

# **The Influence of Education and Training on Work Motivation and Teacher Performance on Smk Negeri 9 in Samarinda**

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**ABSTRACT:** *The purpose of this study is to directly determine the effect of education on work motivation; to directly determine the effect of training on work motivation; to directly determine the effect of work motivation on teacher performance; to directly determine the effect of education on teacher performance; to directly determine the effect of training on teacher performance; to indirectly determine the effect of education on teacher performance through work motivation; and to indirectly determine the effect of training on teacher performance through work motivation. The population in this study were PNS and Non-PNS Teachers at SMK Negeri 9 Samarinda with a sample of 60 respondents with a sampling technique using saturated samples. The data analysis used was PLS-SEM or Path SEM Modeling based on variants with the help of the SmartPLS 3 program in data processing. The findings indicate that education has a negative and insignificant effect on teacher work motivation. Training has a positive and significant effect on teacher work motivation; work motivation has a positive and significant effect on teacher performance; education has a positive and significant effect on teacher performance; training has a negative and insignificant effect on teacher performance; education has an indirect negative and insignificant effect on teacher performance through work motivation; and training indirectly has a positive and significant effect on teacher performance through teacher work motivation at SMK Negeri 9 Samarinda. This means that although direct training does not have a significant impact on teacher performance, training that increases work motivation can indirectly encourage an increase in their performance. Increased work motivation due to training acts as an intermediary that helps teachers improve their performance.*

**Keywords:** *Education; Training; Work Motivation; and Teacher Performance.*

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## **I. INTRODUCTION**

Teachers play a central role in the educational process. As educators and facilitators, teachers have the responsibility to develop the potential of students optimally. Teachers not only transfer knowledge, but also shape the character, morals, and ethics of students. Therefore, the quality of teachers is a very important element in determining the success of education. Competent, integrity, and highly dedicated teachers can create a conducive and inspiring learning environment for students. The role of teachers is very important in teaching and learning process activities (KBM) to students or students, especially at SMK Negeri 9 Samarinda because teachers play the role of facilitators, guides, and motivators in the learning process. Teachers not only deliver subject matter, but are also responsible for shaping students' character, skills, and mindset to be ready to face the challenges of the world of work. As a vocational education institution, SMK Negeri 9 Samarinda has a great responsibility to produce graduates who are competent in their fields. This can only be achieved if teachers have high pedagogical ability, professionalism, and work motivation to support the creation of an effective and quality learning process, which is also related to teacher performance.

Teacher performance is an important indicator in measuring the effectiveness of the learning process in schools. Teacher performance includes various aspects, such as the ability to prepare lesson plans, teaching skills, the ability to evaluate learning outcomes, and efforts to continuously improve professional competence. Good teacher performance will have a direct impact on the quality of education provided to students. Therefore, efforts

to improve teacher performance are a priority in educational development. However, in practice, there are various challenges that affect teacher performance. Factors such as high workload, limited facilities and infrastructure, lack of opportunities to participate in training, and low work motivation can be obstacles for teachers to achieve optimal performance. Therefore, a comprehensive approach is needed to address these issues, including through improving the quality of education and training for teachers. The performance of teachers at SMK Negeri 9 Samarinda has fluctuated over a period of five years. In 2020, the average performance score was 7.5%, which increased significantly to 8.0% in 2021. However, in 2022, there was a slight decline to 7.8%, reflecting challenges or adjustments in teaching strategies. Performance peaked at 8.5% in 2023, indicating the implementation of effective strategies or programs that support teacher performance. Nonetheless, a marginal decline is observed in 2024, with the score dropping to 8.2%. These fluctuations underscore the importance of continuous improvement initiatives to maintain high levels of performance. Overall, the trend highlights progress and variability in teacher performance, calling for targeted interventions to maintain consistency and growth. Teacher performance has a direct influence on the quality of education received by students. Therefore, to improve the quality of education, there needs to be more attention to factors that affect teacher performance, one of which is work motivation. Work motivation is the encouragement that exists in individuals to do their best work. In the context of teachers, this motivation can manifest in the form of enthusiasm for teaching, dedication to work, and efforts to continue to develop teaching skills. High motivation will encourage teachers to improve their performance, both in terms of teaching quality, interaction with students, and professional self-development. The development of teacher performance over time is also greatly influenced by work motivation factors. Teachers who have strong motivation tend to strive to improve their pedagogic skills, participate in training, and implement more innovative teaching methods. Positive work motivation can also create a better learning environment, increase student satisfaction, and ultimately contribute to the achievement of more optimal educational goals. However, while work motivation can play a big role in improving teacher performance, teachers often face various challenges that affect their motivation levels, such as high workloads, lack of rewards, or lack of support from schools. Therefore, it is important to understand more about the factors that affect teachers' work motivation, as well as how they can be optimized to encourage teacher performance improvement.

In accordance with research conducted by Niati et al., (2021) prove that there is work motivation that has a positive and significant effect on performance. Then, the research conducted by Riyanto et al., (2021) It also proves that work motivation has a positive and significant effect directly on performance. However, different research is proven by Muhtadi et al., (2021) where Work motivation has a insignificant effect on employee performance. Meanwhile, research conducted by Iis et al., (2022) Strengthen evidence that work motivation has a positive and significant effect on employee performance. Overall, although there are several studies with different findings, the majority of studies show that work motivation has a positive influence on performance. In the context of teachers, this is important to implement, because good motivation will encourage teachers to continue to develop and give their best in carrying out their duties, which leads to improving the quality of education.

Teachers' work motivation and teacher performance are very relevant to improving the quality of education. Teachers are a key element in the education system, and their performance greatly affects the success of the learning process. Therefore, teachers' work motivation is an important factor that can affect how they carry out their duties. High work motivation not only increases the morale of teaching but also encourages teachers to innovate in teaching methods and improve their professional skills. Teachers' work motivation can be influenced by various factors, one of which is the education and training received. Quality education and training will provide teachers with new skills and knowledge that can increase confidence and satisfaction in their work. Teachers who feel competent and receive support through training tend to be more motivated to improve their performance. In addition, training relevant to the development of the curriculum and educational technology will enrich teachers' teaching methods, allowing teachers to deliver material in a more engaging and effective way.

