Examining the Role of Cognitive Workload, Professional Competence, and Intrinsic Motivation in Teacher Job Satisfaction

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Abstract.
This study aims to examine the influence of cognitive workload, professional competence, and intrinsic motivation on teacher job satisfaction at SMA Negeri 16 Batam. The population of this study consisted of all certified teachers at SMA Negeri 16 Batam. A total sampling technique was employed, involving all 37 teachers as research respondents. The study applied a quantitative approach using multiple linear regression analysis with the support of SPSS SmartPLS version 4. The findings reveal that cognitive workload has a negative and significant effect on teacher job satisfaction, whereas professional competence and intrinsic motivation have positive and significant effects on teacher job satisfaction. Furthermore, cognitive workload, professional competence, and intrinsic motivation simultaneously have a significant influence on teacher job satisfaction. These findings suggest that schools should implement effective workload management, enhance teachers' professional competencies through continuous professional development programs, and strengthen intrinsic motivation in order to improve teacher job satisfaction and overall educational quality.
Keywords: *Cognitive Workload, Professional Competence, Intrinsic Motivation, Job Satisfaction and Teacher*

I. INTRODUCTION

Education is one of the important sectors in developing high-quality human resources. The success of education is greatly influenced by the role of teachers as educators who interact directly with students in the learning process. Teachers are not only responsible for delivering material, but also for guiding, directing, and shaping students' character in order to achieve national education goals. According to Supardi (2022), teacher job satisfaction reflects the level of comfort and happiness teachers feel toward their work, both in terms of the work environment, social relationships, and rewards received. Teachers who have high job satisfaction tend to be more motivated and have better dedication in carrying out their professional duties. Job satisfaction is one of the important factors in improving the quality of education. Handoko in Sutrisno (2021) states that job satisfaction is an emotional condition that is pleasant or unpleasant when someone views their work. Furthermore, Hasibuan (2022) explains that job satisfaction is a pleasant emotional attitude and love for work reflected through work morale, discipline, and work performance. However, based on the report from the Ministry of Education, Culture, Research, and Technology in 2024, the level of teacher job satisfaction in Indonesia is still categorized as moderate due to the high administrative workload, lack of professional appreciation, and limited learning facilities.

One of the factors affecting teacher job satisfaction is cognitive workload. According to Sweller (2023), cognitive workload is the amount of mental burden received by individuals in processing information when carrying out a task. Paas et al. (2024) also explain that cognitive workload is related to mental demands influenced by task complexity and an individual's ability to process information. In the context of teachers, the high demands of administration, preparation of learning tools, assessment of learning outcomes, and the use of learning technology can increase teachers' mental pressure. Research conducted by Martini and Bastaman (2025) as well as Patricia et al. (2024) shows that workload has a negative and significant effect on job satisfaction, where the higher the workload, the lower the teacher job satisfaction tends to be. In addition to cognitive workload, professional competence is also a factor influencing teacher job satisfaction. According to Law Number 14 of 2005 concerning Teachers and Lecturers, professional competence is the teacher's ability to master learning materials broadly and deeply and to effectively develop the learning process. Mulyasa (2023) explains that teacher competence includes personal, scientific, technological, social, and professional abilities that support the optimal implementation of teachers' duties. Teachers who possess good professional competence tend to be more confident in teaching and able to improve the quality of

learning. Research by Mulyani and Windasari (2024) as well as Udayani and Heryanda (2024) proves that professional competence has a positive and significant effect on teacher job satisfaction.

