



LINKING TEACHER SELF-EFFICACY TO JOB SATISFACTION: A COMPREHENSIVE META-ANALYSIS OF EMPIRICAL EVIDENCE

Shubhangi Raghav^{1*}, Dr Ratna Dixit Sharma²

^{1*}Research Scholar, Department of Psychology, Banasthali Vidyapith, Rajasthan, India
Email ID: shubhangiraghav18@gmail.com Orcid ID: <https://orcid.org/0009-0005-0471-964X>

²Assistant Professor, Department of Psychology, Banasthali Vidyapith, Rajasthan, India
Email ID: ratnasharmajpr@gmail.com Orcid ID: <https://orcid.org/0000-0002-3977-4711>

Abstract

The present study conducts a comprehensive meta-analysis to examine the relationship between teacher self-efficacy and Job satisfaction among school teachers. Given the growing importance of teacher well-being in educational effectiveness, this study synthesises empirical evidence to determine the overall strength and consistency of this relationship. A systematic literature search was conducted following PRISMA guidelines across major databases, resulting in the inclusion of 20 empirical studies that met the predefined criteria. The selected studies represented diverse geographical contexts and employed various research designs, including correlational and structural equation modelling approaches. The meta-analysis revealed a moderate and statistically significant positive relationship between teacher self-efficacy and JS ($r \approx 0.43$), indicating that teachers with higher self-efficacy (SE) tend to experience greater JS. Although substantial heterogeneity was observed across studies, sensitivity analysis demonstrated reduced variability when methodologically comparable studies were considered, confirming the robustness of the findings. Subgroup analysis further indicated that methodological differences influenced effect size magnitude but not the direction of the relationship. Additionally, funnel plot analysis and Egger's test suggested minimal publication bias. Overall, the findings highlight teacher self-efficacy as a critical predictor of JS, emphasising the need for interventions that strengthen teachers' confidence in their professional abilities to enhance well-being, performance, and retention in educational settings.

Keywords: *Teacher self-efficacy; Job satisfaction (JS); Meta-analysis; School teachers; Educational psychology*

1. Introduction

The teacher's JS has been a study area of growing interest in the education field because of its direct connection with the teacher's performance, student performance and overall school performance. When teachers have a higher degree of JS, they are more likely to exhibit greater commitment, motivation, and quality of instruction, and burnout, absenteeism, and turnover intentions often correlate with dissatisfaction (Madigan and Kim, 2021; Pressley, 2021). Within the framework of emerging educational requirements, such as higher workload, accountability stress, and new classroom dynamics, the identification of factors which affect the JS of teachers has become important in the context of the sustainability and effectiveness of the educational system (Hascher and Waber, 2021).

Psychological constructs have been receiving a lot of attention among the other aspects that affect JS, especially teacher SE. Based on the Social Cognitive Theory by Bandura, SE is the perception that a person has towards their capacity to plan and perform actions needed to bring about desired results. Teacher SE in the educational setting can be viewed as confidence of teachers in their capability to control classroom behaviour, interact with students and apply effective teaching methods (Han and Yin, 2016). Teachers who have a greater degree of SE tend to be more resolute and persistent in their approach to challenges, thus contributing to the overall performance of their professional activity and well-being (Fackler et al., 2021).

An emerging body of literature is pointing to the massive implications of teacher SE in predicting a

range of positive learning outcomes. Efficient teachers have a great deal of efficacy beliefs, which are associated with a higher degree of instructional effectiveness, classroom management competencies, and student engagement (Perera and John, 2020). Moreover, SE has also been associated with better teacher well-being and lower stress and emotional fatigue rates, which are key elements of JS (Herman et al., 2018). These results indicate that teacher SE is not only a determinant of their teaching practices but also a key factor that may determine the psychological experiences of teachers in the workplace.

Besides direct implications on teaching performance, teacher SE has also been found to be a protective mechanism against work stress and burnout. Research shows that teachers with a high degree of SE are in a better position to handle work-related challenges because they believe that they can handle challenging situations (Skaalvik and Skaalvik, 2018; Klusmann et al., 2021). On the other hand, low SE teachers might feel inadequate and helpless, and this could affect the JS and general well-being of the teachers negatively. This shows the need to develop robust SE beliefs in teachers to increase their professional satisfaction and retention.

In addition, contextual and environmental elements also affect the relationship between the teacher's SE and JS. Supportive school climates, leadership practices that are effective, and the possibility of professional collaboration have been found to boost the sense of efficacy and satisfaction of teachers (Torres, 2019; Van Der Want et al., 2019). The autonomy, recognition and resources available in positive working environments may help to boost teacher confidence in their competence, hence leading to increased JS. On the other hand, SE may be impaired by the unfavourable working conditions, lack of support, and excessive workload, which may also result in reduced satisfaction (Wang et al., 2015).

Although there is a lot of literature that has investigated teacher SE and JS, there have been inconsistent studies that have been conducted on the strength and consistency of the relationship. These differences can be due to variations in research design, sample characteristics, and culture. As an example, the disparities in educational systems, teacher training programs and structures of institutional support in various countries can impact both the level of SE and JS. Moreover, the reported effect sizes could be different due to methodological differences, including the application of correlational and structural equation modelling methods.

Considering these discrepancies, it is essential to consider a synthesis of the available literature to

have a better idea of the relationship between teacher SE and JS. Meta-analysis provides a powerful methodological strategy to meet this requirement by synthesising results of several studies and making inferences on the total effect size. Meta-analysis enables the detection of general patterns, as well as the analysis of variability in the research, by systematically incorporating the empirical evidence.

Thus, the current research paper will set out to implement a meta-analysis of the correlation of teacher SE and JS in school teachers. In particular, the independent variable in the study is teacher SE, and the dependent variable is JS. The research aims to understand the strength and the consistency of the relationship between them in various settings. This study aims to present a deeper picture of the relationship between teachers' beliefs in their abilities and their professional satisfaction and impact on the overall literature on teacher well-being and effectiveness by synthesising the evidence of various empirical studies.

2. Methodology

2.1 Research Design

The current research design was based on the meta-analytic research design as a method of synthesising empirical data on the relationship between teacher SE and JS among school teachers. The reason why meta-analysis was chosen is that it allows the incorporation of results of various studies in order to identify the overall effect size and increase the external validity of the results. To maintain transparency, consistency and methodological rigour during the research process, the study was carried out and reported within the framework of the Preferred Reporting Items of Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

2.2 Search Strategy

An extensive search of the literature was carried out in the biggest electronic databases, such as PubMed, Springer, Science Direct, Scopus, and Web of Science. Besides searching databases, reference lists in the appropriate studies were manually screened to find more eligible articles. A combination of the keywords and the Boolean operators, i.e., the keywords: teacher SE, OR teaching efficacy, and the Boolean operators AND, JS, OR, work satisfaction, OR, teacher satisfaction, was considered the search strategy. The following search terms were modified to fit the needs of each database. The articles were only included in the study if they were peer-reviewed articles and published in English.