At SMK Negeri 9 Samarinda, education and training are important aspects in efforts to improve teacher performance. A relevant and ongoing training program can provide an opportunity for teachers to develop new skills, update their knowledge, and improve their professional competence. In addition, education and training can also be a source of work motivation for teachers, which will ultimately have an impact on improving a teacher's performance. The optimal performance of teachers is greatly influenced by their motivation. Teachers who are motivated to continue learning and developing will have better performance, both in terms of teaching quality, interaction with students, and professional self-development. Conversely, teachers who lack motivation or feel unappreciated tend to show less than optimal performance, which can negatively impact the quality of learning and student development. Education and training have a significant role in shaping teachers' motivation for work. Proper and ongoing training provides an opportunity for teachers to update their knowledge and skills, which in turn will increase their motivation to work better. With the training, teachers not only gain technical skills, but also gain a better understanding of the importance of their role in creating a productive learning environment. Along with that, effective education and training also serve as a tool to build stronger relationships

between teachers and students, creating a supportive and positive atmosphere for the teaching and learning process. Therefore, the development of teachers' motivation through education and training is one of the most important strategies to improve teacher performance and ultimately improve the overall quality of education.

In accordance with research conducted by Manutilaa et al., (2024) prove that work motivation has a significant effect and mediate between the influence of education on Performance. Then, the research conducted by Tabrani et al., (2024) reveals that education has a positive and significant effect indirectly and Intervening through work motivation to employee performance. However, a different study was conducted by Bratha et al., (2023) which revealed that there is a negative and insignificant influence mediating through motivation between education on employee performance. Different research was also found by Avriyanti et al., (2019) which revealed that there is a insignificant influence through motivation on employee performance. Meanwhile, research conducted by Mawarni et al., (2023) Strengthen the evidence that education indirectly affects employee performance through work motivation. Overall, although there are varied findings regarding the influence of education on performance through work motivation, most studies show that work motivation has an important role in linking education to teacher performance. Therefore, understanding and managing teachers' work motivation is very important to create conditions that support optimal self-development and performance, as well as improving the overall quality of education. Research conducted by Aditya et al., (2024) prove that Training has a positive and significant effect on employee performance through work motivation. However, a different study was conducted by Atmoko, (2022) which revealed that training has a negative but significant effect on employee performance through work motivation. Then, the research conducted by Mawarni et al., (2023) which found that there is an indirect influence between education on employee performance through work motivation. Meanwhile, other research also from Manutilaa et al., (2024) strengthening evidence that training has a significant effect and mediating training on employee performance through work motivation. Overall, in the context of teachers, effective and relevant training can improve their professional skills, but the impact on performance is highly dependent on the level of work motivation that the teacher has. Work motivation is a key factor in mediating the effect of training on performance, because motivated teachers will be more likely to apply the training results and work better. Therefore, efforts to increase teachers' work motivation, both through quality training and other support, are very important to achieve optimal performance in the world of education.

Based on the background that has been explained above, the formulation of the problem can be described as follows: (1) Does education directly have a positive and significant effect on work motivation?; (2) Does training directly have a positive and significant effect on teacher performance?; (3) Does work motivation directly have a positive and significant effect on teacher performance?; (4) Does education directly have a positive and significant effect on teacher performance?; (5) Does training directly have a positive and significant effect on teacher performance?; (6) Does Education indirectly have a positive and significant effect on teacher performance through work motivation?; and (7) Does training indirectly have a positive and significant effect on teacher performance through work motivation?.

## **II. LITERATURE REVIEW**

### **Motivation**

According to (2016:322), Motivation is a process that causes an individual's intensity, direction and continuous effort towards achieving goals. Intensity shows how hard a person is trying. But high intensity is unlikely to lead to good performance results, unless efforts are made in a direction that benefits the organization. Because the quality of the business and its intensity must be considered. Motivation has a dimension of continuous effort. Motivation is a measure of how long a person can keep their business. Motivated individuals will run the task long enough to achieve their goals. More explanation Robbins & Judge (2017:127), motivation (motivation) is a process that explains a person's strength, direction, and perseverance in an effort to achieve a goal. Meanwhile, according to Luthan, (2018:141), motivation as a process that begins from a physiological or psychological deficiency or a need that activates behavior or an impulse aimed at a goal or intensity.

### **Teacher Performance**

according to Supardi (2016:54), Teacher performance is the ability of a teacher to carry out learning tasks at school and be responsible for the students under his guidance by improving the achievements or learning outcomes of his students. Therefore, teacher performance can be interpreted as a condition that shows the ability of a teacher to carry out his duties at school and describes the existence of a learning activity so that it is able to guide students in achieving optimal achievements/learning outcomes. Meanwhile, according to Erjati (2017:24), Teacher performance is all activities that he or she carries out his mandate and responsibility in educating, teaching, and guiding, directing, and guiding students in reaching their level of maturity and maturity. Teacher performance is basically more directed at the behaviour of an educator in his work and the effectiveness of the educator in carrying out his duties and responsibilities which can influence students to their desired goals. If performance is the quality and quantity of work completed by individuals, then performance is Output task

implementation.

### **Education**

According to Joseph (2018:8), Education is a systematic effort that aims for every human being to reach a certain stage in his life, namely the achievement of birth and mental happiness. Meanwhile, Sigh, (2019:335) Explains that education in an organization is the process of transforming knowledge from one person to another, or in other words, the dominant aspect of education is the development of knowledge and abilities of decision makers. Meanwhile, according to Yasin et al., (2024:4), Education is a conscious and planned effort to create an inspiring learning environment, where the learning process takes place actively so that students can develop their potential with full awareness. This includes the development of religious spiritual power, self-control, personality formation, intelligence enhancement, the formation of noble character, and the mastery of the skills necessary for oneself, society, nation, and state.

### **Training**

According to Mangkunegara, (2016:44), Training is a short-term educational process that uses a systematic and organized procedure where non-managerial employees learn technical knowledge and skills in a limited way. Then, according to Sutrisno, (2016:67), Training is an effort to improve the work performance of an employee in his current job or in another job that he will hold soon. More explanation Dessler, (2017:284) stated that training is the process of teaching new or existing employees the basic skills they need to carry out their jobs. Training is one of the efforts to improve the quality of human resources in the world of work. Employees, both new and already employed, need to take part in training.