Another factor that also influences teacher job satisfaction is intrinsic motivation. Kiruja and Elegwa (2021) state that motivation is an encouragement that arises from within individuals to achieve certain goals in their work. High intrinsic motivation will encourage teachers to work with full responsibility, enthusiasm, and dedication. Saragih and Suhendro (2020) explain that good work motivation can improve job satisfaction and teacher productivity in educational organizations. Research by R. Sari et al. (2024) and Purnomo et al. (2025) also shows that intrinsic motivation has a positive and significant effect on teacher job satisfaction. Phenomena related to teacher job satisfaction were also found at SMA Negeri 16 Batam. Based on the results of the pre-survey, most teachers showed relatively low levels of job satisfaction. Teachers also experienced high workloads due to the large number of administrative tasks and additional activities outside teaching. In addition, there are still teachers who feel less optimal in developing professional competence and experience a decline in intrinsic motivation due to work routines and increasing work pressure. These conditions indicate that cognitive workload, professional competence, and intrinsic motivation are important factors that need attention in improving teacher job satisfaction. Based on the description above, this study aims to analyze the effect of cognitive workload, professional competence, and intrinsic motivation on teacher job satisfaction at SMA Negeri 16 Batam.

II. METHODS

This study uses a quantitative approach because it aims to examine the relationships between variables through statistical analysis based on numerical data. According to Sugiyono (2022), quantitative research is a research method used to examine specific populations or samples with the aim of testing predetermined hypotheses through statistical data analysis. This approach was chosen because this study aims to analyze the effect of cognitive workload, professional competence, and intrinsic motivation on teacher job satisfaction at SMA Negeri 16 Batam. This research model is used to explain the causal relationship between independent variables and the dependent variable. This study involves four main variables, namely cognitive workload (X_1), professional competence (X_2), intrinsic motivation (X_3), and job satisfaction (Y) as the dependent variable. Cognitive workload is a burden related to mental demands during the learning process influenced by task complexity and an individual's ability to process information (Paas et al., 2024). Teacher professional competence is the teacher's ability to master learning materials broadly and deeply and to effectively develop the learning process (Law Number 14 of 2005). Intrinsic motivation is an encouragement that comes from within individuals to carry out work without external stimulation (Uno, 2021). Meanwhile, job satisfaction is a pleasant psychological condition or teachers' subjective feelings that depend on their work environment (Widodo, 2020).

This study uses quantitative data with primary and secondary data sources. Primary data were obtained through the distribution of questionnaires to teachers at SMA Negeri 16 Batam, while secondary data were obtained from school documents, books, journals, and scientific literature relevant to the study. The population in this study consisted of all civil servant teachers who had certification at SMA Negeri 16 Batam, totaling 37 people. The sampling technique used was total sampling, where all members of the population were used as research samples, resulting in a total sample of 37 respondents. Data collection techniques were carried out through three main methods, namely: (1) observation conducted directly on the research object; (2) literature study obtained from books, journals, and references related to the field of human resource management; and (3) questionnaires distributed to respondents to obtain research data.

The data analysis method used in this study was multiple linear regression analysis with the assistance of SmartPLS version 4. application. Multiple linear regression analysis was used to determine the effect of cognitive workload, professional competence, and intrinsic motivation on teacher job satisfaction at SMA Negeri 16 Batam. Before conducting hypothesis testing, this study first carried out instrument testing consisting of validity and reliability tests. The validity test was conducted to determine the ability of the research instrument to measure the variables studied, while the reliability test was conducted using Cronbach's Alpha. The research instrument is declared reliable if the Cronbach's Alpha value is greater than

0.70. Furthermore, classical assumption tests were conducted consisting of normality test, multicollinearity test, and heteroscedasticity test. The normality test was conducted using QQ-Plot to determine whether the data were normally distributed. The multicollinearity test was conducted by examining the Variance Inflation Factor (VIF) value, while the heteroscedasticity test used the Breusch-Pagan Test to determine whether there was inequality in residual variance within the regression model. Hypothesis testing was conducted through two stages, namely partial test (t-test) and simultaneous test (F-test). The t-test was used to determine the effect of each independent variable on the dependent variable partially. Variables are declared to have a significant effect if the significance value is less than 0.05. Meanwhile, the F-test was used to determine the simultaneous effect of independent variables on the dependent variable. In addition, this study also used the coefficient of determination test (R^2) to determine how much the variables of cognitive workload, professional competence, and intrinsic motivation were able to explain variations in teacher job satisfaction. The greater the R^2 value, the better the ability of the independent variables to explain the dependent variable.

