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# Competence as a Full Mediator: Unravelling the Indirect Path from Training to Teacher Performance in Vocational High Schools

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**Abstract** – This study examines the relationship between training and competence, and its direct and indirect influence on performance. Competence serves as a mediating variable in the relationship between training and performance. The type of this research is a quantitative study, with a research instrument using a questionnaire. The population in this study amounted to 2,007 teachers from public and private vocational high schools in Palembang. This research sample used a probability sampling technique, namely proportionate stratified random sampling. The sample size used is based on the Slovin formula. From 181 questionnaires collected, the data obtained were then analyzed using SEM (Structural Equation Modeling) PLS. The results of this study indicate that the training has not significantly influenced teacher performance; meanwhile, training has a positive and significant influence on competence, and competence has a positive and significant influence on teacher performance. In addition, the results of this study also show that the competence variable fully mediates the improvement in teacher performance. The path coefficient of 0.186 with a t-statistic of 2.663 ($\geq$ 2.58) indicates a highly significant indirect effect, showing a positive but relatively weak-to-moderate influence that remains meaningful.

Keywords: Competence; Teacher performance; Vocational high schools

## 1. Introduction

Indonesia is the fourth most populous country in the world (World Population Review, 2025). Indonesia has a large workforce. There was significant labor force growth in the 2023-2024 period of ±4.4 million workers (147.71 million in 2023 and 152.11 million people in 2024). The Labor Force Participation Rate increased by 1.15 percentage points compared to August 2023 (Badan Pusat Statistik, 2024). In addition, Indonesia has a workforce with a relatively young demographic. Indonesia is predicted to experience an increase in the productive age population by 64% from a total of 297 million people in 2030-2040 (Setiawan, 2018).

Although Indonesia has a large and growing workforce, this condition has not been fully balanced by the availability of adequate and skilled jobs (Ye & Hein, 2025). Employment challenges are increasingly evident from the ongoing misalignment between the competencies of workers and the needs of the labor market, the high proportion of informal workers, and the persistence of labor quality gaps between regions (Universitas Gadjah Mada, 2022; Santoso et al., 2022). This can also be seen from the open unemployment rate in Indonesia.

The trend of the open unemployment rate in Indonesia does show an improvement at the national level, with a decrease from 5.32 percent in August 2023 to 4.91 percent in August 2024. However, this pattern of decline is uneven across regions, with a considerable gap between provinces. West Sulawesi recorded a relatively low open unemployment rate, in the range of 2.7-2.8 percent, while other provinces, such as Maluku, actually showed a higher unemployment rate, reaching 6-6.5 percent. Furthermore, data on the Open Unemployment Rate by Education Level in 2024 shows that vocational high school graduates had the highest open unemployment rate (9.01%) compared to elementary school graduates (2.32%) (Badan Pusat Statistik Indonesia, 2024). This highlights the urgent need to improve the quality of vocational high school teachers to prepare students for the workforce (Maknun & Rahmawati, 2022).

Based on recent policy studies and empirical research, some of the main causes of the lack of competitiveness of the workforce are: (a) the incompatibility of education and training curricula with the needs of the industry (including vocational education); (b) limited access to quality training and upskilling, especially for digital skills and new technologies; (c) weak links between the educational/vocational world and the business world (industry linkage/teaching factory); and (d) weaknesses in the implementation of competency improvement programs that have not always had an impact on real performance (Areisy & Sudira, 2022; Suarta et al., 2017; Hua

& Carmela S. Dizon, 2025). The report on the study and evaluation of government programs emphasizes the importance of strengthening technical and non-technical competencies (soft skills) to increase productivity and employability.

This situation requires a more adaptive policy response and strengthening the capacity of human resources so that the Indonesian workforce can compete in an increasingly competitive and technology-based job market. The government (through the Ministry of Education and Culture, the Ministry of Manpower, the Ministry of Home Affairs, and related institutions) has implemented various policies and programs to strengthen human resources: strengthening vocational education (the Merdeka Learning program and the development of Teaching Factory/SMK Linkage), upskilling/reskilling initiatives by the Ministry of Manpower, and planning for projected labor needs for 2025–2029 aimed at aligning educational output with market needs. These programs emphasize school–industry collaboration, competency certification, and digital skills training as core elements. Still, evaluations show that the scope, quality, and impact vary between regions and institutions.

