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## The Mediator Effect of Stress on Teachers' Self-efficacy Beliefs and Job Satisfaction

Songül Karabatak<sup>1</sup>, Müslim Alanoğlu<sup>1\*</sup>

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### Abstract

This research aimed to determine the role of stress as a mediator in the effect of teachers' self-efficacy on their job satisfaction. To achieve this aim, correlational model was used in the research. The population of the research consists of the teachers working in the schools in Elazığ province in Turkey in the academic year of 2017-2018. Simple random sampling method was used to identify the teachers who would participate in the research and 310 teachers were reached in this context. "Stress Scale", "Job Satisfaction Scale" and "Teacher Self-efficacy Scale" were used to collect data. The predictive and mediating relationships between job satisfaction, stress, and teachers' self-efficacy beliefs were examined by Structural Equation Model (SEM). The simple mediation model was used in SEM. Research results show that teachers' self-efficacy (innovative behavior, coping behavior) has a positive effect on job satisfaction and stress has a negative effect on job satisfaction. Moreover, the stress is a mediator for teachers' self-efficacy variable in explaining job satisfaction.

**Key words:** Teacher, Teacher self-efficacy, Stress, Job satisfaction

### Introduction

Job satisfaction is defined as positive feelings towards one's job which arise in the person as a result of evaluating the characteristics of that person's job. Job satisfaction is closely related to factors such as personal job performance (Judge, Thoresen, Bono, & Patton, 2001; Robbins & Judge, 2013), organizational citizenship behaviour (Bateman & Organ, 1983; Moorman, 1993), customer satisfaction (Ugboro & Obeng, 2000), attendance or absenteeism (Scott & Taylor, 1985), and the sum of many elements (Robbins & Judge, 2013). For a teacher, job satisfaction is also most likely the result of teachers' competence (Caprara, Barbaranelli, Steca & Malone, 2006). In fact, Ma and MacMillan (1999) describe one of the major contributors to job satisfaction in the teaching profession to be teacher competence. For this reason, teachers' self-efficacy beliefs and job satisfaction have attracted the attention of researchers (Skaalvik & Skaalvik, 2010, 2011) and policymakers in the last thirty years (Aldridge & Fraser, 2016).

Self-efficacy is a motivation theory that was put forward by Albert Bandura. Self-efficacy belief is a judgment of the individual's power to organize the actions necessary to perform a certain task (Bandura, 1986). Self-efficacy is not about how talented an individual is, but about how they believe their own abilities affect their behaviour and performance (Okutan & Kahveci, 2012). Self-efficacy beliefs are more often found in professions related to special fields, such as teaching (Çapri & Çelikkaleli, 2008). Teacher self-efficacy is defined as the beliefs that a teacher has about his or her abilities to perform tasks in class (Tschannen-Moran & Woolfolk Hoy, 2001) or their beliefs about the ability of a student to reach the expected results (Klassen, Ucher, & Bong, 2010). Personal judgments about their own abilities and skills are very important for the effectiveness of the teaching process while teachers fulfil their duties and produce solutions to the problems they encounter (Özdemir, 2008). In its 2013–2014 report, the Teaching and Learning International Survey (TALIS) also showed that teachers with high self-efficacy beliefs provide positive classroom management, effective teaching, and high levels of student participation (OECD, 2014).

According to Caprara, Barbaranelli, Borgogni, Petitta, and Rubinacci (2003) and Caprara et al. (2006), self-efficacy beliefs play an important role in teacher loyalty and job satisfaction; teachers with high self-efficacy beliefs are more likely to have stronger job satisfaction, better interpersonal interactions, and more favourable

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conditions than other teachers. In addition, if a teacher possesses a sense of confidence in their teaching abilities and believes s/he can control her/his classroom, there is likely to be an accompanying feeling of happiness (Bolton, 2018). For this reason, job satisfaction and self-efficacy are important variables in maintaining a teacher's professionalism (Pillay, Goddard, & Wilss, 2005). In fact, studies on teacher self-efficacy and job satisfaction show that these concepts are important for increasing performance and productivity in education (Buluç & Demir, 2015).

