Education and Science

Original Article

Vol 50 (2025) No 222 187-204

Nexus between Distributed Leadership, Meaningful Work and School Academic Optimism in Turkish Schools: A Multilevel SEM Analysis

Murat Özdemir [1], Şule Polat [2], Mehmet Küçükçene [3], Sakine Sincer [4], Nesrin Aydın Yürükçü [5]

Abstract

School academic optimism is an internal factor that plays an important role in a range of school outcomes. In recent years, there has been an increasing focus on the antecedents of school academic optimism. Previous studies have concluded that leadership has an important impact on school academic optimism. However, the holistic effect of distributed leadership and meaningful work on school academic optimism has not been sufficiently researched. Therefore, in the current study, we tested the model we had developed to explore the direct and indirect relations among distributed leadership, meaningful work, and school academic optimism both at the teacher level and school level. The data were gathered from 813 teachers working at 78 state primary schools located in 12 regions in Türkiye. We used multilevel structural equation model analysis to test the model we had developed. The results show that meaningful work is a significant factor in the relationship between distributed leadership and school academic optimism. This result contributes to the literature that focuses on the antecedents of school academic optimism. Based on the study results, it is recommended to develop and implement policies that will strengthen schools and give school leaders more authority to produce effective outcomes.

Keywords

Distributed leadership
Meaningful work
School academic optimism
Teacher

Article Info

Received: 11.14.2023
Accepted: 10.10.2024
Published Online: 04.25.2025

DOI: 10.15390/EB.2025.13286

Introduction

In recent years, scholars have focused on the antecedents of school academic optimism due to its positive outcomes at student and school levels. In this context, a growing body of research indicates that the main predictor of school academic optimism is school leadership (Hong, 2017; Mitchell & Tarter, 2016). As an illustration, McGuigan and Hoy (2006) state that principal leadership has a key role in building a culture of academic optimism. Similarly, Kulophas and Hallinger (2020) underline the importance of leadership that creates a culture of academic optimism in the process of supporting teacher learning. While preexisting school conditions do not significantly impact academic optimism, the quality of school investments, particularly in activities, plays a crucial role (Wu & Sheu, 2015). The existing literature has provided some insights into the antecedents and consequences of school academic optimism. Numerous studies have demonstrated the positive impact of academic optimism

[1] Hacettepe University, Faculty of Education, Department of Educational Sciences, Türkiye, mrtozdem@gmail.com
[2] Ministry of National Education, Türkiye, sule.polat@yahoo.com
[3] Kırıkkale University, Faculty of Education, Department of Educational Sciences, Türkiye, mehmetkcene@hotmail.com
[4] Hacettepe University, School of Foreign Languages, Türkiye, sakine_koca@hotmail.com
[5] Ministry of National Education, Türkiye, aydin_nesrin@outlook.com

on school effectiveness, teacher engagement and student achievement (Kulophas, Hallinger, Ruengtrakul, & Wongwanich, 2018). For example, studies have indicated that schools with high levels of academic optimism tend to have higher levels of student achievement (Oldac & Kondakci, 2020; Smith & Hoy, 2007). In addition, academic optimism has been found to positively affect school climate (Kılınç, 2013), teachers' professional commitment (Hong, 2017), and organizational citizenship (Wagner & Dipaola, 2011).

Amidst the growing demand for educational reform and improved student outcomes, school academic optimism has emerged as a promising construct that can positively influence school culture, teacher practices, and student achievement in diverse educational contexts worldwide (Hoy, Tarter, & Woolfolk Hoy, 2006). Despite the importance of school academic optimism in promoting school improvement and student achievement, there are still many challenges that hinder its development and implementation in educational settings (Wu & Sheu, 2015). In addition, there is a need for empirical evidence on the antecedents of school academic optimism, particularly in non-Western contexts (Gramaje & Buenviaje, 2023). This gap in knowledge not only limits our understanding of how school academic optimism can be promoted and sustained but also inhibits the development of evidence-based interventions to enhance academic optimism in schools. Therefore, this study aims to address these gaps in knowledge by exploring the antecedents of school academic optimism, as well as the factors that contribute to the development and sustenance of academic optimism in a non-Western context.

The literature on academic optimism in educational settings and its effects on student, school, and teacher outcomes is expanding. Nevertheless, there is a notable paucity of empirical research addressing the antecedents of academic optimism, indicating a significant gap in the existing body of knowledge. Previous research has shown that transformational, instructional and authentic leadership are a crucial antecedent to the development and maintenance of school academic optimism (e.g. Hong, 2017; Kulophas et al., 2018; Kulophas & Hallinger, 2020; Mitchell & Tarter, 2016; Srivastava & Dhar, 2016). However, studies focusing on the relationship between distributed leadership and school academic optimism are limited (Börü & Bellibaş, 2021; Chang, 2011; Mascall, Leithwood, Strauss, & Sacks, 2009). A meta-analysis study shows that research on the relationship between distributed leadership and school academic optimism has gained momentum especially after 2018 (Akyürek & Bülbül, 2024). Furthermore, there is a gap in the literature regarding the relative effects of mediating variables in the relationship between distributed leadership and school academic optimism. Several previous studies have shown that meaningful work acts as a mediator in the relationship between leadership and various organizational outcomes (e.g. Arnold, Barling, Turner, Kelloway, & McKee, 2007; Demirtaş, Hannah, Gök, Arslan, & Capar, 2017; Frémeaux & Pavageau, 2022; Pradhan & Jena, 2019).

However, the mediating effect of meaningful work on the relationship between distributed leadership and school academic optimism remains to be explored. Studying the relationship between distributed leadership and school academic optimism is original because it focuses on two relatively new concepts that have gained increasing attention among educational management and leadership (EDML) researchers. While the concept of leadership has been widely studied, distributed leadership is a relatively new approach to leadership that is gaining popularity in schools. Similarly, academic optimism is a relatively new construct that reflects the collective beliefs of teachers and school leaders about the ability of the school to overcome challenges and achieve academic success. In addition, the relationship between distributed leadership and academic optimism has not been extensively studied in EDML literature. Therefore, conducting research in this area could contribute to a better understanding of the potential impact of distributed leadership practices on academic optimism, and the implications of this relationship for student achievement. Furthermore, the present study can make significant contributions to educational policy and practice by providing insights into effective leadership strategies, enhancing school culture, improving teacher professional development, and increasing student achievement. For these reasons, we attempted to explore the relationship between distributed leadership and school academic optimism in Türkiye, with a focus on the mediating role of meaningful work. Accordingly, in the present study we specifically address the following research questions:

RQ1: Is there a significant relationship between distributed leadership, meaningful work and school academic optimism in the Turkish context?

RQ2: Does meaningful work have a mediating effect on the relationship between distributed leadership and school academic optimism?