III. RESULT AND DISCUSSION

Respondent characteristics in this study include gender, age, educational background, and years of service. Based on the results of the study involving 37 respondents, the majority of respondents were female, totaling 20 people or 54%, while male respondents totaled 17 people or 46%. This indicates that the teaching profession at SMAN 16 Batam is dominated by women. The teaching profession is closely associated with the roles of educating, guiding, and nurturing, which are socially often associated with female characteristics such as patience, diligence, high empathy, and communicative skills (Eagly, 2022). In addition, the teaching profession is considered to have relatively regular working hours, making it more flexible in balancing work and family roles (Hammond, 2023). Based on age level, the majority of respondents were in the age range of 38–44 years, totaling 13 people or 35%. Furthermore, respondents aged 31–37 years totaled 11 people or 30%, respondents aged 24–30 years totaled 7 people or 19%, and respondents aged 45–56 years totaled 6 people or 16%. This condition indicates that the majority of teachers at SMAN 16 Batam are in the productive age category. Productive age tends to have a higher level of performance because it is supported by physical condition, thinking ability, and good work experience (Aprilyanti, 2017). In addition, more mature age also provides broader work experience that can improve teacher work quality (Yasin & Priyono, 2021).

Based on educational background, the majority of respondents had a Bachelor's degree (S1), totaling 32 people or 86%, while respondents with a Master's degree (S2) totaled 5 people or 14%. This indicates that most teachers already possess academic competencies that comply with the standards for teaching personnel. According to Phitri and Widiyaningsih (2018), educational level influences an individual's ability to make decisions and complete work effectively. In addition, education is also a learning process to develop individual abilities through teaching and training so that educational goals can be achieved optimally (Hendra, 2020). Meanwhile, based on years of service, the majority of respondents had worked for 3–7 years, totaling 17 people or 46%, followed by respondents with 8–10 years of service totaling 11 people or 30%, and respondents with 1 month–2 years of service totaling 9 people or 24%. This indicates that most teachers at SMAN 16 Batam already have sufficient work experience in carrying out their duties and responsibilities as educators. The longer a person's years of service, the higher the level of experience, skills, and ability in completing work effectively (Manulang, 2023).

Validity and Reliability Test

According to Imam Ghozali (2021), validity testing is used to measure whether a questionnaire is valid or not. Validity testing is conducted to ensure that each question item is able to represent the variables studied. An item is declared valid if the corrected item-total correlation value is greater than 0.50. Meanwhile, reliability testing is used to measure the level of consistency of respondents' answers to the research instrument. A variable is declared reliable if it has a Cronbach's Alpha value greater than 0.60.

Table 1. Validity Test Results

Variable	Indicator	Corrected Item- Total Correlation	Critical Value	Information
Job Satisfaction (Y)	Flexibility in Work	0,801	0,5	Valid
	Work Morale	0,791	0,5	Valid
	Skills in Completing Tasks	0,831	0,5	Valid
	Completing Work through Teamwork	0,716	0,5	Valid
	Work Environment	0,807	0,5	Valid
Cognitive Workload (X_1)	Teaching Duration	0,772	0,5	Valid
	Conducting Guidance Activities	0,747	0,5	Valid
	Training Students through Curricular or Extracurricular Activities	0,799	0,5	Valid
	Performing Additional Tasks	0,734	0,5	Valid
Professional Competence (X_2)	Mastering Subject Matter	0,826	0,5	Valid
	Developing Scientific Mindsets	0,767	0,5	Valid
	Mastering Competency Standards	0,756	0,5	Valid
	Developing Learning Materials	0,719	0,5	Valid
	Developing Professionalism	0,693	0,5	Valid
	Utilizing Educational Technology	0,621	0,5	Valid
ntrinsic Motivation (X_3)	Teacher Responsibility in Carrying Out Duties	0,601	0,5	Valid
	Carrying Out Tasks According to Targets	0,804	0,5	Valid
	Independence in Taking Action	0,667	0,5	Valid
	Prioritizing Work Results	0,734	0,5	Valid
	Enjoying Work	0,850	0,5	Valid

Source: SPSS Data Processing Results, 2026

Based on Table 1, it can be seen that all statement items in the variables of Job Satisfaction, Cognitive Workload, Professional Competence, and Intrinsic Motivation have corrected item-total correlation values greater than 0.50. Therefore, all statement items are declared valid and feasible to be used as research instruments.

