



The Moderating Role of Gender in the Relationship Between Teacher Competence, Learning Satisfaction, and Students' Intrinsic Motivation

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Abstract: Teacher competence is a key factor in creating an effective learning experience in the educational environment, especially in Indonesia's secondary education context. There is still a gap in understanding the role of learning satisfaction as a mediator in the relationship. This study explores the relationship between teacher competence, student learning satisfaction, and students' intrinsic motivation at the secondary education level. This study explores the relationship between teacher competence, student learning satisfaction, and students' intrinsic motivation at the secondary education level. Using the Structural Equation Modeling (SEM) approach, data was analyzed from 100 students to identify the impact of teacher competence on learning satisfaction and intrinsic motivation. The results showed that teacher competence significantly had a positive effect on student learning satisfaction with a pathway coefficient of 0.809 ($p < 0.01$) and had a positive impact on students' intrinsic motivation with a coefficient of 0.345 ($p < 0.05$). In addition, learning satisfaction was proven to have a significant mediating role in the relationship between teacher competence and intrinsic motivation, with a pathway coefficient of 0.493 ($p < 0.01$). These findings support the importance of teacher competency development in improving a satisfying and motivating learning experience for students. This research has practical implications for educational institutions in strengthening teacher training programs and strategies to improve teaching quality to support the overall academic development of students.

Keywords: intrinsic motivation; learning satisfaction; structural equation modeling; teacher competence

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INTRODUCTION

The quality of education in secondary schools is greatly influenced by the competence of teachers as the main actors in the learning process (Bürgener & Barth, 2018). Teacher competencies, which include pedagogical, professional, social, and personality abilities, play an important role in creating a conducive learning environment, increasing student learning satisfaction, and motivating them to achieve optimal academic outcomes (Suharyatia et al., 2019; Fernández-Batanero, et al., 2022; Baier et al., 2019; Colomer-Rubio et al., 2019). However, many studies show that low teacher competence can be one of the causes of students' lack of involvement in the learning process, which ultimately negatively impacts their intrinsic motivation (Ryan & Deci, 2020). Students' intrinsic motivation, driven by curiosity and intrinsic interest in learning, has an important role in the long-term success of education (Chaudhuri, 2020). Therefore, it is important to examine the relationship between teacher competence, learning satisfaction, and intrinsic motivation as a basis for developing more effective educational strategies (Ahn et al., 2021).

In Indonesia's education context, there are several significant problems (Sukmayadi & Yahya, 2020). The low quality of teacher training and competency development is often a major problem (McGarr, 2020), resulting in a lack of effectiveness in teaching and learning (Wu et al., 2020). On the other hand, students' learning satisfaction is often overlooked in educational evaluations (Choe et al., 2019), although this directly affects their motivation to learn (Tokan & Imakulata, 2019). The absence of a data-driven approach in analyzing the relationships between these variables is also a challenge in designing targeted interventions (Bachmann et al., 2022). This study seeks to answer these problems by analyzing the relationship between teacher competence, learning satisfaction, and students' intrinsic motivation using the Structural Equation Modeling (SEM) approach so that it can provide a deeper understanding of strategies to improve the quality of education. Previous research has shown the importance of teacher competence in supporting the success of the learning process. According to Zhao et al., (2021) teachers' pedagogical competence significantly influences students' learning satisfaction, which impacts their learning motivation. Jang (2019) found that the quality of teachers'

teaching contributes directly to students' intrinsic motivation, especially in creating a supportive learning environment. Chamizo-Nieto et al. (2021) emphasize that learning satisfaction mediates between teacher competence and student academic achievement. In the context of secondary education, Cole et al. (2021) show that satisfaction positively correlates with student engagement in active learning. In addition, Putra and Widodo (2022) used SEM analysis to prove that improving teacher competence through training correlates with increasing students' intrinsic motivation (Misbah et al., 2022). These findings are an important basis for further research on the relationship between these variables. Although many studies have shown the influence of teacher competence on learning satisfaction and intrinsic motivation of students, there is still a gap in understanding the role of learning satisfaction as a mediator in the relationship, especially in the context of secondary education in Indonesia. In addition, few studies have used the Structural Equation Modeling (SEM) approach to identify deep causal relationships between these variables. This study aims to answer the question: What is the relationship between teacher competence, learning satisfaction, and students' intrinsic motivation? Does learning satisfaction mediate the relationship between teacher competence and students' intrinsic motivation? The proposed hypothesis is:

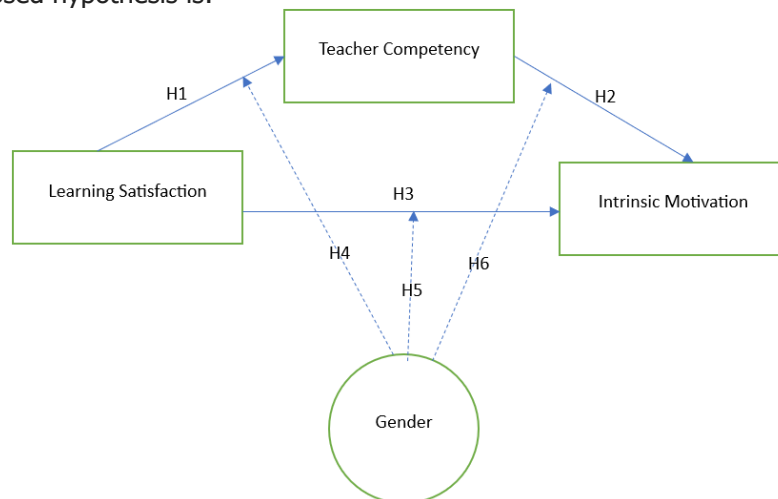


Figure 1. Hypothesis Model

H1: Teacher competence has a positive effect on student learning satisfaction.

The arguments supporting this hypothesis can be seen from several studies showing that teacher competence plays an important role in creating an effective learning environment increasing student learning satisfaction. Teacher competence in terms of material knowledge, teaching skills, and communication skills can improve the quality of learning and make students feel more satisfied with their learning experience. High teaching quality is significantly associated with better student learning outcomes, which can increase their satisfaction with learning (Caskurlu et al., 2020). In addition, Gray and Dimoreto (2016) also show that competent teachers can create a fun and supportive learning atmosphere, which increases student engagement and satisfaction. Teachers can provide a more meaningful and adequate learning experience with higher competence so students feel more satisfied and motivated to learn.

H2: Teacher competence has a positive effect on students' intrinsic motivation.

Arguments supporting this hypothesis can be seen from research showing that teacher competence affects learning outcomes and students' intrinsic motivation. Competent teachers can provide engaging and relevant learning and arouse students' curiosity and involvement in the learning process. According to González et al. (2020), students' intrinsic motivation increases when their basic psychological needs, such as the need for autonomy, competence, and connectedness, are met in the learning environment. Teachers with the competence to create an atmosphere that supports and accommodates these needs can encourage students' intrinsic motivation. For example, Ryan et al. (1994) showed that a positive relationship between teachers and competent students can increase students' confidence and interest in learning, increasing their intrinsic motivation. Thus, teachers' competence in managing learning and building positive relationships with students directly impacts students' intrinsic motivation.

H3: Learning satisfaction mediates the relationship between teacher competence and students' intrinsic motivation.

Arguments supporting this hypothesis can be found in the theory that student learning satisfaction is a mediator that connects teacher competence with students' intrinsic motivation. When students are satisfied with

their learning experience, they tend to be more involved in learning and have higher intrinsic motivation. High teacher competence creates a more meaningful and engaging learning experience, increasing student satisfaction. According to [Deci et al. \(1996\)](#), positive and satisfying learning experiences can meet students' psychological needs, which is important for increasing intrinsic motivation. In addition, [Shin and Bolkan \(2021\)](#) show that competent teachers can create a positive and supportive learning environment, which increases student learning satisfaction and can facilitate an increase in intrinsic motivation. Thus, learning satisfaction acts as a mediator, strengthening teacher competence's impact on students' intrinsic motivation. In this study, the role of gender as a moderation variable is one of the main focuses that is interesting to study. Gender is often considered a factor affecting how students respond to learning and interactions with teachers. For example, several studies have shown that male and female students have different needs and preferences when it comes to learning, which can affect their perception of teacher competence, learning satisfaction, and intrinsic motivation. Therefore, to provide a more comprehensive understanding of the relationship between the research variables, an analysis was carried out by including gender as a moderation variable. The hypothesis of moderation variables (Gender) can be proposed in 3 statements:

H4: Gender moderates the relationship between teacher competence and student learning satisfaction.