Self-efficacy has an important role in social learning theory because it affects not only direct actions but also other determinants of action (Bandura, 1997). For example, self-efficacy belief affects the individual's direct job satisfaction, while job stress affects individual stress. Self-efficacy refers to the belief in one's ability to cope with stress and problems in general (Scholz & Schwarzer, 2005). Woolfolk Hoy and Davis (2006) also point out that teacher self-efficacy affects many positive factors in the classroom, including low stress, student achievement, and long-term careers. In some studies (Brouwers & Tomic, 2000, Bolton, 2018; Caprara et al., 2003; Caprara et al., 2006; Greenglass & Burke, 2003; Klassen et al., 2010), teachers with high job satisfaction showed high levels of motivational behaviour and performance, and low levels of stress, anxiety, and burnout. Teachers with a high level of job satisfaction or self-efficacy beliefs can be said to have low levels of stress because, according to Bandura (1997), people with high self-efficacy beliefs do not run away from the problems they face and have to struggle with and are very determined to fulfil their tasks successfully. Individuals with low self-efficacy beliefs also experience more stress, anxiety, and dissatisfaction than individuals who have strong self-efficacy beliefs in terms of performing certain tasks.

Teaching is defined as a high stress occupation and teacher stress puts not only teachers' health and effectiveness at risk, but also students' academic achievements. Therefore, coping with teacher stress is an issue that is worthy of attention (İpek et al., 2018). Self-efficacy is also defined as the belief in a person's ability to cope with stressful and challenging experiences in general (Cadiz, 1989; Scholz & Schwarzer, 2005). Bandura (1977) also stated that the primary determinant of how much insistence s/he will insist on in order to overcome stressful situations is competence anticipation. For this reason, the successes or failures of organizations are directly related to the stress levels of employees (Akgündüz, 2006) and their self-efficacy (Bandura, 1977). However, self-efficacy is an important factor in increasing individual performance, increasing cognitive, social and behavioural skills, and increasing satisfaction (Bandura, 1982, 1997), while stress is an important factor in reducing individual efficiency, reducing job satisfaction, and influencing performance (Gümüştekin & Öztemiz, 2005). In the same way, self-efficacy increases, and stress reduction contributes to the effectiveness of teaching (Pajares, 1992). In addition, while self-efficacy beliefs strengthen the current status of teachers (Demir, 2019), high stress in teaching predicts lower teacher self-efficacy which leads to intentions to quit the profession (Skaalvik & Skaalvik, 2016).

There are many studies about the factors affecting teachers' job satisfaction. Some of these studies show that there is a significant and opposite relationship between job satisfaction and stress (Brewer & McMahan Landers, 2003; Pavett, 1986; Günbay & Tokel, 2012; Klassen & Chiu, 2010; Özkaya, Yakın, & Ekinçi, 2008; Tuten & Neidermeyer, 2008), there is a significant and positive relationship between job satisfaction and self-efficacy beliefs (Aldridge & Fraser, 2016; Buluç & Demir, 2015; Bolton, 2018; Telef, 2011), and self-efficacy is the determinant of job satisfaction (Canrinus, Helms-Lorenz, Beijaard, Buitink, & Hofman, 2012; Caprara et al., 2006; Judge, Bono, Erez, & Locke, 2005; Klassen & Chiu, 2010; Moè, Pazzaglia & Ronconi, 2010). There are also studies in the literature which show that there is a significant and opposite relationship between self-efficacy and stress (Collie, Shapka, & Perry, 2012; Luszczynska, Gutierrez-Dona, & Schwarzer, 2005; Rimm & Jerusalem, 1999; Vaezi & Fallah, 2011) and that self-efficacy is the determinant of stress (Grau, Salanova, & Peirò, 2001; Schwarzer & Hallum, 2008). Self-efficacy and collective self-efficacy, which feed from the same sources (Bandura, 1997), have different conceptual structures; nevertheless, there is a strong relationship between them (Skaalvik & Skaalvik, 2007). In the study conducted by Demir (2019), it was observed that collective teacher competence positively affects teachers' job satisfaction levels. In addition, self-efficacy may play a critical role as a protective factor in preventing stress; thus, it is particularly important to explore and extend this research area in the literature (Makara-Studzińska, Golonka, & Izydorczyk, 2019). However, there is no study which examines the relationship between job satisfaction, teacher self-efficacy, and stress, and especially the effect of teacher self-efficacy on job satisfaction using stress as a mediation variable.