Conceptual Framework

In the current study, we examined the effect of distributed leadership and meaningful work on school academic optimism relying on the job demands and resources theory (JD-R). The theory of JD-R aims to clarify the antecedents of positive or negative emotions experienced by employees (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). We decided to take the JD-R model as the basis because it addresses both organizational and individual factors leading to positive and negative emotions in employees (Schaufeli & Bakker, 2004). The JD-R model is composed of two components: job demands and job resources. Job demands are stressors in a job, which can be either physical or emotional. These stressors include heavy workload, time pressures, a stressful working environment, role ambiguity, and poor relationships. Conversely, job resources are the positive aspects of a job that benefit employees, such as opportunities for growth, learning, and development. This definition of job resources and demands was proposed by Demerouti et al. (2001). According to the JD-R model, a satisfactory level of job resources helps employees to cope with the negativities caused by job demands more easily, which in turn increases their commitment to work (Bakker, Demerouti, & Schaufeli, 2003). Job resources consist of personal and organizational factors. Organizational job resources include leadership (Collie, Granziera, & Martin, 2018) and a meaningful work environment (Luthans, Avey, Avolio, Norman, & Combs, 2006) while personal job resources include optimism (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). In this context, the JD-R model provides a comprehensive theoretical framework to explain the relationship among the current study variables.

The Job JD-R model offers a valuable framework for understanding the factors that affect teachers in educational settings. Teachers may face various job demands, including workload, disciplinary issues, time pressure while job resources can encompass perceived autonomy support, opportunities for professional learning, and relationships with colleagues (Granziera, Collie, & Martin, 2021). Within this model, these factors can significantly influence teachers' job satisfaction and their risk of burnout, either positively or negatively.

Distributed Leadership and Meaningful Work

Recently, EDML scholars have focused on the nature of distributed leadership and its contribution to educational processes (Elmore, 2000; Gronn, 2010; Harris, Leithwood, Day, Sammons, & Hopkins, 2007; Spillane, 2005). Related literature on distributed leadership shows that there are several different approaches depending on different assumptions and views (Gronn, 2000; Spillane, Halverson, & Diamond, 2004). In the present study, distributed leadership refers to the distribution of leadership functions, which in turn empowers both formal and informal leaders in an organization to get involved in the decision-making process within the organization (Hulpia, Devos, & Rosseel, 2009). Various researchers have laid theoretical foundations for this definition. For instance, Harris and Chapman (2002) indicate that distributed leadership is not only a process of headship delegation but also a redistribution of power. According to this perspective, the power is distributed among multiple individuals within the organization. On the other hand, Spillane et al. (2004), who have provided one of the theoretical grounds as to the nature of distributed leadership, define it as an approach that fosters social distribution in which the decision-making power of a leader is dispersed among all the members at school. Harris (2003) is another researcher who has made an important contribution to the theoretical foundation of distributed leadership. According to Harris, distributed leadership reinforces the interdependence among leadership practices in a setting where leaders share responsibilities with their subordinates. Within this context, Harris' definition of distributed leadership differs from other leadership approaches that emphasize reliance on a single leader.

In the current study, we addressed distributed leadership based on the theoretical framework developed by Hulpia et al. (2009). Hulpia and colleagues ground distributed leadership with a holistic approach. According to holistic approach, the leadership functions of the school principal, vice principals and leader teachers are evaluated separately. According to Hulpia et al. (2009), the leadership function is composed of three components: *(i) setting vision, (ii) developing people, and (iii) supervising teachers' performance*. Unlike previous leadership approaches, vision setting in distributed leadership is not only carried out by the school principal but also collectively by other administrators and teachers in leadership positions in the school. Similarly, developing people is not just a function performed by the principal. According to the distributed leadership approach, the school principal delegates this function to the lower-level administrators. In this process, teachers also support each other's development. Finally, in the distributed leadership approach, the supervision function is fulfilled not only by the principal but also by the joint efforts of other school administrators and teachers. In addition, the level of harmony among the school leadership team including the school principal, vice principals and leader teachers is another important point underlined by the holistic approach. This sub-dimension of distributed leadership consists of three components which are *role ambiguity, group cohesion and goal conciliation* (Hulpia et al., 2009).

The concept of meaningful work has been a topic of interest for scholars in organizational behaviour science because it has been linked to numerous positive outcomes. It is of great importance that the work done is found to be meaningful so that teachers can effectively fulfill their expected professional role. For example; Chalofsky (2003) asserts that employees' experience regarding the meaning of work is necessary not only for their mental health but also for organizational health and high performance at work. In the broadest sense, meaningful work means that labour has special importance and positive meaning for employees (Lysova, Allan, Dik, Duffy, & Steger, 2019). In this context, the coherence between employees' expectations, values, beliefs, and behaviours on the one hand and job features, on the other hand, allows employees to experience the work in a meaningful way (Pratt & Ashforth, 2003).

The theory of meaningful work, *integrated wholeness meaningful work model* was established by Chalofsky (2003) and developed by Miller (2008) with some additions. This model is composed of four components: *sense of self and identity, sense of the job itself, sense of contribution, and sense of balance*. Sense of self and identity refers to a state when employees dedicate themselves to their job completely, harmonize their life goals with the job and are aware of their own potential. Sense of the job itself means that employees master their performance, improve themselves continually, and they are also creative. Sense of contribution means that employees make use of their skills, strengths, and abilities to serve others. Sense of balance means that employees balance the job they do and their personal selves.

In the current study, meaningful work refers to a latent construct consisting of six components which are *search for meaning at work, humility at work, meaning at work, leadership of meaning at work, transcendence at work and work relationship*. Search for meaning at work implies that employees question the goal of their work life and seek meaning at work. Humility at work means that employees do their job in order to serve society and they do not expect something in return. Meaning at work implies that the job done serves superior goals and brings about spiritual satisfaction for employees. The leadership of meaning at work implies that leaders use their authority to help their co-workers explore and realize their life goals as well as build meaning at work. Transcendence at work implies that employees experience a strong desire to work, inner peace and spiritual pleasure at work. Work relationships refer to the cooperation, support and solidarity among employees (Göçen & Terzi, 2019).

We claim that there is a relationship between distributed leadership and meaningful work, as distributed leadership involves the sharing of leadership responsibilities and decision-making among various members of the school community. Distributing the leadership can create a sense of empowerment and autonomy among teachers, which can contribute to a greater sense of meaning and purpose in their work. When teachers perceive that they are involved in making decisions and that their input is appreciated, it boosts their motivation and commitment towards their work. This sense of

ownership and involvement in the leadership process can enhance their sense of meaningfulness and job satisfaction. The previous studies confirmed empirically the relationship between leadership and meaningful work. For instance, Tummers and Knies (2013) came up with such a finding in a study carried out with employees in the public sector. Likewise, Arnold et al. (2007) concluded that meaningful work was a mediating variable in the relationship between transformational leadership and psychological well-being. Similarly, Demirtaş et al. (2017) found that meaningful work was a mediating variable in the relationship between ethical leadership and followers' engagement, identification and envy. Another study also revealed that meaningful work had a mediating effect on the relationship between transformational leadership and innovative work behaviour (Pradhan & Jena, 2019). Furthermore, it has been revealed that the meaningfulness of work mediates the link between distributed leadership and the proactive behavior of new generation employees (Xu, Zhang, Dai, Ma, & Lyu, 2021). Based on the effect of various types of leadership on meaningful work, distributed leadership at schools can be expected to contribute to teachers' considering work meaningful.

Thus, we hypothesized that distributed leadership will positively predict meaningful work (H1).

