

Self-Efficacy as a Mediator between Job Satisfaction and Teaching Motivation among Mathematics Teachers

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Abstract

Low teaching motivation is a global concern. The mediating effect of self-efficacy on the relationship between job satisfaction and teaching motivation was examined. Predictive research design, total enumeration, survey approach, and mediation analysis were applied. The data from 185 mathematics teachers revealed that self-efficacy fully mediated the relationship between job satisfaction and teaching motivation. Future research may explore similar studies involving other possible mediating variables that may explain the remaining 31.25% variance in the strength of mediation. School leaders may develop and implement programs that strengthen teachers' self-efficacy to improve job satisfaction towards enhanced teaching motivation and greater professional engagement.

Keywords: Self-efficacy, job satisfaction, teaching motivation, mathematics teachers

1.Introduction

Low teaching motivation has become a growing concern in the global educational landscape. Recent studies have revealed that many mathematics teachers worldwide experience declining motivation in carrying out their teaching responsibilities, making this a significant concern in education today. Supporting this, international educational reports have emphasized that low teacher motivation continues to challenge the quality and sustainability of education systems globally (UNESCO, 2023). Similarly, researchers have noted that the declining motivation of mathematics teachers persists across educational settings and continues to attract academic attention due to its widespread occurrence in schools worldwide (Wu, 2025).

In many countries, low teaching motivation among mathematics teachers remains a persistent problem. In South Korea, studies highlighted reduced teacher engagement and instructional enthusiasm among mathematics educators (Choi et al., 2023). In South Africa, mathematics teachers continue to face issues related to professional commitment and motivation in delivering mathematics instruction (Theron, 2025). Likewise, in Indonesia, recent educational studies reported that maintaining motivation among mathematics teachers remains an important concern in improving mathematics education in schools (Suryani et al., 2024). These findings indicate that low teaching motivation among mathematics teachers persists across different countries and educational systems.

In the Philippine context, low teaching motivation among mathematics teachers is likewise considered an educational concern. Recent local studies have emphasized that teacher motivation remains a crucial factor in sustaining quality mathematics instruction and improving teacher performance in

schools (Amiang & Salimaco, 2024). Moreover, studies involving Filipino mathematics teachers have shown that low teaching motivation remains evident among educators in public schools, making it a significant area for educational research and intervention (Doño, 2023). The continued low teaching motivation among mathematics teachers further underscores the need to examine this issue in the Philippine educational setting.

Low teaching motivation may result in several negative consequences in the educational process. Studies suggest that reduced teacher motivation may affect instructional effectiveness, classroom engagement, and the quality of students' mathematics learning experiences (Wu, 2025). It may also affect teachers' professional commitment, teaching performance, and classroom interactions with learners (Amiang & Salimaco, 2024). Moreover, low teaching motivation may lead to weak student participation and decreased interest in mathematics classes, which can adversely affect students' academic performance in mathematics (Choi et al., 2023). Hence, low teaching motivation among mathematics teachers remains a significant issue that warrants further educational attention and investigation.

2. Methodology

2.1. Research Design

1. This study employed a predictive research design. Predictive research design is a quantitative research approach used to determine the extent to which one variable predicts or influences another variable (Creswell & Creswell, 2023). This design was appropriate for the study since it aimed to determine the predictive relationship between job satisfaction and motivation, as well as the mediating role of self-efficacy among mathematics teachers. It is advantageous because, as Nyoni mentioned (2025), it improves decision-making, forecasting accuracy, and data analysis efficiency.

2.2. Research Locale and Respondents

The study was conducted in the Island Garden City of Samal, specifically in Babak District. This district was selected because it offers a balanced combination of urban and rural schools, providing a diverse teaching environment for mathematics teachers. Including this district ensured a sufficient number of respondents and enabled the researcher to collect data across varying school settings and working conditions. In recent years, mathematics teachers in this district have experienced various professional realities, including workload pressure, leadership dynamics, and varying levels of institutional support, which have influenced job satisfaction, self-efficacy, and motivation. institutional support, which influenced job satisfaction, self-efficacy, and motivation.

The respondents of this study were teachers handling mathematics subjects in the Babak District, regardless of whether they were mathematics majors or non-mathematics majors. According to official records, the total population is 185. Since the number of teachers was manageable, the study used total enumeration, where all 185 teachers were invited to participate. This approach was appropriate because it allowed the researcher to include the entire population, ensuring representation across schools and academic backgrounds. Taherdoost (2016) emphasized that this sampling method helps reduce sampling bias and provides a clearer representation of the target population, which is advantageous for the present study, which focuses on job satisfaction, self-efficacy, and teaching motivation among mathematics teachers in the area. Furthermore, the sample size of 185 respondents is considered adequate for mediation analysis in educational research. Several studies have successfully utilized mediation analysis with moderate sample sizes. For instance, Verano (2025) employed 200 respondents to examine classroom management as a mediator, while Waldeyer (2022) conducted mediation analysis with a sample of 106 students. These studies indicated that mediation can be appropriately performed with sample sizes below 300, particularly when the entire population is included, as in the present study.