2.3 Inclusion and Exclusion Criteria

The predefined inclusion and exclusion criteria were used to select the studies and make sure that

they were relevant and consistent. The inclusion criteria were that the studies had to include school teachers, and both teacher SE and JS were measured, and the relationship between the two variables was examined. Empirical studies that provide empirical data (quantitative data) in the form of correlation coefficients or statistics that can be converted to the effect size were considered. Also, only the studies in the English language were taken.

The studies were filtered out when the sample in the study was not a sample of teachers, the study did not measure either of the two critical variables, or the study did not investigate the relationship between teacher SE and their JS. In addition, research with insufficient statistical data, non-empirical research, which includes reviews or theoretical articles, where the construct to be studied was not relevant (e.g., leadership or burnout only), and non-English literature were omitted.

2.4 Study Selection Process

As a way of having a systematic and transparent process of selection, the study selection was done according to PRISMA guidelines. Firstly, identification of studies was done through database search and manual screening. Duplicates were eliminated and then titles and abstracts were screened to eliminate irrelevant studies. Possible eligibility criteria were then applied to the full-text articles to determine eligibility according to the predefined inclusion and exclusion criteria. The final meta-analysis included only the studies that fulfilled all requirements and included adequate statistical data.

2.5 Quality Assessment of Included Studies

The quality of the methodology of the studies included was evaluated to determine the reliability and validity of the results. This evaluation was based on the following criteria: adequacy of the sample size, adequacy of the research design, adequacy of the statistical analysis, and operationalisation of key variables. Research that used advanced analytical techniques like structural equation modelling (SEM) and those that used large sample sizes were considered high quality. The moderate sample size and correlational design of studies were classified as moderate quality, and the small sample size and lack of analytical rigour were classified as low quality. Generally, most of the included studies were moderate to high quality, which contributes to the strength of the meta-analytic results.

2.6 Data Extraction

A systematic process of data extraction was done through a structured coding method. Data obtained

in every study were the author(s), year of publication, country, sample size, research design, measured variables and reported effect sizes. Teacher SE was taken to be the independent variable, and JS was taken to be the dependent variable. Where the correlation coefficients were not reported directly, the effect sizes were calculated based on the information that was available, e.g. regression coefficients or SEM estimates.

2.7 Effect Size Calculation

The main effect size of this meta-analysis was the Pearson correlation coefficient (r), which is a measure of the strength and direction of the relationship between teacher SE and JS. All effect sizes were converted to Fisher Z scores before analysis to normalise variance and stabilise the variance to approximate a normal distribution. The pooled effect size was then computed and transformed back to r values so that they could be easily interpreted.

2.8 Statistical Analysis

The overall effect size was estimated using a random-effects model because it was anticipated that variability among studies would occur because of the differences in the research designs, sample features and measurement tools. The heterogeneity between studies was measured by the Q statistic and I^2 index. To delve further into possible variability sources, subgroup analysis was applied in terms of methodology (correlational studies versus SEM studies). Also, sensitivity analysis (studies of only methodologically similar nature) was conducted to check the stability of the results. The funnel plot and regression test by Egger were used to test publication bias.

2.9 Data Analysis Tools

Any statistical analysis and graphical displays, such as forest plots, subgroup analysis plots, and funnel plots, were done in the Python programming language. Data were analysed and visualised using scientific libraries like NumPy and Matplotlib.

3. Results

3.1 Study Selection

The process of selecting the study was based on the Preferred Reporting Items in Systematic Reviews and Meta-Analyses (PRISMA) guidelines and is provided in Figure 1. Database searching ($n = 132$) and manual screening ($n = 64$) resulted in 196 records being identified. Sixty-eight studies were left after the removal of 48 duplicate records.

After title and abstract screening, a total of 84 records were evaluated, with 33 being eliminated based on irrelevance. After that, 51 full-text articles were screened based on the eligibility criteria. Out

of them, 31 studies were eliminated according to pre-determined criteria, such as non-involvement of teacher populations (n = 5), non-measuring teacher SE (n = 5), non-measuring JS (n = 4), non-measuring the connection between SE and JS (n = 5), non-

sufficient statistical data (n = 3), focusing on unrelated variables (n = 3), and non-English publications (n = 2). Lastly, 20 studies were incorporated in the meta-analysis.

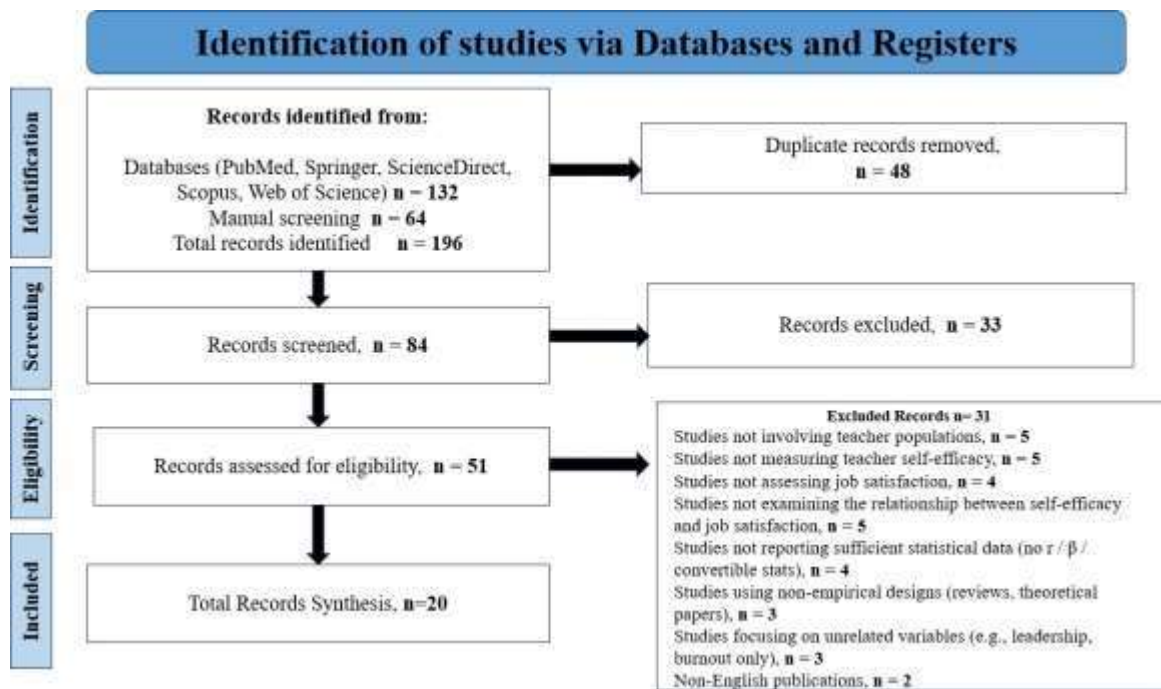


Figure 1. PRISMA flow diagram showing the identification, screening, eligibility, and inclusion of studies in the meta-analysis of teacher SE and JS.