In education, human resources—teachers—are vital, both for society and the nation (Ghufron et al., 2024). Quality teacher performance is essential for national development as it leads to quality learning outcomes, which are central to Sustainable Development Goal (SDG) 4 and supported by a global commitment to improving quality in education (Salifu et al., 2023). Educational goals are achieved through teacher support, as teachers serve as expert learners, managers, and mediators in the learning process (Rusdiana, 2015; Niu & Niemi, 2019). Quality education depends on quality teachers, whose potential and performance play a key role in realizing educational success (Faujiah et al., 2023) (Mustafa Özgenel et al., 2025). Teacher performance refers to the actual results achieved in fulfilling responsibilities such as planning, implementing, and evaluating learning programs (Pambreni et al., 2023). Teachers today are expected to develop global professional skills and demonstrate key qualities, including strong character, classroom management, instructional ability, student monitoring, and professionalism (Togatorop & Heryanto, 2019; Stronge, 2018). Education policies also demand that teachers modernize learning through four core competencies: pedagogical, personal, social, and professional (Menristekdikti, 2017).

This study is anchored in Human Capital Theory, which conceptualizes individuals' abilities, skills, and knowledge as strategic economic assets that enhance productivity and organizational outcomes, with education, training, experience, and health serving as key investments that elevate individual and societal development (Becker, 1993; Schultz, 1961). Within human resource management, this perspective informs employee development strategies such as training, mentoring, and career planning, emphasizing continuous learning and practical skill application to strengthen organizational competitiveness and support sustainable national growth (Collins, 2021; Ding et al., 2021; Rossi, 2020; Cazarez, 2022). Performance, understood as the quality and quantity of work produced within a specific timeframe, reflects the interplay between an individual's ability and effort in accomplishing assigned tasks (Silaen et al., 2022; Mangkunegara, 2017; Hadjri & Perizade, 2019). Training, therefore, becomes a structured process to enhance knowledge, skills, and attitudes to achieve professional competence and institutional goals, with teacher training in particular serving as a crucial component of professional development through school-based and government-supported initiatives that foster integrity, discipline, responsibility, and professionalism (Landa et al., 2021; Lewaherilla et al., 2021; Zunaidah & Porwani, 2023; Maritasari et al., 2020; Shukla, 2014). Well-designed training programs at various organizational levels improve engagement, job satisfaction, innovation, performance, and productivity, underscoring the need for teachers to consistently participate in training to strengthen pedagogical competence and enhance instructional effectiveness (Rosita et al., 2024; Tan et al., 2023; Yusnita et al., 2018; Sari et al., 2025).

According to several earlier investigations, a gap exists in research findings. Previous studies on the impact of training on teacher performance found that training affects performance (Pambreni et al., 2023; Mandacan et al., 2021). Different results found that training was not significant for teacher performance (Batto et al., 2024). Furthermore, the results of previous studies on the relationship between competence and performance found that competence affects teacher performance (Canuto et al., 2024; Ramdani & Jelatu, 2024; Ramdhani & Adawiyah, 2023; Rahmawati et al., 2021; Poro et al., 2019). While other studies found different results, stating that competence does not have a significant effect on teacher performance (Wahyuni & Utari, 2024).

Previous studies on teacher performance have largely emphasized the direct effects of training. Yet, limited attention has been given to how competence mediates this relationship, particularly in the context of vocational education. Most existing research is conducted in general education settings (Canuto et al., 2024; Maritasari et al., 2020; Fitri et al., 2019), leaving a gap in understanding the dynamics within vocational high schools that demand more technical and practical teaching skills. Furthermore, evidence from Indonesia, especially from secondary vocational high schools in Palembang City, remains scarce. This study fills the gap by empirically testing the mediating role of teacher competence in linking training programs to performance, thereby offering new insights into professional development strategies for vocational educators.

Based on the phenomena and results of previous studies, it is necessary to examine the influence of training and competence on the performance of vocational high school teachers in the city of Palembang. This study aims to analyze whether training and competence have a partial influence on the performance of vocational high school

teachers in Palembang. Furthermore, the study examines the impact of training on the performance of vocational high school teachers in Palembang, with competency as a mediating variable.

## 2. Research Methods

A quantitative method was employed to assess the degree of impact of training on the performance of teachers in vocational high school, moderated by competence. The population in this study consisted of vocational high school teachers in Palembang City, totaling 2,007 individuals (Dapodikdasmen, 2024).