2.3. Research Instrument

The study utilized three adapted and modified survey questionnaires. The first questionnaire was adapted from the Job Satisfaction Questionnaire developed and validated by Romero and Bantigue (2017), consisting of 20 items that measured teachers' job satisfaction. The second questionnaire was adapted from the Teachers' Self-Efficacy Scale developed by Tschannen-Moran and Woolfolk Hoy (2001), which contained 15 items measuring teachers' self-efficacy. Lastly, the third questionnaire was adapted from the Work Tasks Motivation Scale for Teachers developed by Fernet et al. (2008), consisting of 25 items that measured teaching motivation.

2.4. Data Collection Procedure

2. A survey technique was used as the primary data-gathering method in this study. A survey is a structured method of collecting data through questionnaires designed to obtain information regarding respondents' attitudes, perceptions, and experiences (Creswell & Creswell, 2023). This technique is commonly used in quantitative research because it enables researchers to efficiently and systematically collect standardized data from large numbers of participants. Moreover, surveys are considered cost-effective, time-efficient, and suitable for statistical analysis because responses are consistent (Dillman et al., 2024).

2.5. Data Analysis

In this study, three data analysis techniques were used: descriptive data analysis, correlation analysis, and mediation analysis. Descriptive data analysis was employed in this study to organize and summarize the levels of the variables using mean and standard deviation. Leavy (2022) stated that descriptive statistics are essential in quantitative research because they provide a clear, systematic presentation of data before conducting more complex analyses. This method is useful in simplifying large sets of information and identifying observable patterns and tendencies among variables (Privitera & Delzell, 2019). Moreover, correlation data analysis is a statistical method used to determine the strength and direction of the relationship between two variables, commonly using Pearson's r (Field, 2023). According to Gravetter and Wallnau (2021), correlation analysis is commonly used to determine the degree and direction of association between variables in quantitative studies. This statistical tool is advantageous because it allows researchers to identify meaningful relationships among variables and provides support for further inferential analyses (Cohen et al., 2018).

Furthermore, mediation analysis is a statistical method used to examine how a beta estimate influences a dependent variable through a mediator, helping explain indirect relationships among variables (Hayes, 2024). It is applied when researchers aim to determine whether the effect of one variable on another is mediated by a third variable, particularly in quantitative research (MacKinnon, 2023). Its advantages include identifying the underlying mechanisms linking variables and strengthening the interpretation of model relationships (Hayes, 2024).

2.6. Ethical Considerations

This study adhered to the ethical standards set by the Graduate School of Holy Cross of Davao College. Before conducting the study, approval was secured from the Society of Moral Integrity and Legal Ethics (SMILE) to ensure compliance with institutional and professional guidelines. Formal permission was also requested from the Division of the Island Garden City of Samal and the principals of the participating schools, with the necessary endorsements from the research adviser and the Dean of the Graduate School.

Participation of mathematics teachers was strictly voluntary. An informed consent form was provided, clearly stating the study's objectives, participants' rights to decline or withdraw at any time without penalty, and that their responses would remain confidential. The survey was administered via Google Forms and printed forms, with no personally identifiable information collected. All data were used solely for academic purposes and were handled with strict confidentiality. The researcher ensured that no harm or undue burden was caused to participants. The findings were intended to contribute to understanding how job satisfaction influences teacher motivation, with teacher self-efficacy serving as a mediating variable.

3. Results and Discussion

3.1. Descriptive Analysis of the Study Variables

Table 1. Descriptive Statistics of the Study Variables (N = 185)

Variables	SD	Mean	Descriptive Level
Job Satisfaction (IV)	0.41	3.51	Very High
Security	0.47	3.44	Very High
Work Environment	0.46	3.53	Very High
Job Responsibilities	0.47	3.52	Very High
Community Attachments/Linkages	0.46	3.55	Very High
Self-Efficacy (MV)	0.41	3.61	Very High
Student Engagement	0.44	3.58	Very High
Instructional Strategies	0.43	3.66	Very High
Classroom Management	0.43	3.58	Very High
Teaching Motivation (DV)	0.30	3.41	Very High
Intrinsic Motivation	0.40	3.68	Very High
Identified Regulation	0.38	3.69	Very High
Introjected Regulation	0.41	3.49	Very High
External Regulation	0.56	3.08	High
Amotivation	0.74	3.09	High

Shown in Table 1 are the descriptive statistical results of the study. Contained in the table are the variables involved, namely, job satisfaction, self-efficacy, and teaching motivation, with their respective indicators, and the number of samples, standard deviation, mean, and descriptive level specifically corresponding with each of the variables.