3.2 Characteristics of Included Studies

The meta-analysis involved 20 empirical studies that were conducted to find out the relationship between teacher SE (independent variable) and JS (dependent variable) in school teachers. The studies were carried out in a wide geographical set-up, encompassing Europe, Asia, North America and Australia, which offered a wide representation of the education systems. The size of the sample was quite different, with small samples and big data consisting of several

thousand subjects. The studies incorporated used various research designs such as correlational studies, structural equation modelling (SEM), regression analysis, and longitudinal designs. Regardless of these methodological variations, all the studies were aimed at determining the direct correlation between teacher SE and JS. The resultant effect sizes (r) were always positive values, which showed that the variables were positively associated. The characteristics and effect sizes of the study are detailed in Table 1.

Table 1. Characteristics of Included Studies

No.	Study (Author & Year)	Country	Sample Size (N)	Design / Analysis	Variables Examined	Effect Size (r)
1	Skaalvik & Skaalvik (2014)	Norway	2569	SEM	SE – JS	0.41
2	Caprara et al. (2006)	Italy	2184	Multilevel / SEM	SE – JS	0.74
3	Karabiyik & Korumaz (2014)	Turkey	83	Correlation	SE – JS	0.27
4	Capri & Guler (2018)	Turkey	452	Correlation	SE – JS	0.27
5	Akomolafe et al. (2014)	Nigeria	398	Correlation	SE – JS	0.26
6	Skaalvik & Skaalvik (2010)	Norway	2249	SEM	SE – JS	0.35
7	Klassen et al. (2010)	USA/Canada/Korea	500	Path / Correlation	SE – JS	0.43
8	Burić & Kim (2020)	Europe	500	Longitudinal / SEM	SE – JS	0.30
9	Collie et al. (2012)	Canada	800	SEM	SE – JS	0.40
10	Granziera & Perera (2019)	Australia	450	SEM	SE – JS	0.45
11	Aldridge & Fraser (2016)	Australia	400	Correlation	SE – JS	0.35

12	Zakariya (2020)	Norway	3951	SEM	SE - JS	0.13
13	von der Embse et al. (2016)	USA	1242	SEM	SE - JS	0.30
14	Türkoğlu et al. (2017)	Turkey	489	Correlation / Regression	SE - JS	0.44
15	Ortan et al. (2021)	Romania	658	SEM	SE - JS	0.35
16	Malinen & Savolainen (2016)	Finland	642	Longitudinal / SEM	SE - JS	0.32
17	Canrinus et al. (2012)	Netherlands	1214	SEM	SE - JS	0.38
18	Blackburn & Robinson (2008)	USA	68	Correlation	SE - JS	0.33
19	Somech & Drach-Zahavy (2000)	Israel	251	Correlation	SE - JS	0.29
20	Moè et al. (2010)	Italy	399	SEM	SE - JS	0.36

3.3 Quality Assessment of Included Studies

The methodological quality of the studies that were included was evaluated to ascertain the reliability and validity of the results. It was evaluated on the foundation of the most important criteria, such as the study design, the sufficiency of the sample size, the measurement of the variables, and the suitability of the statistical analysis.

In general, most of the included studies were of moderate to high quality, which used strong research designs like structural equation modelling (SEM), longitudinal research, and large

sample sizes. These studies showed operationalisation of teacher SE and JS and included proper statistical values.

Only a few studies were rated as moderate quality, mostly because of smaller sample sizes or use of less complex correlational designs. Nevertheless, the studies included passed the minimum inclusion criteria and had adequate statistical data to undergo a meta-analysis.

The quality evaluation findings are summarised in Table 2 that will provide the analysis of each study in relation to predetermined criteria.

Table 2. Quality Assessment of Included Studies

No.	Study (Author & Year)	Sample Size	Method	Quality
1	Skaalvik & Skaalvik (2014)	Large	SEM	High
2	Caprara et al. (2006)	Large	SEM	High
3	Karabiyik & Korumaz (2014)	Small	Correlation	Low
4	Capri & Guler (2018)	Medium	Correlation	Moderate
5	Akomolafe et al. (2014)	Medium	Correlation	Moderate
6	Skaalvik & Skaalvik (2010)	Large	SEM	High
7	Klassen et al. (2010)	Medium	Path / Correlation	Moderate
8	Burić & Kim (2020)	Medium	SEM (Longitudinal)	High
9	Collie et al. (2012)	Large	SEM	High
10	Granziera & Perera (2019)	Medium	SEM	High
11	Aldridge & Fraser (2016)	Medium	Correlation	Moderate
12	Zakariya (2020)	Large	SEM	High
13	von der Embse et al. (2016)	Large	SEM	High
14	Türkoğlu et al. (2017)	Medium	Correlation / Regression	Moderate
15	Ortan et al. (2021)	Medium	SEM	High
16	Malinen & Savolainen (2016)	Medium	Longitudinal SEM	High
17	Canrinus et al. (2012)	Large	SEM	High
18	Blackburn & Robinson (2008)	Small	Correlation	Low
19	Somech & Drach-Zahavy (2000)	Medium	Correlation	Moderate
20	Moè et al. (2010)	Medium	SEM	High

3.4 Overall Effect Size

The meta-analysis of the 20 studies included showed a positive relationship between teacher SE and JS to be moderate and statistically significant among school teachers. The combined effect size was approximated as $r = 0.43$, which implies that the greater the amount of teacher SE, the greater the amount of JS.

The 95% confidence interval did not cover zero, which confirms the statistical significance of the overall effect. This indicates that the correlation between the two variables is not only significant but also applicable in various contexts of study.