Table 2. Reliability Test Results

Variabel	*Cronbach's Alpha*	Batasan	Keputusan
Job Satisfaction (Y)	0,804	0,6	Reliabel
Cognitive Workload (X_1)	0,760	0,6	Reliabel
Professional Competence (X_2)	0,821	0,6	Reliabel
Intrinsic Motivation (X_3)	0,787	0,6	Reliabel

Source: SPSS Data Processing Results, 2026

Based on Table 2, it can be seen that all research variables have Cronbach's Alpha values greater than 0.60. This indicates that the research instrument has a good level of consistency. Therefore, all variables are declared reliable and can be used in the research.

Classical Assumption Test Results

1. Normality Test

The normality test is used to determine whether the data studied are normally distributed or not. The method used for the normality test in this study is statistical analysis using the Q-Q Plot. Quantile-Quantile Plot is a graph used to compare the distribution of the data with a particular theoretical distribution, usually a normal distribution. The results of the normality test can be seen in the following figure:

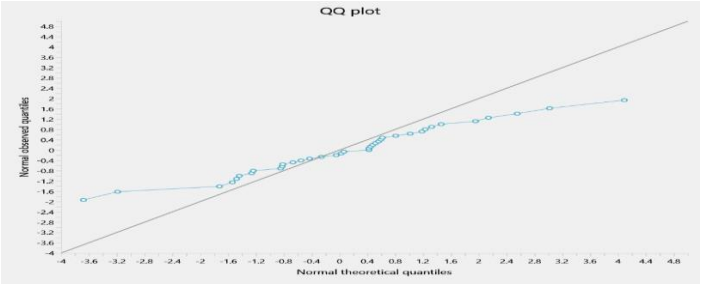

Fig. 1. Normality Test Results (Q-Q Plot)
Source: Data Processed Using SmartPLS 4, 2026.

Based on Figure 1, the results of the normality test conducted using SmartPLS show that the points spread following the diagonal line. This indicates that the regression model meets the normality assumption. In addition to the Q-Q Plot test, the residual histogram is a graph that describes the distribution of standardized residuals for all observations in the model. Its purpose is to evaluate whether the residuals follow a normal distribution. A good histogram will form a pattern resembling a symmetrical bell-shaped curve distributed evenly around zero; if this pattern appears, then the normality assumption can be considered fulfilled. The normality test in this study was conducted using the skewness value to determine whether the data distribution was symmetrical and normally distributed. A dataset is considered normally distributed if the skewness value is within the acceptable range of –1 to +1. The results of the normality test are presented in Table 3 below.

Table 3. Normality Test Results (Skewness)

Variabel	Skewness
Job Satisfaction (Y)	0,065

Source: Data Processed Using SmartPLS 4, 2026

Based on Table 3, it can be seen that the skewness value for the Total variable (Y) is 0.065. This value is very close to zero, indicating that the distribution of the Total (Y) data is symmetrical or close to a normal distribution. Thus, it can be concluded that there is no significant skewness either to the left or to the right. In general, skewness values within the range of –1 to +1 indicate that the data meet the normality assumption. Therefore, the Total variable (Y) in this study can be said to be normally distributed and suitable for further statistical analysis.

2. Multicollinearity Test

The multicollinearity test is conducted to examine whether there is a correlation among variables in the linear regression model. A good regression model is one that does not experience multicollinearity. The multicollinearity test can be detected by looking at the Variance Inflation Factor (VIF) value, with the following criteria: If the VIF value is < 10, then there is no multicollinearity. If the VIF value is > 10, then there is multicollinearity.