## **The Influence Variables and Research Hypothesis Formulation**

### **The Influence of Education on Work Motivation**

According to Bratha et al., (2023:56), the level of education can affect the level of work motivation because the higher the education that employees achieve, the more their work motivation will increase. An organization's efforts to achieve its goals depend on the basis and education of its personnel or members. Employees who reach the level of higher education have high expectations for their careers. Research conducted by Avriyanti et al., (2019) revealed that there is a significant influence between education on employee motivation. However, a different study was found by Bratha et al., (2023) which reveals that education has a positive but not significant effect on work motivation. Meanwhile, research conducted by Mawarni et al., (2023) also proves that education Directly has a positive and significant effect on work motivation. Based on the theoretical and empirical studies that have been formulated, the hypothesis first that is proposed.

H1: Education directly has a positive and significant effect on work motivation

### **The Effect of Training on Work Motivation**

According to Dessler, (2017:281) Training It is not useful if the participant does not get the ability or motivation with motivation, then the training participants will encouraged to take part in training. Then, according to Robbins & Judge (2017):211), Training can improve employee competence which leads to increased work motivation. When individuals feel they are able to complete their tasks well after receiving training, they tend to be more motivated to work optimally. Research conducted by Atmoko, (2022) It proves that training has a positive and significant effect on motivation. Then, the research conducted by Mawarni et al., (2023) It proves that training has a positive and significant effect directly on work motivation. Meanwhile, research evidenced by Manutilaa et al., (2024) It also proves that training has a significant effect on performance. Based on the theoretical and empirical studies that were formulated, the second hypothesis proposed is.

H2: training directly has a positive and significant effect on work motivation

### **The Influence of Work Motivation on Teacher Performance**

According to Koesomowidjojo, (2017:27), A person will greatly determine the quality of his work. Low work motivation can certainly cause an employee to do his work not in accordance with what has been set by the company, thus the employee's performance will decrease. This work motivation will awaken employees to do their work in accordance with previously set operational standards. research conducted by Niati et al., (2021) prove that there is work motivation that has a positive and significant effect on performance. between education on the performance of employees or teachers. Then, the research conducted by Riyanto et al., (2021) It also proves that work motivation has a positive and significant effect directly on employee performance. However, different research is proven by Muhtadi et al., (2021) where Work motivation has a insignificant effect on employee performance. Meanwhile, research conducted by Iis et al., (2022) Strengthen evidence that work motivation has a positive and significant effect on employee performance. Based on the theoretical and empirical studies that were formulated, the third hypothesis proposed is.



H3: work motivation directly has a positive and significant effect on teacher performance

#### **The Influence of Education on Teacher Performance**

Squirt Bratha et al., (2023:55), education is a maturation process to find an identity to form character through learning, coaching, and developing work-related skills. The level of education is one of the efforts to increase knowledge to get motivation and achievement, through education a person can make himself superior to others and have a direct impact on employee performance in an organization. Research done by Avriyanti et al., (2019) prove that there is a significant influence between education to the performance of employees or employees. Then, the research conducted by Bratha et al., (2023) prove that education It also has a positive and significant effect on employee performance. Meanwhile, research conducted by Mawarni et al., (2023) proves that education directly has a positive and significant effect on employee performance. Based on the theoretical and empirical studies formulated, the fourth hypothesis proposed is.

H4: education directly has a positive and significant effect on teacher performance

#### **The Effect of Training on Teacher Performance**

According to Widodo, (2016:82), Training is a series of individual activities to systematically improve skills and knowledge so that they can have professional performance in their fields. Then, mSão Paulo Dwigita & Muslikh, (2023:15), training is one way to overcome job description problems for employees. The better the training provided to employees and the more frequent training provided by the organization; the more employee performance will improve because employee knowledge will increase which will have a positive impact on the organization in improving employee performance. Research conducted by Niati et al., (2021) which proves that training has a positive and significant effect on performance. Then, the research conducted by Riyanto et al., (2021) It also proves that training has a significant effect directly on employee performance. Different research was conducted by D'Artagnan, (2023) which reveals that training has a positive but insignificant effect on employee performance. Meanwhile, other research by Ancient & Indrawan, (2023) Strengthen evidence that training has a positive and significant effect on employee performance. Based on the theoretical and empirical studies formulated, the fifth hypothesis proposed is.

H5: direct training has a positive and significant effect on teacher performance

#### **The Influence of Education on Teacher Performance Through Work Motivation**

According to Dessler, (2017:112), Education is a formal process for developing abilities, knowledge, and skills that contribute to an individual's increased productivity. With a good education, employees have a better understanding of their job and tend to have higher intrinsic motivation to achieve optimal performance. Then, according to Robbins & Judge (2017:211), motivation is formed by a variety of factors, including personal satisfaction that comes from the application of knowledge and skills acquired through education. Motivation acts as a mediator that connects education to employee performance. Presearch conducted by Manutilaa et al., (2024) proving that work motivation has a significant effect and mediates the influence of education on work motivation. Then, the research conducted by Tabrani et al., (2024) reveals that education has a positive and significant effect indirectly and Intervening through work motivation to employee performance. However, a different study was conducted by Bratha et al., (2023) which revealed that there is a negative and insignificant influence mediating through motivation between education on employee performance. Different research was also found by Avriyanti et al., (2019) that reveals that there is an influence education that insignificant through motivation for employee performance. Meanwhile, research conducted by Mawarni et al., (2023) Strengthen the evidence that education indirectly affects employee performance through work motivation. Based on the theoretical and empirical studies formulated, the sixth hypothesis proposed, is.