Meaningful Work and School Academic Optimism

School academic optimism is one of the variables that come forward in the literature on school effectiveness. Seligman, one of the leading names in positive psychology, has contributed much to the theoretical development of school academic optimism. Seligman (2002) claims that optimism is a learnable psychological construct and emphasizes that *learned optimism* is important both for individuals and organizations. In this context, learned optimism also provides a basis to conceptualize school academic optimism. Based on this ground, Smith and Hoy (2007) assert that academic optimism is an individual feature, while it is also a collective quality adopted by all the employees at a school.

In the current study, school academic optimism refers to a three-dimensional latent construct whose dimensions can be listed as *collective efficacy, faculty trust in parents and students and academic emphasis on schools* (Hoy et al., 2006). Bandura (1997) defines collective efficacy as employees' belief that the school as a system can perform effectively. Previous studies revealed that employees have a high level of job satisfaction and commitment (Ware & Kitsantas, 2007) and a low level of burnout (Skaalvik & Skaalvik, 2007) at schools where there is a high level of academic optimism. The second dimension of school academic optimism is faculty trust in parents and students. Studies show that employees have good intentions about students and parents and think that they are reliable, honest and open to dialogue at schools where there is a high level of academic optimism (Hoy et al., 2006). The third dimension of school academic optimism is the academic emphasis of schools. At schools where the academic emphasis is high, teachers set high but accessible academic goals for their students and believe they can reach them (Goddard, Sweetland, & Hoy, 2000).

It is expected that teachers' meaningful perception of work will contribute to school academic optimism. The link between meaningful work and school academic optimism is an important area of study, as both concepts can contribute to a positive school culture and improved student outcomes. Teachers who find their work meaningful are more likely to be engaged, motivated, and committed to their jobs. This, in turn, can contribute to a more positive school culture and create an environment that supports academic optimism. Indeed, previous literature has explored that meaningful work is linked to various positive individual and organizational outcomes in educational settings. For example, it has been revealed that a sense of calling, job design, and coworker relationships were associated with meaningful work for teachers (Fouché, Rothmann, & Van der Vyver, 2017). In addition, meaningful work was discovered to mediate the connection between having a sense of calling and maintaining a positive attitude toward work (Willemse & Deacon, 2015). Hence, based on the relevant literature, we argue that meaningful work is also linked to school academic optimism.

Thus, we hypothesized that meaningful work will positively predict school academic optimism (H2).

Mediating Effect of Meaningful Work in the Relationship between Distributed Leadership and School Academic Optimism.

In the current study, we claim that distributed leadership at schools will increase school academic optimism as a result of teachers' considering their jobs meaningful. Distributed leadership can create a sense of empowerment and autonomy among teachers, which can contribute to a greater sense of meaningful work. In turn, this sense of meaningful work can lead to higher levels of school academic optimism, which refers to the collective belief and confidence among teachers that their school is capable of achieving academic success for their students. Therefore, meaningful work is considered to be a mediator in the relationship between distributed leadership and school academic optimism, as it accounts for part of the relationship between these two variables. Indeed, previous research indicates that leadership enables teachers to find work meaningful (Chang, 2011; Feng & Chen, 2019; Kulophas et al., 2018), which ultimately strengthens school academic optimism (Hirschi, 2012; Singh & Rangnekar, 2016).

Thus, we hypothesized that distributed leadership will increase school academic optimism through meaningful work (H3).

Study Context

Türkiye is a democratic and secular state located between the continents of Europe and Asia, and has a population of over 85 million. The Turkish educational system educates over 18 million students (K-12 schools) and employs over 1 million teachers (Ministry of National Education [MoNE], 2021). Turkish educational system is extremely centralized due to historical, sociological, political and cultural reasons (Özdemir, 2008). As educational practices are planned and implemented with a centralized approach, MoNE is responsible for all activities such as preparing the curriculum, employing teachers and regulating the transition system for grades. In recent decades, reform efforts have gained acceleration in the Turkish educational system. The current agenda includes implementing changes to improve schools and empower teachers. Specifically, in Türkiye, a new Law on the Teaching Profession was put into effect in 2022, officially recognizing teaching as a professional career. Furthermore, significant progress has been made in selecting and training school administrators. The overarching goal of these reforms is to promote more professional and democratic management of schools. The efforts to improve school management and promote democratic principles have raised the expectations for distributing leadership across the entire organization of schools in Türkiye. Given Türkiye's centralized administrative culture, we are interested in exploring how the distribution of leadership among school stakeholders impacts school academic optimism. Although a centralist structure prevails in the education system in Turkey, distributed leadership can become functional through certain mechanisms. Structures such as the teachers' board, branch/group teachers' board in the same branch facilitate the implementation of this leadership style. These structures allow teachers to take on leadership roles in their fields and actively participate in decision-making processes. Thus, the restrictions imposed by the centralist structure can be overcome through these micro-level distributed leadership practices, making educational processes more dynamic and participatory. Therefore, we developed a conceptual model for the relationship between distributed leadership, meaningful work and school academic optimism based on the assumptions of JD-R theory (Bakker et al., 2003; Collie et al., 2018; Luthans et al., 2006, Xanthopoulou et al., 2009) and relevant literature (Börü & Bellibaş, 2021; Chang, 2011; Mascall et al., 2009). As seen in Figure 1, we claim that distributed leadership will positively affect meaningful work (H1) and meaningful work will positively affect school academic optimism (H2). Consistent with this, we suggest that meaningful work mediates the relationship between distributed leadership and school academic optimism (H3).

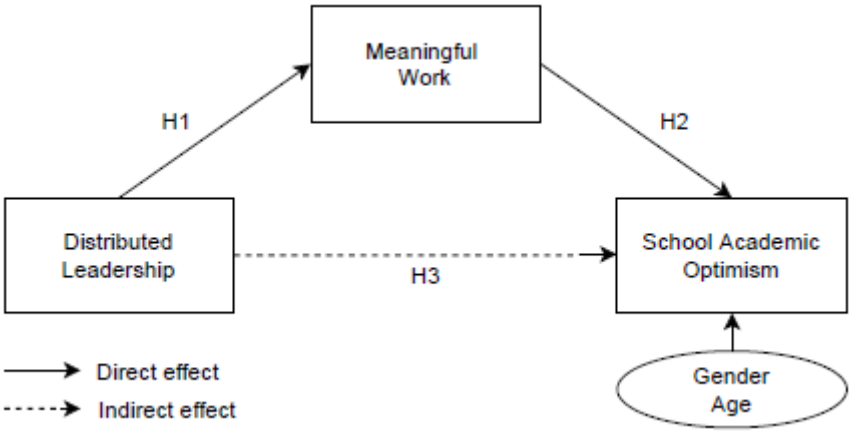


Figure 1. Conceptual Model

Method

Participants and Procedures

The target population of the study consists of 306.987 teachers working in 24.519 primary schools across Türkiye (MoNE, 2021). Since it was not possible to reach this number of teachers, we decided to conduct the research on a sample. According to our calculations at .05 significance and 95% confidence level, we found that 384 teachers could represent the population. In this research, we adopted the stratified sampling method and examined each region of Türkiye as a stratum. We used the Nomenclature of Territorial Units for Statistics (NUTS) when deciding on the regions where the research was conducted. Türkiye is categorized into 12 regions, which are determined based on similarities in geography, society, and economy (Development Agencies [DA], 2023). When choosing the provinces in these regions, we took the level of economic and social development in the region as a criterion. Instead of selecting schools and participants one by one, we delivered the data collection tool online (Google form) to all primary schools in the provinces where we plan to conduct the research, with the support of MoNE. At the end of the data collection process, 813 teacher data were obtained in 78 schools. Demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic characteristics of the sample