Table 1. Types and Number of Vocational High Schools and Teachers in Palembang City, 2024

| Type of Vocational High School | Total | |
|---|---|---|
| | School | Teacher |
| Public | 9 | 897 |
| Private | 74 | 1,110 |
| Total | 83 | 2,007 |

*Source: (Dapodikdasmen, 2024)*

This research sample used a probability sampling technique, namely proportionate stratified random sampling. Proportionate stratified random sampling is used when the population has members that are not homogeneous and are stratified proportionally (Sugiyono, 2016). The sample size used is based on the sampling formula, namely the Slovin formula, with a margin of error of 5% (0.05).

$$n = \frac{N}{1+(N \cdot e^2)} = \frac{2{,}007}{1+(2{,}007 \cdot 0.05^2)} = \frac{2{,}007}{6.0175} = 333.5 \approx 334 \quad (1)$$

The number of samples is divided based on the type of school, namely public and private, so that the number of each sample is as follows:

Table 2. Sample Distribution by Vocational High School Type

| Type of Vocational High School | Teacher | Percentage | Sample | Sample completed |
|---|---|---|---|---|
| Public | 897 | 44.69 | 149 | 98 |
| Private | 1,110 | 55.31 | 185 | 83 |
| Total | 2,007 | 100 | 334 | 181 |

*Source: Processed data (2024)*

Respondents were then randomly selected, with the initial criteria being that they had worked for at least one year and had attended at least one training course. After distributing the questionnaires within a three-month time limit, 181 completed questionnaires were returned.

Methods for analyzing the data include the program SmartPLS version IV and the statistical method known as Partial Least Squares (PLS), which is based on variance. The data analysis stages using Partial Least Squares are as follows:

1. Designing a Structural Model (inner model)

The structural model (inner model) in this study consists of one exogenous latent variable (training) and two endogenous latent variables (competence and performance). The relationship between these three latent variables is causal, where training affects performance, competence affects performance, and training, in turn, affects competence, which also affects performance.

2. Designing a Measurement Model (outer model)

A measurement model (outer model) is a model that connects latent variables with manifest variables. The latent training variable consists of five latent variables as dimensions: training objectives (TRN1), consisting of three manifest variables; trainers (TRN2), consisting of two manifest variables; training materials (TRN3), consisting of three manifest variables; training method (TRN4), consisting of two manifest variables, and trainees (TRN5), consisting of three manifest variables (Mangkunegara, 2017). The latent variable Competence consists of 4 latent variables, namely Pedagogical Competence (COM1), consisting of 13 manifest variables, Professional Competence (COM2), consisting of 5 manifest variables, Social Competence (COM3), consisting of 4 manifest variables, and Personality Competence (COM4), consisting of 5 manifest variables (Kementerian Pendidikan dan Kebudayaan, 2016). Teachers' performance latent variables consist of 3 latent variables, namely Lesson planning (PER1), consisting of 4 manifest variables, Implementation of active and effective learning activities (PER2), consisting of 6 manifest variables, and Learning assessment (PER3), consisting of 5 manifest variables (Pedoman Pelaksanaan Penilaian Kinerja Guru, 2012).

The hypotheses formulated in this study are as follows:

H1: Training has a significant positive effect on competence
H2: Training has a significant positive effect on performance
H3: Competence has a significant positive effect on performance

H4: Training through competence has a positive effect on Performance
Based on the relevant background and previous research, the conceptual framework can be described as follows:

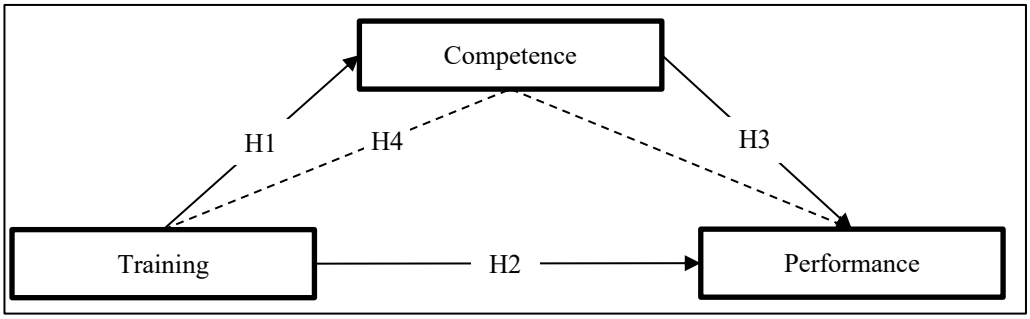
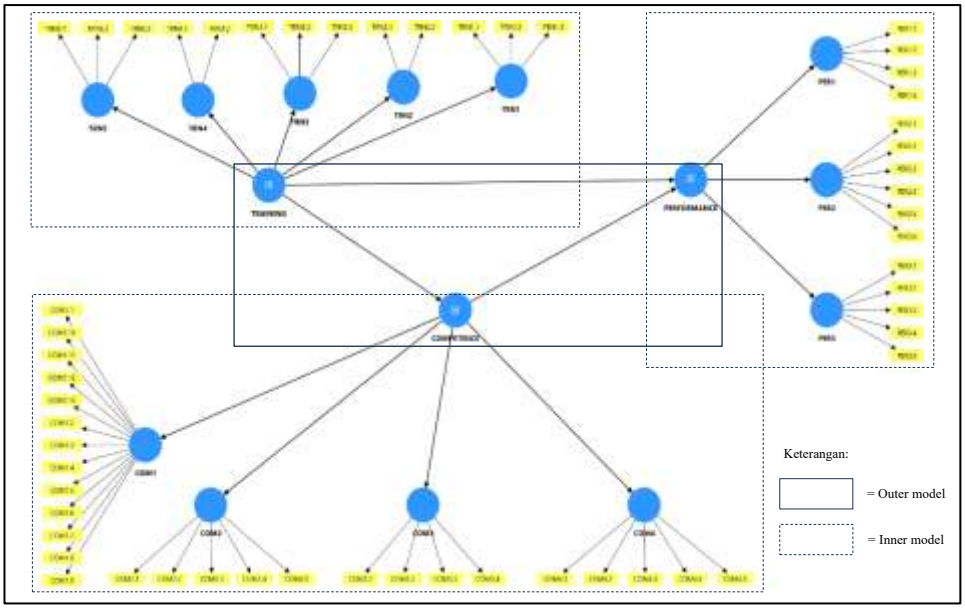



