

How Professional Efficacy Affects Professional Motivation and Professional Engagement in Teachers

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Abstract

The aim of this study was to examine the relation between teachers' professional efficacy and professional engagement through the mediation of professional motivation. Based on data collected from 426 primary school teachers in Turkey, this research used the structural equation model approach and the bootstrap method to test the model. The results showed that teachers' professional efficacy is a significant positive predictor of professional engagement, and that professional motivation had a fully mediating role between professional efficacy and professional engagement. Professional efficacy had an indirect effect on professional engagement through the mediation of professional motivation. The findings of this research also indicate that both professional efficacy and professional motivation are necessary for improving teachers' performance through their professional engagement. The factors that positively influence teachers' professional engagement include school administrators who promote the improvement of teachers' professional efficacy by acting equally and fairly with the goal of increasing teachers' professional motivation, directing and supporting them in their professional endeavours, and making them feel a part of the school.

Key words: teacher; efficacy; primary school; Turkey.

Introduction

Teachers' cognitive experiences and motivations (Bergey & Ranellucci, 2021; Gaines et al., 2019; Skaalvik & Skaalvik, 2017) may explain their reactions, behaviours and preferences during professional processes. One of the most important professional qualities that these experiences can explain is teachers' professional engagement. Teacher engagement enables mental readiness from an emotional and motivational

perspective in their careers (Høigaard et al., 2012). Teacher engagement evaluated in relation to intrinsic motivation (Botham, 2018) is examined within the contexts of teacher autonomy and efficacy (Skaalvik & Skaalvik, 2014).

Teachers' professional performance is an important factor that determines the success of education systems (Abe & Adu, 2014; Andriani et al., 2018; Somech & Wenderow, 2006; Sudarjat et al., 2015). Whether teacher professional performance matches the intended level depends on the school factors as well as personal and professional ones related to teachers' attitudes, beliefs and behaviour. These professional factors include teachers' perception of professional efficacy, professional motivation and professional engagement (Canrinus et al., 2012; Skaalvik & Skaalvik, 2016; Viel-Ruma et al., 2010). Previous studies have found a strong relationship between teachers' professional efficacy and professional engagement (Chan et al., 2008; Simbula et al., 2011; Timms, & Brough, 2013; Tschannen-Moran & Hoy, 2001) and that professional motivation plays an important role in the realization of educational goals by increasing teachers' performance (Andriani et al., 2018; Riyadi, 2015; Santisi et al., 2014). Thus, it could be noted that the professional motivation and engagement of teachers who are confident about their professional efficacy will increase.

Although the literature related to teacher professional engagement points to the relationships between teacher engagement, professional motivation and professional efficacy, little attention has been given to examining these variables together. The majority of research (e.g., Fokkens-Bruinsma & Canrinus, 2014; Han & Yin, 2016) has examined the relationship between teacher engagement and motivation considering various variables. However, there is a need to investigate a mediated relationship, taking into account professional efficacy associated with teacher engagement and motivation. Therefore, the aim of this study is twofold: to examine the possible relations between teachers' professional efficacy, professional motivation and professional engagement; and to reveal the mediating role of professional motivation in the relationship between professional efficacy and engagement.

Teachers' professional efficacy

Teachers' efficacy is an evaluation regarding the level of realization of educational goals with the knowledge and skills teachers have (Tschannen-Moran & Hoy, 2001; Skaalvik & Skaalvik, 2007). Theoretical bases on teachers' efficacy started to form as researchers considered whether teachers believe they can control their actions and environments, and it was found that teachers with a high level of self-efficacy can control student success and motivation better (Tschannen-Moran & Hoy, 2001). The level teacher's effectiveness is explained with their beliefs about fulfilling a duty more easily and successfully (Cheng, 2015; Kramer & Winter, 2008). Teacher's professional efficacy requires the continuity of learning processes and encompasses knowledge and skills related to the profession. It also highly contributes to efforts put forth by teachers to improve educational activities (McKim et al., 2017). In this regard, it can

be asserted that the professional efficacy of teachers has an important role in the realization of successful educational activities.

Professional efficacy is often associated with student success and is defined as teacher's beliefs about their competence in achieving the intended learning outcomes (Seider & Lemma, 2004; Wheatley, 2005). It is an indication of the teachers' belief in their abilities to help students in learning and in their level of impact on the effort students invest in instructional processes (Tschannen-Moran & Hoy, 2001). Since efficacy entails the confidence of individuals in their abilities to successfully complete a task (Bandura, 1997), teacher's competence, as a conceptual indication of the required attributes, becomes operational with the examination of their efficacy (McKim et al., 2017).

Professional motivation

Defined as action plans and behavioral patterns (Laming, 2004) developed for an intended goal, motivation plays an important role in the performance of individuals and organizations. Professional motivation is defined as a process that strengthens the individual's behaviour in an organizational environment and determines the form, direction and intensity of the behaviour (Leonard et al., 1999). Teacher's motivation plays a vital role in teaching/learning processes (Gemedá & Tynjälä, 2015) and it is discussed in the context of the pleasure that comes from teaching, characteristics of teaching and the value attributed to the profession, professional commitment, professional devotion and contribution to the life of others (Ceviz, 2018). The concept of professional motivation is important for the teaching profession because supporting teachers, critical shareholders of educational institutions, with internal and external motivation sources enables the development of positive attitudes toward the profession. Intrinsic motivation is based in teachers themselves, while the main determinant of extrinsic motivation is the environment. The positive effect of teachers' professional efficacy on their professional motivation can be an example of internal motivation (Goroziadis & Papaioannou, 2014), whereas school administrators creating a school environment based on trust, by being sensitive to teacher's social needs and displaying behaviour that increases teacher's motivation, such as appreciation, participation in decision-making and fairness (Erdener & Dalkiran, 2017), are examples of external motivation.

Mustafa and Othman (2010) emphasized that teachers' efficacy in teaching may change based on their professional motivation and efficacy while Ceviz (2018) stated that it is quite important to have high motivation in the teaching profession, which can be affected by many factors such as students, parents, school administrators, curricula and educational policies, and that this motivation should be sustainable. Similarly, Yilmaz (2009) emphasized that teacher's professional motivation is a determinant for an effective and productive learning environment, as well as for job satisfaction and performance. Professional motivation also plays a role in the actualization of educational goals by increasing teacher's performances (Andriani et al., 2018; Riyadi,

2015; Santisi et al., 2014). Therefore, professional motivation may contribute to teachers in terms of enabling them to do their jobs willingly and selflessly, focus on teaching and increase their engagement.

Teachers' professional engagement

Engagement is defined as individuals associating themselves with their jobs and co-workers physically, cognitively and emotionally (Handa & Gulati, 2014; Kahn, 1990), and as performing a job with high levels of energy, will, mental resolution and overcoming adversities (Bakker & Demerouti, 2008). Professional engagement is the attitude of individuals toward their jobs which entails performing the assigned roles in the best possible way (Kozikoglu & Ozcanli, 2020). Professionally engaged employees experience growth in their jobs by completely focusing on their work; thus, they encounter difficulties more easily, by complete focus on the work (Schaufeli et al., 2002).

The professional engagement of teachers can be defined as pride in their profession, holding the values of the profession above others and perceiving that teaching is the most suitable profession for their working life. Teachers who use modern methods for effective learning and are devoted to their profession are needed (Hoy & Miskel, 2010; Shukla, 2014), whereas teachers who are not happy with their jobs are unfit for high performance (Kumari & Gera, 2018). Additionally, professionally engaged teachers are willing to exert extra effort to increase student success and continue their profession (Butucha, 2013; Kumari & Gera, 2018; Malechwanzhi & Hongde, 2018), while teachers with a low level of professional engagement are not interested in their profession enough and do not strive to improve themselves (Kozikoglu & Senemoglu, 2018).

The current study

This study aims to extend the literature by investigating the mediating role of professional motivation in the relationship between teachers' professional efficacy and professional engagement. For this purpose, four hypotheses were sequentially tested in the study.

