | Perfect fit |
| NNFI(TLI) | $\geq .95$ | $\geq .90$ | .95 | Perfect fit |
| IFI | $\geq .95$ | $\geq .90$ | .97 | Perfect fit |

According to Table 4, it was found that the fit indices obtained in this study indicated acceptable and perfect fit when compared with the perfect and acceptable fit limits (Schumacker & Lomax, 2004). The proposed model through the structural equation modeling is shown in Figure 2.
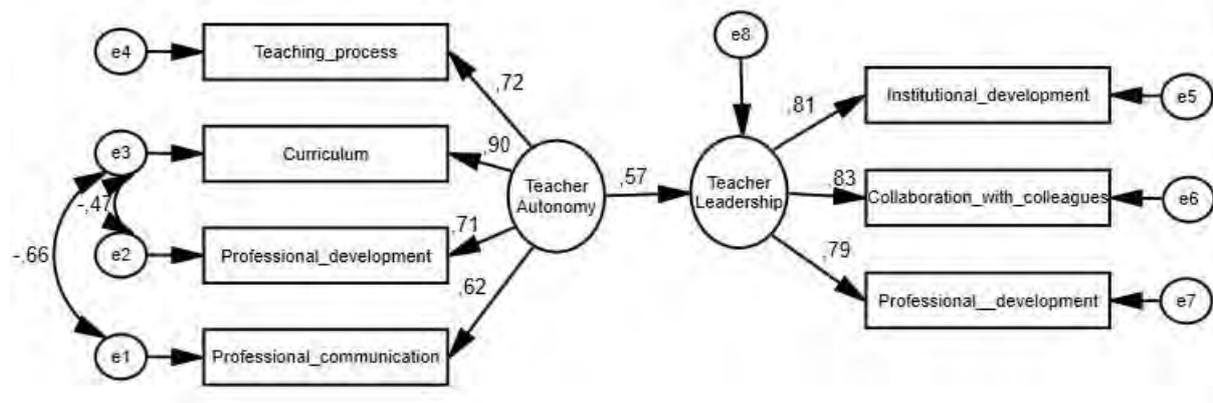


Figure 2. Structural equation modeling between teacher autonomy and teacher leadership

The standardized and non-standardized path coefficients for the common variance between teacher autonomy and teacher leadership were submitted in Table 5.

Table 5. Standardized ($B_0$) and non-standardized ($B_1$) path coefficients in structural equation modeling for the relationship between teacher autonomy and teacher leadership

| | | | $B_0$ | $B_1$ | S.E. | C.R. | p |
|---|---|---|---|---|---|---|---|
| Teacher autonomy | $\longrightarrow$ | Teacher leadership | 0.57 | 0.79 | 0.08 | 9.61 | <0.001 |
| Teacher autonomy | $\longrightarrow$ | Institutional development | 0.81 | 1 | | | |
| Teacher autonomy | $\longrightarrow$ | Collaboration with colleagues | 0.83 | 0.90 | 0.04 | 20.03 | <0.001 |
| Teacher autonomy | $\longrightarrow$ | Professional development | 0.79 | 0.64 | 0.03 | 19.29 | <0.001 |

According to Table 5, it was established that the acceptable and perfect goodness-of-fit indices obtained as a result of the analyses confirmed the proposed model. Path coefficients between observed and unobserved variables were statistically significant (p<0.001). In addition, it was determined that there was a significant relationship between teacher autonomy and teacher leadership ($\beta_0$=.57, p<0.001), and the common variance between the two latent variables was 32% ($R^2$= 32).

## Discussion and Conclusion

The relationship between teacher autonomy and teacher leadership was examined in this study. For this purpose, the perception levels of the participants regarding teacher autonomy were primarily discussed. The research results suggest that teachers have a high level of autonomy perception to a certain extent. This finding suggests that teachers in Turkey feel relatively free to take responsibility for decision-making processes regarding teaching practices, methods and techniques to be used, assessment and evaluation practices, and their communication with education stakeholders, although they have limited autonomy (Eurydice, 2008; OECD, 2013). Prichard and Moore (2016) pointed out that the autonomy-limiting effects of the stakeholders of education and governments may impress teachers' perception of autonomy. It can be asserted that teachers have a high sense of autonomy even when they experience frustration from different sources (Einolf, 2002; Rudolf, 2006). While some studies on teacher autonomy yielded that the teachers had a moderate level of autonomy perception (Çolak & Altınkurt 2017; Dampson et al., 2019), some others reported a high level of autonomy perception (Salokangas et al., 2020; Yorulmaz et al., 2018). The divergent results of the studies may be related to the factors such as school climate, school culture, administrative approach, the processes of teacher training and development. Based on the sub-dimensions of teacher autonomy, it was concluded that teachers had a high level of autonomy perception in the teaching process sub-dimension, they, on the other hand, had a high level of autonomy perception in the curriculum, professional communication, and professional development sub-dimensions to a certain extent. Some studies in the literature also demonstrated that the teachers acted more autonomously in the teaching sub-dimension of teacher autonomy (Archbald & Porter, 1994; Lacoe, 2006; Garvin, 2007; Karabacak, 2014). It can be argued that the teacher's freedom to make decisions in the classroom and determine the methods and techniques to be used while lecturing support their autonomy in teaching despite the limiting factors regarding autonomy.