H6: Education indirectly has a positive and significant effect on teacher performance through work motivation

#### **The Effect of Training on Teacher Performance Through Work Motivation**

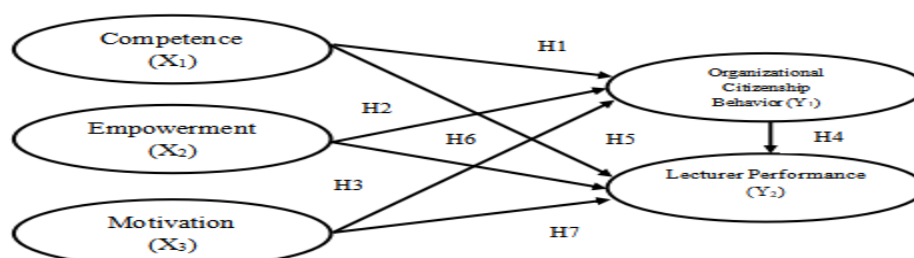
According to Dessler, (2017:284), The training provided in a structured manner is able to increase employees' confidence in their abilities, which in turn increases work motivation. With training, employees feel valued by the organization, so they are more enthusiastic about their work. Meanwhile, according to Robbins & Judge (2017:211), Effective training can increase work motivation through upskilling and career development. This motivation becomes an important mediator that links training to work performance, as more motivated employees will show higher performance. Research conducted by Aditya et al., (2024) prove that Training has a positive and significant effect on employee performance through work motivation. Then, the research conducted by Mawarni et al., (2023) which found that there is an indirect influence between training on employee performance through work motivation. Meanwhile, other research also from Manutilaa et al., (2024) strengthening evidence that training has a significant effect and mediating training on employee performance through work

motivation. Based on the theoretical and empirical studies that were formulated, the seventh hypothesis proposed is.

H7: Training indirectly has a positive and significant effect on teacher performance through work motivation

### Research Conceptual Framework

**Figure 1. Research Conceptual Framework**



### III. RESEARCH METHOD

#### Operational Definition

1. Education (X1) is a formal process taken by teachers to improve knowledge, skills, and competencies relevant to the profession as a power Educators at SMK Negeri 9 Samarinda. The indicators or parameters used to measure education according to Saepudin & Sudiarti, (2024:984), that is:
  - a. Formal education level  
Referring to the level of formal education that a person has taken, such as a bachelor's, master's, or doctorate, a high level of education is usually associated with a broader understanding of science;
  - b. Participation in a training or learning program  
Refers to the individual's participation in training, workshops, seminars, or other non-formal learning programs, whether held within or outside the institution, to enhance competence in a particular area; and
  - c. Educational and learning experiences  
It refers to a person's learning experience outside of the traditional educational context, such as reading a book, attending a seminar, or taking an online course.
2. Training (X2) is a skill and knowledge improvement program followed by teachers to support professional development in SMK Country 9 Samarinda. The indicators or parameters used to measure training according to Dessler, (2017:244) that is:
  - a. Instructor  
Refers to competence, experience, and ability to deliver training materials effectively.
  - b. Participants  
Refers to teachers as participants in the training, including their level of participation, commitment, and readiness to receive the training materials.
  - c. Training methods  
Refers to techniques or approaches used in skill improvement such as lectures, discussions, simulations, hands-on practice, or the use of technology.
  - d. Materials or curriculum  
Refers to the content or topic taught during the training, which must be relevant to the duties and responsibilities of teachers at SMK Negeri 9 Samarinda.
  - e. Training objectives  
Describe the goals or expected outcomes of the training, such as the improvement of pedagogical, managerial, or technical skills that support the teacher's duties.
3. Work motivation (Y1) is an internal and external impulse that influences the teacher's enthusiasm in carrying out tasks and achieving organizational goals at SMK Negeri 9 Samarinda. The indicators or parameters used to measure motivation work according to Robbins & Judge (2017:131), Is.
  - a. The need for achievement  
It refers to the teacher's desire to achieve high standards of work, complete tasks well, and obtain recognition for achievements.
  - b. The need for power  
Refers to the teacher's desire to influence, direct, or control others and contribute to decision-making in the work environment.

- c. Need for affiliates  
It refers to the desire of teachers to establish harmonious relationships, work together, and feel accepted by colleagues and the school environment.
4. Teacher performance (Y2) is the result of work achieved by teachers in carrying out the task of teaching, educating, and guiding students based on certain work standards in SMK Country 9 Samarinda. The indicators or parameters used to measure Teacher Performance according to Barnawi & Arifin (2017:15) Is :
  - a. Learning program planning  
Refers to the teacher's ability to design and compile a systematic learning implementation plan (RPP) in accordance with the curriculum.
  - b. Implementation of learning activities  
Measuring the effectiveness of teachers in managing the classroom and carrying out the teaching and learning process in an interactive, innovative, and conducive manner.
  - c. Learning evaluation  
Refers to the teacher's ability to assess and analyse student learning outcomes to measure the achievement of learning objectives.

### Population & Sample

The population used in this study is all teachers as many as 60 people at SMK Negeri 9 Samarinda with the determination of the sample is a saturated sample where the number of populations in this study is limited, so the entire population is used as a sample

### Analysis Method

Data analysis using variant-based PLS-SEM or partial least square path modeling then in processing using SmartPLS 3.0 software. According to Ghazali & Latan (2015:5), Partial least square (PLS) is a powerful analysis method and is often referred to as soft modelling because it eliminates the assumptions of OLS (ordinary least square) regression such as data must be normally distributed in a multivariate manner and there is no problem of multicollinearity between exogenous variables. PLS is used to test weak theories and weak data such as small sample counts or data normality problems. In addition, PLS is also used to explain the existence or absence of relationships between latent variables (predictions) and can also confirm theories. This explanation is further strengthened by Hair et al., (2019:4), "The PLS-SEM method is very appealing to many researchers as it enables them to estimate complex models with many constructs, indicator variables and structural paths without imposing distributional assumptions on the data. More importantly, however, PLS-SEM is a causal-predictive approach to SEM that emphasizes prediction in estimating statistical models, whose structures are designed to provide causal explanations

## ANALYSIS AND DISCUSSION

### Structural Equation Modelling (PLS-SEM)

Data analysis was conducted using structural equation modeling (SEM) with the approach used being VB-SEM (variance based-SEM). The following is the analysis of the data testing carried out, which is as follows.