This study, which focuses on the mediator effect of the stress variable on the effect of teacher self-efficacy on teachers' job satisfaction, was designed to contribute to the literature in the area of achieving organizational goals in the context of schools. Firstly, a conceptual framework was outlined which demonstrates the relationship between self-efficacy belief, stress, and job satisfaction. Then, the effect of self-efficacy on job satisfaction and stress was determined. Next, the effect of stress on job satisfaction was determined and, finally,

the mediator effect of stress on teachers' self-efficacy beliefs and job satisfaction was tested. It can be said that this study is important in terms of examining teachers' self-efficacy beliefs, job satisfaction, and stress levels together; this can be considered remarkable in terms of educational management literature. In this context, the main purpose of this study was to determine the effect of stress on the relationship between teachers' job satisfaction and teacher self-efficacy.

## Method

### Study Model

The research is based on the correlational model within quantitative research. The identification and examination of human behaviour in both individual and social relationships is a very complex process. In order to make this process a little more understandable, it is sometimes possible to determine these relationships at a simpler level and try to understand them. Correlational studies are also preferred for determining these relationships (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2011). This model determines the presence and/or degree of exchange between two or more variables (Karasar, 2009). In this study, the aim was to find out the relationships between job satisfaction, teachers' self-efficacy, and stress variables. Thus, the problem and hypotheses of the research are as follows:

**Research problem:** Does stress influence the effect of teachers' self-efficacy on job satisfaction?

**Hypothesis 1:** Teachers' self-efficacy (innovative behaviour and coping behaviour) affects job satisfaction positively.

**Hypothesis 2:** Stress affects job satisfaction negatively.

**Hypothesis 3:** Teachers' self-efficacy (innovative behaviour, coping behaviour) affects stress negatively.

### Population and Sample

The population of the study constituted 7634 teachers working in public schools in Elazığ province in Turkey in 2017–2018 academic year. Simple random sampling method was used to determine the teachers asked to give feedback in the survey. In this method, all units in the population have an equal and independent chance of being selected for the sample (Arikan, 2004). Within the scope of the research, 323 teachers who were working in unselected schools were contacted. Thirteen of the collected surveys were not evaluated because they were randomly filled. Thus, a total of 310 available and validated surveys were analysed. It can be said that 310 teachers represent the universe at 90% reliability and 4.58% error level. In addition, the critical sample size (Critical N-CN) should be considered to determine the minimum number of samples required for a structural equation model to fit well (Hu & Bentler, 1995). This value was calculated as 199.91 in this study.

Sixty percent ( $n = 186$ ) of the teachers comprising the sample were female and 40% ( $n = 124$ ) were male; 55.8% ( $n = 173$ ) were single and 44.2% ( $n = 137$ ) were married; 71.9% ( $n = 223$ ) had graduated with a degree and 28.1% ( $n = 87$ ) had a postgraduate degree; 52.3% ( $n = 162$ ) of the teachers were teacher candidates and 47.7% ( $n = 148$ ) were senior teachers.

### Data Collection Tools

The 'Stress Scale', 'Job Satisfaction Scale', and 'Teacher Self-Efficacy Scale' were used to collect data in accordance with the scope of the study.

**Stress Scale:** The scale was developed by Karakuş (2013). The scale consists of one dimension and four items. Assessment of the scale is in the form of a five-point Likert scale. Karakuş (2013) calculated the internal consistency coefficient of the scale as .70. The Stress Scale was rated between (1) *absolutely disagree* and (5) *completely agree*. The construct validity of the one-factor scale was provided by the Confirmatory Factor Analysis (CFA). The results of the analysis showed that the goodness of fit indices were  $\chi^2 = .10$ ,  $df = 2$ , RMSEA = .0000, SRMR = .0021, GFI = 1.00, AGFI = 1.00, NFI = 1.00, NNFI = 1.01, CFI = 1.00 and IFI = 1.00. In this study, the internal consistency coefficient was calculated as .80.

**Job Satisfaction Scale:** The scale was adapted from Hackman and Oldham's (1975) Job Characteristics Survey and measures the individual's general job satisfaction in one dimension. The General Job Satisfaction Scale, consisting of five items and one dimension, was adapted to Turkish by Basım and Şeşen (2009) and used by Çetin (2011). The scale is rated between (1) *absolutely disagree* and (5) *completely agree*. The internal

consistency coefficient of the scale was calculated as .76 by Basım and Şeşen (2009) and .76 by Çetin (2011). The construct validity of the one-factor scale was provided by the CFA. The results of the analysis showed that the goodness of fit indices were  $\chi^2/df = 3.605$ , CFI = .97, GFI = .96. In this study, the internal consistency coefficient was calculated as .96.