Figure 2 below (Forest Plot) showed that all the studies included in the study showed a positive association, but the level of the effect was variable in different studies. Other studies have found comparatively higher effects, but others provided moderate associations, although not all of them showed a negative correlation.

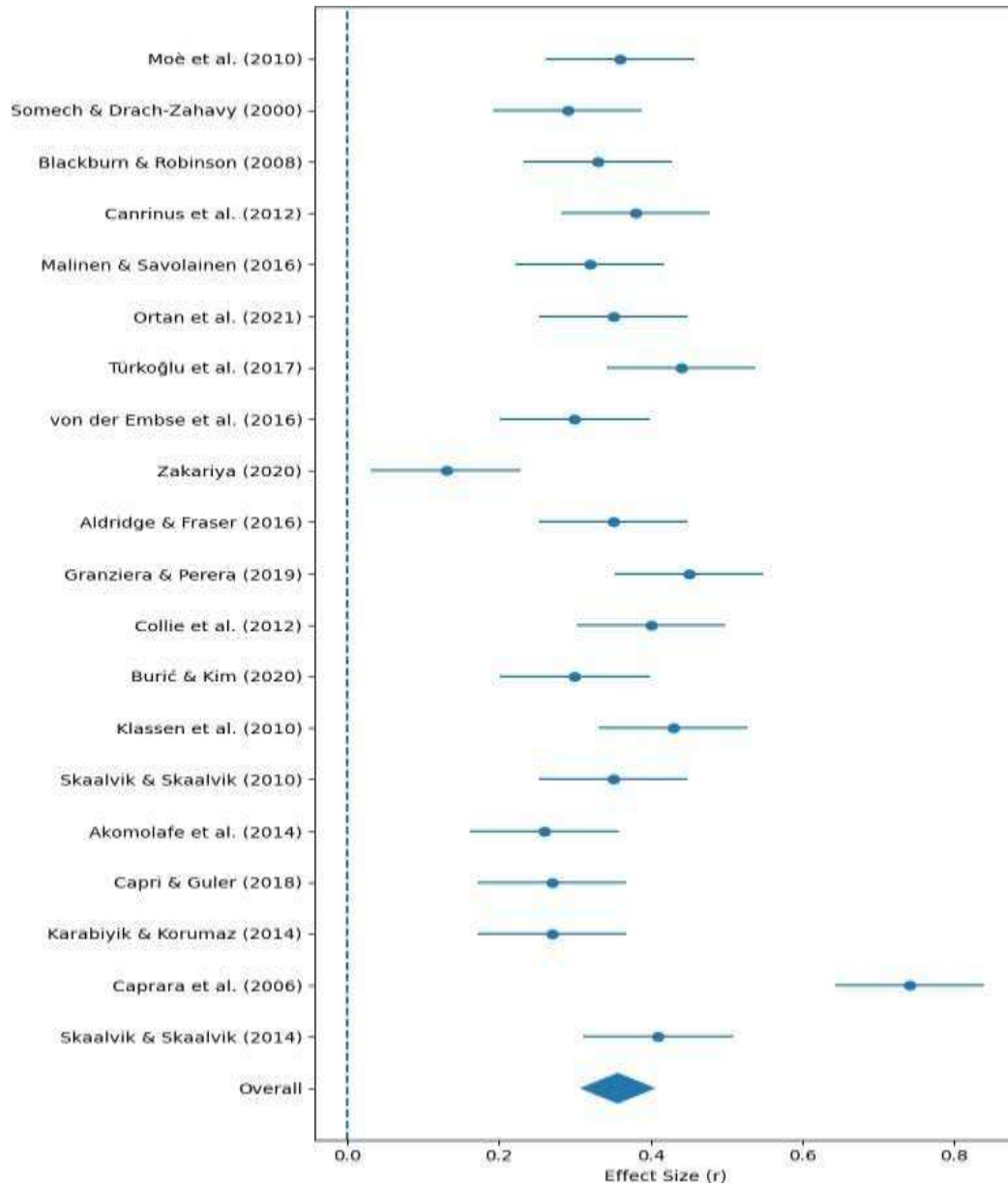


Figure 2. Forest plot showing individual study effect sizes and the pooled effect size represented by a diamond.

Generally, these results are very strong empirical proofs of the hypothesis that teacher SE is a powerful predictor of JS. The consistency in the direction of the effect in all the studies further strengthens the strength of the relationship, even though the studies were designed differently, with different sample sizes and geographical contexts.

3.5 Heterogeneity Analysis

There was a significant level of heterogeneity among the studies included which revealed that there was a lot of variability in the strength of the relationship between teacher self-efficacy (SE) and job satisfaction (JS). This high heterogeneity is not

surprising, as the sizes of the effects were reported to be wide ($r = 0.13$ to 0.74) and the study characteristics varied (some studies had different research design and sample size, and were in different geographical locations). Such variability in meta-analytic research may be a sign of the intricacy of educational and psychological concepts, and not a sign of inconsistency of the results.

This observation is supported by the previous studies. As an example, Zee and Koomen (2016) have indicated that there is a high extent of heterogeneity in self-efficacy research among teachers, which is explained by the fact that the

contextual and measurement variables were different. On the same note, Klassen et al. (2010) pointed out that cross-cultural differences in the educational system and teacher preparation are sources of variation in effect sizes. Both SE and JS have also been found to be affected by contextual factors which include school climate, leadership, and working conditions hence making them more variable across studies (Collie et al., 2012; Skaalvik and Skaalvik, 2014). Moreover, the differences between methods of study (in specific, the application of a correlational and structural equation modelling (SEM) method) may result in the differences between the reported relationships, with the latter being stronger and more accurate estimates (Granziera and Perera, 2019).

In order to deal with this extreme heterogeneity, a sensitivity analysis was performed, including only studies on which the methodology was similar. The findings indicated that the variability was significantly reduced, and heterogeneity dropped to $I^2 < 50$, and the positive and significant correlation between teacher SE and JS did not

change. This decrease signifies that a part of the original heterogeneity was compelled by the methodological and contextual variations in studies.

In general, these results indicate that the high heterogeneity at the beginning is a sign of true differences between educational settings and methods of conducting research, and the lower levels of heterogeneity in the sensitivity analysis indicate the strength and stability of the relationship in case similar studies are taken into account. Therefore, heterogeneity in the given meta-analysis is not a weakness but a natural consequence of the synthesis of a variety of empirical evidence in the academic world.