Figure 1. Conceptual Framework

The relationship between variables and dimensions in this study is depicted in the following diagram:




Source: Processed PLS data (2024)

Figure 2. Research Path Diagram

**3. Result and Discussion**

3.1. Demographics of respondents

A total of 181 people participated in this study. Most of the respondents were female, accounting for 80.1% of the sample. The majority of them were between the ages of 26-35 years old, held a Bachelor's degree, and had between 1-5 years of work experience. As appears in the table that follows:

Table 3. Demographics of Respondents

| Profiles | Categories | Percentage (%) |
|---|---|---|
| Gender | Male | 19.89 |
| | Female | 80.11 |
| Age | 20-25 years old | 14.36 |
| | 26-35 years old | 42.54 |
| | 36-40 years old | 20.99 |
| | 41-45 years old | 22.11 |
| Education | Associate Degree | 0.55 |
| | Bachelor's Degree | 83.98 |
| | Master's Degree | 15.47 |
| Work period | 1-5 years | 47.52 |
| | 6-10 years | 18.23 |
| | 11-15 years | 9.39 |
| | >15 years | 24.86 |

*Source: Processed data (2024)*

3.2. Descriptive Statistical Analysis

In descriptive analysis, the goal is to provide a detailed account of the observed events or data properties without drawing any broad conclusions (Wiyono, 2020). The outcomes of these analyses are displayed in Table 2 below:

Table 4. Descriptive Statistics of Respondents' Responses by Variable

| Categories | Training (%) | Competence (%) | Performance (%) |
|---|---|---|---|
| Strongly Disagree | 0.00 | 0.00 | 0.04 |
| Disagree | 0.30 | 0.16 | 0.07 |
| Neutral | 6.54 | 6.28 | 2.36 |
| Agree | 47.34 | 51.61 | 38.27 |
| Strongly Agree | 45.81 | 41.95 | 59.26 |