Consistent with the purpose of the study, participants' perceptions of teacher leadership were examined. The research findings indicated that participants' perceptions of teacher leadership with its sub-dimensions, namely collaboration with colleagues, institutional development, and professional development, were somewhat high. This seems to be supported by various research findings (Beycioğlu & Aslan, 2012; Kılınç & Recepoğlu, 2013; Kılınç et al., 2015; Öntaş & Okut, 2017; Öztürk & Şahin, 2017; Cansoy & Parlar, 2018; Aslan et al., 2019) in the related literature. These results reveal that teachers contribute to the quality of teaching and the institutional development of the school by taking actions and exhibiting behaviours that go beyond their formal and traditional roles. In addition, it points out that teachers consider themselves as professionals who facilitate the educational process of students and share their in-class activities, practices, and skills with other teachers. Moreover, it can be inferred that teachers believe that they are effective in improving the teaching activities and professional development of their colleagues. Wenner and Campbell (2017) voiced that teacher leaders are teachers who assume leadership responsibilities outside the classroom as well as their classroom practices. Studies, carried out especially during the Covid-19 pandemic, have revealed that teachers' communication and problem-solving skills become more of an issue for the period of "new normal" (Yıldız Şal & Göçen, 2022). Therefore, teacher leaders are individuals who are hardworking, open to innovations, motivate the students with their various knowledge and skills, and are ready to help other teachers (Katzenmeyer & Moller, 2009). It can be claimed that the participating teachers are role models and influence their colleagues with their professional knowledge and competencies and personal characteristics. What's more, it can be deduced that they support other teachers by sharing their experience and skills in solving their professional problems and encouraging them in professional development.

As for the relationship between teacher autonomy and teacher leadership, it was concluded that there is a moderate, positive, and significant relationship. Additionally, a positive, moderate, and significant relationship was observed between teacher autonomy and the sub-dimensions of teacher leadership, namely institutional development, collaboration with colleagues, and professional development. These results pinpoint that teachers' leadership behaviours will increase together with the rise in autonomy behaviours. In that vein, teachers' leadership behaviours will also be limited if their autonomy behaviours are restricted. Bredeson (2000) highlights that school administrators motivate teachers about teacher autonomy in effective schools. Webb (2002) indicates that teachers are negatively affected and do not feel free due to not taking a decent place in decision-making and administrative processes. Ingersoll (2007), on the other hand, asserts that teachers should be given authority and power along with responsibilities. According to Öztürk (2011), the teacher should be equipped with autonomy and decision-making power. Therefore, it is necessary to provide teachers with an environment where they can exhibit their leadership skills along with the autonomy to increase effectiveness and efficiency in educational organizations.

Finally, the extent to which teacher autonomy predicts teacher leadership was examined in line with the study's main purpose. According to the structural equation modeling result, it was yielded that teacher autonomy explained 32% of teacher leadership. This result suggests that teacher autonomy and teacher leadership are not independent structures and that teacher autonomy is one of the significant factors affecting teacher leadership. Teachers' leadership skills should be revealed by taking responsibility not only during the teaching processes but also inside and outside the classroom (Cemaloğlu & Duran, 2018). Therefore, it is necessary to develop teachers' collaborative decision-making processes at school, encourage teachers to exhibit leadership behaviours, and create opportunities for increasing their performance (Yılmaz et al., 2017). Thus, it can be alleged that teachers should be autonomous during the teaching process and the practices for boosting their professional development and communication capacities should be carried out to improve the quality of teachers and strengthen their professional professionalism (Buyruk & Akbaş, 2021). However, it is possible to say that different factors explain teacher leadership as well as teacher autonomy. Katzenmeyer and Moller (2009) listed the significant factors for teacher leadership such as respecting teachers for their contributions to the institution, encouraging professional cooperation, participation in decision-making processes, and creating a positive school climate and professional autonomy. On the other hand, various studies concluded that factors such as organizational culture (Öztürk & Şahin, 2017), school principal's leadership (Araşkal & Kılınç, 2019), and personal characteristics (Sawalhi & Sellami, 2021) are effective on teacher leadership.

As a result, it was revealed that the participants perceived teacher autonomy and teacher leadership at higher levels. It was determined that there is a positive and significant relationship between teacher autonomy and teacher leadership. Furthermore, it was found that teacher autonomy is among the factors explaining teacher leadership.

## Limitations and Recommendations

Teachers working in elementary schools were only included in the sample during the development of the teacher leadership scale. Therefore, it may be considered a limitation that the sample of this study consisted only of teachers working in elementary schools. While national and international studies conducted in this area indicate limited teacher autonomy in Turkey, the high perception of teacher autonomy in this study implies that it should be explored in more detail. An in-depth (interpretive) qualitative research can be conducted to uncover the reasons behind it. Based on the research findings, it can be asserted that school administrators who expect teachers to engage in leadership behaviours should adopt practises that support teacher autonomy and develop a favourable school structure. Practises such as involving teachers in decision-making, supporting professional development, giving teachers the authority to design curriculum according to students' needs, and developing intra-school communication channels can help ensure teacher autonomy. On the other hand, it is recommended to conduct quantitative, qualitative, and mixed-method studies to identify the different factors that influence teacher leadership.

### Author(s) Contribution Rate
The authors contributed equally to the study.

### Conflicts of Interest
The authors declare that they have no conflict of interest.

### Ethical Approval
Ethical permission (08.04.2021-33736) was obtained from Gaziantep University's Social and Humanities Sciences Ethics Committee for this research.

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