Teachers with high perception of their professional efficacy have increased professional motivation (Canrinus et al., 2012; Kim & Cho, 2014; Skaalvik & Skaalvik, 2016) and often display specific and observable behaviours such as trust, effort and persistence (Tschannen-Moran & Hoy, 2001), all of which positively affect their professional motivation (Goroziadis & Papaioannou, 2014). Therefore, it can be stated that teachers' beliefs about their professional efficacy increase their professional motivation. In this regard, the first hypothesis of the study was formed as follows:

Hypothesis 1. *Teachers' professional efficacy predicts their professional motivation.*

Professional efficacy is necessary to improve the performance of teachers through their professional engagement. Teacher's efficacy has been considered in various studies as an influential factor in developing their engagement (Federici & Skaalvik, 2011; Han et al., 2021; Kose & Uzun, 2018; Llorens et al., 2007; Simbula et al., 2011; Ware & Kitsantas, 2007). Teachers with high levels of engagement have greater self-

confidence regarding their professional efficacy (Fransson & Frelin, 2016). In addition, increasing teacher engagement positively influences their knowledge and skills (Ostad et al., 2019) by enabling them develop a desire for improving their professional efficacy (Yin et al., 2017). In conclusion, the previously presented research results indicate that teacher's professional efficacy can predict their professional engagement. Therefore, the second hypothesis is proposed as:

Hypothesis 2. *Teachers' professional efficacy predicts their professional engagement.*

Considering the relationship between professional motivation and professional engagement, Akman (2017) stated that professional motivation increases identification with an organization higher performance of those individuals. Professional engagement is a motivational and positive statement of well-being regarding work characterized by the concepts of effort, commitment and self-devotion (Bakker et al., 2011; de Jesus & Lens, 2005; Fokkens-Bruinsma & Canrinus, 2014; Pourtousi & Ghanizadeh, 2020; Tims et al., 2011). Thus, it can be asserted that teachers who feel comfortable in their working environment, do their job willingly and consider themselves a part of the school will identify with the school, and their level of professional engagement will increase accordingly. In line with this information, the third hypothesis of the study was formed as follows:

Hypothesis 3. *Teachers' professional motivation predicts their professional engagement.*

Professional motivation is positively affected by teachers' professional efficacy (Gorozidis & Papaioannou, 2014) and increases their professional engagement (Fokkens-Bruinsma & Canrinus, 2014; Tims et al., 2011). It has been determined that professional motivation is influenced by various factors at the teacher and school level, and that it has a positive impact on organizational outcomes such as performance and commitment (de Jesus & Lens, 2005; Riyadi, 2015; Santisi et al., 2014; Yilmaz, 2009). Moreover, many studies exist on the mediating role of professional motivation (Al-Musadieq et al., 2018; Bektas et al., 2020; Boset & Asmawi, 2020; Garg, 2017). In light of this information, the fourth hypothesis about the mediating role of professional motivation is as follows:

Hypothesis 4. *Professional motivation mediates the relationship between teachers' professional efficacy and professional engagement.*

The conceptual framework of the study, including the research hypotheses developed in line with the theoretical framework, is shown in *Figure 1*.

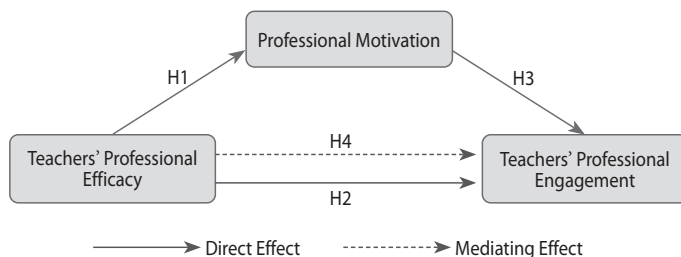


Figure 1. The Conceptual Framework of the Study

Methodology

Research design

This study, which examined the relationship between professional efficacy, professional motivation and professional engagement, was conducted as a correlational model which aims to determine the existence and direction of the correlation between two or more variables (McMillan & Schumacher, 2010).

Participants

The study was conducted with 426 classroom teachers randomly selected with the non-proportional cluster sampling method from 23 primary schools in Gaziantep in Turkey in the academic year 2019-2020. Of the teachers included in the study, 232 (54.5 %) were female and 194 (45.5 %) male, 216 (50.7 %) were between 21-30 years old, 170 (39.9 %) between 31 and 40 years old and 40 (9.4 %) were 41 and older. Considering their work experience, 327 (76.5 %) teachers had 1-10 years of experience, 86 (20.2 %) had 11-20 years and 13 (3.1 %) had 21 or more years in service. The number of teachers with a university degree was 347 (81.5 %) and with a postgraduate degree 79 (18.5 %).

Instruments

Teachers' Professional Efficacy Scale: This scale was developed by Schwartz et al. (1999) and was adapted to Turkish by Gulebaglan (2003). It has a single subscale of nine items (e.g., "I believe that I can successfully teach all the contents of the subject, even to the most difficult students."; "I know that I can motivate my students to participate in new projects."). Teachers gave their answers on a four-point Likert scale (1=entirely untrue, 4=entirely true). The reliability coefficient of the existing scale was calculated as (α) 0.71. The one-dimensional structure of the scale was validated with the CFA, which obtained the following data: $\chi^2=58.228$, $\chi^2/df=2.911$, RMSEA=0.07, RMR=0.03, GFI=0.97, NFI=0.88, IFI=0.92, TLI=0.88 and CFI=0.91. It was concluded that the goodness of fit values for NFI, TLI, CFI and RMSEA were acceptable, and other values were between the accepted goodness of fit liminal values (Hu & Bentler, 1999; Kline, 2011; Schumacker & Lomax, 2010). The scale's total score was calculated as the sum of the items included. An increase in the total score can be interpreted as an increase in the perception of professional efficacy.

Professional Motivation Scale: This scale was developed by Ceviz (2018) and it has 30 items (e.g., "I teach with love."; "Teaching is an important part of my life."). Teachers gave their answers on a five-point Likert scale (1=strongly disagree, 5=totally agree). This scale comprises five subscales: pleasure (PM1-PM11), value (PM12-PM16), commitment (PM17-PM21), devotion (PM22-PM26) and contribution (PM27-PM30). The reliability coefficients (α) of the existing scale were calculated as: pleasure 0.94, value 0.91, commitment 0.94, devotion 0.91, contribution 0.88, and the overall scale 0.92. Items PM1-PM2, PM4-PM5, PM8-PM10 (in the pleasure subscale), PM19 and PM21 (in the commitment subscale) were modified by adding covariance to their error

terms in the CFA, while items PM11 (in the pleasure subscale), PM13 (in the value subscale), PM22 (in the devotion subscale) and PM30 (in the contribution subscale) were excluded as they were related to items in different subscales and increased the chi-square value. Thus, the fit values of the model were increased, and they were calculated in the CFA as: $\chi^2=717.487$, $\chi^2/df=2.474$, RMSEA=0.06, RMR=0.02, GFI=0.88, NFI=0.92, IFI=0.95, TLI=0.95 and CFI=0.95. It was concluded that RMSEA and GFI had acceptable values, with other values also between the accepted goodness of fit liminal values (Hu & Bentler, 1999; Kline, 2011; Schumacker & Lomax, 2010). Each of the total scores for the five subscales were calculated as the sum of the items included. An increase in the total score can be interpreted as high level of professional motivation.

Teachers' Professional Engagement Scale: This scale was developed by Kozikoglu and Senemoglu (2018) and it has 20 items (e.g., "I feel energetic about work."; "I think that my profession is an enjoyable profession."). It is answered using a five-point Likert scale (1= strongly disagree, 5= totally agree) and consists of three subscales: commitment to the profession (PE1-PE8), devotion to the profession (PM9-PM12) and dedication to students (PE13-PE20). The reliability coefficient of the existing scale (α) was calculated as 0.92 for commitment to the profession, 0.82 for devotion to the profession, 0.88 for dedication to the students and 0.91 for the overall scale. Items PE1, PE2, PE6 and PE8 (in the commitment to the profession subscale) were modified by adding covariance in the error terms. The structure of the scale was validated in the analysis and the fit values were determined as follows: $\chi^2=457.034$, $\chi^2/df=2.770$, RMSEA=0.065, RMR=0.024, GFI=0.90, NFI=0.91, IFI=0.94, TLI=0.94 and CFI=0.94. It was concluded that RMSEA was acceptable, with other values also between the accepted goodness of fit liminal values (Hu & Bentler, 1999; Kline, 2011; Schumacker & Lomax, 2010). Each of the total scores for the three subscales were calculated as the sum of included items. An increase in the total score can be interpreted as high level of professional engagement.

Procedure and data analysis

Data were collected from teachers who worked in primary schools in Gaziantep in Turkey in the 2019-2020 academic year. Necessary permissions were obtained and appointments made through pre-interviews with the administrators of the schools included in the sample. In this regard, the schools were visited on the set dates and the scale forms were handed out to voluntary teachers and administered individually. The forms did not require any identifying information. The forms were distributed to 600 teachers, out of which 470 were returned.

Before the data analysis, the 470 completed forms were checked leading to the exclusion of 18 incomplete or incorrect forms from the analysis. Of the remaining 452 forms, 20 were excluded from the data set as they were outliers, and six because they were under 13.82, i.e. the critical value for the Mahalanobis distance (Pallant, 2005). The analyses were conducted on 426 scale forms, which was sufficient for a 95 % confidence interval and $\alpha=0.05$ significance level (Field, 2009).

The data were analyzed using the SPSS 22.0 and AMOS 23.0 programs. The conceptual model was tested with the analysis of the path formed using the structural equation model (SEM) to determine the direct and indirect effects of teachers' professional efficacy (independent/external variable) and professional motivation (mediating variable) on teachers' professional engagement (dependent/internal variable). In addition to SEM, the bootstrap method was used to test the mediating role of professional motivation on the correlations between the variables, and to determine the significance of direct and indirect effects in this model by increasing the sample sizes (Preacher & Hayes, 2008). This research utilized the 10.000 resampling method, the bootstrap coefficient was calculated and confidence intervals were determined (MacKinnon, 2008). The correlations between the variables were calculated using the Pearson Product-Moment Correlation technique. The significance level in the analysis was accepted as $p < 0.05$.