#### Evaluation of Measurement Models (Outer Model)

##### 1. Convergent validity test

In this study, a loading factor limit of 0 will be used.60. To assess the results of the convergent validity test, it can be seen from the value of the loading factor reflected in the results of the outer loading as shown in Table 1 below.

**Table 1. Convergent Validity Test Results Using Outer Loading**

	Teacher Performance (Y2)	Work Motivation (Y1)	Training (X2)	Education (X1)
X1.1				0.849
X1.2				0.815
X1.3				0.889
X2.1			0.796	
X2.2			0.820	
X2.3			0.758	
X2.4			0.843	
X2.5			0.611	
Y1.1		0.876		
Y1.2		0.888		

	Teacher Performance (Y2)	Work Motivation (Y1)	Training (X2)	Education (X1)
Y1.3		0.629		
Y2.1	0.806			
Y2.2	0.800			
Y2.3	0.874			

Source : SmartPLS Output 3, 2025.

According to Table 1 above, the results were obtained that all indicators in this study had an outer loading value above 0.60, which indicates that these indicators meet the conditions of convergent validity. The Education variable (X1) with the X1.3 indicator had the highest outer loading value (0.889), which shows that educational and learning experience is the most powerful factor in explaining the educational variable. The X1.2 indicator has a value of 0.815, while X1.1 has a value of 0.849, which also shows a strong contribution to the education variable; The Training Variable (X2) with the X2.4 Indicator had the highest outer loading value (0.843), which indicates that the training method was the most dominant aspect of the training variable. The X2.5 indicator has the lowest value (0.611), but it is still above the minimum limit (0.60) so it is still considered valid; The Work Motivation Variable (Y1) with Indicator Y1.2 has the highest outer loading value (0.888), indicating that the need for power is the most influential factor on teachers' work motivation. The Y1.3 indicator has the lowest value (0.629), but it still qualifies for validity. Meanwhile, the Teacher Performance Variable (Y2) with Indicator Y2.3 has the highest outer loading value (0.874), showing that learning evaluation is the most dominant aspect in teacher performance. Indicator Y2.2 has a value of 0.800, and Y2.1 has a value of 0.806, which also shows a good contribution to the teacher's performance variables. For this, all indicators have met the convergent validity, because they have an outer loading above 0.60. The indicator with the highest score in each variable shows the most dominant aspects of measuring the variable, such as educational experience (X1.3), training methods (X2.4), need for power (Y1.2), and learning evaluation (Y2.3). The indicators with the lowest values (X2.5 and Y1.3) are retained because they still meet the requirements for convergent validity. These results show that the research instruments used have met the requirements for convergent validity, so they can be used for further analysis. In addition, outer loading to see the validity of the construct, other convergent validity test results can also be reported which are reflected in the AVE (average variance extracted) value where the limit value is 0.50 as in Table 2.

**Table 2. Average Variance Extracted (AVE) Results**

	Average Variance Extracted (AVE)
Education (X1)	0.725
Training (X2)	0.593
Work Motivation (Y1)	0.651
Teacher Performance (Y2)	0.685

Source: SmartPLS Output 3, 2025.

According to Table 2, it shows an AVE value that is greater than the threshold of 0.50 so that it can be concluded that the validity of the construct has a good convergence of validity, which illustrates the magnitude of the variance or diversity of manifest variables that can be possessed by latent constructs. Thus, the greater the variant or diversity of manifest variables that can be contained by latent constructs, the greater the representation of manifest variables to their latent constructs.

## 2. Discriminatory validity test (discriminant validity test)

Discriminant validity is used to see the extent to which a construct is completely different from another. Therefore, to evaluate the discriminant validity test, the researcher used the heterotrait-monotrait ratio (HTMT) because the recommended method to assess the validity of the discriminant. To assess the validity of discrimination using the threshold value must be below 0.90. The following are the results of the heterotrait-monotrait ratio (HTMT) test as seen in Table 3 below.

**Table 3. Results of Discriminant Validity Test Using Heterotrait-Monotrait Ratio (HTMT)**

	Teacher Performance (Y2)	Work Motivation (Y1)	Training (X2)	Education (X1)
Education (X1)	0.557	0.576	0.845	
Training (X2)	0.440	0.845		
Work Motivation (Y1)	0.525			



Teacher Performance (Y2)				
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Source: SmartPLS Output 3, 2025.

According to Table 3, all HTMT values are below or lower than 0.90 which means that there is no problem of validity discrimination in this research model. HTMT is used to measure discriminant validity by comparing correlations between latent variables. In addition, according to Hair et al., (2019), indicating that the variables in the model have good discriminant validity, meaning that each latent variable actually measures a different construct and does not experience excessive overlap with the other variables.

### 3. A test of consistency of reality

The realism test used for Cronbach's alpha must be greater than 0.6 and the composite reliability must be greater than 0.7 for which the results can be seen in Table 4 below.

**Table 4. Reliability Consistency Test Results**

	Cronbach's Alpha	rho_A	Composite Reliability
Education (X1)	0.819	0.867	0.888
Training (X2)	0.825	0.840	0.878
Work Motivation (Y1)	0.718	0.749	0.845
Teacher Performance (Y2)	0.769	0.773	0.867

Source: SmartPLS Output 3, 2025.

As per Table 4, since the entire reliability value is above the minimum limit of 0.7, which indicates that each indicator in the variable has good internal consistency and is reliable in measuring the construct under study. Thus, the variables in the study can be used for further analysis, as they have a strong measurement consistency, and the results can be trusted in explaining the relationships between variables in the research model.

### Evaluation of Structural Models (Inner Model)

#### 1. Structural model colinierity test (colinierity)

The collinearity test is used to see the conditions that arise when there are two independent variables that are interconnected. In the collariaty test, the structural model uses Inner VIF with a threshold that must be below 5 as seen in Table 5 below.

**Table 5. Results of Statistical Collinearity Test (Inner VIF Values)**

	Teacher Performance (Y2)	Work Motivation (Y1)	Training (X2)	Education (X1)
Education (X1)	2.045	2.045		
Training (X2)	2.858	2.045		
Work Motivation (Y1)	1.803			
Teacher Performance (Y2)				

Source: SmartPLS Output 3, 2025.