H5: Gender moderates the relationship between learning satisfaction and students' intrinsic motivation.

H6: Gender moderates the relationship between teacher competence and students' intrinsic motivation.

The novelty of the research lies in understanding the significant contribution in the field of education by highlighting the close relationship between teacher competence, learning satisfaction, and students' intrinsic motivation. Improving teacher competence has a direct impact on learning satisfaction and plays an important role in increasing students' intrinsic motivation. The main contribution of this research lies in a deeper understanding of the interaction mechanisms between these variables and practical recommendations for developing more effective teacher training programs. These findings also provide empirical evidence that supports educational theories about the importance of a conducive learning environment and high-quality teaching in supporting students' academic success.

METHODS

This study uses a quantitative design with an explanatory approach to analyze the causal relationship between teacher competence, learning satisfaction, and students' intrinsic motivation. This approach was chosen because it allows for a more in-depth analysis of the direct and indirect influences between variables through structural models. The population in this study is high school students in Magelang, with a sample of 100 students selected using the purposive sampling technique. This technique ensures that the selected sample matches the research criteria. The selection criteria include students who are active in learning and have direct experience with the teacher who is the focus of the research. Thus, the study's results can reflect a more accurate relationship between the variables studied. A representative sample is essential to produce findings that can be generalized in the context of secondary education. Therefore, sample selection is carried out systematically to support the validity of the research.

Data collection was carried out using a structured online questionnaire that had been validated to ensure the accuracy of the measurements. The questionnaire consists of three main scales that measure teacher competence, learning satisfaction, and students' intrinsic motivation. The teacher competency scale (6 items) was adopted from the Danielson Framework (Danielson, 2007), while the learning satisfaction scale (7 items) was adapted from Ning and Downing (2010). The intrinsic motivation scale (10 items) was taken from [Deci et al. \(1996\)](#). Each scale uses a Likert of 5 points, from 1 (strongly disagree) to 5 (strongly agree), to capture the level of respondents' agreement with various statements. Using the Likert scale helps obtain quantitative data that can be analyzed statistically. Before being used in major studies, the instrument is tested for validity and reliability to ensure that each item can accurately measure the variable.

Data analysis was carried out using the Structural Equation Modeling (SEM) method with the help of SmartPLS4 software. The analysis begins with testing the validity and reliability of research instruments to ensure the quality of the data collected. After that, an external model analysis was carried out to test the suitability of the indicators with the measured variables. The next step is structural model analysis to identify the relationship between teacher competence, learning satisfaction, and students' intrinsic motivation. In addition, this study also integrates gender as a moderation variable, which aims to explore how gender differences can affect the relationship between variables. This approach allows for the identification of more complex patterns of relationships in student learning dynamics. Thus, this study provides broader insights into the various factors affecting students' high school learning experiences.

The study's results were interpreted by considering various statistical indicators, such as path coefficient, R-squared, and Goodness of Fit Index (GoF), to assess the suitability of the model and the significance of the relationship between the variables. Taking into account the interaction between gender and key variables, this

study aims to identify whether there are significant differences in the relationships studied. The study results will provide deeper insights into the interaction dynamics between teacher competence, learning satisfaction, and students' intrinsic motivation. In addition, this research can provide practical recommendations for developing more effective teaching quality improvement strategies. The implications of the results of this study can also be useful for policymakers in the field of education to design teacher training programs that are more in line with the needs of students. A deeper understanding of the factors affecting learning satisfaction and intrinsic motivation can improve student academic outcomes. Therefore, this study is expected to be a reference for further studies that examine other factors that affect learning effectiveness.