Multicollinearity assumptions were tested with univariate and multivariate normality before the analysis. The skewness and kurtosis coefficients of each variable were calculated in the univariate normality assumption, and the values obtained were between -2.0 and +2.0, thus the data were found to have normal distribution (George & Mallery, 2016). The multivariate normality assumption was tested with Mardia's coefficient, which was determined as lower than 1.96 (1.46), with a critical ratio value lower than 5 (2.18). These values indicate that the normality assumption was met (Raykov & Marcoulides, 2008). Binary correlations between the values were calculated and found to be below 0.80, meaning they were within the scope of the multicollinearity assumption in this study. Additionally, the fact that the variance inflation factor (VIF) value was lower than 10 and the tolerance value higher than 0.2 indicates no multicollinearity assumption issues (Field, 2009). The maximum likelihood method was preferred in the analyses regarding the prediction of parameters in the structural equation modeling where the assumptions were met. The effect sizes of all direct, indirect and total effects obtained as a result of the analysis were interpreted as follows: around 0.10 indicates a small effect, around 0.30 a moderate effect and around 0.50 a major effect (Kline, 2011).

Results

Descriptive statistics and correlation coefficients

Descriptive statistics and correlation coefficients of the variables are presented in Table 1.

Table 1
Path analysis results regarding the relationship between the variables

Variables	Descriptive Statistics				Correlation Coefficients		
	Mean	SD	Skewness	Kurtosis	1	2	3
1. PEF	3.50	0.28	-0.19	-0.80	-	-	-
2. PM	3.96	0.40	-0.28	-0.42	0.34**	-	-
3. PE	4.13	0.39	-0.66	0.29	0.23**	0.45**	-

** $p < 0.01$ (Notes: PEF: Teachers' professional efficacy, PM: Professional motivation, PE: Teachers' professional engagement)

The values in Table 1 show that all data are normally distributed, which means that normality assumptions were met (Finney & DiStefano, 2006). Considering the correlation coefficients, professional efficacy has shown weak correlation with professional engagement ($r=0.23$, $p<0.01$). Moreover, weak correlations were also found between professional efficacy and professional motivation ($r=0.34$, $p<0.01$) and between professional motivation and professional engagement ($r=0.45$, $p<0.01$).

Measurement model

Before performing the SEM test, it was necessary to examine the structural relationships between the variables by creating a measurement model (Schumacker & Lomax, 2010). The analysis of the measurement model created in this framework was determined as $\chi^2=2509.697$, $df=1360$ ($\chi^2/df=1.845$, $p<0.00$). The model fit values were acceptable: RMSEA = 0.05, RMR = 0.03, GFI = 0.82, NFI = 0.85, IFI = 0.92, TLI = 0.92 and CFI = 0.92 (Hu & Bentler, 1999; Kline, 2011). According to the results of the t-test in the model, a positive significant and moderate relationship between the variables was noted. The structural model's test phase with path analysis was initiated upon the structural verification of the measurement model.

Structural model

The hypotheses developed regarding the mediating relationship between professional efficacy and professional engagement were tested using the SEM. Based on the theoretical model (Figure 1), the mediating role of professional motivation in the relationship between professional efficacy and professional engagement was investigated. The path coefficients for the tested SEM are presented in detail within the scope of the mediation test (Figure 2). The results of the analysis illustrated that the path model had acceptable goodness-of-fit values ($\chi^2/df_{(2509.697/1360)}=1.845$; RMSEA=0.05, RMR=0.03, GFI=0.82, NFI=0.85, IFI=0.92, TLI=0.92 and CFI=0.92).

Mediating test

Initially, the direct, indirect and total effects were examined within the scope of the mediating test (MacKinnon, 2008). Results on the mediating role of professional motivation in the effect of teachers' professional efficacy on their professional engagement were presented in this process. First, it was determined that professional efficacy was significantly correlated with professional motivation ($\beta=0.45$, $p<0.01$), as well as with professional engagement ($\beta=0.32$, $p<0.05$). Moreover, the direct correlation between professional motivation and professional engagement was statistically significant ($\beta=0.50$, $p<0.01$). It was concluded that professional motivation (mediating variable) affects professional engagement (dependent variable) without professional efficacy (independent variable). These findings indicate that the mediating test would be suitable. Therefore, the mediating role of professional motivation in the relationship between professional efficacy and professional engagement was tested, and the findings are presented in *Figure 2*.

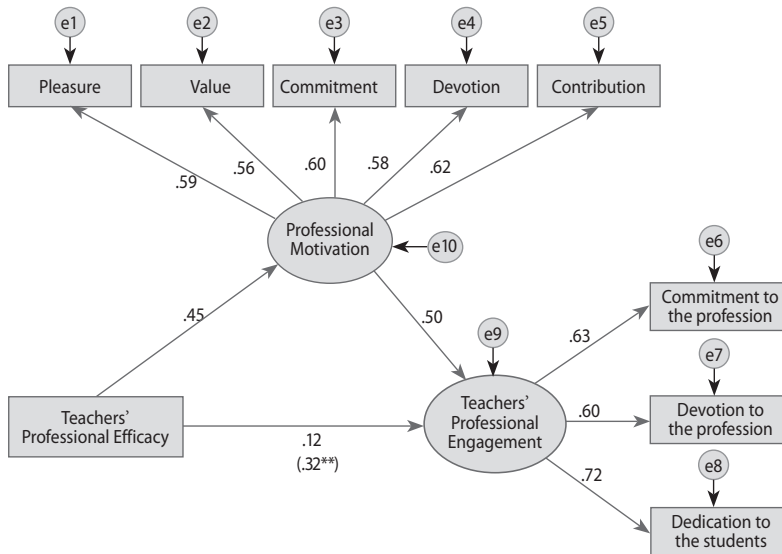


Figure 2. The mediating role of professional motivation (** $p < 0.01$)

** The path coefficient specified in parentheses is the value (.32**) of direct impact before the professional motivation, i.e. mediating variable was added to the model.

As indicated in Figure 2, when the mediating variable – professional motivation – was introduced into the model, the coefficient of regression as considerably reduced, from 0.32 to 0.12, and was no longer significant ($p > 0.05$). However, there was a statistically significant direct effect of professional efficacy on professional motivation ($\beta = 0.45$, $p < 0.01$), and professional motivation on professional engagement ($\beta = 0.50$, $p < 0.01$).

The fit values of the model were calculated as: $\chi^2/df_{(2509,697/1360)} = 1.845$; RMSEA=0.05, RMR=0.03, GFI=0.82, NFI=0.85, IFI=0.92, TLI=0.92 and CFI=0.92. B (non-standardized estimated value), β (standardized estimated value), SE (standard error), t ($c.r$) and p values obtained as the result of the path analysis are presented in Table 2.

Table 2
Path analysis results regarding the relationship between the variables

Hypothesis	Pats	B	β	SE	t	p
H1	PEF ---> PM	0.56	0.45	0.10	5.347	***
H2	PEF ---> PE	0.35	0.32	0.09	4.044	***
H3	PM ---> PE	0.43	0.50	0.09	4.950	***
H4	PEF ---> PM ---> PE	0.13	0.12	0.09	1.472	>0.05

*** $p < 0.001$ (Notes: PEF: Professional efficacy, PM: Professional motivation, PE: Professional engagement)

Considering Table 2, it is apparent that professional motivation is the mediating variable in the relationship between professional efficacy and professional engagement. The type of mediation here is known as full mediation since the direct effect of professional efficacy on professional engagement was no longer significant after

professional motivation was introduced into the model ($\beta=0.12, p>0.05$); instead, the indirect effect was significant. Thus, the hypothesis that professional efficacy directly affects professional engagement can be rejected, whereas the hypothesis that professional efficacy has an indirect effect on professional engagement through the mediation of professional motivation can be accepted (see Table 2).

Bootstrap test

After determining the full mediating role of professional motivation, the significance of change in regression coefficients was tested by adding the standard errors of the variables into the calculation with the bootstrap method (MacKinnon, 2008). The results of the mediation test show that professional motivation had a fully mediating role between professional efficacy and professional engagement. The coefficients of direct and indirect effects obtained in the analysis and confidence intervals of these coefficients are presented in Table 3.

Table 3
Direct and indirect effects regarding the full mediating role of professional motivation

Pats	Bootstrap values		95 % Bootstrap CI	
	β	SE	Lower Bound	Upper Bound
<i>Direct Effect</i>				
PEF ---> PM	0.45	0.06	0.35	0.55
PEF ---> PE	0.12	0.09	-0.15	0.26
PM ---> PE	0.50	0.11	0.33	0.70
<i>Indirect Effect</i>				
PEF ---> PE	0.23	0.06	0.13	0.35
<i>Total Effect</i>	0.35	0.06	0.22	0.47

Notes: PEF: Professional efficacy, PM: Professional motivation, PE: Professional engagement. All bootstrap values in the table show the standardized beta (β) coefficients.

Based on the bootstrap coefficients and confidence intervals related to these coefficients in Table 3, the direct path between professional efficacy and professional motivation ($\beta=0.45, SE=0.06, 95\% \text{ Bootstrap CI} = [0.35, 0.55], p<0.001$) was found to be statistically significant. The direct path between professional motivation and professional engagement was also significant ($\beta=0.50, SE=0.11, 95\% \text{ Bootstrap CI} = [0.33, 0.70], p<0.001$). Furthermore, professional efficacy had a statistically significant indirect effect on professional engagement ($\beta=0.23, SE=0.06, 95\% \text{ Bootstrap CI} = [0.13, 0.35], p<0.001$). The fact that the direct effect of professional efficacy on professional engagement became insignificant ($\beta=0.12, SE=0.09, 95\% \text{ Bootstrap CI} = [-0.15, 0.26], p>0.05$) with the inclusion of professional motivation into the model, and that professional efficacy indirectly affected professional engagement provided evidence of the full mediating role of professional motivation.