	M (SD)	n	%
Gender			
Male		277	34.1%
Female		536	65.9%
Seniority			
<=5		409	42.4%
6-10		302	31.3%
11-15		130	13.5%
16-20		54	5.6%
=>21		69	7.2%
Age	40.04 (9.80)		

As seen in Table 1, there is an imbalance in the sample. The main reason for this imbalance in the sample is that the population itself is unstable. According to MoNE (2023) statistics, 60% of teachers are women and 40% are men. Moreover, according to TALIS data, 79% of teachers working in Türkiye have 5 years of seniority or less in the school where they currently work. In addition, the average age of the sample is also parallel to the Türkiye average (Ceylan, Özdoğan Özbal, Sever, & Boyacı, 2020).

Measures

Distributed leadership. Distributed leadership was measured by the "Distributed Leadership Inventory (DLI)" developed by Hulpia et al. (2009). DLI was adapted into Turkish culture by Özdemir (2012). DLI is composed of two sections. The first section of the Turkish form is composed of one dimension and 13 items, and it measures the leadership functions of the leadership team (school principal, vice principals) separately (e.g., "*S/he explains his/her long-term plans beforehand*"). The second section of DLI, which is composed of 10 items, measures coherence among the members of the leadership team (e.g., "*Members of leadership team have clear and open goals*"). DLI is a 5-point Likert-type scale that has scores varying between *strongly disagree* (1) and *strongly agree* (5). Second-level confirmatory factor analysis (CFA) conducted with the current study data and Cronbach alpha coefficient values show that DLI is a highly valid and reliable measurement tool (See Table 3).

Meaningful work. Meaningful work was measured with the "Meaningful Work Scale (MWS)" developed by Göçen and Terzi (2019). MWS is composed of six dimensions and 21 items. The dimensions of MWS are respectively (i) meaning at work, (ii) search for meaning at work, (iii) work relationships, (iv) transcendence at work, (v) humility at work and (vi) leadership of meaning at work. (e.g., "*My work serves a great purpose", "I feel my colleagues value me"*). MWS is a 5-point Likert-type scale whose scores vary between *strongly disagree* (1) and *strongly agree* (5). Second-level confirmatory factor analysis (CFA) conducted with the current study data and Cronbach alpha coefficient values show that MWS is a highly valid and reliable measurement tool (See Table 3).

School academic optimism. School academic optimism was measured with the "School Academic Optimism Scale (SAOS)" developed by Hoy et al. (2006). SAOS was adapted into Turkish culture by Çoban and Demirtaş (2011). The Turkish form of SAOS includes three dimensions and 19 items in total. The dimensions of SAOS are (i) academic emphasis, (ii) collective efficacy and (iii) faculty trust in students and parents. (e.g., *"Students make extra effort in order to get a good score", "Parents of students at this school are reliable"*). SAOS is a 5-point Likert-type scale and the scores vary between *strongly disagree* (1) and *strongly agree* (5). Second-level confirmatory factor analysis (CFA) conducted with the current study data and Cronbach alpha coefficient values show that SAOS is a highly valid and reliable measurement tool (See Table 3).

Control variables. In this study, the effect of distributed leadership on school academic optimism and its' indirect effect through meaningful work were tested by performing MSEM, controlling for several teacher characteristics such as gender (Female=0, Male=1) and age. Some of the previous literature has documented that gender and age influence academic optimism (Börü & Bellibaş, 2021; Chang, 2011). Therefore, gender and age were selected as control variables in our study.

Analytic Strategy

We used SPSS 26 to analyse descriptive statistics such as mean, standard deviation and correlation analysis. Besides, *Mplus 7.3* software was used for multilevel Structural Equation Modelling (MSEM) to examine the structural relations among variables (Muthén & Muthén, 2017). Considering the nested nature of the data structure in the present study, we computed intra-class correlation coefficients ICC(1), ICC(2) and within-group agreement $R_{WG(J)}$ indices for each variable to justify aggregating the individual-level scores at the school level. The results are presented in Table 2.

Table 2. Interrater agreement and interrater reliability of variables

	Distributed Leadership	Meaningful Work	School Academic Optimism
ICC (1)	.27	.23	.11
ICC (2)	.42	.45	.40
R_{wg}	.87	.74	.87

Abbreviations: ICC, intraclass correlation coefficient; R_{wg}, within-group agreement.

As seen in Table 2, ICC(1) values for each measure were above .05, showing that the suitability of aggregating participants' scores at the school level. The reliability of the school-level means (ICC2) was equal to .40. According to Fleiss (1986), for assessing reliability of group-level means, ICC(2) < .40 are poor, those from .40 to .75 are fair to good, and those >.75 are excellent. Moreover, all variables' $R_{WG(J)}$ values exceeded .70, showing acceptable indices (Lüdtke & Robitzsch, 2009). In this study, the direct effect of distributed leadership on school academic optimism and its' indirect effect through the mediating effect of meaningful work were tested, controlling for several teacher characteristics such as gender (Female=0, Male=1) and age (years). Furthermore, the method of bootstrapping, as proposed by Preacher and Hayes (2008), was utilized to generate confidence intervals and evaluate the significance of the paths. In all of our analyses, the maximum likelihood (MLR) method was employed as the estimator. Model fit was examined with comparative fit index (CFI), Tucker Lewis index (TLI) and root means square error of approximation (RMSEA). CFI and TLI values of .90 or greater and .95 or greater indicate adequate and good fit respectively, and RMSEA values of .08 or less and .05 or less indicate adequate and good fit respectively. In addition, cutoff value of standardized root means square residual (SRMR) was determined as .08 (Hu & Bentler, 1999). The current study data were gathered from a single source (i.e. teachers). Therefore, we took some steps to diminish common method bias (Podsakoff, MacKenzie, & Podsakoff, 2012). In this context, we performed Harman's (1967) single-factor test. This analysis showed us that the items did not gather under one factor. The first factor accounted for 39% of the total variance (less than 50%). Moreover, we identified 9 items having an eigenvalue higher than 1. This result showed that the data set did not have a problem of common method bias. In order to control method bias, we also used procedural remedies (Podsakoff et al., 2012). First, in the data collection tool, we presented the independent, mediator and dependent variables to the participants in a mixed order, rather than sequentially. Second, we collected data on leadership from teachers rather than school administrators, thus trying to avoid social desirability.

Results

Preliminary Analysis

Table 3 presents means, standard deviations, Cronbach alpha coefficients, Pearson correlations and CFA results.