RESULT AND DISCUSSION

To provide a clearer picture of the characteristics of the respondents, the following is presented with a demographic distribution of students involved in the study. The data includes gender categories, grade levels, ages, experiences with teachers, and student attendance levels during the learning process. This information is important to understand the research context and ensure that the sample is representative enough.

Table 1. Background of respondent

Category		Frequency	Percentage (%)
Gender	Male	45	45
	Female	55	55
Grade Level	Grade 10	30	30
	Grade 11	40	40
	Grade 12	30	30
Age	15 Years	20	20
	16 Years	35	35
	17 Years	30	30
	18 Years	15	15
Experience with Teachers	≤ 1 Year	25	25
	1–2 Years	45	45
	> 2 Years	30	30
Student Attendance	Always Present	70	70
	Often absent	30	30

Participants in this study consisted of 100 high school students, with 45% male and 55% female. Based on grade level, 30% are from grade 10, 40% are from grade 11, and 30% are from grade 12. In terms of age, the majority of students are 16 years old (35%), followed by 17 years old (30%), 15 years old (20%), and 18 years old (15%). Students' experiences with teachers show that 25% have less than or equal to 1 year of experience, 45% have between 1 to 2 years of experience, and 30% have more than 2 years. In addition, based on attendance in learning, 70% of students are always present, while the other 30% are often absent.

Table 2 shows the results of the convergent reliability and validity assessment of the three main constructions in the research model, namely Intrinsic Motivation, Learning Satisfaction, and Teacher Competence. The Intrinsic Motivation Construction has an Alpha Cronbach value of 0.926, which indicates excellent internal reliability. The Composite Reliability Values (ρ_a and ρ_c) are 0.936 and 0.938, respectively, indicating high internal consistency. The Average Variance Extracted (AVE) of 0.603 indicates that more than 60% of the indicator's variance is explained by this construction, thus meeting the convergence validity criteria. The Learning Satisfaction Construction also showed similar results to Cronbach's Alpha of 0.923 and Composite Reliability values (ρ_a and ρ_c) of 0.925 and 0.938, respectively. With an AVE of 0.685, this construction meets the standard of good convergence validity, as more than 68% of the indicator's variance is explained by construction. Meanwhile, teacher competency has a Cronbach's Alpha score of 0.889, which indicates that reliability remains in the good category. The Composite Reliability Values (ρ_a and ρ_c) were 0.890 and 0.916, respectively, supporting adequate internal consistency. With an AVE of 0.644, this construction also meets the criteria for convergence validity. Overall, the reliability and validity values shown by these three constructions have met the criteria suggested in the study based on the structural equation model (SEM), namely Cronbach's Alpha > 0.7, Composite Reliability > 0.7, and AVE > 0.5. This indicates that the instrument used has good measurement quality.

Table 2. Reliability and validity indicators

Variable	Item reliability		Convergent validity			
	Indicator	Loading	AVE	CA	Rho_A	CR
Intrinsic Motivation	IM1	0.774	0.603	0.926	0.936	0.938
	IM2	0.820				
	IM3	0.846				
	IM4	0.671				
	IM5	0.650				
	IM6	0.727				
	IM7	0.837				
	IM8	0.743				
	IM9	0.840				
	IM10	0.830				
Learning Satisfaction	LS1	0.819	0.685	0.923	0.925	0.938
	LS2	0.831				
	LS3	0.836				
	LS4	0.869				
	LS5	0.875				
	LS6	0.749				
	LS7	0.807				
Teacher Competency	TC1	0.823	0.644	0.889	0.890	0.916
	TC2	0.815				
	TC3	0.784				
	TC4	0.835				
	TC5	0.780				
	TC6	0.778				

The results of the table analysis show that all research variables meet the criteria of item reliability and convergent validity. This can be seen from the value of the loading factor in each indicator, which is generally greater than 0.7, although there are some exceptions, such as IM4 (0.671) and IM5 (0.650) in the intrinsic motivation variable. This value is still acceptable in exploratory research. For convergent validity, the Average Variance Extracted (AVE) value showed adequate results, namely 0.603 for Intrinsic Motivation, 0.685 for Learning Satisfaction, and 0.644 for Teacher Competence, all above the minimum threshold of 0.5. In addition, the reliability of the construction is also very good, shown by a Composite Reliability (CR) value of 0.938 for Intrinsic Motivation, 0.938 for Learning Satisfaction, and 0.916 for Teacher Competence. The high Cronbach's Alpha (CA) values of 0.926, 0.923, and 0.889 for each variable further strengthen the internal consistency of this indicator. Thus, these results show that all indicators can reliably and validly represent their construction.