Discussion

This study aimed to determine the mediating role of professional motivation in the relationship between teachers' professional efficacy and teachers' professional engagement. It represents a careful and systematic analysis of the effects of professional efficacy and professional motivation on the professional engagement of teachers in Turkey. Professional efficacy served as the independent variable, professional motivation as the mediating variable and professional engagement as the dependent research variable.

It was found that the teacher professional efficacy affected their professional motivation positively. The research carried out on the relationship between professional efficacy and professional motivation established a positive correlation between the variables (Canrinus et al., 2012; Kim & Cho, 2014; Skaalvik & Skaalvik, 2016). Teachers with a high level of perception of efficacy are motivated to display specific and observable behaviours such as trust, effort and persistence (Tschannen-Moran & Hoy, 2001). Additionally, teachers' professional efficacy positively affected their professional motivation (Gorozidis & Papaioannou, 2014). Besides, their efficacy in teaching may change based on their professional motivation (Mustafa & Othman, 2010). It can therefore be stated that teachers' beliefs about their professional efficacy increase their professional motivation.

The obtained results show that teacher perceptions of efficacy are a basis of professional engagement (Chan et al., 2008; Timms & Brough, 2013) and that teachers who are confident about their professional efficacy are more professionally engaged (Kose & Uzun, 2018; Simbula et al., 2011). As many studies found teacher efficacy to be an influential factor in developing engagement, sufficient professional efficacy becomes a necessity if teacher performance is to improve (Han et al., 2021; Federici & Skaalvik, 2011; Kose & Uzun, 2018; Llorens et al., 2007; Simbula et al., 2011; Ware & Kitsantas, 2007). Teachers with high levels of engagement have greater self-confidence regarding their professional efficacy (Fransson & Frelin, 2016). Moreover, increasing engagement in teachers has a positive influence on their knowledge and skills (Ostad et al., 2019) by sprouting in them a desire to improve their professional efficacy (Yin et al., 2017).

Teacher engagement enables the mental readiness of teachers from an emotional and motivational perspective in their careers (Høigaard et al., 2012). Teachers with high levels of professional motivation also have higher levels of professional engagement. Research on the premises of professional engagement, which is an expected behaviour in terms of education, found that highly-motivated and devout teachers' levels of professional engagement increase (Bakker et al., 2011; Fokkens-Bruinsma & Canrinus, 2014; Pourtousi & Ghanizadeh, 2020; Tims et al., 2011). Professional motivation positively affects teachers' dedication to the profession by increasing their performance (Santisi et al., 2014). Besides, professional motivation may contribute to teachers in terms of doing their job willingly and selflessly, focusing on their work and increasing their engagement. It can therefore be stated that teachers' professional engagement is shaped by their professional motivation.

Despite the fact that this study has provided a valuable contribution to the existing literature, some areas need further investigation. First, the results cannot be extrapolated to all schools in Turkey because the sample was not representative of the whole country. Future studies can compare this study's findings with research at different school levels (middle school, high school) and regions. Second, the relational model was used in this study, which causes two critical limitations; namely, it explains the relationship between the three variables, but not cause and effect, and the scale's application provides a comprehensive perspective, but not detailed information. Therefore, it is necessary to conduct qualitative and mixed-method studies on the subject. Finally, HLM or multilevel SEM analyses can determine which variables affect the findings at the school level or teacher level. The data set of this study was also examined for the multi-level analysis requirements, but results showed that it was not suitable for multi-level analysis considering school- or teacher-level variables. Other limitations included the sample's characteristics in terms of relatively homogenous age structure (90.6 % being 40 years and below). Regarding the measures, there might be limitations in interpreting the results in case of reduced variance of the predictors due to the sample's homogeneity.

This study has theoretical and practical implications. The results of the study revealed that teachers' professional efficacy is a basis for professional motivation and professional engagement. From this point of view, it is vital to design clinical inspection practices for teaching in line with the performance criteria concerning efficacy. This implementation would be very useful for enhancing teacher engagement and development in the teaching process. In order to do that and define standards of efficacy recognized and applied by teachers, it is important to design and implement a school-based approach in addition to the already existing in-service professional development activities. Besides, school administrators should provide opportunities for teachers to improve their professional efficacies by acting equally and fairly, increase teachers' professional motivation, direct and support teachers in their tasks and make them feel like they belong to a school. Moreover, teacher's professional engagement enables them to be more productive and show higher performance as well as allow carry out educational activities more effectively. Recommendations for future studies entail examining school culture, personal characteristics, organizational justice, interactions between school leaders and staff and variables considered as antecedents of professional engagement. Qualitative studies can be conducted to explore the reasons why professional teacher engagement increases along with the rise of professional efficacy and professional motivation, and to obtain in-depth information on the factors influencing teacher's professional engagement levels.

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Utjecaj profesionalne učinkovitosti na profesionalnu motivaciju i angažman učitelja

Sažetak

Cilj ovoga istraživanja bio je ispitati odnos između profesionalne učinkovitosti i profesionalnoga angažmana učitelja putem profesionalne motivacije kao faktora medijacije. Na osnovi podataka sakupljenih od 426 osnovnoškolskih učitelja u Turskoj, u ovom istraživanju korišten je pristup strukturiranoga modeliranja i bootstrap metoda za testiranje modela. Rezultati su pokazali da je profesionalna učinkovitost učitelja značajan pozitivan prediktor profesionalnoga angažmana i da profesionalna motivacija u potpunosti djeluje kao posrednik između profesionalne učinkovitosti i profesionalnoga angažmana. Profesionalna učinkovitost imala je indirektan učinak na profesionalni angažman putem profesionalne motivacije. Rezultati ovoga istraživanja također pokazuju da su i profesionalna učinkovitost i profesionalna motivacija nužni za poboljšanje izvedbe učitelja kroz njihov profesionalni angažman. Čimbenici koji mogu pozitivno utjecati na profesionalni angažman učitelja obuhvaćaju promociju povećanja efikasnosti učitelja koju potiče školska uprava, njezino djelovanje na bazi jednakosti i poštenja s ciljem povećavanja profesionalne motivacije učitelja, usmjeravanje i podršku za učitelje u njihovim profesionalnim nastojanjima te razvijanje osjećaja pripadnosti školi kod učitelja.

Ključne riječi: osnovna škola; Turska; učinkovitost; učitelj.

Uvod

Kognitivna iskustva i motivacija učitelja (Bergey i Ranellucci, 2021; Gaines i sur., 2019; Skaalvik i Skaalvik, 2017) mogu objasniti njihove reakcije, ponašanja i preferencije tijekom radnoga procesa. Jedna od najvažnijih profesionalnih kvaliteta koje ti doživljaji mogu objasniti jest profesionalni angažman učitelja. Učiteljski angažman omogućuje mentalnu spremnost u njihovim karijerama iz emocionalne i motivacijske perspektive (Høigaard i sur., 2012). Evaluacija angažmana učitelja u odnosu na njihovu intrinzičnu motivaciju (Botham, 2018) istražuje se u kontekstima autonomije i učinkovitosti učitelja (Skaalvik i Skaalvik, 2014).

Profesionalna izvedba učitelja važan je faktor koji određuje uspjeh obrazovanih sustava (Abe i Adu, 2014; Andriani i sur., 2018; Somech i Wenderow, 2006; Sudarjat i sur., 2015). Potencijal profesionalne izvedbe da dosegne planiranu razinu može se

mijenjati na osnovi čimbenika na razini škole, kao i osobnih i profesionalnih čimbenika povezanih sa stavovima, uvjerenjima i ponašanjima učitelja. Ti profesionalni faktori uključuju učiteljsku percepciju profesionalne učinkovitosti, profesionalnu motivaciju i profesionalni angažman (Canrinus i sur., 2012; Skaalvik i Skaalvik, 2016; Viel-Ruma i sur., 2010). Prijašnje studije pokazale su snažan odnos između učiteljske profesionalne učinkovitosti i profesionalnoga angažmana (Chan i sur., 2008; Simbula i sur., 2011; Timms, i Brough, 2013; Tschannen-Moran i Hoy, 2001) i važnu ulogu profesionalne motivacije u ostvarivanju obrazovnih ciljeva kroz poboljšanje rada učitelja (Andriani i sur., 2018; Riyadi, 2015; Santisi i sur., 2014). Stoga se može zaključiti da će profesionalna motivacija i angažman učitelja koji imaju pouzdanja u vlastitu profesionalnu učinkovitost rasti.