According to Table 5, the results of the structural collariaty test (inner values) obtained an inner VIF (variance Inflated Factor) value of less than 5 indicating the absence of collinearity problems among independent variables in the research model. This means that there is no very high relationship (multicollinearity) between the predictor variables, so the regression model used remains stable and valid for further analysis. Thus, the independent variables used in this study can be used to predict dependent variables without bias due to multicollinearity.

#### 2. Coefficient of determination (R-Square)

Value R-squares used as an explanatory force for any endogenous latent variable. According to Hair et al., (2022:183), in scientific research focusing on marketing issues, an R value<sup>2</sup> ranges from 0.75; 0.50; or 0.25 which is described as substantial; keep; or weak. The following are the results of the determination coefficient test (R-Square) as seen in Table 6.

**Table 6. R2 Test Results (R square)**

	R Square	R Square Adjusted
Work Motivation (Y1)	0.445	0.426
Teacher Performance (Y2)	0.258	0.218

Source: SmartPLS Output 3, 2025.

According to Table 6, the R2 value (R square) for Work Motivation (Y1) is 0.445 or 44.5% while for the Teacher Performance variable (Y2) is 0.258 or 25.8%. This model is quite good at explaining Work Motivation as it has an R<sup>2</sup> of 44.5%, although there are still other contributing factors. However, this model is less powerful in explaining Teacher Performance, as only 25.8% can be explained by the variables present in the model. According to the results of the R2 value (R square) for all endogenous constructs in the moderate or moderate category because it is below 0.75. Overall, the model can be used for further analysis, but it can be improved by adding other variables that contribute more to Teacher Performance.

### 3. Effect size (f-Square)

Effect size (f2 or f square) is used to evaluate the magnitude of the direct influence effect of endogenous variables in a structural model with the threshold of effect size (f2) values of 0.02; 0.15; and 0.35 respectively which are interpreted as small, medium; and large. The following are the results of the effect size or f-square test in Table 7.

**Table 7. Effect Size Test Results (f2Test)**

	Teacher Performance (Y2)	Work Motivation (Y1)	Training (X2)	Education (X1)
Education (X1)	0.117	0.000		
Training (X2)	0.005	0.398		
Work Motivation (Y1)	0.051			
Teacher Performance (Y2)				

Source: SmartPLS Output 3, 2025.

According to Table 7, the magnitude of the influence or effect on the variable Education (X1) to Teacher Performance (Y2) of 0.117 is between 0.02 (small) and 0.15 (medium). This means, the influence of education on teacher performance is small to close to medium scale, so that education has a sufficient contribution to improving teacher performance, but it is not dominant; Education (X1) to Work Motivation (Y1) of 0.000 which shows no significant effect of Education on Work Motivation. This means, Education has no direct effect on work motivation in this model; Training (X2) to Teacher Performance (Y2) of 0.005 is much smaller than 0.02 (small threshold). This means that the influence of Training on Teacher Performance is very small to almost insignificant. This means that in this model, training does not have a major impact on teacher performance directly; Training (X2) to Work Motivation (Y1) is 0.398 which is greater than 0.35, which shows a great influence. This means, Training has a very strong influence on Work Motivation, which means that the more often and effectively training is given, the higher the teacher's work motivation; Then, Work Motivation (Y1) to Teacher Performance (Y2) is 0.051 which is between 0.02 (small) and 0.15 (medium). This means that Work Motivation has a small influence on Teacher Performance. This means that although work motivation is important, there are other factors that are more dominant in improving teacher performance. These results show that Training is very important in increasing Work Motivation, which can ultimately affect Teacher Performance. However, to improve Teacher Performance more significantly, additional variables outside of this model may be required.

### 4. Predictive Relevance (Q-Square/Q2) and Effect Size (q2)

The value of Q2 is useful for validating the ability to predict the model where this model is only suitable for use in endogenous constructs that have reflective indicators. To test the predictive relevance value (Q2 or Q square test) using the blindfolding procedure which can be seen in the construct cross validated redundancy section in SmartPLS. The following are the results of the predictive relevance test or Q-squares test as seen in Table 8 below.

**Table 8. Predictive Relevance Test (Q-Square Test) Results**

	SSO	SSE	Q <sup>2</sup> (=1-SSE/SSO)
Education (X1)	180.000	180.000	
Training (X2)	300.000	300.000	

	SSO	SSE	Q <sup>2</sup> (=1-SSE/SSO)
Work Motivation (Y1)	180.000	136.007	0.244
Teacher Performance (Y2)	180.000	151.236	0.160

Source: SmartPLS Output 3, 2025.

According to Table 8 above, the results were obtained that the endogenous variable or construct had a value of  $Q^2 > 0$  which indicates that the model has met the predictive relevance where the model has been well reconstructed. A value of 0.244 greater than 0 indicates that the independent variable in the model has a fairly good predictive ability against Work Motivation. Then, for Teacher Performance (Y2) where the value of 0.160 is also greater than 0, which means that the model still has predictive power on Teacher Performance. However, since the  $Q^2$  of 0.160 is in the range of 0.15 – 0.35, the predictive power is also moderate, but close to the lower limit.

From these results, the value of  $q^2$  predictive relevance can also be determined as a measure or effect size that has a relative impact on the structural model that can be measured with a formula, namely.

$$q^2 = \frac{Q^2 - Q^2_{\text{excluded}}}{1 - Q^2}$$

$$= \frac{0.445 - 0.258}{1 - 0.445}$$

$$= \frac{0.187}{0.555} = 0.337$$

According to this manual calculation, the amount of influence of the  $q^2$  predictive relevance value is 0.337 which means that the model has a moderate predictive ability in explaining endogenous variables. That is, the model has a fairly good predictive relevance, but it has not yet reached a very strong prediction category.

#### Evaluation of Structural Models (Inner Model)

A structural model (inner model) is a model that shows the relationship between latent variables, the diagram model of which can be seen in Figure 3 below.

##### 1. Model fit (goodness of fit / GoF)

The value of goodness of fit (GoF) is measured by the average communality index and the R-square average which to find the communality value of each variable can be found from the measurement of the model using the blindfolding technique in the cross validated communality construct section in PLS. The following is the average value of the communality index as shown in Table 9 below.