Table 4. Multicollinearity Test Results

Variabel	VIF
Cognitive Workload (X_1)	1,363
Professional Competence (X_2)	2,059
Intrinsic Motivation (X_3)	2,054

Source: Data Processed Using SmartPLS 4, 2026

Based on Table 4, it can be seen that the results of the multicollinearity test shown through the Variance Inflation Factor (VIF) values indicate that the Cognitive Workload variable (X_1) has a VIF value of 1.363, the Professional Competence variable (X_2) has a VIF value of 2.059, and the Intrinsic Motivation variable (X_3) has a VIF value of 2.054. The VIF values of all variables are below 10. This indicates that the independent variables in the research model do not have a high correlation or do not experience multicollinearity symptoms. Therefore, it can be concluded that the regression model in this study fulfills the multicollinearity assumption, so that the Cognitive Workload, Professional Competence, and Intrinsic

Motivation variables can be used simultaneously in the research model to explain the dependent variable without causing interference among the independent variables.

3. Heteroscedasticity Tests

The heteroscedasticity test in this study was conducted using the residual autocorrelation plot to identify whether there is a systematic pattern or correlation among residuals in the regression model. A regression model is considered free from autocorrelation if the residuals are randomly distributed and do not form a specific pattern. The results of the residual autocorrelation plot are presented in Figure 2 below.

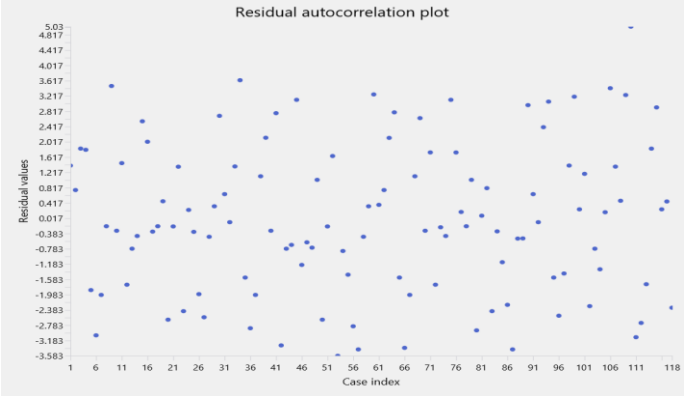

Fig. 1. Residual Autocorrelation Plot

Source: Data Processed Using SmartPLS 4, 2026

Based on Figure 2, the residual autocorrelation plot shows that the residuals are randomly distributed above and below the zero line and do not form a specific or systematic pattern. This indicates that there is no autocorrelation problem in the regression model. The random distribution of residuals suggests that the observations are independent from one another, so the regression model has fulfilled the autocorrelation assumption and is appropriate for further analysis. The heteroscedasticity test in this study was conducted using the Breusch–Pagan Test to determine whether there was an inequality of residual variance in the regression model. A regression model is considered free from heteroscedasticity if the significance value (p-value) is greater than 0.05. The results of the heteroscedasticity test are presented in Table 5 below.

Table 5. Heteroscedasticity Tests Results

	Test-Statistic	**df**	**P-value**
Breusch-Pagan Test	2.874	3	0.411

Source: Data Processed Using SmartPLS 4, 2026

Based on Table 5, the results of the heteroscedasticity test using the Breusch–Pagan Test obtained a Test-Statistic value of 2.874 with a degree of freedom (df) of 3 and a p-value of 0.411. Since the p-value is greater than 0.05, it can be concluded that the regression model does not experience heteroscedasticity problems. This indicates that the residual variance is constant or homogeneous, meaning that the regression model has fulfilled the heteroscedasticity assumption and is suitable for further analysis.

Multiple Linear Regression Analysis

Multiple linear regression analysis is an analytical method used in this study to determine the ability of the independent variables in explaining the dependent variable. Multiple linear regression analysis was used to examine the effect of cognitive workload, professional competence, and intrinsic motivation on the job satisfaction of teachers at SMAN 16 Batam. The following figure illustrates the results of the analysis examining the effects of Cognitive Workload (X1), Professional Competence (X2), and Intrinsic Motivation (X3) on Job Satisfaction (Y). The model indicates that Intrinsic Motivation has the strongest positive effect on Job Satisfaction, while Cognitive Workload demonstrates a negative effect on employees' level of job satisfaction. Furthermore, the coefficient of determination (R^2) value of 0.769 indicates that 76.9% of the variation in Job Satisfaction can be explained by the three independent variables included in this research model.