*Teacher Self-Efficacy Scale:* The scale was developed by Schmitz and Schwarzer (2000) and adapted to Turkish by Yılmaz, Köseoğlu, Gerçek, and Soran (2004). Reliability alpha values at different times in the original German language scale have been calculated as .81 and .76. As a result of the factor analysis, it was revealed that the 4-point Likert-type scale had two dimensions (coping behaviour and innovative behaviour) and the number of items on the original scale was eight on the Turkish scale. The internal consistency coefficient of the adapted scale was .79. In this study, this value was calculated as .94.

## Data Analysis

For the descriptive analysis of the data and the calculation of the internal consistency coefficients of the scales, SPSS 22 was used. LISREL 8.80 was also used to examine the predictive and mediator relationships between job satisfaction, stress, and teacher self-efficacy beliefs using a Structural Equation Model (SEM).

SEM is a comprehensive statistical approach used to test models in which causal and reciprocal relationships coexist between observed and latent variables. In the regression analysis, only the direct correlations of the explanatory variables are determined and the measurement errors of these variables are ignored. However, in SEM, measurement errors are included in the model to deal with the direct and indirect effects of the model together, and the testing, estimation, and development of multivariate complex models are provided (Çelik & Yılmaz, 2013). The simple mediation model was used in SEM. The simple mediation model consists of independent, mediator and dependent variables (McKinnon, 2008). The mediator variable is a dependent variable that is part of the cause-and-effect relationship between the two variables. In order to understand more easily, the previously established hypotheses and the basic model in which the research variables are included, see Figure 1.

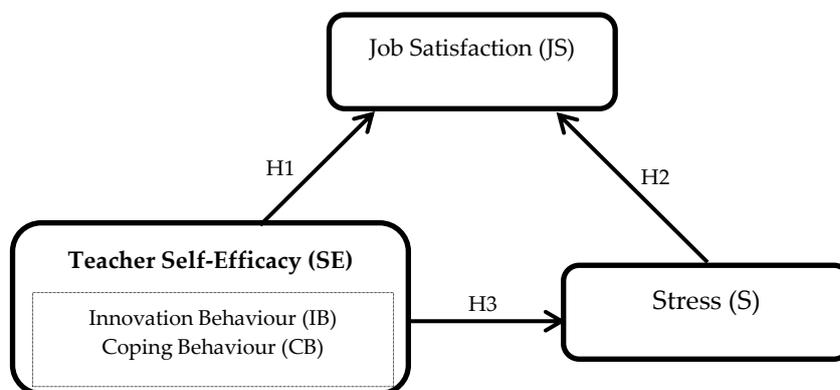


Figure 1. Basic model of the research

As seen in Figure 1, teachers' self-efficacy beliefs were determined to be an external latent variable (independent variable), job satisfaction an internal latent variable (dependent variable), and internal variable stress an internal latent (dependent) variable.

Both the measurement model and the structural model were tested using the Maximum Likelihood Estimation Method. The Maximum Likelihood Estimation Method is the most commonly used adaptive function in SEM (Çelik & Yılmaz, 2013). The  $\chi^2 / df$  ratio was used to test the fit of the model. Jöreskog and Sörbom (1993) suggested a comparison of the expected value of the sampling distribution with the severity of  $\chi^2$ , indicating that for a good model the ratio of  $\chi^2 / df$  should be a small value, with a ratio between 2 and 3 indicating that the model is acceptable. The RMSEA, NNFI, NFI, CFI, GFI, IFI, AGFI, and SRMR indices were also checked to control the model fit. The analysis results show that the model's goodness of fit values were not within acceptable ranges. To ensure the model's goodness of fit, items with a high correlation between error variances were identified and error covariances of these items (SE1 and SE2; S3 and S4) were combined. After this correction, it was found that the fit was good. Findings of compliance indices of the measurement model obtained after correction are shown in Table 1.