Iako literatura o učiteljskom profesionalnom angažmanu ukazuje na vezu između angažmana, profesionalne motivacije i učinkovitosti učitelja, malo je pažnje posvećeno ispitivanju uzajamnih veza između tih varijabli. Većina istraživanja (npr., Fokkens-Bruinsma i Canrinus, 2014; Han i Yin, 2016) ispitala je odnos između angažmana i motivacije učitelja s obzirom na razne varijable. Ipak, postoji potreba za istraživanjem posredovanoga odnosa, uzimajući u obzir profesionalnu efikasnost povezanu s angažmanom i motivacijom učitelja. Zbog toga je cilja ovoga istraživanja dvojak: ispitati moguće odnose između profesionalne učinkovitosti učitelja, profesionalne motivacije i profesionalnoga angažmana te otkriti posredničku ulogu profesionalne motivacije između profesionalne efikasnosti i angažmana učitelja.

Profesionalna učinkovitost učitelja

Učinkovitost učitelja je procjena razine ostvarenja obrazovnih ciljeva sa znanjem i vještinama koje učitelji posjeduju (Tschannen-Moran i Hoy, 2001; Skaalvik i Skaalvik, 2007). Teorijske osnove istraživanja učiteljske učinkovitosti formirane su razmatranjem uvjerenja učitelja o tome mogu li kontrolirati svoje radnje i okoline, a otkriveno je da učitelji s visokom razinom samoučinkovitosti mogu bolje kontrolirati uspjeh i motivaciju učenika (Tschannen-Moran i Hoy, 2001). Razina učinkovitosti učitelja raste s njihovim uvjerenjem u vlastite sposobnosti lakšega i uspješnijega izvršavanja dužnosti (Cheng, 2015; Kramer i Winter, 2008). Profesionalna učinkovitost učitelja zahtijeva kontinuirane procese učenja i obuhvaća znanje i vještine povezane uz profesiju te intenzivira nastojanja učitelja za poboljšanjem obrazovnih aktivnosti (McKim i sur., 2017). S obzirom na to, može se ustvrditi da profesionalna učinkovitost učitelja ima važnu ulogu u ostvarivanju učinkovitih obrazovnih aktivnosti.

Profesionalna učinkovitost često se povezuje s uspjehom učenika i definirana je kao uvjerenje učitelja o njihovoj učinkovitosti u postizanju planiranih ciljeva učenja (Seider i Lemma, 2004; Wheatley, 2005). To je pokazatelj uvjerenja učitelja o vlastitim sposobnostima da pomognu učenicima u procesima učenja i njihovoj razini utjecaja na angažman učenika tijekom nastavnoga procesa (Tschannen-Moran i Hoy, 2001). Budući da **učinkovitost izražava** vjeru pojedinaca u vlastite sposobnosti da izvrše neki

zadatak (Bandura, 1997), kompetencija učitelja kao konceptualni pokazatelj traženih osobina postaje operativna u ispitivanju njihove učinkovitosti (McKim i sur., 2017).

Profesionalna motivacija

Definirana kao plan akcije i obrazac ponašanja (Laming, 2004) razvijeni s unaprijed određenim ciljem, motivacija ima važnu ulogu u izvedbi pojedinca i organizacije. Profesionalna motivacija definira se kao proces koji osnažuje ponašanje osobe u okolini organizacije i određuje oblik, smjer i intenzitet ponašanja (Leonard i sur., 1999). Motivacija učitelja igra vitalnu ulogu u procesima poučavanja i učenja (Gemeda i Tynjälä, 2015), a o profesionalnoj motivaciji učitelja raspravlja se u kontekstu zadovoljstva poučavanjem, karakteristika i vrijednosti profesije, profesionalne obveze, predanosti zanimanju i doprinosa životima drugih (Ceviz, 2018). Koncept profesionalne motivacije važan je za zanimanje učitelja jer podrška učiteljima, koji su kritični dioničari obrazovnih institucija, putem unutrašnje i vanjske motivacije omogućuje razvoj pozitivnih stavova prema profesiji. Osnova unutarne motivacije u samim je učiteljima, a glavna odrednica vanjske motivacije jest okolina. Pozitivni učinci profesionalne učinkovitosti učitelja na njihovu profesionalnu motivaciju primjeri su unutrašnje motivacije (Gorozidis i Papaioannou, 2014). S druge strane, stvaranje školske okoline zasnovane na međusobnom povjerenju školske uprave i učitelja pokazivanjem osjetljivosti za socijalne potrebe učitelja i djelovanja koje pojačava motivaciju učitelja, poput uvažavanja, sudjelovanja učitelja u donošenju odluka i poštenja (Erdener i Dalkiran, 2017), predstavljaju primjere vanjske motivacije.

Mustafa i Othman (2010) naglašavaju da je učinkovitost učitelja u poučavanju podložna promjeni na osnovi njihove profesionalne motivacije i učinkovitosti, a Ceviz (2018) navodi da je za profesiju učitelja visoka motivacija prilično važna, na što mogu utjecati mnogi faktori poput učenika, roditelja, upravitelja škole, kurikula i obrazovne politike, te da ta motivacija treba biti održiva. Slično tome, Yilmaz (2009) tvrdi da je profesionalna motivacija učitelja odrednica učinkovite i produktivne okoline učenja, kao i njihove izvedbe te zadovoljstva poslom. Profesionalna motivacija također ima važnu ulogu u ostvarivanju obrazovnih ciljeva putem poboljšanja izvedbe učitelja (Andriani i sur., 2018; Riyadi, 2015; Santisi i sur., 2014). Profesionalna motivacija stoga pozitivno utječe na učitelje koji će zbog nje raditi svoj posao nesebično i s voljom, fokusirati se na poučavanje i povećati vlastiti angažman.

Profesionalni angažman učitelja

Angažman se definira kao veza osobe s poslom i emotivna, fizička i kognitivna povezanost s kolegama (Handa i Gulati, 2014; Kahn, 1990), te kao obavljanje posla s visokom razinom energije, voljom, mentalnom odlučnosti i sposobnosti za rješavanje poteškoća (Bakker i Demerouti, 2008). Profesionalni angažman je stav osobe prema vlastitom poslu koji uključuje očekivanja o izvršavanju dodijeljenih uloga na najbolji mogući način (Kozikoglu i Ozcanlı, 2020). Profesionalno angažirani zaposlenici razvijaju

se u svojem poslu potpunim fokusom, stoga oni svladavaju teškoće usredotočujući se na posao (Schaufeli i sur., 2002).

Profesionalni angažman učitelja može se definirati kao ponos profesijom, osjećajem više vrijednosti vlastite profesije u usporedbi s drugima i percepcijom učiteljskoga zanimanja kao najprimjerenijega za vlastiti radni život. Učitelji koji koriste moderne metode za učinkovito učenje i koji su predani svojoj profesiji su nužni (Hoy i Miskel, 2010; Shukla, 2014), a učitelji koji nisu zadovoljni svojim poslom, ne mogu pokazati visoku izvedbu (Kumari i Gera, 2018). Osim toga, profesionalno angažirani učitelji voljni su uložiti dodatni napor kako bi povećali uspjeh učenika i nastavili baviti se svojim zanimanjem (Butucha, 2013; Kumari i Gera, 2018; Malechwanzi i Hongde, 2018), dok učitelji niske razine profesionalnoga angažmana nisu dovoljno zainteresirani za svoju profesiju i ne ulažu dovoljno u vlastiti razvoj (Kozikoglu i Senemoglu, 2018).

Istraživanje

Ovo istraživanje nastoji proširiti literaturu ispitivanjem posredničke uloge profesionalne motivacije u odnosu između profesionalne učinkovitosti i angažmana učitelja. U tu svrhu jedna za drugom testirane su četiri hipoteze.

Učitelji s visokom razinom percepcije vlastite profesionalne učinkovitosti imaju višu razinu profesionalne motivacije (Canrinus i sur., 2012; Kim i Cho, 2014; Skaalvik i Skaalvik, 2016) i često pokazuju specifična i zamjetna ponašanja poput povjerenja, angažmana i ustrajnosti (Tschannen-Moran i Hoy, 2001), koja pozitivno utječu na profesionalnu motivaciju (Gorozidis i Papaioannou, 2014). Stoga se može tvrditi da uvjerenja učitelja o njihovoj profesionalnoj učinkovitosti povećavaju njihovu profesionalnu motivaciju. S obzirom na to, prva hipoteza ovoga istraživanja formulirana je kako slijedi:

Hipoteza 1. *Profesionalna učinkovitost učitelja predviđa profesionalnu motivaciju.*

Profesionalna učinkovitost nužna je za poboljšanje izvedbe učitelja kroz njihov profesionalni angažman. Učinkovitost učitelja razmatrana je u mnogim studijama kao utjecajan faktor u razvoju učiteljskog angažmana (Federici i Skaalvik, 2011; Han i sur., 2021; Kose i Uzun, 2018; Llorens i sur., 2007; Simbula i sur., 2011; Ware i Kitsantas, 2007). Učitelji s visokim razinama angažmana imaju veće samopouzdanje s obzirom na vlastitu profesionalnu učinkovitost (Fransson i Frelin, 2016). Osim toga, rastući angažman učitelja ima pozitivan utjecaj na njihovo znanje i vještine (Ostad i sur., 2019) omogućujući im razviju želju za poboljšanjem vlastite profesionalne učinkovitosti (Yin i sur., 2017). Naposljetku, predstavljeni rezultati prijašnjih istraživanja pokazuju da profesionalna učinkovitost učitelja može predvidjeti njihov profesionalni angažman. Stoga je druga hipoteza definirana kako slijedi:

Hipoteza 2. *Profesionalna učinkovitost učitelja predviđa profesionalni angažman.*

S obzirom na odnos između profesionalne motivacije i profesionalnoga angažmana učitelja, Akman (2017) navodi da profesionalna motivacija povećava identifikaciju s poslom te da će osobe koje se poistovjećuju s organizacijom imati bolju izvedbu. Profesionalni angažman je motivacijska i pozitivna manifestacija blagostanja vezana

za posao, karakterizirana konceptima nastojanja, obaveze i predanosti (Bakker i sur., 2011; de Jesus i Lens, 2005; Fokkens-Bruinsma i Canrinus, 2014; Pourtousi i Ghanizadeh, 2020; Tims i sur., 2011). Stoga se može tvrditi da će se učitelji koji se osjećaju ugodno u radnoj okolini, rade svoj posao s voljom te se osjećaju dijelom škole identificirati sa školom, a razina njihova profesionalnoga angažmana povećavat će se u skladu s navedenim. Sukladno tome, treća hipoteza u ovome istraživanju definirana je na sljedeći način:

Hipoteza 3. *Profesionalna motivacija predviđa profesionalni angažman učitelja.*

Profesionalna učinkovitost ima pozitivan utjecaj na profesionalnu motivaciju učitelja (Gorozidis i Papaioannou, 2014) i povećava njihov profesionalni angažman (Fokkens-Bruinsma i Canrinus, 2014; Tims i sur., 2011). Ustanovljeno je da je profesionalna motivacija pod utjecajem raznih faktora na razini učitelja i škole te da se pozitivno odražava na ishode organizacije poput izvedbe i obveza (de Jesus i Lens, 2005; Riyadi, 2015; Santisi i sur., 2014; Yilmaz, 2009). Osim toga, postoje mnoga istraživanja koja ispituju posredničku ulogu profesionalne motivacije (Al-Musadieq i sur., 2018; Bektas i sur., 2020; Boset i Asmawi, 2020; Garg, 2017). U svjetlu ovih informacija, četvrta hipoteza je definirana kako slijedi:

Hipoteza 4. *Profesionalna motivacija posrednik je odnosa između profesionalne učinkovitosti i angažmana učitelja.*

Konceptualni okvir istraživanja koji uključuje hipoteze, razvijene u skladu s teorijskim okvirom, prikazan je na *Slici 1*.

Slika 1.

Metodologija

Dizajn istraživanja

Ovo istraživanje, kojim se ispitivao odnos između profesionalne učinkovitosti, profesionalne motivacije i profesionalnoga angažmana, provedeno je pomoću korelacijskoga modela s ciljem utvrđivanja postojanja i smjera korelacije između dvije ili više varijabli (McMillan i Schumacher, 2010).

Sudionici

Istraživanje je provedeno s 426 učitelja koji su nasumično odabrani neproporcionalnom klaster metodom uzorkovanja iz 23 osnovne škole u Gaziantepu u Turskoj 2019./2020. školske godine. Uzorak je uključivao 232 učiteljice (54,5 %) i 194 (45,5 %) učitelja; 216 učitelja (50,7 %) u dobi od 21 do 30, 170 (39,9 %) u dobi od 31 do 40 i 40 učitelja (9,4 %) u dobi od 41 godine ili starijih. S obzirom na radni staž, 327 (76,5 %) učitelja imalo je 1-10 godina radnoga iskustva, 86 (20,2 %) ih je imalo 11-20 godina i 13 (3,1 %) 21 ili više godina staža. Broj učitelja s visokim obrazovanjem bio je 347 (81,5 %), a poslijediplomsko obrazovanje imalo je 79 (18,5 %) učitelja.

Instrumenti

Skala profesionalne učinkovitosti učitelja: Ovu skalu razvili su Schwarzer i suradnici (1999), a Gulebaglan ju je prilagodio turskom kontekstu (2003). Ova skala ima jednu podskalu s devet čestica (npr. „Vjerujem da mogu uspješno poučavati sve predmetne sadržaje čak i najtežim učenicima;” „Znam da mogu motivirati svoje učenike na sudjelovanje u novim projektima.”). Učitelji su davali odgovore na četverostupanjskoj Likertovoj ljestvici (1 = u potpunosti netočno, 4 = u potpunosti točno). Koeficijent pouzdanosti ove skale izračunat je kao (α) 0,71. Jednodimenzionalna struktura skale provjerena je konfirmativnom faktorskom analizom i dobiveni su sljedeći podatci: $\chi^2 = 58,228$, $\chi^2/df = 2,911$, RMSEA = 0,07, RMR = 0,03, GFI = 0,97, NFI = 0,88, IFI = 0,92, TLI = 0,88 i CFI = 0,91. Zaključeno je da su vrijednosti dobroga pristajanja modela za NFI, TLI, CFI i RMSEA bile prihvatljive, a ostale vrijednosti bile su također unutar granica dobroga pristajanja (Hu i Bentler, 1999; Kline, 2011; Schumacker i Lomax, 2010). Ukupan rezultat skale izračunat je kao zbroj uključenih čestica. Povećanje ukupnoga rezultata može se tumačiti kao povećanje percepcije profesionalne učinkovitosti.

Skala profesionalne motivacije: Ovu skalu razvio je Ceviz (2018), a ona uključuje 30 čestica (npr. „Bavim se učiteljskom profesijom s ljubavlju;” „Poučavanje je važan dio mogega života.”). Učitelji su na pitanja odgovarali na petostupanjskoj Likertovoj ljestvici (1 = izrazito neslaganje, 5 = izrazito slaganje). Ova skala sastoji se od pet podskala: Zadovoljstvo (PM1 - PM11), Vrijednost (PM12 - PM16), Posvećenost (PM17 - PM21), Privrženost (PM22 - PM26) i Doprinos (PM27 - PM30). Koeficijenti pouzdanosti postojeće ljestvice u ovom istraživanju izračunati su kao (α) 0,94 za Zadovoljstvo, 0,91 za Vrijednost, 0,94 za Posvećenost, 0,91 za Privrženost, 0,88 za Doprinos i 0,92 za cjelokupnu skalu. Čestice PM1 - PM2, PM4 - PM5, PM8 - PM10 (na podskali Zadovoljstva), PM19 i PM21 (na podskali Posvećenosti) modificirane su dodavanjem kovarijance njihovim pogreškama u konfirmatornoj faktorskoj analizi, dok su čestice PM11 (na podskali Zadovoljstva), PM13 (na podskali Vrijednosti), PM22 (na podskali Privrženosti) i PM30 (na podskali Doprinososa) isključene jer su povezane s česticama na različitim podskalama i povećavale su vrijednost hi-kvadrata. Stoga su vrijednosti pristajanja modela povećane. Vrijednosti pristajanja modela utvrđene su konfirmativnom faktorskom analizom kako slijedi: $\chi^2 = 717,487$, $\chi^2/df = 2,474$, RMSEA = 0,06, RMR = 0,02, GFI = 0,88, NFI = 0,92, IFI = 0,95, TLI = 0,95 i CFI = 0,95. Zaključeno je da RMSEA i GFI imaju prihvatljive vrijednosti te da su i ostale vrijednosti unutar granica dobrog pristajanja (Hu i Bentler, 1999; Kline, 2011; Schumacker i Lomax, 2010). Svaki od ukupnih rezultata pet podljestvica izračunat je kao zbroj svih uključenih čestica. Povećanje ukupnoga rezultata može se tumačiti kao visoka razina profesionalne motivacije.

Skala profesionalnoga angažmana učitelja: ovu su skalu razvili Kozikoglu i Senemoglu (2018) i ona ima 20 čestica (npr. „Osjećam se energično u vezi s poslom;” „Mislim da je moja profesija ugodna.”). Učitelji su davali odgovore na petostupanjskoj Likertovoj ljestvici (1 = izrazito neslaganje, 5 = izrazito slaganje). Ova skala sadrži tri podskale:

Posvećenost profesiji (PE1 - PE8), Privrženost profesiji (PM9 - PM12) i Posvećenost učenicima (PE13 - PE20). Koeficijent pouzdanosti postojeće skale u ovom istraživanju izračunat je kao (α) 0,92 za Posvećenost profesiji, 0,82 za Privrženost profesiji, 0,88 za Posvećenost učenicima i 0,91 za cijelu skalu. Čestice PE1, PE2, PE6 i PE8 (na podskali Posvećenost profesiji) modificirane su dodavanjem kovarijance njihovim pogreškama. Struktura skale provjerena je analizom, a vrijednosti pristajanje utvrđene su kako slijedi: $\chi^2 = 457,034$, $\chi^2/df = 2,770$, RMSEA = 0,065, RMR = 0,024, GFI = 0,90, NFI = 0,91, IFI = 0,94, TLI = 0,94 i CFI = 0,94. Izračunata RMSEA bila je prihvatljiva, a i ostale vrijednosti bile su unutar granica dobrog pristajanja (Hu i Bentler, 1999; Kline, 2011; Schumacker i Lomax, 2010). Ukupni rezultat svake od triju podskala izračunat je kao suma uključenih čestica. Povećanje ukupnoga rezultata smatra se višom razinom profesionalnoga angažmana.