Table 3. Discriminant Validity of Constructs

Variables	Intrinsic Motivation	Learning Satisfaction	Teacher Competency
Discriminant Validity: Fornell–Larcker Criterion			
Intrinsic Motivation	0.777		
Learning Satisfaction	0.772	0.828	
	0.744	0.809	0.803
Heterotrait–Monotrait Criterion			
Intrinsic Motivation			
Learning Satisfaction	0.810		
Teacher Competency	0.810	0.890	

The results of the discriminatory validity analysis showed that each variable met the Fornell-Larcker criteria, which ensured that each construction was more related to its indicator than the other constructions. The root values of Average Variance Extracted (AVE) for Intrinsic Motivation, Learning Satisfaction, and Teacher Competence were 0.777, 0.828, and 0.803, respectively, higher than the correlation between constructs. For example, the correlation between Intrinsic Motivation and Learning Satisfaction was 0.772, lower than the root value of AVE for both variables. Similarly, the correlation between intrinsic motivation and teacher competency (0.744) and between learning satisfaction and teacher competency (0.809) was also lower than the root value of the AVE of each related variable. In heterotrait-monotrait analysis (HTMT), the correlation value between constructions also meets the criteria of discriminatory validity. The HTMT value between Intrinsic Motivation and Learning Satisfaction was 0.810, while the value between Learning Satisfaction and Teacher Competency

was 0.890, and the value between Intrinsic Motivation and Teacher Competency was 0.810. These values are below the threshold of 0.90, indicating that discrimination between constructions is good enough. With the fulfillment of the Fornell-Larcker and HTMT criteria, it can be concluded that each construction in the model has good discriminatory validity so that each construction can adequately represent different concepts in this analysis.

Table 4. Path Coefficients for Direct Effects.

Hypotheses	Beta (β)	T Value	97.5%CI	p values	Report
Learning Satisfaction -> Intrinsic Motivation	0.493	4.149	0.702	0.000	Supported
Learning Satisfaction -> Teacher Competency	0.809	21.268	0.871	0.000	Supported
Teacher Competency -> Intrinsic Motivation	0.345	2.988	0.575	0.003	Supported

Note. CI = confidence Interval *p < .05.

The analysis showed that Learning Satisfaction significantly influenced Intrinsic Motivation with a beta (β) value of 0.493, a T value of 4.149, and a confidence interval range of up to 97.5%, reaching 0.702. A p-value of 0.000 confirms that this relationship is very significant, supporting the hypothesis. This shows that high learning satisfaction can directly increase students' intrinsic motivation. In addition, Learning Satisfaction also has a powerful influence on Teacher Competence, with a beta (β) value of 0.809, a T value of 21.268, and a confidence interval of 97.5% to 0.871. The p-value of 0.000 confirms a significant relationship. This means that learning satisfaction contributes significantly to improving teacher competence, which reflects the importance of providing a satisfying learning experience.

Furthermore, Teacher Competence was also proven to significantly influence Intrinsic Motivation, with a beta (β) value of 0.345, a T value of 2.988, and a 97.5% confidence interval of 0.575. With a p-value of 0.003, this relationship is declared significant. This shows that good teacher competence can positively encourage students' intrinsic motivation. Overall, these results confirm the importance of increasing student learning satisfaction to increase their intrinsic motivation and support the improvement of teacher competence, which in turn has a positive impact on student motivation.