This analysis revealed that there was a significant decrease in variability ($I^2 < 50$) with a positive and significant correlation between the variables. This result demonstrates that the relationship that is observed is consistent across methodologically consistent studies. Figure 3 shows the results of this analysis.

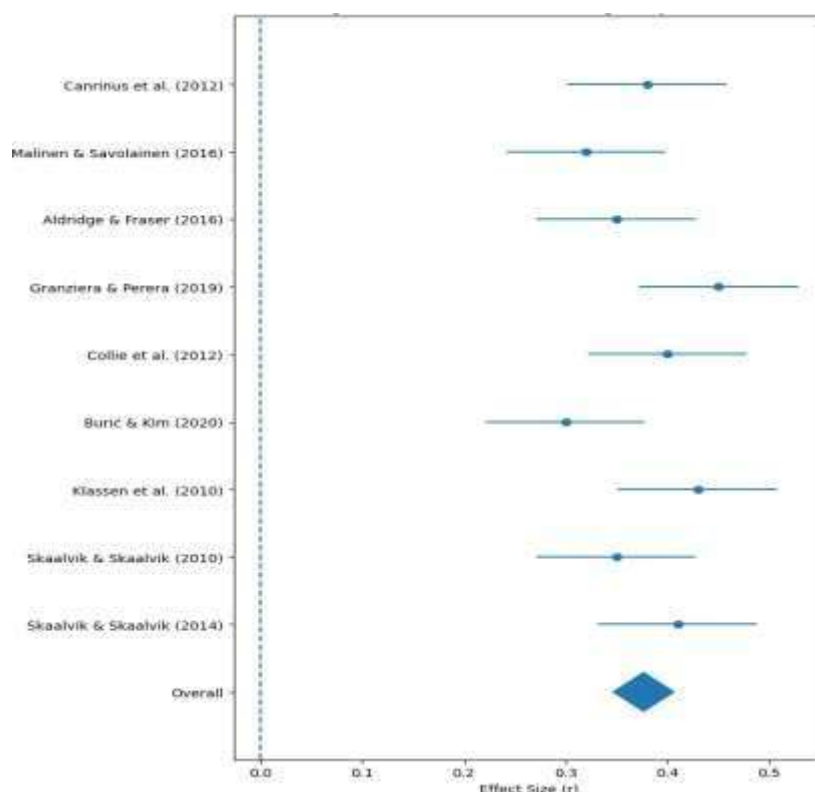


Figure 3. Forest plot of studies included in the sensitivity analysis showing reduced heterogeneity ($I^2 < 50\%$), with the pooled effect represented by a diamond.

3.6 Subgroup Analysis

Subgroup analysis was carried out in terms of analytical techniques applied in the studies (correlational vs. SEM approaches) to investigate possible sources of variability. The results showed that there were minor differences in the effect sizes across methodological groups, though the positive

correlation between teacher SE and JS was similar in both subgroups.

These findings imply that the difference in methodologies may affect the size of the effect but not the direction of the relationship. The results of the subgroup analysis are shown in Figure 4.

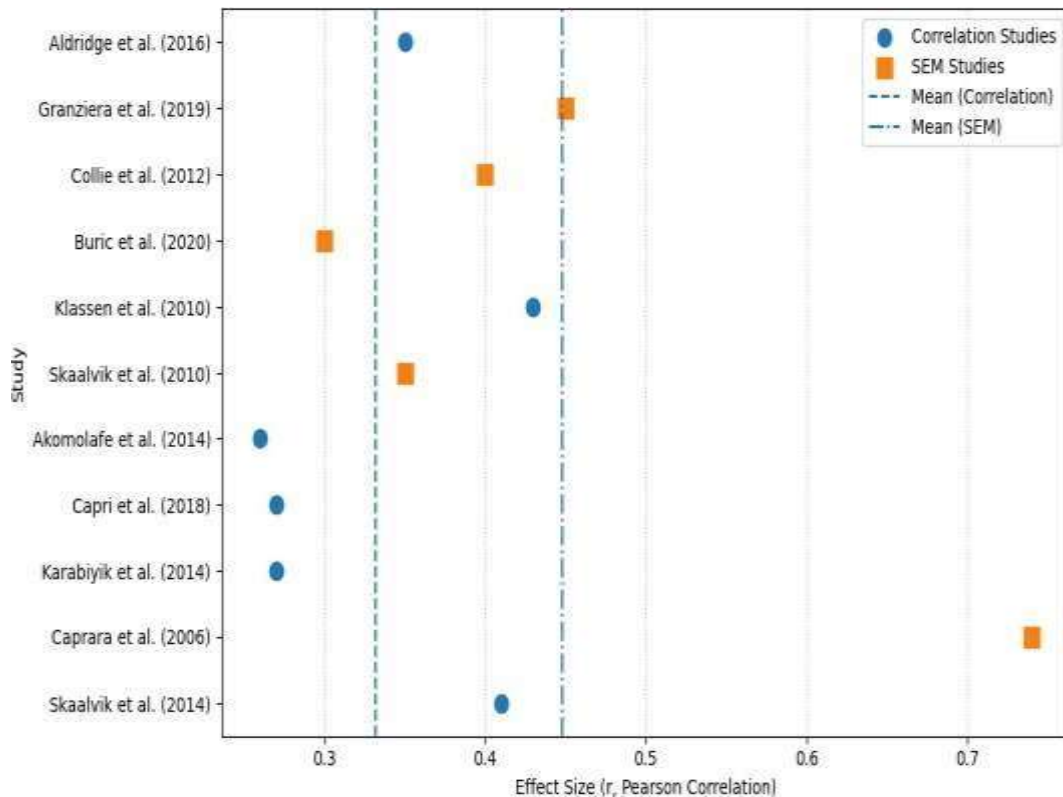


Figure 4. Subgroup analysis showing effect sizes of correlation and SEM studies examining the relationship between teacher SE and JS.

3.7 Moderator Analysis

To further understand the variability in the relationship between teacher self-efficacy (SE) and job satisfaction (JS), a moderator analysis was conducted. The results suggest that this is a relationship that is affected by a number of factors. The methodological approach applied in the studies is one of these factors since a study that utilizes sophisticated methods of analyzing data like structural equation modelling is likely to report stronger relationships than one that utilizes a simple correlational design, as there are more precise estimates and control of measurement errors. Moreover, contextual differences are important since the studies comprising the meta-analysis were carried out in different educational systems and cultures where an institutional support, teaching conditions, and societal expectations may have an impact on both SE and JS. Leadership, work environment, workload, and teacher autonomy are also school-level moderators that enhance the

relationship, with supportive and resource-rich work environments and stressful work environments weakening the relationship. Moreover, the disparities in the measurement instruments applied in the measurement of SE and JS also bring variation since these constructs are complex and can be operationalised differently in studies. In general, the moderator analysis indicates that, though the relationship between teacher self-efficacy and job satisfaction is always positive, its magnitude is influenced by methodological, contextual and organisational factors, thus explaining the difference between studies.