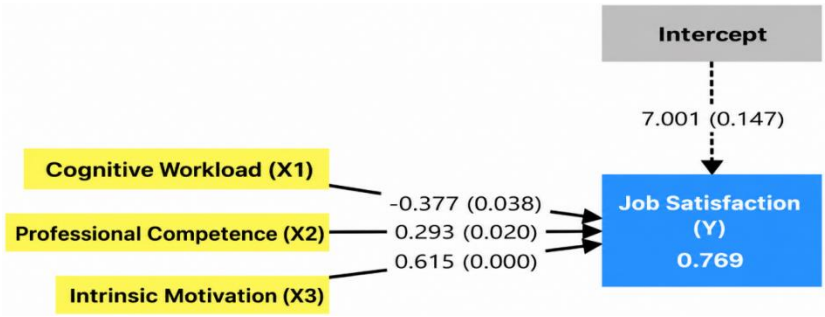

Fig. 2. Multiple Linear Regression Equation

Source: Data Processed Using SmartPLS 4, 2026

The intercept value of 7.001 indicates the basic level of job satisfaction when all independent variables are equal to zero. Meanwhile, the R^2 value of 0.769 means that 76.9% of the variation in job satisfaction can be explained by these three variables, while the remaining 23.1% is influenced by other factors outside the research model.

Table 6. Coefficient Values in the Multiple Linear Regression Equation

	ıstandardized coefficients	**Standardized coefficients**	**SE**	**P value**
Cognitive Workload (X_1)	-0.377	-0.211	0.175	0.038
Professional Competence (X_2)	0.293	0.293	0.120	0.020
Intrinsic Motivation (X_3)	0.615	0.515	0.143	0.000
Intercept	7.001	0.000	4.721	0.147

Source: Data Processed Using SmartPLS 4, 2026

The interpretation of the multiple linear regression equation above is as follows. The intercept value of 7.001 indicates that if the variables of cognitive workload (X_1), professional competence (X_2), and intrinsic motivation (X_3) are assumed to be constant or fixed, then the job satisfaction value is 7.001. Furthermore, the regression coefficient value of cognitive workload (β_1) of -0.377 indicates that if cognitive workload increases by 1 unit, then job satisfaction will decrease by 0.377. The negative coefficient value indicates that the direction of the effect of cognitive workload on job satisfaction is negative.

Meanwhile, the regression coefficient value of professional competence (β_2) of 0.293 indicates that if professional competence increases by 1 unit, then job satisfaction will increase by 0.293. The positive coefficient value indicates that professional competence has a positive effect on job satisfaction. Furthermore, the regression coefficient value of intrinsic motivation (β_3) of 0.615 indicates that if intrinsic motivation increases by 1 unit, then job satisfaction will also increase by 0.615. Thus, intrinsic motivation can be said to have a positive effect on job satisfaction. Meanwhile, the standard error (e) is a random variable that has a probability distribution and describes various other factors that may affect job satisfaction but are not included in the regression equation model of this study.

Hypothesis Testing

1. Partial Test (T-Test)

This test is used to determine the effect of each independent variable on the dependent variable. The variables included in the model are cognitive workload, professional competence, and intrinsic motivation. The test is conducted by comparing the significance value with a significance level of 0.05. The basis for decision making in accepting or rejecting the hypothesis is as follows: if the p-value < 0.05 or the t-value > 1.96, then the independent variable has a significant effect on the dependent variable. The t-table value in this study was calculated based on the degree of freedom (df) of n – 1, with a significance level (α) of 0.05 divided by two ($\alpha/2$) because a two-tailed test was used. With a sample size (n) of 37, the calculation obtained df = 37 – 1 = 36 and $\alpha/2 = 0.025$. Based on these values, the t-table obtained was 2.028 by referring to the t-distribution table at df = 36 and a significance level of 0.025.