Furthermore, the relationship between Learning Satisfaction and Teacher Competence has the highest track coefficient value, 0.810, with a t-statistic of 21.268 and a p-value of 0.000. This shows that Learning Satisfaction significantly and strongly affects Teacher Competence. Finally, the relationship between Teacher Competence and Intrinsic Motivation has a path coefficient value of 0.345, with a t-statistic of 2.988 and a p-value of 0.003. This shows that Teacher Competence also significantly and positively influences Intrinsic Motivation, although it has a smaller effect than other relationships. All the relationships tested in this study model were significant at a 99% confidence level (p-value < 0.01). These results support the research hypothesis that Learning Satisfaction and Teacher Competency influence Intrinsic Motivation.

Table 5. Path Coefficients for Direct Effects Variable Moderation (Gender)

Hypotheses	Beta (β)	T Value	97.5%CI	p values	Report
Male					
Learning Satisfaction -> Intrinsic Motivation	0.480	4.147	0.681	0.000	Accepted
Learning Satisfaction -> Teacher Competency	0.740	12.630	0.828	0.000	Accepted
Teacher Competency -> Intrinsic Motivation	0.278	2.303	0.491	0.021	Accepted
Female					
Learning Satisfaction -> Intrinsic Motivation	0.451	4.147	0.909	0.076	Rejected
Learning Satisfaction -> Teacher Competency	0.870	12.630	0.930	0.000	Accepted
Teacher Competency -> Intrinsic Motivation	0.448	2.303	0.887	0.056	Rejected

Note. CI = confidence Interval *p < .05.

The results of the analysis showed that there was a significant difference in the relationship between variables based on gender. In male respondents, all hypotheses were proven to be supported. Learning Satisfaction has a positive and significant influence on Intrinsic Motivation with a coefficient value (β) of 0.480, a T value of 4.147, and a p-value of 0.000. In addition, Learning Satisfaction also strongly influences Teacher Competence with a coefficient (β) of 0.740, a T value of 12,630, and a p-value of 0.000. The relationship between Teacher Competence and Intrinsic Motivation was also significant, with a coefficient value (β) of 0.278, a T value of 2.303, and a p-value of 0.021. Meanwhile, in female respondents, only one hypothesis was supported: the effect of Learning Satisfaction on Teacher Competence, with a coefficient value (β) of 0.870, a T value of 12,630, and a p-value of 0.000. However, the effect of Learning Satisfaction on Intrinsic Motivation was insignificant even though it showed a positive direction, with a coefficient (β) of 0.451, a T value of 4.147, and a p-value of 0.076. The same thing happened in the relationship between Teacher Competence and Intrinsic Motivation, where the positive influence was insignificant with a coefficient (β) of 0.448, a T value of 2.303, and

a p-value of 0.056. The difference in results between male and female respondents in the relationship between variables can be caused by psychological, social, and statistical factors. Men tend to be more driven by learning satisfaction in increasing intrinsic motivation, while women may be influenced by other factors, such as social or emotional support (Vallerand, 2000). In addition, social and cultural expectations can shape different perceptions of teacher competence, which impacts intrinsic motivation (Eccles & Wigfield, 2020). This difference may also be due to women's sensitivity to other variables not measured in this study, so the relationship between learning satisfaction and intrinsic motivation becomes statistically insignificant (Schweder & Raufelder, 2021). In conclusion, the relationship between the variables of Learning Satisfaction, Teacher Competence, and Intrinsic Motivation is very significant in male respondents. However, in female respondents, a significant influence was only found in the relationship between Learning Satisfaction and Teacher Competence (Cruz-Sandoval et al., 2024). These findings reflect gender differences in how learning satisfaction and teacher competence affect intrinsic motivation.

Table 6. Goodness-of-Fit Model Testing

Indicator/Construct	Value	Threshold	Evaluation/Category	Note
Chi-square	626.354	No default threshold	No direct evaluation	Affected by sample size: Use other indicators for interpretation.
Standardized Root Mean Square Residual (SRMR)	0.082	< 0.10	Fit	Showing good fit.
d_ULS (Squared Euclidean Distance)	1.855	No default threshold	Evaluation is necessary with bootstrapping distributions	Stable results according to bootstrapping.
d_G (Geodesic Distance)	1.274	No default threshold	Evaluation is necessary with bootstrapping distributions	Stable results according to bootstrapping.
Normed Fit Index (NFI)	0.705	> 0.9	Marginal Fit	It needs improvement to achieve a good fit.