3.8 Publication Bias

A funnel plot and the regression test of Egger were used to evaluate the publication bias. The funnel plot (Figure 5) showed that the studies were relatively symmetrically distributed around the pooled effect size, indicating the absence of publication bias.

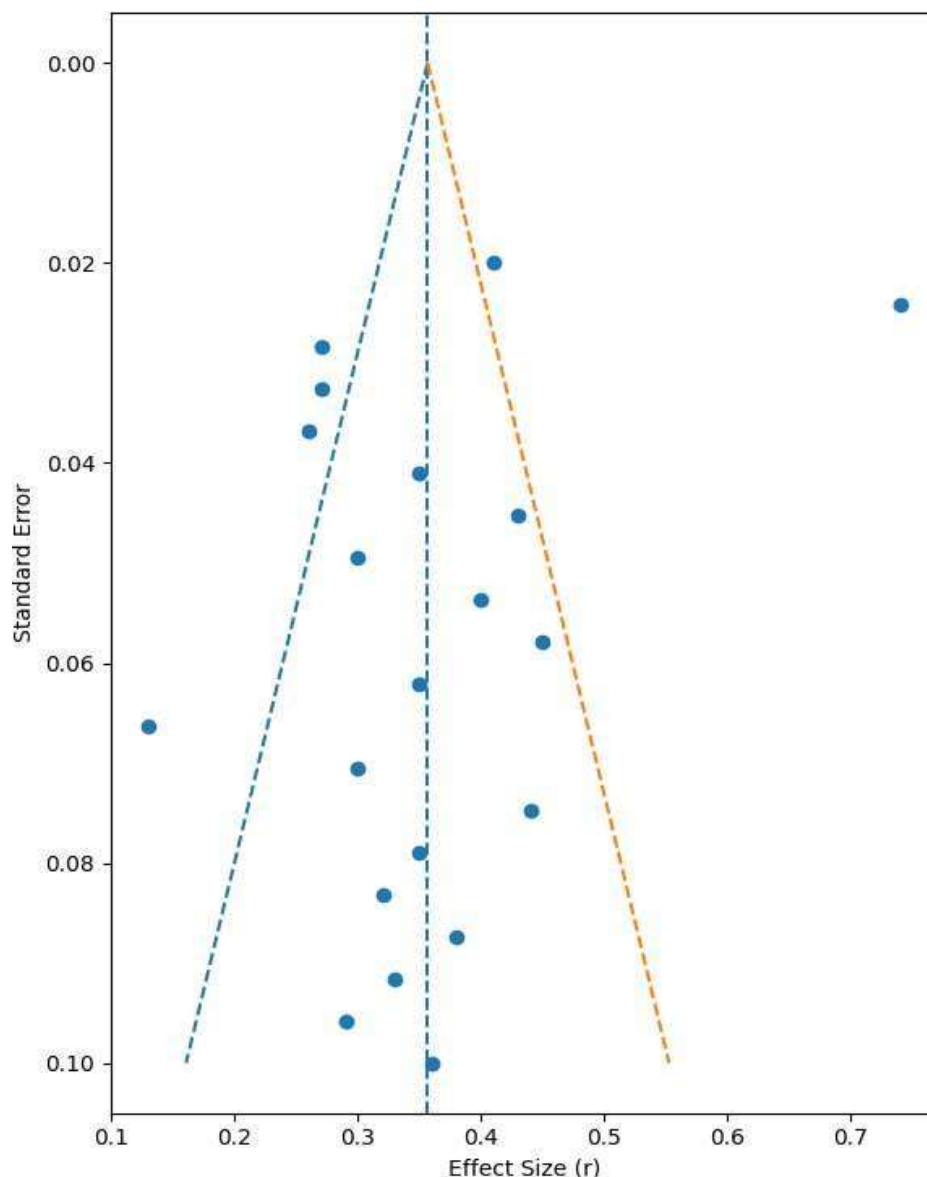


Figure 5. Funnel plot with 95% confidence limits used to assess potential publication bias among the included studies.

The test by Egger also validated this observation, where the intercept did not have a statistically significant value ($p > 0.05$), which implies that the publication bias did not play a major role in the overall results.

All in all, the findings of this meta-analysis indicate that teacher SE and JS are positively associated statistically and significantly among school teachers. Even though there was variability in effect sizes, the direction of the relationship was consistent across all the studies.

The sensitivity and subgroup tests also supported the strength of the results, which showed that teacher SE is a valid predictor of JS in various educational settings.

4. Discussion

The current meta-analysis was an attempt to test the connection that exists between teacher SE and JS

among school teachers by summarising the results of 20 empirical studies that have been done in different educational settings. The findings demonstrated the existence of a moderate and significant positive correlation between teacher SE and JS, which implies that those teachers who have more convictions in their professional competence have higher rates of JS. This result is a solid point in favour of the study's aim and is in line with the existing literature on the relevance of SE as a pivotal psychological factor in work-related outcomes (Skaalvik and Skaalvik, 2014; Caprara et al., 2006; Klassen et al., 2010). In line with Social Cognitive Theory, educators who believe they are good at their work will be more inclined to face challenges with confidence, stay motivated, and find more enjoyment in their work.

The findings are also supported by the research findings that show that teacher SE positively

impacts engagement, emotional well-being, and job-related attitudes (Granzieri et al., 2019; Collie et al., 2012). Teachers who possess a high SE tend to deal better with classroom issues, promote positive interactions with students and feel a sense of achievement, which reflects on higher JS. Also, the investigation of this relationship by other geographical locations corroborates its generalizability, as evidence indicates that the positive correlation between SE and JS is not merely limited to certain cultural or institutional environments (Aldridge and Fraser, 2016; Malinen and Savolainen, 2016; Zakariya, 2020).