Table 7. Partial Test (T-Test) Result

	Unstandardized coefficients	Standardized coefficients	SE	T value	P value
Job Satisfaction (Y)	-0.377	-0.211	0.175	2.156	0.038
Cognitive Workload (X_1)	0.293	0.293	0.120	2.442	0.020
Professional Competence (X_2)	0.615	0.515	0.143	4.297	0.000
Intrinsic Motivation (X_3)	7.001	0.000	4.721	1.483	0.147

Source: Data Processed Using SmartPLS 4, 2026

Based on Table 7, it can be seen that the cognitive workload variable obtained a t-value of 2.156 with a significance level of 0.038. These results indicate that t-value (2.156) > 2.028 or significance (0.038) < 0.05, so it can be concluded that cognitive workload has a negative and significant effect on job satisfaction. Therefore, the first hypothesis (H1) is accepted. Furthermore, the professional competence variable obtained a t-value of 2.442 with a significance level of 0.020. These results indicate that t-value (2.442) > 2.028 or significance (0.020) < 0.05, meaning that professional competence has a positive and significant effect on job satisfaction. Therefore, the second hypothesis (H2) is accepted. Meanwhile, the intrinsic motivation variable obtained a t-value of 4.297 with a significance level of 0.000. These results indicate that t-value (4.297) > 2.028 or significance (0.000) < 0.05, so it can be concluded that intrinsic motivation has a positive and significant effect on job satisfaction. Therefore, the third hypothesis (H3) is accepted.

2. Simultaneous Test (F-Test)

The F-test is used to determine whether the independent variables simultaneously are able to explain the dependent variable properly or whether the independent variables together have a significant effect on the dependent variable. In the ANOVA summary table, the effect of the independent variables (cognitive workload, professional competence, and intrinsic motivation) on the dependent variable (job satisfaction) can be observed.

The F-table value in this study was determined at a significance level of 5% using the numerator degree of freedom (df1) equal to the number of independent variables (k) and the denominator degree of freedom (df2) equal to n – k – 1. With a sample size (n) of 37 and the number of independent variables (k) of 3, it was obtained that df1 = 3 and df2 = 37 – 3 – 1 = 33. Based on these values, the F-table obtained was 2.89 by referring to the F-distribution table at a significance level of 0.05.

Table 8. Simultaneous Test (F-Test) Result

	Unstandardized coefficients	Standardized coefficients	SE	T value	P value
Cognitive Workload (X_1)	-0.377	-0.211	0.175	2.156	0.038
Professional Competence (X_2)	0.293	0.293	0.120	2.442	0.020
Intrinsic Motivation (X_3)	0.615	0.515	0.143	4.297	0.000
Intercept	7.001	0.000	4.721	1.483	0.147

Source: Data Processed Using SmartPLS 4, 2026

Based on Table 8, it can be seen that the calculated F-value (36.602) > 2.89 with a significance value of (0.000) < 0.05. Thus, it can be concluded that cognitive workload, professional competence, and intrinsic motivation simultaneously have a significant effect on job satisfaction. Therefore, the fourth hypothesis (H4) is accepted.

Coefficient of Determination

The coefficient of determination is a measure that shows the magnitude of the variation in the dependent variable that can be explained by the independent variables. The coefficient of determination value is determined by the Adjusted R Square value, which can be seen in Table 9 below

Table 9. Coefficient of Determination Result

	Job Satisfaction
R-square	0.769
R-square adjusted	0.748

Source: Data Processed Using SmartPLS 4, 2026

Based on Table 9, it can be seen that the R-Square value is 0.769 or 76.9%. This means that 76.9% of the job satisfaction variable is influenced by cognitive workload, professional competence, and intrinsic motivation, while the remaining 23.1% is influenced by other variables not examined in this study.

IV. DISCUSSION

The test results show that the first hypothesis proposed is accepted, meaning that cognitive workload affects the job satisfaction of teachers at SMAN 16 Batam. This indicates that high cognitive workload can reduce teachers' job satisfaction because teachers are required to concentrate, think intensively, and complete various academic responsibilities continuously. Excessive cognitive workload can cause mental fatigue and work stress, which ultimately reduces comfort at work. Therefore, the higher the cognitive workload perceived by teachers, the lower the level of job satisfaction tends to be. Thus, the first hypothesis is accepted. The results of this study are in line with research conducted by Murakibuddin et al. (2025) and Udayani & Heryanda (2024), which stated that cognitive workload has a negative and significant effect on job satisfaction.