Table 3. Descriptive statistics, Cronbach's alpha, CFA and Pearson correlations

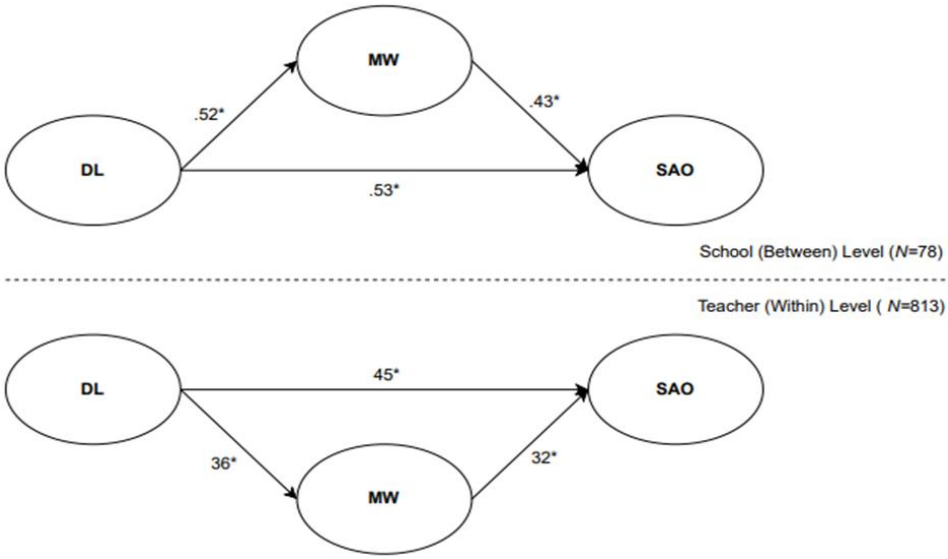
				CFA			Pearson Correlations	
Variables	***M***	***SD***	**α**	**RMSEA**	**CFI**	**TLI**	**DL**	**MW**	**SAO**
Teacher Level (N = 813)									
DL	3.71	.83	.98	.08	.91	.90	--		
MW	4.13	.45	.85	.07	.92	.91	<.38	--	--
SAO	3.61	.61	.81	.08	.94	.91	<.60	<.49	--
School Level (N=78)									
DL	3.70	.85	--	--	--	--			
MW	4.13	.46	--	--	--	--	<.54	--	
SAO	3.60	.64	--	--	--	--	<.81	<.69	--

Note: M, mean; SD, standard deviations; α, alpha; ICC, intra-class correlation; DL, distributed leadership; MW, meaningful work; SAO, school academic optimism; CFA, confirmatory factor analysis; p<.05

As is seen in Table 3, Cronbach alpha coefficient is over the minimum value of .70 (Hair, Black, Babin, Anderson, & Tatham, 1998). Furthermore, measures of DLI, MW and SAO had a strong structure. In addition, there is a moderate and significant correlation between distributed leadership and meaningful work (r=.38, p<.05), and school academic optimism (r=.60, p<.05). There is also a significant and moderate correlation between meaningful work and school academic optimism (r=.49, p<.05). These results provide preliminary support for the study hypotheses.

MSEM Analysis

To answer the study's research questions, a multilevel structural equation modelling (MSEM) was performed to investigate the mediation model that encompasses distributed leadership, meaningful work, and school academic optimism. MSEM demonstrated an acceptable fit for the multilevel mediation model ($\chi 2$= 11.423, *df*=4, *p*>.001, CFI=.98, TLI=.94, RMSEA=.05, $SRMR_W$=.02, $SRMR_B$=.14. However, the $SRMR_B$ value was calculated as .14. Hu and Bentler (1999) proposed a cutoff value of .08 for SRMR as an indicator of good model fit. However, this cutoff was suggested for overall model fit, not specifically for between-group comparisons in multilevel analysis. Since multilevel analysis involves hierarchical data structures and complex modeling, cutoff values may vary depending on the specifics of the research context and the complexity of the model. The results are shown in Figure 2.



Note: *p<.001; DL, distributed leadership; MW, meaningful work; SAO, school academic optimism.

Figure 2. Mediation model of distributed leadership and school academic optimism in Turkish schools.

As Figure 2 illustrates, distributed leadership positively predicted meaningful work at both levels (H1 was supported). At the school level, it positively predicted meaningful work (*β*=.52, *p*<.001). At the individual level, it also positively predicted meaningful work (*β*=.36, *p*<.001). The direct effect of distributed leadership on school academic optimism was significant at the teacher level (*β*=.45, *p*<.001) and at the school level (*β*=.53, *p*<.001). In addition, meaningful work positively predicted school academic optimism at both levels (H2 was supported). At the individual level, meaningful work positively predicted school academic optimism (*β*=.32, *p*<.001). At the school level, it also positively predicted school academic optimism (*β*=.43, *p*<.001).

Multilevel Mediation Analysis

Table 4 presents the total, direct and total indirect effects of distributed leadership on school academic optimism. Distributed leadership had a positive direct effect on school academic optimism at the teacher level (*β*=.45, *p*<.001) and at the school level (*β*=.53, *p*<.001). The indirect effect of distributed leadership through meaningful work was also significant at the individual level (*β*=.11, *p*<.001) and at the school level (*β*=.22, *p*<.001) (H3 was supported). The total effect of distributed leadership on school academic optimism was moderate, positive and statistically significant at the teacher level (*β*=.56, *p*<.001) and at the school level (*β*=.75, *p*<.001).

Table 4. Effects of distributed leadership on school academic optimism (Standardized results)

	Teacher level (n=813)					School level (n=78)				
	Est.	**Se.**	**CI-L**	**CI-U**	***Sig.***	**Est.**	**Se.**	**CI-L**	**CI-U**	***Sig.***
Direct effect	.45	.03	.39	.50	**	.53	.20	.19	.91	**
Indirect effect	.11	.02	.07	.14	**	.22	.12	.02	.42	**
Total effect	.56	.03	.50	.61	**	.75	.12	.54	.96	**

Note: **p<.001; Est., estimation; Se., standard error; CI-L, confidence interval-lower; CI-U, confidence interval-upper; Sig, significance level.

Discussion, Conclusion, and Implication

In the current study, we examined whether meaningful work had a mediating role in the relationship between distributed leadership and school academic optimism based on the data gathered from teachers. In general, the findings of this study highlight several key points. The results demonstrate that distributed leadership is a positive predictor of meaningful work at both the school and teacher levels. Furthermore, meaningful work is shown to positively predict school academic optimism at both levels. A fundamental outcome of this research is the identification of the mediating role of meaningful work, indicating that distributed leadership influences school academic optimism through its impact on meaningful work within schools. In other words, the study has contributed to a better understanding of literature by exploring the relationship between distributed leadership and school academic optimism in Türkiye, focusing on the mediating role of meaningful work.

The study findings comply with the previous studies which revealed that educational leadership had an important effect on school academic optimism (Chang, 2011; Feng & Chen, 2019; Kulophas et al., 2018; Mascall et al., 2009; Srivastava & Dhar, 2016). Besides, the current study results are also consistent with previous studies which specifically put forth that distributed leadership increased school academic optimism (Chang, 2011; Mascall et al., 2009). All the same, the findings of the current study also contribute to the literature which has discovered that when work is considered meaningful by employees, it has various individual and organizational positive outcomes (Fouché et al., 2017; Willemse & Deacon, 2015). This result also supports the JD-R model and theory of job characteristics, which claims that when employees consider a job meaningful, it positively impacts their attitudes (Demerouti et al., 2001; Hackman & Oldham, 1976). Similarly, the current study is relatively in parallel with previous studies which concluded that there was a relationship between meaningful work and the sub-dimensions of school academic optimism (Hirschi, 2012; Singh & Rangnekar, 2016). Lastly, the current study supports the literature which reveals that meaningful work has a mediating role in the relationship between leadership and various organizational outcomes (Arnold et al., 2007; Demirtaş et al., 2017; Pradhan & Jena, 2019).