Postupak i analiza podataka

Podatci su sakupljeni od učitelja koji rade u osnovnim školama u Gaziantepu u Turskoj u školskoj 2019./2020. godini. Prije samih intervjua dobivene su potrebne dozvole i ugovoreni termini intervjua s upravom škola uključenih u uzorak. U tom smislu, škole su posjećene na ugovorene datume i **učiteljima dobrovoljcima dani su obrasci skala koje su učitelji ispunjavali individualno**. Obrasci nisu sadržavali podatke za identifikaciju, a dobilo ih je 600 učitelja, od kojih njih 470 vratilo ispunjene obrasce.

Prije analize podataka provjereno je 470 obrazaca koje su ispunili učitelji te su nepotpuni i netočno ispunjeni isključeni iz analize. Od preostalih 452 obrasca 20 ih je isključeno iz podataka jer su predstavljali netipične vrijednosti, a šest je isključeno jer su bili ispod 13,82, što je kritična vrijednost za Mahalanobisovu udaljenost (Pallant, 2005). Analize su provedene na 426 obrazaca i taj je broj bio dovoljan za interval pouzdanosti od 95 % i razinu značajnosti $\alpha = 0,05$ (Field, 2009).

Podatci su analizirani u programima SPSS 22.0 i AMOS 23.0. Konceptualni model testiran je analizom puta koji je formiran upotrebom strukturnoga modeliranja (SEM), kako bi se utvrdili direktni i indirektni učinci profesionalne učinkovitosti učitelja (nezavisna/vanjska varijabla). Osim SEM-a upotrijebljena je *bootstrap* metoda kako bi se testirala posrednička uloga profesionalne motivacije u korelaciji između varijabli i ustanovila značajnost izravnih i neizravnih učinaka u ovom modelu povećavanjem veličine uzoraka (Preacher i Hayes, 2008). Upotrijebljena je metoda ponovnoga uzorkovanja s brojem replikacija 10 000, izračunat je *bootstrap* koeficijent te utvrđeni intervali pouzdanosti (MacKinnon, 2008). Utvrđene su korelacije između varijabli putem Pearsonova koeficijenta korelacije. U analizama je prihvaćena razina značajnosti $p < 0,05$.

Testirane su pretpostavke multikolinearnosti putem jednovarijantne i multivarijantne normalnosti prije provedbe same analize. Koeficijenti spljoštenosti i asimetrije izračunati su za svaku varijablu uz pretpostavku jednovarijantne normalnosti, a dobivene vrijednosti bile su u intervalu -20 do +2,0, stoga je zaključeno da su podatci normalno

distribuirani (George i Mallery, 2016). Pretpostavka multivarijantne normalnosti testirana je Mardia koeficijentom multivarijantne normalnosti koji je bio ispod 1,96 (1,46) s t odnosom (C.R.) ispod 5 (2,18). Dobivene vrijednosti pokazuju da je pretpostavka normalne distribucije potvrđena (Raykov i Marcoulides, 2008). Izračunate su binarne korelacije između vrijednosti koje su bile ispod 0,80, što znači da su bile unutar granica pretpostavke multikolinearnosti ovoga istraživanja. Osim toga, činjenica da je faktor varijacije inflacije (VIF) bio ispod 10 i vrijednost tolerancije viša od 0,2 ukazuje na to da nije bilo problema u potvrđivanju pretpostavke multikolinearnosti (Field, 2009). Metoda najveće vjerojatnosti imala je prednost u analizama s obzirom na predviđene parametare u strukturnom modeliranju gdje su zadovoljene pretpostavke. Veličina učinka svih izravnih, neizravnih i ukupnih učinaka dobivenih kao rezultat analize interpretirani su kako slijedi: vrijednost oko 0,10 znači mali učinak, oko 0,30 umjereni učinak i oko 0,50 veliki učinak (Kline, 2011).

Rezultati

Deskriptivna statistika i koeficijenti korelacije

Deskriptivni podatci i koeficijenti korelacije prikazani su u Tablici 1.

Tablica 1

Podatci u Tablici 1 pokazuju normalnu distribuciju svih podataka. Prema tome, pretpostavka normalnosti distribucije je zadovoljena (Finney i DiStefano, 2006). S obzirom na koeficijente korelacije, profesionalna učinkovitost slabo je povezana s profesionalnim angažmanom ($r = 0,23, p < 0,01$). Osim toga, utvrđene su niske korelacije između profesionalne učinkovitosti i profesionalne motivacije ($r = 0,34, p < 0,01$), i između profesionalne motivacije i profesionalnoga angažmana ($r = 0,45, p < 0,01$).

Mjerni model

Prije provođenja SEM testa nužno je ispitati strukturne odnose između varijabli stvaranjem modela mjerenja (Schumacker i Lomax, 2010). Analizom mjernoga modela stvorenoga u ovom okviru utvrđene su vrijednosti $\chi^2 = 2509,697, df = 1360$ ($\chi^2/df = 1,845, p < 0,00$). Vrijednosti pristajanja modela RMSEA = 0,05, RMR = 0,03, GFI = 0,82, NFI = 0,85, IFI = 0,92, TLI = 0,92 i CFI = 0,92 su prihvatljive (Hu i Bentler, 1999; Kline, 2011). Prema rezultatima t-testa u modelu primijećeno je da postoji pozitivna značajna i umjerena veza između varijabli. Nakon provjere strukture mjernoga modela započeta je faza testiranja strukturnoga modela metodom analize puta.

Strukturni model

Razvijene hipoteze u vezi s posredničkim odnosom između profesionalne učinkovitosti i profesionalnoga angažmana testirane su upotrebom SEM-a. Na osnovi teorijskoga modela (Slika 1) ispitana je posrednička uloga profesionalne motivacije u odnosu između profesionalne učinkovitosti i profesionalnoga angažmana. Koeficijenti putanje

za testirani SEM detaljno su prikazani unutar medijacijskoga testa (Slika 2). Analiza rezultata pokazuje da je putanja modela imala prihvatljive vrijednosti pristajanja ($\chi^2/df_{(2509.697/1360)} = 1,845$; RMSEA = 0,05, RMR = 0,03, GFI = 0,82, NFI = 0,85, IFI = 0,92, TLI = 0,92 i CFI = 0,92).

Test medijacije

Na početku su se ispitivale izravni, neizravni i ukupni učinci unutar testa medijacije (MacKinnon, 2008). Rezultati vezani za posredničku ulogu profesionalne motivacije u utjecaju profesionalne učinkovitosti učitelja na njihov profesionalni angažman predstavljeni su u ovom procesu. Prvo je utvrđena značajna povezanost između profesionalne učinkovitosti i profesionalne motivacije ($\beta = 0,45$, $p < 0,01$, kao i profesionalnoga angažmana ($\beta = 0,32$, $p < 0,05$). Štoviše, izravna korelacija između profesionalne motivacije i profesionalnoga angažmana bila je statistički značajna ($\beta = 0,50$, $p < 0,01$). Zaključeno je da profesionalna motivacija (posrednička varijabla) utječe na profesionalni angažman (zavisna varijabla) bez profesionalne učinkovitosti (nezavisna varijabla). Ovi rezultati pokazuju da bi test medijacije bio primjeren. Stoga je testirana posrednička uloga profesionalne motivacije u odnosu između profesionalne učinkovitosti i profesionalnoga angažmana, a rezultati prikazani na Slici 2.

Slika 2.

Kao što se vidi iz Slike 2, kada je uvedena posrednička varijabla profesionalne motivacije, koeficijent regresije značajno je smanjen, s 0,32 na 0,12 i više nije značajan ($p > 0,05$). Ipak, postoji statistički značajan, izravan učinak profesionalne učinkovitosti na profesionalnu motivaciju ($\beta = 0,45$, $p < 0,01$) i profesionalne motivacije na profesionalni angažman ($\beta = 0,50$, $p < 0,01$).

Vrijednosti pristajanja modela su $\chi^2/df_{(2509.697/1360)} = 1,845$; RMSEA = 0,05, RMR = 0,03, GFI = 0,82, NFI = 0,85, IFI = 0,92, TLI = 0,92 i CFI = 0,92. B (nestandardizirana procijenjena vrijednost), β (standardizirana procijenjena vrijednost), SE (standardna pogreška), t ($c. r$) i p vrijednosti dobivene kao rezultat analize puta prikazane su u Tablici 2.

Tablica 2

S obzirom na podatke u Tablici 2, očito je da profesionalna motivacija funkcionira kao posrednička varijabla u odnosu između profesionalne učinkovitosti i profesionalnog angažmana. Ova vrsta posredovanja poznata je kao puno posredovanje pošto direktni učinak profesionalne učinkovitosti na profesionalni angažman više nije značajan nakon uvođenja profesionalne motivacije u model ($\beta=0.12$, $p>0.05$); umjesto toga, značajan je indirektni učinak. Stoga se hipotezu da profesionalna učinkovitost direktno utječe na profesionalni angažman može odbaciti, a prihvatiti hipotezu da profesionalna učinkovitost ima indirektni učinak na profesionalni angažman posredstvom profesionalne motivacije (vidi Tablicu 2).