The table shows that the self-efficacy variable had a mean of 3.61, indicating that respondents generally have very strong self-efficacy. All its indicators are described as very high. The corresponding standard deviation of 0.41 indicates a highly consistent response, showing that the respondents have a relatively uniform perception. Furthermore, the job satisfaction variable had a mean of 3.51, indicating very high job satisfaction, and was described as very high. All its indicators are described as very high. The corresponding standard deviation of 0.41 indicates highly consistent responses. Lastly, the teaching motivation variable had a mean of 3.41, indicating very strong teaching motivation. Among its indicators, three were rated very high, and two were rated high. The corresponding standard deviation of 0.30 indicates highly consistent responses among participants.

The findings showed that self-efficacy, job satisfaction, and teaching motivation are all very high among the respondents. It indicates positive professional perceptions and attitudes. Among these factors, self-efficacy stood out as the strongest, with all its indicators showing very strong levels. Job satisfaction also showed consistently good results across all indicators, suggesting favorable work experiences for the respondents. However, teaching motivation, while still considered very strong overall, showed slightly lower results on some indicators, suggesting greater variation than the other factors. Still, the responses across all areas were consistent among the participants.

3.2. Correlation Results

Table 2. Correlation Table (N=185)

Variables	Teaching Motivation			
	r-value	p-value	Decision on H_0	Interpretation
Job Satisfaction	0.44	0.000	Reject	Moderately low positive, significant correlation
Self-Efficacy	0.49	0.000	Reject	Moderately low positive, significant correlation

Level of Significance: 0.05

Decision Rule: Reject H_0 if $p < 0.05$

The table shows that the correlation between job satisfaction and teaching motivation variables obtained a p-value of less than 0.001, which is lower than the 0.05 level of significance; hence, the null hypothesis was rejected. It indicates that the correlation between job satisfaction and teaching motivation is statistically significant. The corresponding r-value of 0.44 indicates a moderately low positive correlation between the two variables. It implies that for every increase in job satisfaction, there is a corresponding increase in teaching motivation. Likewise, the correlation between self-efficacy and teaching motivation variables obtained a p-value of less than 0.001, which is lower than the 0.05 level of significance; therefore, the null hypothesis was rejected. It indicates that the correlation between self-efficacy and teaching motivation is statistically significant. The corresponding r-value of 0.49 indicates a moderately low positive correlation between the two variables. It implies that for every increase in self-efficacy, there is also a corresponding increase in teaching motivation.

The findings showed that both job satisfaction and self-efficacy are closely linked to teaching motivation. However, self-efficacy has a slightly stronger positive relationship with teaching motivation than job satisfaction. Both factors play a role in teaching motivation, but self-efficacy is more influential in motivating mathematics teachers. efficacy appears to have a greater association with motivating mathematics teachers

3.3. Mediation Results

Table 3. Mediation Table (N=185)

Label	Path/Effect	Estimate (B)	SE	z-value	p-value	Decision	Interpretation
a	Job Satisfaction → → Self-Efficacy	0.79	0.04	17.75	0.0000	Reject H_0	Significant

b	Self-Efficacy → → Teaching Motivation	0.28	0.08	3.59	0.0004	Reject Ho	Significant
a x b	Indirect Effect	0.22	0.08	-	-	Reject Ho	Significant
c'	Job Satisfaction → → Teaching Motivation (Direct Effect)	0.10	0.08	1.32	0.1878	Fail to Reject Ho	Not Significant
C (Total Effect)	Job Satisfaction → → Teaching Motivation	0.32	0.05	6.67	0.0000	Reject Ho	Significant

Level of Significance: 0.05

Decision Rule: Reject Ho if $p < 0.05$

Mediation Proportion: 68.75%

Table 3 presents mediating table. The table includes several columns: Predictor, Estimate, Standard Estimate, SE (Standard Error), t (t-value), p (p-value), and Decision on null hypothesis.

The table shows the direct effect of job satisfaction on teaching motivation variable, controlling for self-efficacy, obtained an estimate beta of 0.10. The p-value is 0.1878, which is greater than 0.05 level of significance; hence, the null hypothesis was accepted. This indicates that the direct effect of job satisfaction on teaching motivation, controlling for self-efficacy, is not significant. Moreover, the indirect effect of job satisfaction on teaching motivation through self-efficacy variable obtained an estimate beta of 0.22. Since the indirect effect was found significant; hence, the null hypothesis was rejected. Lastly, the total effect of job satisfaction on teaching motivation variable obtained an estimate beta of 0.32. The p-value is 0.0000, which is less than 0.05 level of significance; hence, the null hypothesis was rejected. It indicates that the overall effect of job satisfaction on teaching motivation is significant. Finally, the table shows the mediated proportion of 68.75%, indicating that the strength of the mediation is strong.

Conclusion

Based on the findings, it was concluded that the correlation between job satisfaction and teaching motivation among mathematics teachers was fully mediated by self-efficacy. This result supported the Social Cognitive Theory, which posits that individuals' beliefs in their capabilities influenced their teaching motivation and behavior.

Acknowledgements

The author expresses sincere gratitude to the respondents, research adviser, panel members, and the Holy Cross of Davao College for their guidance, encouragement, and invaluable support throughout the completion of this study.

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