One of the fundamental results of the current study is that distributed leadership affects school academic optimism via the mediating role of meaningful work at schools. From this point forth, one of the ways to strengthen school academic optimism is ensuring that work is considered meaningful by teachers with the help of an atmosphere created by distributed leadership. The current result complies with the literature which shows that distributed leadership contributes to positive outcomes at individual and organizational levels at schools. For example, a study shows that various elements of teachers' ability to adapt, such as collaborative efforts, collegial support, knowledge sharing, self-efficacy, and the internalization of school goals, are more prevalent in schools where leaders distribute leadership among teachers compared to schools where this practice is not implemented (Amels, Krüger, Suhre, & van Veen, 2021). Likewise, teachers' organizational commitment is primarily influenced by the quality of supportive leadership, teamwork within the leadership group, and involvement in decision-making processes (Hulpia, Devos, & Keer, 2011). In addition, distributed leadership also has an effect on teacher self-efficacy and job satisfaction (Liu, Bellibaş, & Gümüş, 2021) and teachers' affective commitment (Ross, Lutfi, & Hope, 2016).

Furthermore, the current study is relatively in parallel with the literature that points to the effect of leadership in educational management (Edmonds, 1979; Hallinger, 2011; Hallinger & Murphy, 1986; Heck & Hallinger, 2014; Leithwood, Patten, & Jantzi, 2010). Based on this finding, the current study puts forth that when individuals who occupy a leadership position at schools including principals, vice principals and leader teachers exhibit strong leadership behaviours individually and achieve harmony among them, it turns out that school academic optimism improves as well. Although the education system in Turkey operates with a centralized structure, there are mechanisms within schools, such as teachers' boards or committees for groups within the same branch. Within these structures, teachers can find opportunities for leadership and participation in decision-making. Such structures can make teachers think that their work is much more meaningful and functional. Therefore, this path between distributed leadership and school academic optimism is likely to play a key role in strengthening school academic optimism. Indeed, previous studies indicated that leadership is relatively distributed in schools (Özdemir & Demircioğlu, 2015), teachers find work meaningful (Karataş & Özdemir, 2022) and academic optimism is high among teachers in Turkish schools (Özdemir & Pektaş, 2017). Mascall et al. (2009) conclude that when academic optimism is high, there is a strong positive correlation with carefully planned leadership distribution. Conversely, when academic optimism is low, there is a significant negative correlation with leadership distribution that is unplanned and uncoordinated. As a result of the distribution of leadership schools, teachers found the work more meaningful and this ultimately contributed to the development of an optimistic academic climate in Turkish schools.

Theoretical Implications

Our study on the nexus between distributed leadership, meaningful work, and school academic optimism has significant theoretical implications. Firstly, the study provides a deeper understanding of the interplay between distributed leadership, meaningful work, and school academic optimism in the context of Turkish schools. Secondly, the study highlights the importance of distributed leadership in promoting meaningful work, which in turn, positively influences school academic optimism. Thirdly, the findings suggest that meaningful work serves as a mediator between distributed leadership and school academic optimism, thereby providing evidence of a significant link between leadership and positive outcomes in schools. The study's results provide insights into the potential benefits of fostering distributed leadership and meaningful work in schools, which can improve teachers' engagement and motivation, leading to higher levels of academic optimism. Overall, the study contributes to the literature on leadership, work, and organizational behaviour, providing a valuable foundation for future research in this area.

Practical Implications

The fact that distributed leadership and meaningful work are relatively influential on school academic optimism can guide policymakers and educational leaders. Teachers can consider working more meaningful if individuals who occupy a leadership position at schools including principals, vice principals and leader teachers exhibit strong leadership behaviours individually and work in harmony among themselves. Also, developing and implementing policies that will strengthen schools and schools' leaders in countries such as Türkiye, where centralization is dominant in the educational system, will contribute to teachers and school outcomes. In this context, it is crucial for schools that policymakers develop policies that give school leaders more authority to produce effective outcomes.

Limitations and Future Research

The current study has some limitations. First and foremost, the current study has a cross-sectional design. Because of that reason, the study data were collected at one time. Researchers who want to conduct similar studies can prefer a longitudinal design. In this context, they can collect data at the beginning and end of an educational year, which can make it possible to identify the differences in teachers' opinions about school academic optimism that might arise over time (Hill, Seo, Kang, & Taylor, 2012). Secondly, the study data were collected from a single source (teachers). We suggest that researchers collect data from different sources such as school principals, students, parents, and policymakers in education in further studies. Finally, the current study was carried out in Turkey, which has a dominant centralized approach in educational terms and a high level of power distance in cultural terms (Hofstede, Hofstede, & Minkov, 2010). Therefore, it is not appropriate to generalize the current study findings in western countries where decentralization is dominant and power distance is relatively low. We suggest researchers conduct further studies in different cultures and different contexts.

References

Akyürek, M. İ., & Bülbül, A. E. (2024). The relationship between distributed leadership and academic optimism: A meta-analysis study. *Leadership and Policy in Schools*, 1-16. doi:10.1080/15700763.2024.2312997

Amels, J., Krüger, M. L., Suhre, C. J. M., & van Veen, K. (2021). The relationship between primary school leaders' utilization of distributed leadership and teachers' capacity to change. *Educational Management Administration & Leadership, 49*(5), 732-749. doi:10.1177%2F1741143220915921

Arnold, K. A., Barling, N., Turner, J., Kelloway, E. K., & McKee, M. C. (2007). Transformational leadership and psychological well-being: The mediating role of meaningful work. *Journal of Occupational Health Psychology, 12*(3), 193-203. doi:10.1037/1076-8998.12.3.193

Bakker, A., Demerouti, E., & Schaufeli, W. (2003). Dual processes at work in a call centre: An application of the job demands-resources model. *European Journal of Work and Organizational Psychology, 12*(4), 393-417. doi:10.1080/13594320344000165

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Börü, N., & Bellibaş, M. Ş. (2021). Comparing the relationships between school principals' leadership types and teachers' academic optimism. *International Journal of Leadership in Education*, *27*(4), 1-19. doi:10.1080/13603124.2021.1889035

Ceylan, E., Özdoğan Özbal, E., Sever, M., & Boyacı, A. (2020). *Türkiye'deki öğretmen ve okul yöneticilerinin görüşleri, öğretim koşulları: TALIS 2018 öğretmen ve okul yöneticileri yanıtları analizi.* Ankara: Millî Egitim Bakanlığı Yayınları.