The model evaluation results showed that some indicators showed a good fit while others required more attention. The Chi-square value of 626.354 has no standard threshold and is difficult to evaluate directly because the sample size heavily influences it. Therefore, the interpretation should consider other indicators. The Root Mean Square Residual (SRMR) standard shows a value of 0.082, below the threshold of 0.10, so this model can be categorized as having a good fit. Other indicators, such as d_ULS (Euclidean Distance Squared) with a value of 1.855 and d_G (Geodesic Distance) 1.274, do not have a specific threshold but are stable based on the bootstrapping results, which indicates that the results of this model are quite reliable. However, the Normed Fit Index (NFI) is at a value of 0.705, below the threshold of 0.90 for a good fit. This indicates that the model is in the category of marginal fit and needs further improvement to achieve a better fit. Overall, although some indicators show a good fit, improvements are needed in certain aspects to improve the model's overall quality.

The results of this study show that teacher competence significantly influences students' learning satisfaction and intrinsic motivation. Teacher competence, including pedagogical, professional, social, and personality abilities, is important in creating a conducive learning environment. This aligns with the intrinsic motivation theory put forward by Deci and Ryan (1985) in Self-Determination Theory, which states that an environment that supports competence, autonomy, and social coherence can increase individual intrinsic motivation. Adequate teacher competence can create a learning atmosphere that encourages students to feel internally competent and motivated. These findings are also supported by Hidayat (2020), who shows that teachers' pedagogical competence directly affects students' learning satisfaction, increasing their intrinsic motivation. Teacher competence was proven to affect student learning satisfaction with a pathway coefficient of 0.809 ($p < 0.01$) and student intrinsic motivation with a coefficient of 0.345 ($p < 0.05$). In addition, learning satisfaction was found to have a significant mediating role in the relationship between teacher competence and students' intrinsic motivation, with a pathway coefficient of 0.493 ($p < 0.01$). This finding reinforces Kusuma et al. (2021), who stated that learning satisfaction mediates between teacher competence and student learning outcomes. However, this study has a new contribution compared to previous research, especially in the context of secondary education in Indonesia, using the Structural Equation Modeling (SEM) approach to explore causal relationships in depth. In contrast to previous studies that use a correlation approach, this study provides more substantial empirical evidence through structural analysis, thus providing a more thorough understanding of the role of learning satisfaction as a mediator. Thus, this study underscores the importance of improving teacher competence through training that focuses on pedagogical and professional aspects to create a more satisfying

and motivating learning experience for students. These findings strengthen the theory and results of previous research and provide practical implications for formulating education policies and designing teacher training programs. The theoretical and practical implications of the following will be explained in detail below.

The study's results showed a significant relationship between learning satisfaction, teacher competence, and students' intrinsic motivation. *First*, learning satisfaction is important in increasing students' intrinsic motivation. When students feel satisfied with their learning experience, they tend to be more intrinsically motivated to learn and achieve better academic outcomes. These findings align with the Theory of Self-Determination, which states that three basic psychological needs influence intrinsic motivation. Empirical evidence from Pouta et al. (2021), [Ryan and Deci \(2020\)](#), and [Ryan and Vansteenkiste \(2023\)](#) supports these findings. In addition, the results of this study also show that learning satisfaction significantly mediates the relationship between the learning environment and intrinsic motivation, which ultimately positively impacts students' academic outcomes. Thus, these findings make a significant theoretical contribution to understanding the relationship between learning satisfaction, intrinsic motivation, and student academic outcomes in education.