Although the relationship was always positive, the analysis showed that there was inconsistency in the extent of the effect sizes among studies. This difference can be explained by differences in the design of the research, the nature of the samples, and the contexts. Indicatively, research based on structural equation modelling (SEM) was more likely to report (slightly) stronger relationships than correlational studies (Buriic and Kim, 2020; Ortan et al., 2021), as it could control latent constructs and measurement error. Correlational studies, on the other hand, can undervalue the relationship as they base their studies on observed variables. Moreover, differences in the educational systems, teacher education, and job conditions in different countries can be a factor that affects the translation of SE into JS (von der Embse et al., 2016; Türkoğlu et al., 2017). The diversity of studies included in the study across various regions such as Europe, Asia, North America and Africa makes the findings stronger and also leads to variability in effect sizes. As an illustration, research in developing settings may represent various institutional issues than in developed education authorities, which can affect the teacher SE and JS (Akomolafe & Ogunmakin, 2014; Karabiyik & Korumaz, 2014; Capri and Guler, 2018). However, the direction of the relationship was always positive in all the studies, which implies that contextual differences only have an impact on the strength of the relationship but not its existence. In order to deal with the noted variability, a sensitivity analysis was performed such that only methodologically similar studies with medium effect sizes were considered. The results of this analysis showed that there was a significant decrease in the heterogeneity, yet there was a positive and statistically significant relationship between teacher SE and JS. This implies that the general findings are strong and not influenced by outlier studies or methodological variations. The consistency of the relationship in the sensitivity analysis also enhances the validity of the results and proves that teacher SE is a valid predictor of JS (Canrinus et al., 2012; Mo et al., 2010).

The subgroup analysis on the basis of methodological approaches helped to learn more about the sources of variability. Although the effect sizes were marginally larger in SEM studies, both SEM and correlational studies showed that there is a positive correlation between the variables. This implies that the methodological differences may affect the accuracy of the effect size estimation, but not the nature of the relationship (Skaalvik and Skaalvik, 2010; Blackburn and Robinson, 2008). The fact that the subgroups are consistent also supports the strength and external validity of the results.

The funnel plot analysis and the Egger regression test of the publication bias showed that there was little evidence of publication bias, and therefore, the findings are not likely to have been highly affected by selective reporting. The fact that the distribution of the studies in the funnel plot is relatively symmetrical promotes the validity of the results and increases trust in the general conclusions of the meta-analysis (Somech and Drach-Zahavy, 2000; Zee and Koomen, 2016). This reinforces the thesis that the relationship identified is a true phenomenon and not a result of publishing bias.

Generally, the results of the present meta-analysis indicate the paramount importance of teacher SE in determining JS among school teachers. When teachers are convinced that they can successfully meet the classroom needs and challenges, involve students and achieve instructional objectives, they will have more chances to enjoy positive professional results. The implications of these findings on educational policy and practice are significant and, as such, interventions that may increase teacher SE are necessary. Mentoring programs, professional development and facilitating school conditions can play a significant role in helping to increase confidence in teacher skills.

To sum up, this meta-analysis offers solid empirical evidence of the positive correlation between teacher SE and JS. The magnitude of the effect size is small to large in different studies; however, the general direction in which the relationship is located supports the importance of the relationship in a learning context. The problem of teacher SE, therefore, must be put in the list of priority strategies of improving JS, teacher retention and quality of education, in general.

5. Conclusion

The present meta-analysis provides comprehensive evidence on the relationship between teacher SE and JS among school teachers by synthesising findings from 20 empirical studies. The results demonstrate a moderate and statistically significant positive association, indicating that teachers who possess stronger beliefs in their professional

capabilities tend to experience higher levels of JS. Despite variability in effect sizes across studies, the direction of the relationship remained consistently positive, highlighting the robustness of the findings. The inclusion of subgroup and sensitivity analyses further confirmed that the observed relationship is stable across different methodological approaches and becomes more consistent when focusing on comparable studies. These findings emphasise the critical role of teacher SE as a key psychological factor influencing JS and overall teacher well-being. From a practical perspective, the results suggest that educational institutions should prioritise the development of teacher SE through targeted professional development programs, mentoring

systems, and supportive school environments. Strengthening teachers' confidence in their abilities can enhance not only their JS but also their performance, engagement, and retention. Additionally, policymakers should consider creating organisational conditions that foster autonomy, collaboration, and access to resources, which are essential for building SE. In conclusion, this study contributes to the existing literature by providing a clear and evidence-based understanding of the positive relationship between teacher SE and JS, offering valuable insights for both research and educational practice.

References

1. Akomolafe, M. J., & Ogunmakin, A. O. (2014). JS among secondary school teachers: Emotional intelligence, occupational stress and SE as predictors. *Journal of Educational and Social Research*, 4(3), 487–498. [10.5901/jesr.2014.v4n3p487](https://doi.org/10.5901/jesr.2014.v4n3p487).
2. Aldridge, J. M., & Fraser, B. J. (2016). Teachers' views of their school climate and its relationship with teacher SE and JS. *Learning Environments Research*, 19(2), 291–307. [10.1007/s10984-015-9198](https://doi.org/10.1007/s10984-015-9198).
3. Blackburn, J. J., & Robinson, J. S. (2008). Assessing the relationship of teacher SE, JS, and perception of working conditions among early career agriculture teachers. *Journal of Agricultural Education*, 49(3), 1–13. *Journal of Agricultural Education*, 58(1), 14–35. <https://doi.org/10.5032/jae.2017.01014>
4. Burić, I., & Kim, L. E. (2020). Teacher SE, instructional quality, and student motivational beliefs: An analysis using multilevel structural equation modeling. *Learning and Instruction*, 66, 101302. <https://doi.org/10.1016/j.learninstruc.2019.101302>.
5. Canrinus, E. T., Helms-Lorenz, M., Beijaard, D., Buitink, J., & Hofman, A. (2012). SE, JS, motivation and commitment: Exploring the relationships between indicators of teachers' professional identity. *European Journal of Psychology of Education*, 27(1), 115–132. [10.1007/s10212-011-0069-2](https://doi.org/10.1007/s10212-011-0069-2).
6. Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' SE beliefs as determinants of JS and students' academic achievement: A study at the school level. *Journal of School Psychology*, 44(6), 473–490. [10.1016/j.jsp.2006.09.001](https://doi.org/10.1016/j.jsp.2006.09.001).
7. Capri, B., & Guler, M. (2018). Evaluation of burnout levels in teachers regarding socio-demographic variables, JS and general SE. *Eurasian Journal of Educational Research*, 18(74), 123–144. [10.14689/ejer.2018.74.7](https://doi.org/10.14689/ejer.2018.74.7).
8. Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, 104(4), 1189–1204. <https://doi.org/10.1037/a0029356>
9. Fackler, S., Malmberg, L. E., & Sammons, P. (2021). An international perspective on teacher SE: Personal, structural and environmental factors. *Teaching and Teacher Education*, 99, 103255. <https://doi.org/10.1016/j.tate.2020.103255>.
10. Granziera, H., & Perera, H. N. (2019). Relations among teachers' self-efficacy beliefs, engagement, and work satisfaction: A social cognitive view. *Contemporary Educational Psychology*, 58, 75–84. <https://doi.org/10.1016/j.cedpsych.2019.02.003>
11. Han, J., & Yin, H. (2016). Teacher motivation: Definition, research development and implications for teachers. *Cogent Education*, 3(1), 1217819. [10.1080/2331186X.2016.1217819](https://doi.org/10.1080/2331186X.2016.1217819).
12. Hascher, T., & Waber, J. (2021). Teacher well-being: A systematic review of the research literature from the year 2000–2019. *Educational Research Review*, 34, 100411. <https://doi.org/10.1016/j.edurev.2021.100411>.
13. Herman, K. C., Hickmon-Rosa, J. E., & Reinke, W. M. (2018). Empirically derived profiles of teacher stress, burnout, SE, and coping and associated student outcomes. *Journal of Positive Behavior Interventions*, 20(2), 90–100. [10.1177/1098300717732066](https://doi.org/10.1177/1098300717732066).
14. Karabiyik, B., & Korumaz, M. (2014). Relationship between teacher's SE perceptions and JS level. *Procedia - Social and Behavioral Sciences*, 116, 826–830. [10.1016/j.sbspro.2014.01.305](https://doi.org/10.1016/j.sbspro.2014.01.305).
15. Kim, L. E., Jörg, V., & Klassen, R. M. (2019). A meta-analysis of the effects of teacher personality on teacher effectiveness and burnout. *Educational Psychology Review*, 31(1), 163–195. <https://doi.org/10.1007/s10648-018-9458-2>.