Table 9. Communality Index Value Results

	SSO	SSE	Q <sup>2</sup> (=1-SSE/SSO)
Education (X1)	180.000	102.810	0.429
Training (X2)	300.000	183.775	0.387
Work Motivation (Y1)	180.000	121.617	0.324
Teacher Performance (Y2)	180.000	115.352	0.359

Source: SmartPLS Output 3, 2025.

According to Table 9 above, the results are obtained that the average value of the communality index is 0.375 while the average value of R-square is 0.501 which is obtained from the value of R-square ( $R_1 + R_2 / 2$  or  $0.445 + 0.258/2$ ). From this value, the model feasibility test (godness of fit) can also be determined with a formula, namely.

$$GoF = \sqrt{\text{com} \times R^2}$$

$$= \sqrt{0.375 \times 0.352}$$

$$= \sqrt{0.132} = 0.363 \text{ or } 36.3\%.$$

Based on manual calculations related to the GoF value, the result of 0 was obtained.363 or 36.3% which means that the GoF value is moderate fit. This provides an understanding that the model used has a moderate fit level in explaining the relationship between the variables studied. In other words, the model is quite good at describing the phenomenon being analyzed, but it still has room for improvement in order to achieve a higher level of feasibility. Then, in addition to the Goodness of Fit (GoF) above, the following SRMR test results need to be reported in evaluating whether the model matches the distribution of empirical data reflected in the SRMR value in Table 10 below.

**Table 10. SRMR Value Test Results**

	Saturated Model	Estimated Model
SRMR	0.112	0.112

Source: SmartPLS Output 3, 2025.

According to Table 10 above, the SRMR value is  $0.112 < 0.10$  which means that the model has a poor fit. This means that there is a significant difference between the observed covariance matrix and the covariance matrix predicted by the model, so improvements are needed to improve the model's suitability.

### PLS Predict Evaluation

PLS predict is used to assess the extent to which the proposed PLS model has good predictive power. The following are the results of the PLS predict test as shown in Table 11 below.

**Table 11. PLS Predict Test Results**

	Model PLS			Model LM		
	Q <sup>2</sup> _predict	PLS-SEM_RMSE	PLS-SEM_MAE	Q <sup>2</sup> _predict	LM_RMSE	LM_MAE
Y1.1	0.311	0.501	0.381	0.339	0.491	0.373
Y1.2	0.295	0.551	0.425	0.304	0.547	0.399
Y1.3	0.125	0.662	0.540	0.046	0.691	0.542
Y2.1	0.105	0.678	0.528	-0.127	0.761	0.598
Y2.2	0.068	0.683	0.555	0.003	0.707	0.604
Y2.3	0.114	0.687	0.559	-0.009	0.733	0.602

Source: SmartPLS Output 3, 2025.

As per Table 11, most of the measurement items of endogenous variables (work motivation and teacher performance) in the proposed PLS model have lower RMSE values than the LM model (linear regression). This means that the proposed PLS model has **the power of "medium prediction"** which means that the proposed PLS model has a fairly good predictive ability for Work Motivation (Y1). However, this model has weaker predictive capabilities for Teacher Performance (Y2), as some Q<sup>2</sup> values\_predict are close to zero or negative. Model improvements can be made by reviewing the indicators of the Y2 variable or adding other influential variables.

### Hypothesis Testing

Testing of the path coefficient structural model using the bootstrapping method using the threshold if the relationship or influence is significant by looking at the t-value  $> 1.96$  and p-values  $< 0.05$ . The following test results can be seen in Table 12 below.

**Table 12. Path Coefficient Test Results**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Education (X1) -> Work Motivation (Y1)	-0.006	0.000	0.130	0.049	<b>0.961</b>
Education (X1) -> Teacher Performance (Y2)	0.421	0.418	0.146	2.884	<b>0.004</b>
Training (X2) -> Work Motivation (Y1)	0.672	0.682	0.111	6.070	<b>0.000</b>
Training (X2) -> Teacher Performance (Y2)	-0.108	-0.074	0.194	0.556	<b>0.579</b>
Work Motivation (Y1) -> Teacher Performance (Y2)	0.260	0.247	0.122	2.132	<b>0.034</b>

Source: SmartPLS Output 3, 2025.

According to Table 12, the results were obtained that the variables that had a significant effect were Education to Teacher Performance (positive, significant), Training to Work Motivation (positive, significant), and Work Motivation to Teacher Performance (positive, significant); and variables that did not have a significant effect, namely Education to Work Motivation (not significant), and Training to Teacher Performance (insignificant). From the results of this hypothesis testing, it can be interpreted, as follows.

#### 1. First Hypothesis Testing; The Influence of Education on Work Motivation

Education (X1) with a path coefficient of -0.006 has a negative and insignificant effect on the work motivation (Y1) of teachers at SMK Negeri 9 Samarinda because t-count  $< t$ -table or  $0.049 < 1.96$  with a p-value level of

0.961 > 0.05. This result has a negative or non-directional relationship direction and is insignificant which means **that H1 was rejected.**

2. Second Hypothesis Testing; The Influence of Coaching on Work Motivation

Training (X2) with a path coefficient of 0.672 had a positive and significant effect on the work motivation (Y1) of teachers at SMK Negeri 9 Samarinda because t-count > t-table or 6,070 > 1.96 with a p-value level of 0.000 < 0.05. This result has a positive or unidirectional relationship direction and is significant which means **that H2 was accepted.**

3. Third Hypothesis Testing; The Influence of Work Motivation on Teacher Performance

Work motivation (Y1) with a path coefficient of 0.260 had a positive and significant effect on the performance of teachers (Y2) teachers at SMK Negeri 9 Samarinda because t-count > t-table or 2,132 > 1.96 with a p-value level of 0.034 < 0.05. This result has a positive or unidirectional relationship direction and is significant which means **that H3 was accepted.**

4. Testing the Fourth Hypothesis; The Influence of Education on Teacher Performance

Education (X1) with a path coefficient of 0.421 had a positive and significant effect on the work motivation (Y1) of teachers at SMK Negeri 9 Samarinda because t-calculation > t-table or 2,884 > 1.96 with a p-value level of 0.004 < 0.05. This result has a positive or unidirectional relationship direction and is not significant which means **H4 was accepted.**

5. Fifth Hypothesis Testing; The Effect of Training on Teacher Performance

Training (X2) with a path coefficient of -0.108 had a negative and insignificant effect on the work motivation (Y1) of teachers at SMK Negeri 9 Samarinda because t-calculation < t-table or 0.556 < 1.96 with a p-value level of 0.579 > 0.05. This result has a negative or indirect relationship direction and is also insignificant, which means **that H5 was rejected.**

### Mediation Testing

Furthermore, in addition to Table 5.20 to answer the hypothesis of this study with the existence of mediation variables or indirect influences which are reflected in specific indirect effects in SmartPLS. The following are the test results as seen in Table 13 below.