Chalofsky, N. (2003). An emerging construct or meaningful work. *Human Resources Development International, 6*(1), 69-83. doi:10.1080/1367886022000016785

Chang, I. H. (2011). A study of the relationships between distributed leadership, teacher academic optimism and student achievement in Taiwanese elementary schools. *School Leadership & Management, 31*(5), 491-515. doi:10.1080/13632434.2011.614945

Collie, R. J., Granziera, H., & Martin, A. J. (2018). Teachers' perceived autonomy support and adaptability: An investigation employing the job demands-resources model as relevant to workplace exhaustion, disengagement, and commitment. *Teaching and Teacher Education,* 74, 125-136. doi:10.1016/j.tate.2018.04.015

Çoban, D., & Demirtaş, H. (2011). Okulların akademik iyimserlik düzeyi ile öğretmenlerin örgütsel bağlılığı arasındaki ilişki. *Kuram ve Uygulamada Eğitim Yönetimi, 3*(3), 317-348.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499-512.

Demirtaş, Ö., Hannah, S. T., Gök, K., Arslan, A., & Capar, N. (2017). The moderated influence of ethical leadership, via meaningful work, on followers' engagement, organizational identification, and envy. *Journal of Business Ethics, 145*(1), 183-199. doi:10.1007/s10551-015-2907-7

Development Agencies. (2023) *Kalkınma planlamasında istatistiki bölge birimleri sınıflandırması.* Retrieved from https://ka.gov.tr/sayfalar/kalkinma-planlamasinda-istatistiki-bolge-birimleri-siniflandirmasi--24

Edmonds, R. (1979). Effective schools for the urban poor. *Educational Leadership, 37*(1), 15-24.

Elmore, R. F. (2000). *Building a new structure for school leadership*. Washington, DC: The Albert Shanker Institute.

Feng, F. I., & Chen, W. L. (2019). The effect of principals' social justice leadership on teachers' academic optimism in Taiwan. *Education and Urban Society, 51*(9), 1245-1264. doi:10.1177/0013124518785438

Fleiss, J. (1986). *The design and analysis of clinical experiments*. New York: Wiley.

Fouché, E., S. S. Rothmann, & Van der Vyver, C. (2017). Antecedents and outcomes of meaningful work among school teachers. *SA Journal of Industrial Psychology, 43*(1), 1-10. doi:10.4102/sajip.v43i0.1398

Frémeaux, S., & Pavageau, B. (2022). Meaningful leadership: How can leaders contribute to meaningful work?. *Journal of Management Inquiry, 31*(1), 54-66, doi:10.1177/1056492619897126

Goddard, R. D., Sweetland, S. R., & Hoy, W. K. (2000). Academic emphasis of urban elementary schools and student achievement in reading and mathematics: A multilevel analysis. *Educational Administration Quarterly, 36*(5), 683-702. doi:10.1177/00131610021969164

Göçen, A., & Terzi, R. (2019). Meaningful work scale for educational organizations. *Gazi Üniversitesi Eğitim Fakültesi Dergisi, 39*(3), 1487-1512.

Gramaje, J. A. D., & Buenviaje, J. T. (2023). The roles of middle leaders in reinforcing academic optimism. *Educational Management Administration & Leadership*. doi:10.1177/17411432231201488

Granziera, H., Collie, R., & Martin, A. (2021). Understanding teacher wellbeing through job demands-resources theory. In C. F. Mansfield (Ed.), *Cultivating teacher resilience: International approaches, applications and impact* (pp. 229-244). Springer.

Gronn, P. (2000). Distributed properties: A new architecture for leadership. *Educational Management and Administration, 28*(3), 317-338. doi:10.1177/0263211X000283006

Gronn, P. (2010). Where to next for educational leadership?. In T. Bush, L. Bell, & D. Middlewood (Eds.), *The principles of educational leadership and management* (pp. 70-85). Thousand Oaks, CA: SAGE.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance, 16*(2), 250-279. doi:10.1016/0030-5073(76)90016-7

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2006). *Multivariate data analysis.* Upper Saddle River, NJ: Prentice Hall.

Hallinger, P. (2011). Leadership for learning: Lessons from 40 years of empirical research. *Journal of Educational Administration, 49*(2), 125-142. doi:10.1108/09578231111116699

Hallinger, P, & Murphy, J. F. (1986). The social context of effective schools. *American Journal of Education, 94*(3), 328-355. doi:10.1086/443853

Harman, H. H. (1967). *Modern factor analysis.* London: University of Chicago Press.

Harris, A. (2003). Teacher leadership as distributed leadership: Heresy, fantasy or possibility?. *School Leadership & Management, 23*(3), 313-324. doi:10.1080/1363243032000112801

Harris, A., & Chapman, C. (2002). Leadership in schools facing challenging circumstances. *Management in Education, 16*(1), 10-13.

Harris, A., Leithwood, K., Day, C., Sammons, P., & Hopkins, D. (2007). Distributed leadership and organizational change: Reviewing the evidence. *Journal of Educational Change, 8*(4), 337-347. doi:10.1007/s10833-007-9048-4

Heck, R. H., & Hallinger, P. (2014). Modeling the longitudinal effects of school leadership on teaching and learning. *Journal of Educational Administration, 52*(5), 653-681. doi:10.1108/JEA-08-2013-0097

Hill, N. S., Seo, M. G., Kang, J. H., & Taylor, M. S. (2012). Building employee commitment to change across organizational levels: The influence of hierarchical distance and direct managers' transformational leadership. *Organization Science, 23*(3), 758-777. doi:10.1287/orsc.1110.0662

Hirschi, A. (2012). Callings and work engagement: Moderated mediation model of work meaningfulness, occupational identity, and occupational self-efficacy. *Journal of Counselling Psychology, 59*(3), 479-485. doi:10.1037/a0028949

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind* (3rd ed.). New York: McGraw-Hill.

Hong, F. Y. (2017). Antecedent and consequence of school academic optimism and teachers' academic optimism model. *Educational Studies, 43*(2), 165-185. doi:10.1080/03055698.2016.1248902

Hoy, W. K., Tarter, C. J., & Woolfolk Hoy, A. (2006). Academic optimism of schools: A force for student achievement. *American Educational Research Journal, 43*(3), 425-446. doi:10.3102/00028312043003425

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling: A Multidisciplinary Journal, 6*(1), 1-55. doi:10.1080/10705519909540118

Hulpia, H., Devos, G., & Keer, H.V. (2011). The relation between school leadership from a distributed perspective and teachers' organizational commitment: Examining the source of the leadership function. *Educational Administration Quarterly, 47*(5), 728-77. doi:10.1177/0013161X11402065

Hulpia, H., Devos, G., & Rosseel, Y. (2009). Development and validation of scores on the distributed leadership inventory. *Educational and Psychological Measurement, 69*(6), 1013-1034. doi:10.1177/0013164409344490

Karataş, E., & Özdemir, M. (2022). Examining the relationship between meaningful work and job engagement. *Journal of Theoretical Educational Science, 15*(3), 676-698. doi:10.30831/akukeg.1053090

Kılınç, A. Ç. (2013). The relationship between individual teacher academic optimism and school climate. *International Online Journal of Educational Sciences, 5*(3), 621-634.