Second, teacher competence has a positive impact on student learning satisfaction. The higher the teacher's competence in teaching, the greater the satisfaction students feel with the learning process. This aligns with the Social Learning Theory, which states students learn through observation and interaction with others, including teachers. The empirical evidence is per [Rotter \(2021\)](#), and [Powers et al. \(2020\)](#), which stated that teacher competence significantly affects student learning satisfaction and academic achievement. The theoretical contribution of the findings provides an understanding of the reinforcement and development of concepts in social learning theory as well as a clear relationship between teacher competence and student learning satisfaction. *Third*, teacher competence also contributes directly to increasing students' intrinsic motivation. Competent teachers can deliver material well and build a supportive learning environment, so that students are more encouraged to learn independently and are enthusiastic in achieving their academic goals. This is in line with the Theory of Teacher Effectiveness ([Gordon, 2001](#)), which emphasizes that teachers' competence in managing classes, delivering materials, and interacting with students is a key factor in creating effective and motivating learning experiences. This is per [Bardach et al. \(2022\)](#) and [Carpenter et al. \(2020\)](#), who emphasized that teachers' psychological aspects, such as motivation, personality, self-efficacy, expectations, enthusiasm, and emotional intelligence, contribute significantly to the success of the learning process. The theoretical contribution of this statement strengthens and develops existing concepts.

Fourth, there are significant differences in the relationship between variables based on gender. In the context of this study, the relationship between learning satisfaction, teacher competence, and intrinsic motivation has a different pattern when analyzed by gender. This aligns with the Gender Differences in Learning Theory by [Oliver and Hyde \(1993\)](#), which emphasizes that men and women have different ways of processing information, interacting, and responding to the learning environment. This aligns with [Park et al. \(2019\)](#) and [Carpenter et al. \(2020\)](#), which found that gender moderated the relationship between perceived usefulness and the intention to use, with men being more task-oriented. The theoretical contribution of these findings is to enrich the understanding of the role of gender as a moderating factor in the dynamics of the relationship between learning satisfaction, teacher competence, and students' intrinsic motivation. These findings indicate that for male students, teacher competence has an important role in increasing intrinsic motivation, while for female students, other factors outside of teacher competence may have more influence on their intrinsic motivation. The implications of these results can be considered in designing learning strategies that align with student characteristics based on gender.

This research also has important practical implications for the management of higher education. First, because learning satisfaction has been shown to affect students' intrinsic motivation significantly, educational institutions need to pay more attention to factors that can increase learning satisfaction, such as the development of relevant curricula, adequate learning facilities, and a supportive learning environment. Second, the results that show a significant influence between learning satisfaction and teacher competence emphasize the importance of improving teaching quality. Therefore, training and professional development programs for teachers are urgently needed to ensure that they have adequate competence in managing classes and delivering materials. Finally, the influence of teacher competence on students' intrinsic motivation shows that skilled teachers not only have an effect on academic achievement but also increase students' motivation to learn. As a practical implication, educational institutions can encourage teachers to continue to develop their teaching skills and provide constructive feedback to students to increase learning motivation. Thus, educational institutions can create a more supportive environment for students' overall academic development.

Although this study contributes significantly to understanding the relationship between learning satisfaction, teacher competence, and intrinsic motivation, some limitations must be considered. First, the research sample used is limited to students from one educational institution, so the results of these findings may not be fully generalizable to the student population at other institutions or in different contexts. Second, this study uses a quantitative approach with surveys as a data collection method, which can ignore contextual

or qualitative factors that affect the relationship between variables. Third, the variables tested in this study were limited to learning satisfaction, teacher competence, and intrinsic motivation, so other factors that also influenced, such as students' socioeconomic conditions or social environment, were not considered. Finally, the study uses a cross-sectional design, which only measures the relationship between variables at one point, so it cannot directly identify causality. Further research with a wider sample, more diverse data collection methods, and longitudinal designs can help overcome these limitations and provide deeper insights.

CONCLUSION

The results of this study show that learning satisfaction significantly influences intrinsic motivation and teacher competence, with the strongest relationship occurring between learning satisfaction and teacher competence. In addition, teacher competence also contributes positively to students' intrinsic motivation, emphasizing the importance of teaching quality in increasing student engagement. From the analysis of moderation by gender, it was found that the relationship between learning satisfaction, teacher competence, and intrinsic motivation was more significant in male students than in female students. The validity and reliability of the research construct have met the required standards so that the instruments used are reliable. These findings confirm that increased learning satisfaction not only encourages students' intrinsic motivation but also improves teacher competence, which ultimately positively impacts the overall quality of learning. Therefore, education policies that focus on increasing learning satisfaction can be an effective strategy for strengthening student motivation and improving the quality of teaching in schools.

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