The test results show that the second hypothesis proposed is accepted, meaning that professional competence affects the job satisfaction of teachers at SMAN 16 Batam. This indicates that the better the professional competence possessed by teachers, the higher the level of job satisfaction. Teachers who master learning materials, are able to develop learning methods, and improve their professional quality tend to feel more confident and satisfied in carrying out their work. Therefore, professional competence can increase teachers' comfort and pride in their profession. Thus, the second hypothesis is accepted. The results of this study are in line with research conducted by Udayani & Heryanda (2024) and Fan et al. (2024), which stated that professional competence has a positive and significant effect on job satisfaction.

The test results show that the third hypothesis proposed is accepted, meaning that intrinsic motivation affects the job satisfaction of teachers at SMAN 16 Batam. This indicates that the higher the intrinsic motivation possessed by teachers, the higher the level of job satisfaction. Teachers who have responsibility, enjoyment at work, and a strong orientation toward work results tend to feel more enthusiastic and satisfied in carrying out their duties. Intrinsic motivation encourages teachers to work not only because of external rewards, but also because of internal encouragement and personal satisfaction. Thus, the third hypothesis is accepted. The results of this study are in line with research conducted by Mulyani & Windasari (2024) and Khasanah (2024), which stated that intrinsic motivation has a positive and significant effect on job satisfaction.

The test results show that the fourth hypothesis proposed is accepted, meaning that cognitive workload, professional competence, and intrinsic motivation simultaneously affect the job satisfaction of teachers at SMAN 16 Batam. This indicates that teacher job satisfaction is influenced by the combination of mental workload, professional ability, and internal motivation at work. When teachers are able to manage cognitive workload properly, supported by good professional competence and strong intrinsic motivation, job satisfaction will increase. Therefore, schools need to pay attention to these three factors to maintain and improve teachers' job satisfaction optimally. These results support research conducted by Mulyani & Windasari (2024), Khasanah (2024), Udayani & Heryanda (2024), and Warestu & Mayasari (2025), which stated that cognitive workload, professional competence, and intrinsic motivation simultaneously have a significant effect on job satisfaction.

V. CONCLUSION

Cognitive workload has a negative and significant effect on the job satisfaction of teachers at SMAN 16 Batam. This indicates that the higher the cognitive workload experienced by teachers, the lower the level

of job satisfaction tends to be. Excessive mental demands in carrying out teaching, administrative, and academic responsibilities can cause mental fatigue and work stress, which ultimately reduce teachers' comfort and satisfaction at work. Therefore, proper workload management is needed so that teachers can work optimally without experiencing excessive mental pressure. Professional competence has a positive and significant effect on the job satisfaction of teachers at SMAN 16 Batam. This indicates that the better the professional competence possessed by teachers, the higher the level of job satisfaction. Teachers who are able to master learning materials, apply effective teaching methods, and manage the learning process properly tend to feel more confident and successful in carrying out their duties. This condition can increase teachers' sense of pride and satisfaction in their profession.

Intrinsic motivation has a positive and significant effect on the job satisfaction of teachers at SMAN 16 Batam. This indicates that teachers who have high intrinsic motivation tend to have higher job satisfaction. Intrinsic motivation encourages teachers to work with responsibility, dedication, and enthusiasm because they feel that their work is meaningful and enjoyable. Therefore, intrinsic motivation becomes an important factor in increasing teachers' job satisfaction. Cognitive workload, professional competence, and intrinsic motivation simultaneously have a significant effect on the job satisfaction of teachers at SMAN 16 Batam. This indicates that teachers' job satisfaction is influenced by several interrelated factors. Excessive cognitive workload can reduce job satisfaction, while professional competence and intrinsic motivation can increase job satisfaction. Therefore, schools need to maintain a balance in workload management, improve teachers' professional competence, and strengthen intrinsic motivation so that teachers' job satisfaction can increase optimally.

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