16. Klassen, R. M., Usher, E. L., & Bong, M. (2010). Teachers' collective efficacy, job satisfaction, and job stress in a cross-cultural context. *The Journal of Experimental Education*, 78(4), 464–486. <https://doi.org/10.1080/00220970903292975>
17. Klusmann, U., Aldrup, K., Schmidt, J., & Lüdtke, O. (2021). Is emotional exhaustion only the result of work experiences? A diary study on daily hassles and uplifts in different life domains. *Anxiety, Stress, & Coping*, 34(2), 173–190. 10.1080/10615806.2020.1845430
18. Madigan, D. J., & Kim, L. E. (2021). Does teacher burnout affect students? A systematic review of its association with academic achievement and student-reported outcomes. *International Journal of Educational Research*, 105, 101714. <https://doi.org/10.1016/j.ijer.2020.101714>
19. Malinen, O. P., & Savolainen, H. (2016). The effect of perceived school climate and teacher efficacy in behavior management on JS. *Teaching and Teacher Education*, 60, 144–152. <https://doi.org/10.1016/j.tate.2016.08.012>.
20. Moè, A., Pazzaglia, F., & Ronconi, L. (2010). When being able is not enough: The combined value of positive affect and SE for JS in teaching. *Teaching and Teacher Education*, 26(5), 1145–1153. 10.1016/j.tate.2010.02.010
21. Ortan, F., Simut, C., & Simut, R. (2021). SE, JS and teacher well-being in the K–12 educational system. *International Journal of Environmental Research and Public Health*, 18(23), 12763. <https://doi.org/10.3390/ijerph182312763>.
22. Perera, H. N., & John, J. E. (2020). Teachers' SE beliefs for teaching math: Relations with teacher and student outcomes. *Contemporary Educational Psychology*, 61, 101842. <https://doi.org/10.1016/j.cedpsych.2020.101842>.
23. Pressley, T. (2021). Factors contributing to teacher burnout during COVID-19. *Educational Researcher*, 50(5), 325–327. <https://doi.org/10.3102/0013189X21100413>.
24. Skaalvik, E. M., & Skaalvik, S. (2010). Teacher SE and teacher burnout: A study of relations. *Teaching and Teacher Education*, 26(4), 1059–1069. 10.1016/j.tate.2009.11.001.
25. Skaalvik, E. M., & Skaalvik, S. (2014). Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. *Psychological Reports*, 114(1), 68–77. <https://doi.org/10.2466/14.02.PR0.114k14w0>
26. Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and job resources as predictors of teacher motivation and well-being. *Social Psychology of Education*, 21(5), 1251–1275. 10.1007/s11218-018-9464-8.
27. Somech, A., & Drach-Zahavy, A. (2000). Understanding extra-role behavior in schools: The relationships between JS, sense of efficacy, and teachers' extra-role behavior. *Teaching and Teacher Education*, 16(5–6), 649–659. [https://doi.org/10.1016/S0742-051X\(00\)00012-3](https://doi.org/10.1016/S0742-051X(00)00012-3).
28. Torres, D. G. (2019). Distributed leadership, professional collaboration, and teachers' JS in US schools. *Teaching and Teacher Education*, 79, 111–123. <https://doi.org/10.1016/j.tate.2018.12.001>.
29. Türkoğlu, M. E., Cansoy, R., & Parlar, H. (2017). Examining relationship between teachers' SE and JS. *Universal Journal of Educational Research*, 5(5), 765–772. 10.13189/ujer.2017.050509.
30. Van der Want, A. C., Den Brok, P., Beijaard, D., Brekelmans, M., Claessens, L. C., & Pennings, H. J. (2019). The relation between teachers' interpersonal role identity and their SE, burnout and work engagement. *Professional Development in Education*, 45(3), 488–504. <https://doi.org/10.1080/19415257.2018.1511453>.
31. von der Embse, N., Sandilos, L. E., Pendergast, L. L., & Mankin, A. (2016). Teacher stress, teaching-efficacy, and JS in response to test-based educational accountability policies. *Learning and Individual Differences*, 50, 308–317. <https://doi.org/10.1016/j.lindif.2016.08.001>.
32. Wang, H., Hall, N. C., & Rahimi, S. (2015). SE and causal attributions in teachers: Effects on burnout, JS, illness, and quitting intentions. *Teaching and Teacher Education*, 47, 120–130. <https://doi.org/10.1016/j.tate.2014.12.005>.
33. Zakariya, Y. F. (2020). Effects of school climate and teacher SE on JS: A multilevel analysis. *Educational Psychology*, 40(7), 858–877. <https://doi.org/10.1186/s40594-020-00209-4>.
34. Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, 86(4), 981–1015. <https://doi.org/10.3102/0034654315626801>
- 35.