As seen in Table 2, there are direct relationships between the dimensions of teachers' self-efficacy coping behaviour ( $\beta = .52, p < .01$ ) and innovative behaviour ( $\beta = .52, p < .01$ ) and dimensions of job satisfaction in Model 1. The effect of self-efficacy on job satisfaction in both dimensions is statistically significant. The dimensions of teachers' self-efficacy were found to predict job satisfaction. In Model 2, it was determined that stress has a statistically significant and negative effect on job satisfaction ( $\beta = -.65, p < .01$ ) and stress predicts job satisfaction. In Model 3, teachers' self-efficacy coping behaviour dimension ( $\beta = -.20, p < .01$ ) and the innovative behaviour dimension ( $\beta = -.34, p < .01$ ) have statistically significant effects on stress. This means that both dimensions of self-efficacy predict stress.

While Model 4 is established as a model in which stress is not determined as a mediator variable (in other words, the path between stress and job satisfaction is removed), Model 5 is designed to be a model in which the paths between stress and job satisfaction are added. According to the fit indices showing in Table 2 ( $\chi^2 / df = 2.01$ ; GFI = .92; AGFI = .89; CFI = .99; IFI = .99; NFI = .98; NNFI = .99; SRMR = .045; RMSEA = .057) it can be said that the path ( $S \rightarrow JS$ ), which is added in Model 5 and allows stress to be a mediator variable, is very important for the model. The model (Model 5) testing the mediating effect of stress in the relationship between teachers' self-efficacy dimensions and job satisfaction is shown in Figure 2.

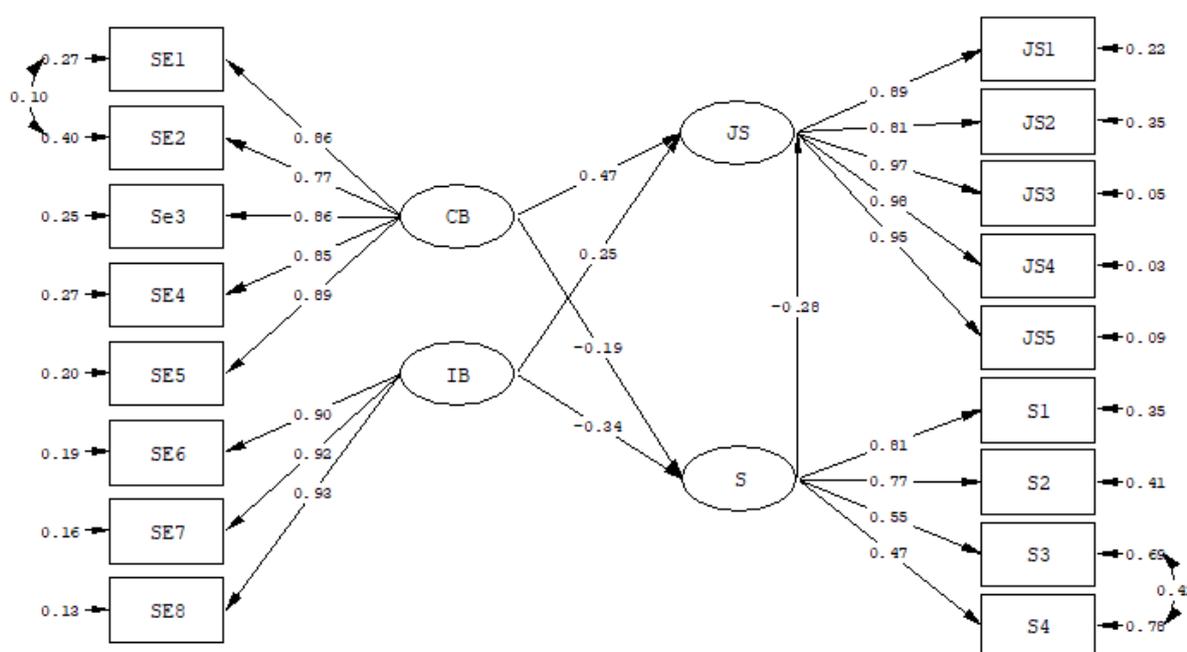


Figure 2. Effect of stress mediation between job satisfaction and teacher self-efficacy

In Figure 2, standardized regression coefficients between job satisfaction and coping behaviour dimension ( $\beta = .84, p < .01$ ) and innovative behaviour dimension ( $\beta = .83, p < .01$ ) decrease in the coping behaviour dimension ( $\beta = .47, p < .01; z = 5.708; p < .01$ ) and the innovative behaviour dimension ( $\beta = .25, p < .01; z = 5.969; p < .01$ ) after the model was established. In other words, teachers' self-efficacy leads to a decrease in stress. In addition, teachers' self-efficacy causes a decrease in the effect of stress on job satisfaction ( $\beta = -.28, p < .01$ ). In other words, teachers' self-efficacy reduces both the stress level and the negative effect of stress on job satisfaction.