Bootstrap test

Nakon utvrđivanja pune posredničke uloge profesionalne motivacije, značajnost promjene koeficijena regresije testirana je dodavanjem standardnih pogrešaka varijabli u izračun putem *bootstrap* metode (MacKinnon, 2008). Dobiveni rezultati u medijacijskom testu pokazuju da je profesionalna motivacija imala u potpunosti posredničku ulogu između profesionalne učinkovitosti i profesionalnoga angažmana. Koeficijenti izravnoga i neizravnoga učinka dobiveni kao rezultat analize i intervali pouzdanosti tih koeficijenata prikazani su u Tablici 3.

Tablica 3

Na osnovi *bootstrap* koeficijenata i intervala pouzdanosti tih koeficijenata prikazanih u Tablici 3, može se tvrditi da je izravna putanja između profesionalne učinkovitosti i profesionalne motivacije statistički značajna ($\beta = 0,45$, $SE = 0,06$, 95 % Bootstrap CI = [0,35; 0,55], $p < 0,001$). Izravni put između profesionalne motivacije i profesionalnoga angažmana također jer značajan ($\beta = 0,50$, $SE = 0,11$, 95 % Bootstrap CI = [0,33; 0,70], $p < 0,001$). Osim toga, profesionalna učinkovitost ima statistički značajan neizravan učinak na profesionalni angažman ($\beta = 0,23$, $SE = 0,06$, 95 % Bootstrap CI = [0,13; 0,35], $p < 0,001$). Činjenica da je izravan učinak profesionalne učinkovitosti na profesionalni angažman postao beznačajan ($\beta = 0,12$, $SE = 0,09$, 95 % Bootstrap CI = [-0,15, 0,26], $p > 0,05$) prilikom uvođenja profesionalne motivacije u model i da profesionalna učinkovitost neizravno utječe na profesionalni angažman, predstavlja dokaz potpune posredničke uloge profesionalne motivacije.

Rasprava

Ovo istraživanje imalo je cilj utvrditi posredničku ulogu profesionalne motivacije u odnosu između profesionalne učinkovitosti i profesionalnoga angažmana učitelja te predstavlja pažljivu i sustavnu analizu utjecaja profesionalne učinkovitosti i profesionalne motivacije na profesionalni angažman učitelja u Turskoj. Profesionalna učinkovitost je nezavisna varijabla, profesionalna motivacija je posrednička varijabla i profesionalni angažman zavisna varijabla ovoga istraživanja.

Rezultati pokazuju da profesionalna učinkovitost učitelja pozitivno utječe na njihovu profesionalnu motivaciju. Istraživanjem odnosa profesionalne učinkovitosti i profesionalne motivacije ustanovilo se da postoji pozitivna povezanost između tih varijabli (Canrinus i sur., 2012; Kim i Cho, 2014; Skaalvik i Skaalvik, 2016). Učitelji s visokom razinom percepcije učinkovitosti motivirani su za pokazivanje specifičnih i vidljivih ponašanja poput povjerenja, truda i ustrajnosti (Tschannen-Moran i Hoy, 2001). Osim toga, učiteljska profesionalna učinkovitost pozitivno utječe na profesionalnu motivaciju (Gorozidis i Papaioannou, 2014), a učinkovitost učitelja u poučavanju može se mijenjati na osnovi njihove profesionalne motivacije (Mustafa i Othman, 2010). Stoga se može tvrditi da uvjerenja učitelja o njihovoj profesionalnoj učinkovitosti povećavaju njihovu profesionalnu motivaciju.

Dobiveni rezultati pokazuju da percepcije učinkovitosti učitelja predstavljaju osnovu profesionalnoga angažmana (Chan i sur., 2008; Timms i Brough, 2013) i da će razina profesionalnoga angažmana učitelja koji su samopouzđani u vezi sa svojom profesionalnom učinkovitosti rasti (Kose i Uzun, 2018; Simbula i sur., 2011). Dovoljna profesionalna učinkovitost nužna je za poboljšanje izvedbe učitelja kroz njihov profesionalni angažman jer su razna istraživanja pokazala da je učinkovitost učitelja faktor koji utječe na rast njihova angažmana (Han i sur., 2021; Federici i Skaalvik, 2011; Kose i Uzun, 2018; Llorens i sur., 2007; Simbula i sur., 2011; Ware i Kitsantas, 2007). Učitelji s visokom razinom angažmana imaju veće samopouzđanje vezano uz vlastitu profesionalnu učinkovitost (Fransson i Frelin, 2016). Osim toga, rastući angažman učitelja igra važnu ulogu u području njihova znanja i vještina (Ostad i sur., 2019), omogućujući im stjecanje želje za poboljšanjem vlastite profesionalne učinkovitosti (Yin i sur., 2017).

Angažman učitelja omogućuje mentalnu spremnost učitelja iz emocionalne i motivacijske perspektive u njihovim karijerama (Høigaard i sur., 2012). Razine profesionalnoga angažmana učitelja rastu paralelno s razinom profesionalne motivacije. Istraživanje premisa profesionalnoga angažmana, koji je očekivan kada govorimo o obrazovanju, otkrila su da razine profesionalnoga angažmana učitelja rastu ako rade svoj posao s ljubavlju i visokim stupnjem motivacije (Bakker i sur., 2011; Fokkens-Bruinsma i Canrinus, 2014; Pourtousi i Ghanizadeh, 2020; Tims i sur., 2011). Profesionalna motivacija pozitivno utječe na posvećenost učitelja profesiji poboljšavajući njihovu izvedbu (Santisi i sur., 2014). Osim toga, profesionalna motivacija može pridonijeti tomu da učitelji svoj posao rade s voljom i nesebično, fokusiraju se na poučavanje i povećaju vlastiti angažman. Stoga se može zaključiti da je profesionalna motivacija oblikuje njihov profesionalni angažman.

Unatoč tome što ovo istraživanje predstavlja vrijedan doprinos postojećoj literaturi, neka područja treba dodatno istražiti. Za početak, zbog toga što uzorak nije uključivao cijelu zemlju, tj. nije bio reprezentativan za cijelu Tursku, rezultati se ne mogu primijeniti za sve škole u zemlji. Buduća istraživanja mogu usporediti rezultate ove studije s istraživanjem na različitim školskim razinama (niža srednja škola, srednja škola) i regijama. Nadalje, u ovom istraživanju korišten je odnosni model, što uzrokuje dva kritična ograničenja: prvo, odnosni model objašnjava odnos između tri varijable, ne uzrok i posljedica; drugo, primjena skale iznjedrila je sveobuhvatnu perspektivu, ali ne i detaljne informacije, stoga je nužno provesti kvalitativna istraživanja o ovoj temi upotrebom mješovitih metoda. Naposljetku, HLM ili SEM analizama višestrukih razina moguće je utvrditi koje varijable utječu na rezultate na razini škole ili učitelja. Dobiveni podatci u ovom istraživanju također su analizirani prema zahtjevima analize višestrukih razina, ali rezultati pokazuju da grupa dobivenih podataka nije primjerena za takvu analizu s obzirom na varijable na razini škole ili varijable na razini učitelja. Ostala ograničenja ovoga istraživanja uključuju karakteristike uzorka u smislu relativno homogene dobne strukture (90,6 % ispitanika imalo je 40 godina ili manje). S obzirom

na mjerne instrumente, mogu se utvrditi ograničenja u tumačenju rezultata u slučaju smanjene varijance prediktora zbog homogenosti uzorka.

Ovo istraživanje ima teorijske i praktične implikacije. Rezultate su pokazali da je profesionalna učinkovitost učitelja osnova profesionalne motivacije i profesionalnoga angažmana. Iz ove točke gledišta od vitalne je važnosti dizajnirati prakse kliničkoga nadzora za poučavanje u skladu s kriterijima izvedbe koji se tiču efikasnosti. Ova primjena vrlo je korisna u povećavanju angažmana učitelja i poboljšanja poučavanja učitelja. Kako bi ojačali angažman učitelja u tom procesu i definirali standard učinkovitosti koje bi učitelji priznali i primijenili, važno je dizajnirati i primijeniti pristup zasnovan na školi kao dodatak aktivnostima profesionalnoga usavršavanja radno aktivnih učitelja. Osim toga, uprava škole trebala bi učiteljima osigurati prilike za poboljšanje profesionalne učinkovitosti. Nadalje, uprava škole treba djelovati po principima jednakosti i poštenja kako bi povećala profesionalnu motivaciju učitelja, usmjeravala i podržala učitelje u njihovim nastojanjima i učinila da se osjećaju dijelom škole, sve s ciljem pozitivnoga utjecaja na profesionalni angažman učitelja. Štoviše, profesionalni angažman učitelja omogućuje im da budu produktivniji i pokažu višu razinu izvedbe kao i učinkovitiju provedbu obrazovanih aktivnosti. Buduće studije mogu istraživati školsku kulturu, osobne karakteristike, pravičnu organizaciju, interakciju između vodstva škole i zaposlenika te varijable koje se smatraju prethodnicama profesionalnoga angažmana. Kvalitativna istraživanja mogu se provesti s ciljem utvrđivanja razloga zbog kojih profesionalni angažman učitelja raste s porastom profesionalne učinkovitosti i motivacije, i s ciljem dobivanja iscrpnih informacija o čimbenicima koji utječu na razinu profesionalnoga angažmana učitelja.