Kulophas, D., & Hallinger, P. (2020). Leadership that matters: Creating cultures of academic optimism that support teacher learning in Thailand. *Journal of Educational Administration, 58*(6), 605-627. doi:10.1108/JEA-12-2019-0222

Kulophas, D., Hallinger, P., Ruengtrakul, A., & Wongwanich., S. (2018). Exploring the effects of authentic leadership on academic optimism and teacher engagement in Thailand. *International Journal of Educational Management, 32*(1), 27-45. doi:10.1108/IJEM-10-2016-0233

Leithwood, K., Patten, S., & Jantzi, D. (2010). Testing a conception of how school leadership influences student learning. *Educational Administration Quarterly, 46*(5), 671-706. doi:10.1177/0013161X10377347

Liu, Y., Bellibaş, M. Ş., & Gümüş, S. (2021). The effect of instructional leadership and distributed leadership on teacher self-efficacy and job satisfaction: Mediating roles of supportive school culture and teacher collaboration. *Educational Management Administration & Leadership 49*(3), 430-453. doi:10.1177/1741143220910438

Luthans, F., Avey, J. B., Avolio, B. J., Norman, S. M., & Combs, G. M. (2006). Psychological capital development: toward a micro-intervention. *Journal of Organizational Behavior, 27*(3), 387-393. doi:10.1002/job.373

Lüdtke, O., & Robitzsch, A. (2009). Assessing within-group agreement: A critical examination of a random-group resampling approach. *Organizational Research Methods, 12*(3), 461-487. doi:10.1177/1094428108317406

Lysova, E. I., Allan, B. A., Dik, B. J., Duffy, R. D., & Steger, M. F. (2019). Fostering meaningful work in organizations: A multi-level review and integration. *Journal of Vocational Behavior*, 110, 374-389. doi:10.1016/j.jvb.2018.07.004

Mascall, B., Leithwood, K., Strauss, T., & Sacks, R. (2009). The relationship between distributed leadership and teachers' academic optimism. *Journal of Educational Administration, 46*(2), 214-228. doi:10.1007/978-1-4020-9737-9_5

McGuigan, L., & Hoy, W. K. (2006). Principal leadership: Creating a culture of academic optimism to improve achievement for all students. *Leadership and Policy in Schools, 5*(3), 203-229. doi:10.1080/15700760600805816

Miller, C. S. (2008). *Meaningful work over the life course* (Doctoral dissertation). Fielding Graduate University, Santa Barbara, CA.

Ministry of National Education. (2021). *National Education statistics 2021/2022.* Retrieved from http://sgb.meb.gov.tr/www/icerik_goruntule.php?KNO=424

Mitchell, R. M., & Tarter, C. J. (2016). A path analysis of the effects of principal professional orientation towards leadership, professional teacher behavior, and school academic optimism on school reading achievement. *Societies, 6*(1), 1-11. doi:10.3390/soc6010005

Muthén, L. K., & Muthén, B. O. (2017). *Mplus user's guide*. Los Angeles, CA: Muthén & Muthén Publishing.

Oldac, Y. I., & Kondakci, Y. (2020). Multilevel analysis of the relationship between school-level variables and student achievement. *Educational Management Administration & Leadership, 48*(4), 762-780. doi:10.1177/1741143219827303

Özdemir, M. (2008). Eğitim yönetiminde yerelleşme siyasaları. *Amme İdaresi Dergisi, 41*(3), 153-168.

Özdemir, M. (2012). Dağıtımcı liderlik envanterinin türkçe uyarlaması: Geçerlik ve güvenirlik çalışmaları. *Kuram ve Uygulamada Eğitim Yönetimi, 4*(4), 575-598.

Özdemir, M., & Demircioğlu, E. (2015). Distributed leadership and contract relations: Evidence from Turkish high schools. *Educational Management Administration & Leadership, 43*(6), 918-938. doi:10.1177/1741143214543207

Özdemir, M., & Pektaş, V. (2017). Examining the relationship between social justice leadership and school academic optimism according to teachers' opinions. *Ege Eğitim Dergisi, 18*(2), 576-601. doi:10.12984/egeefd.328458

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539-569. doi:10.1146/annurev-psych-120710-100452

Pradhan, S., & Jena, L. K. (2019). Does meaningful work explains the relationship between transformational leadership and innovative work behaviour?. *Vikalpa, 44*(1), 30-40. doi:10.1177/0256090919832434

Pratt, M. G., & Ashforth, B. E. (2003). Fostering meaningfulness in working and at work. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 309-327). Oakland, CA: Berret-Koehler Publishers.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods,* 40, 879-891. doi:10.3758/BRM.40.3.879

Ross, L., Lutfi, G. A., & Hope, W. C. (2016). Distributed leadership and teachers' affective commitment. *NASSP Bulletin, 100*(3), 159-169. doi:10.1177/0192636516681842

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*(3), 293-315. doi:10.1002/job.248

Seligman, M. E. P. (2002). Positive psychology, positive prevention, and positive therapy. In C. R. Snyder, & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 3-12). Oxford: Oxford University Press.

Singh, N., & Rangnekar, S. (2016). Relationship between meaningful work and organizational trust: A study of techno-managers in the Indian power sector. In *Proceedings of GLOGIFT 16* (pp. 247-255). New Delhi: Global Institute of Flexible Systems Management (GIFT) Publishing.

Skaalvik, E., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology, 99*(3), 611-625. doi:10.1037/0022-0663.99.3.611

Smith, P. A., & Hoy, W. K. (2007). Academic optimism and student achievement in urban elementary schools. *Journal of Educational Administration, 45*(5), 556-568. doi:10.1108/09578230710778196

Spillane, J. P. (2005). Distributed leadership. *The Educational Forum, 69*(2), 143-150.

Spillane, J. P., Halverson, R., & Diamond, J. B. (2004). Towards a theory of leadership practice: A distributed perspective. *Journal of Curriculum Studies, 36*(1), 3-34. doi:10.1080/0022027032000106726

Srivastava, A. P., & Dhar, R. L. (2016). Authentic leadership for teacher's academic optimism: Moderating effect of training comprehensiveness. *European Journal of Training and Development, 40*(5), 321-344. doi:10.1108/EJTD-12-2015-0096

Tummers, L. G., & Knies, E. (2013). Leadership and meaningful work in the public sector. *Public Administration Review, 73*(6), 859-868. doi:10.1111/puar.12138

Wagner, C. A., & Dipaola, M. F. (2011). Academic optimism of high school teachers: Its relationship to organizational citizenship behaviors and student achievement. *Journal of School Leadership, 21*(6), 893-926. doi:10.1177/105268461102100607

Ware, H., & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *Journal of Educational Research, 100*(5), 303-310. doi:10.3200/JOER.100.5.303-310

Willemse, M., & Deacon, E. (2015). Experiencing a sense of calling: The influence of meaningful work on teachers' work attitudes. *SA Journal of Industrial Psychology, 41*(1), 1-9. doi:10.4102/sajip.v41i1.1274

Wu, J. H., & Sheu, T. M. (2015). How to improve academic optimism? An inquiry from the perspective of school resource and investment. *Asia Pacific Education Review,* 16, 663-674.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior, 74*(3), 235-244. doi:10.1016/j.jvb.2008.11.003

Xu, S., Zhang, H., Dai, Y., Ma, J., & Lyu, L. (2021). Distributed leadership and new generation employees' proactive behavior: Roles of idiosyncratic deals and meaningfulness of work. *Frontiers in Psychology, 12*(755513), 1-13. doi:10.3389/fpsyg.2021.755513