Findings related to the direct, indirect, and total effect coefficients of dependent and independent variables of the model are presented in Table 3.

Table 3. Direct, indirect and total effect coefficients between dependent and independent variables

	S	CB	IB	CB	IB	CB	IB	
	Direct Effect	Direct Effect	Direct Effect	Indirect Effect	Indirect Effect	Total Effect	Total Effect	Total Effect
JS	-.28	.47	.25	.05	.10	.52	.35	.61

As seen in Table 3, when the stress mediator variable is added to the model, the coping behaviour dimension ( $\beta = .47$ ) and the innovative behaviour dimension ( $\beta = .25$ ) have direct effects on job satisfaction. However, adding the stress variable to the model increased the total effect of coping dimension ( $\beta = .52$ ) and innovative behavior dimension ( $\beta = .35$ ) on job satisfaction ( $\beta = .61$ ). Therefore, stress has a mediating effect on the influence of

self-efficacy on job satisfaction. Also, the goodness of fit of the model is very close to the goodness of fit of the measurement model ( $\chi^2 / df = 2.01$ ; GFI = .92; AGFI = .89; CFI = .99; IFI = .99; NFI = .98; NNFI = .99; SRMR = .045; RMSEA = .057). The results of the model in Figure 2 are presented in Table 4.

Table 4. Results of SEM for research model

Dimenons/ Items	Standard loads	t-value	R <sup>2</sup>	Cronbach's $\alpha$	$\bar{X}$	sd
JS				.96	3.24	1.394
JS1	.89		.78		3.17	1.70
JS2	.81	19.32	.65		3.22	1.38
JS3	.97	30.39	.95		3.31	1.45
JS4	.96	31.26	.97		3.27	1.47
JS5	.95	28.35	.91		3.26	1.45
S				.80	3.02	.882
S1	.81		.65		2.89	1.14
S2	.77	11.72	.59		2.95	1.19
S3	.55	8.90	.31		3.13	1.13
S5	.47	7.50	.22		3.15	1.04
CB				.93	2.72	.863
SE1	.86	18.63	.73		2.65	1.03
SE2	.77	15.86	.60		2.68	.84
SE3	.86	18.91	.75		2.78	1.03
SE4	.85	18.52	.73		2.73	.97
SE5	.89	19.98	.80		2.73	.99
IB				.94	2.74	.935
SE6	.90	20.38	.81		2.73	.97
SE7	.92	20.96	.84		2.77	1.00
SE8	.93	21.48	.87		2.71	1.00
Structural Equations		Error Variance		R <sup>2</sup>		
$JS = -.28 * S + .47 * CB + .25 * IB$		.21		.79		
$S = -.21 * CB -.36 * IB$		.83		.27		

As shown in Table 4, as a result of testing using Model 5, the factor loads of the coping behaviour dimension vary between .77 and .89; the factor loads of the innovative behaviour dimension vary between .90 and .93; factor loads of job satisfaction vary between .81 and .98, and factor loads of stress vary between .47 and .81. The internal consistency coefficient of job satisfaction is .96, the internal consistency coefficient of stress is .80, the internal consistency coefficient of coping behaviour dimension is .93, and the internal consistency coefficient of the innovative behaviour dimension is .94. Regarding the explanation of latent variables of observed variables, if t values between 1.96–2.56 they are significant at .05 level and if above 2.56 they were significant at .01 level (Çokluk, Şekercioğlu, & Büyüköztürk, 2016). When the research model is examined, the t values of scale items are significant at .01 level. According to the structural equations obtained in the model, teachers' self-efficacy (coping behaviour and innovative behaviour dimensions) and stress explained 79% of job satisfaction; teachers' self-efficacy (coping behaviour and innovative behaviour) explained 27% of the stress.

There is a positive effect of teachers' self-efficacy dimensions (coping behaviour and innovative behaviour) on job satisfaction. In addition, stress negatively affects job satisfaction. Finally, the effect of teachers' self-efficacy on job satisfaction decreases when the stress variable is added to the model. This indicates that the stress variable is partially mediated by the teachers' self-efficacy variable (innovative behaviour and coping behaviour).