**Table 13. Specific Indirect Effect**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Education (X1) -> Work Motivation (Y1) -> Teacher Performance (Y2)	-0.002	0.002	0.036	0.046	<b>0.964</b>
Training (X2) -> Work Motivation (Y1) -> Teacher Performance (Y2)	0.175	0.167	0.087	2.003	<b>0.046</b>

**Source: SmartPLS Output 3, 2025.**

According to Table 13 above, the results of hypothesis testing were obtained indirectly with mediation variables which can be interpreted as follows.

1. Sixth Hypothesis Testing; The Influence of Education on Teacher Performance Through Work Motivation  
Education (X1) with a path coefficient of -0.002 had a negative and insignificant effect on teacher performance (Y2) which was mediated by the work motivation (Y1) of teachers at SMK Negeri 9 Samarinda because t-count < t-table or 0.046 < 1.96 with a p-value level of 0.964 > 0.05. This result has a negative relationship direction f or indirect and insignificant which means **that H6 is rejected.** Because education (X1) directly has a significant effect on teacher performance (Y2) and work motivation (Y1) indirectly has a insignificant effect, the role of work motivation is a non-mediated no-effect where the direct influence is significant, but the mediation path is not significant. Then, because the direct influence is positive and the negative indirect influence, the mediation is called "Competitive Mediation", because there is a significant direct influence, but the indirect path has the opposite direction and is insignificant. Work motivation is not an effective mediator and in fact slightly interferes with the positive effect of education on teacher performance.

2. Seventh Hypothesis Testing; The Effect of Training on Teacher Performance Through Work Motivation  
Training (X2) with a path coefficient of 0.175 had a positive and significant effect on teacher performance (Y2) which was mediated by the work motivation (Y1) of teachers at SMK Negeri 9 Samarinda because t-calculation > t-table or 2.003 > 1.96 with a p-value level of 0.046 < 0.05. This result has a positive or unidirectional relationship direction and is significant which means **that H7 is accepted.** Because training (X2) directly has a insignificant effect on teacher performance (Y2) and work motivation (Y1) indirectly has a significant effect, the role of work motivation is "Full Mediation" or full mediation Because the direct path is not significant, but the indirect path through the work motivation is significant. Then, because the impact of the direct influence is



negative and the indirect influence is positive, the mediation is called "Competitive Mediation". The following is the calculation of the effect size of the epsilon ( $\nu$ ) statistical mediation as seen in Table 14 below.

**Table 14. Results of Calculation of Mediation Effect at the Structural Level Using Upsilon Statistics ( $\nu$ )**

No.	Effect Size Upsilon	Direct Effect	Indirect Effect	Upsilon Statistics ( $\nu$ )	Information
1	Education (X1) to Teacher Performance (Y2) Through Work Motivation (Y1)	0.421	-0.002	0.419	High Mediation Effect
2	Training (X2) to Teacher Performance (Y2) Through Work Motivation (Y1)	-0.108	0.175	0.067	The Influence of Mediation Medium

**Source: Microsoft Excel, Processed in 2023.**

According to Table 5.22 above, it can be seen that the role of work motivation (Y2) as a mediating variable in influencing education (X1) on teacher performance (Y2) at the structural level is classified as a high mediating influence. Furthermore, the role of work motivation (Y2) as a mediating variable in influencing education (X1) on teacher performance (Y2) at the structural level is classified as having a low mediating influence.

## **Conclusion and Recommendation**

### **Conclusion**

1. Education directly has a negative and insignificant effect on the work motivation of teachers at SMK Negeri 9 Samarinda which starts from the factor of educational and learning experience because the loading value factor is the highest and most powerful in explaining the influence of education on work motivation.
2. Training directly has a positive and significant effect on the work motivation of teachers at SMK Negeri 9 Samarinda which starts from the material or curriculum factor because the loading value factor is the highest and most powerful in explaining the influence of training on work motivation.
3. Work motivation directly has a positive and significant effect on teacher performance at SMK Negeri 9 Samarinda which starts from the factor of need for power because the loading value factor is the highest and most powerful in explaining the influence of work motivation on teacher performance.
4. Education directly has a positive and significant effect on teacher performance at SMK Negeri 9 Samarinda with the learning evaluation factor having the highest loading factor value.
5. Training directly has a negative and insignificant effect on teacher performance at SMK Negeri 9 Samarinda which starts from the learning evaluation factor because the loading factor value is the highest.
6. Education indirectly has a negative and insignificant effect on teacher performance through teacher motivation at SMK Negeri 9 Samarinda.
7. Training indirectly has a positive and significant effect on teacher performance through teacher motivation at SMK Negeri 9 Samarinda.

### **Recommendation**

#### **For further research:**

1. Given the results that show that education has a negative and insignificant effect on work motivation, further research should examine other factors that are more dominant in influencing teachers' work motivation, such as work environment, leadership, or organizational culture.
2. Regarding the results that show that training has a negative and insignificant effect on teacher performance, further research can explore more effective training methods, such as technology-based approaches or more intensive mentoring.
3. Given the results that show that education indirectly negatively and insignificantly affects teacher performance through work motivation, further research can examine other mediating factors that have the potential to strengthen the relationship between education and teacher performance, such as organizational support or involvement in the academic community.

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