## Conclusion

The aim of this research study was to determine the effect of teacher self-efficacy on job satisfaction through stress variation. When the results obtained were evaluated, it was shown that all the hypotheses formed for the research were accepted within the scope of the established structural model. According to the results obtained in the model, both the innovative behaviour dimension and the coping behaviour dimension of teacher self-efficacy affect teachers' job satisfaction positively (Hypothesis 1) and stress level negatively (Hypothesis 3). On the other hand, teachers' stress level affects job satisfaction levels negatively (Hypothesis 2). These results show that teacher self-efficacy directly affects job satisfaction and stress in both dimensions. In other words, teachers' self-

efficacy beliefs are predictive of job satisfaction and stress levels. In addition, stress levels of teachers are also predictive of job satisfaction.

In addition, the effect of teacher self-efficacy dimensions (innovative behaviour, coping behaviour) in describing job satisfaction decreased when the stress variable was included in the model. In other words, the stress variable reduces the effect of both dimensions of teacher self-efficacy on job satisfaction. Hence, it has been determined that stress is partially mediated by the effect of teacher self-efficacy on job satisfaction. Thus, it has been revealed that teacher self-efficacy dimensions have direct effects on job satisfaction as well as indirect effects. This result shows that increasing teachers' self-efficacy beliefs and reducing stress levels will make a significant contribution to increasing teachers' job satisfaction. As a result, it can be said that teachers' self-efficacy beliefs and stress levels are important variables in explaining job satisfaction.

## Discussion

The basis of the structural model formed within the scope of this research study is the effect of teacher self-efficacy beliefs on teachers' job satisfaction. In order to evaluate the results of the research together with the results of previous studies, it is appropriate to examine the related literature.

Research has shown that teacher self-efficacy directly affects job satisfaction and stress in both dimensions (innovative behaviour, coping behaviour). In the study conducted by Buluç and Demir (2015), it was found that there is a positive and moderate level correlation between teacher self-efficacy and job satisfaction. When the significance of the regression coefficients was examined in the same study, it was revealed that the research results are similar to the results of the present study and the self-efficacy dimensions are significant predictors of job satisfaction. Caprara et al. (2006) found that teacher self-efficacy had positive effects on job satisfaction and academic achievement of students. Demir (2019) found that collective teacher efficacy positively affects teacher job satisfaction. Türkoglu, Cansoy, and Parlar (2017) found that all dimensions of teachers' self-efficacy had a low level positive correlation with job satisfaction and that teacher self-efficacy was an important predictor of job satisfaction. Saraçoğlu, Aldan Karademir, Dinçer, and Dedeşali (2017) also found that there was a low level significantly positive relationship between teacher self-efficacy and job satisfaction in their study.

In the study by Telef (2011), positively low and moderate relationships were found between job satisfaction and general self-efficacy beliefs and teacher self-efficacy dimensions. Even if the self-efficacy of teachers is at a low level, job satisfaction increases. In the study of Turcan (2011), it was also found that there was a moderately positive significant correlation between teachers' self-efficacy and job satisfaction levels. This statistical result shows that as teachers' self-efficacy beliefs increase, the level of job satisfaction also increases. According to Turcan (2011), the higher people's efficacy beliefs, the higher is job satisfaction. The findings of studies by Bolton (2018) and Caprara et al. (2006) confirmed that teacher self-efficacy was a statistically significant predictor of job satisfaction. In the literature, teacher self-efficacy has been found to be an important predictor of job satisfaction in studies that examine the relationship between teacher self-efficacy and job satisfaction. The results of these studies and the results obtained in the present study are parallel with each other. These results, which are related to teacher self-efficacy and job satisfaction (i.e., satisfaction of teachers when they perform their duties and self-efficacy beliefs that express their belief in their profession), influence each other positively. For this reason, it can be said that the level of job satisfaction will be increased by increasing teacher self-efficacy.

The results of the research show that self-efficacy beliefs affect teachers' job satisfaction as well as stress levels. However, self-efficacy, which affects job satisfaction positively, affects stress levels negatively. It has been shown that most of the studies performed in the literature support the relationship between self-efficacy and stress demonstrated in the present study. Studies conducted by Collie et al. (2012) and Klassen and Chiu (2010) have shown that teacher self-efficacy positively affects job satisfaction and is negatively related to stress. In parallel with these results, İpek et al. (2018), Gamsız, Yazıcı, and Altun (2013), and Schwarzer and Hallum (2008) found a low level and negative significant relationship between teacher self-efficacy and stress level. The findings of Bolton's (2018) study showed that improving teacher efficacy is important in reducing stress in teachers. Unlike studies showing that self-efficacy and stress are negatively related, it has been found that there is a positive and low correlation between self-efficacy and stress in the study conducted by Reilly, Dhingra and Boduszek (2013). When studies in the field and current research results are evaluated together, it can be said that teacher self-efficacy is an important predictor of stress. Because teachers with high self-efficacy are aware of the adequacy of their work, the level of work-related stress will be lower than the stress level of teachers with low self-efficacy. Teachers with low stress levels are expected to show more positive attitudes and behaviour.

Hence, teachers' high self-efficacy beliefs can reduce stress levels and cause teachers to exhibit more positive attitudes and behaviour.

At the end of the research study, it was shown that the stress levels of the teachers affected job satisfaction negatively. Research findings by Gamsız et al. (2013) found that one of the strongest predictors of teachers' job satisfaction was stress sources. The negative relationship between stress sources and job satisfaction showed that job satisfaction decreased as stress levels increased. Compatible with the literature, Reilly et al. (2013) found negative and moderate correlations between job satisfaction and stress in their study. According to the results supported by Klassen and Chiu (2010), Collie et al., (2012) and Klassen et al., (2010), it was found that teachers' job satisfaction and stress levels are negatively correlated. In general, there is a negative relationship between stress and job satisfaction. When the present research and previous studies were evaluated, it was revealed that the stress levels of the teachers predicted job satisfaction. According to Liu and Ramsey (2008), the strongest effect on teachers' job satisfaction is stress caused by poor working conditions. However, difficult working conditions do not always lead to high levels of stress. Administrators who want to improve job satisfaction are required to make efforts to reduce the stress levels experienced by teachers. Removing stress sources will lead to an increase in job satisfaction.

According to the findings of this research, there is a mediator effect of stress on the influence of teachers' self-efficacy on job satisfaction. It is possible to find studies (e.g., Klassen & Chiu, 2010; Collie et al., 2012; Gamsız et al., 2013) in the literature that investigate the relationship between teacher self-efficacy, job satisfaction, and stress variables. However, no study has been found to determine the mediating effect of the stress variable on self-efficacy and job satisfaction. Therefore, no comparisons were made with any studies performed on the subject in terms of the mediation effect. However, Schwarzer and Hallum (2008) found that the stress variable plays a mediating role in the effect of teacher self-efficacy on burnout levels. Self-efficacy beliefs and stress levels were found to be important factors in explaining teachers' job satisfaction. Self-efficacy belief affects job satisfaction positively and affects stress level negatively. Stress as a mediator variable reduces the effect of self-efficacy on job satisfaction.

## **Recommendations**

A teacher's sense of self-sufficiency in her/his profession is closely related to her/his belief in teaching self-efficacy. The results of the research also show that teacher self-efficacy is an important factor in an increase in job satisfaction and decrease of stress levels. Therefore, the establishment of a mechanism to increase teachers' self-efficacy in schools can increase the quality of teachers as well as their efficiency. Considering that teachers' self-efficacy beliefs can be improved by training, it is necessary to focus on developing teachers' professional self-efficacy beliefs in pedagogical formation programmes and in-service training.

The results of the research show that stress level affects teachers' job satisfaction negatively and reduces self-efficacy perceptions of job satisfaction. Therefore, stress levels can be reduced and teachers' job satisfaction can be increased through studies on the sources of stress that cause stress in teachers, because identifying stress sources can be a guide to reducing the stress levels of teachers or to identifying adjustments which can be made to cope with stress. The development of a teacher's self-efficacy belief can be achieved by knowing what qualifications a profession needs. For this reason, the teacher self-efficacy development process can start with teacher training programmes and then continue with problem-based in-service training.

One of the limitations of this study is that it was only conducted with teachers who work in a certain area. Therefore, it is proposed that the work be repeated using different universes and samples to increase the generalizability of the results of this study. The model, in which the relationships between teachers' self-efficacy, stress levels, and job satisfaction are determined, can provide a basic predictor for future research. For this reason, the effects of teacher self-efficacy beliefs on job satisfaction and stress levels and their causes can be examined in depth through qualitative research. When analysing the effect of teacher self-efficacy in describing job satisfaction, incorporating different mediator variables into the model can allow research studies to obtain more effective results.

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