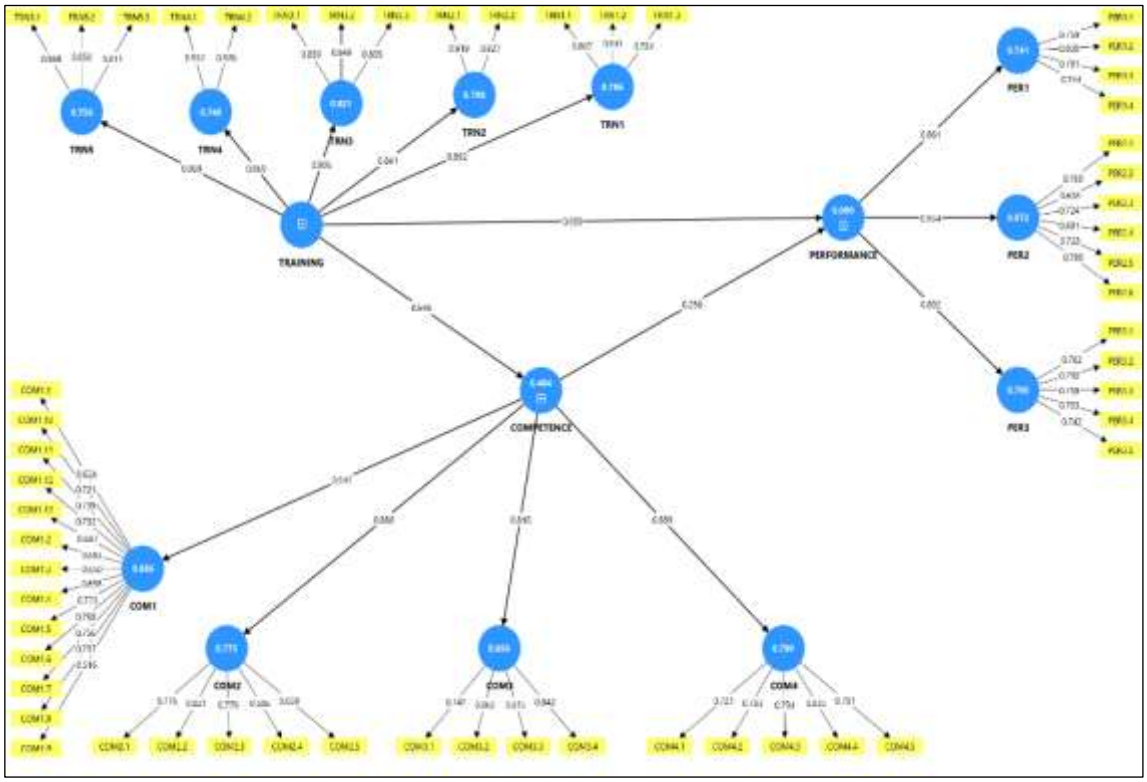
Source: Processed data (2024)
Note: T=Training; C=Competence; P=Performance

Descriptive results showed that responses to statements in each variable were predominantly in the direction of agreement. The percentages of respondents who selected neutral, disagree, and strongly disagree were all below 10%. Only 0.30% disagreed with the primary training variable statement, whereas 6.54% expressed neutrality with the same statement. Simultaneously, the majority of respondents stated that they agreed (51.61%) and strongly agreed (41.95%) with the competency variable.

3.3. Evaluation of Measurement Model (Outer Model)

3.3.1. Dimensional Level (First-order)

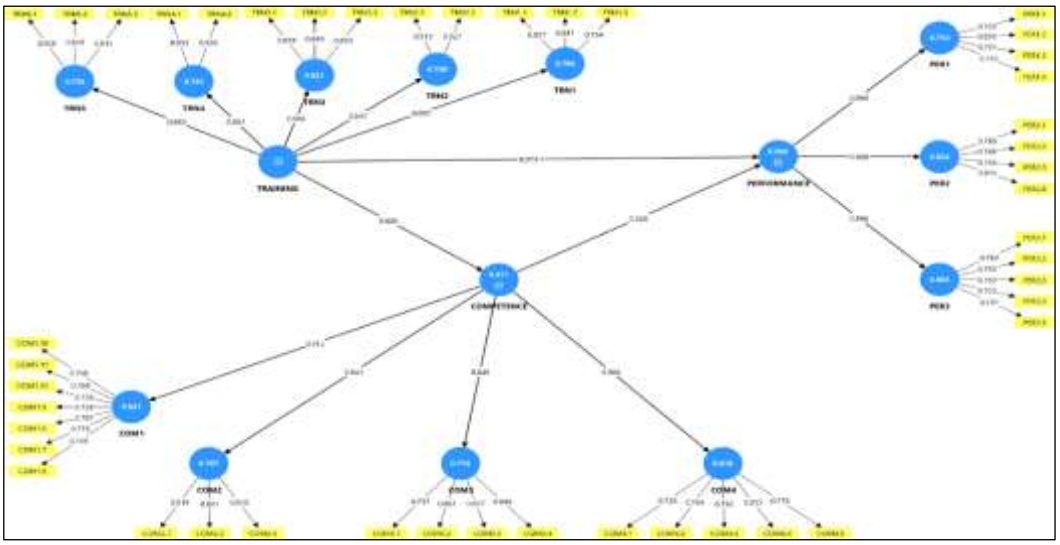
At the dimensional level, validity testing is carried out to prove whether the indicators in a construct can reflect the construct itself. The measurement model in Figure 3 illustrates the conceptual model proposed in this study.




Source: Processed PLS data (2024)

Figure 3. First Order Model_1

Figure 3 showed that the outer loading of all items in the first order models_1 exceeded 0.70, except for COM1.1, COM1.2, COM1.3, COM1.4, COM1.9, COM1.13, COM2.4, COM2.5, PER2.2, and PER2.4, which ranged from 0.516 to 0.698. These items will be removed because they significantly increase the Average Variance Extracted (AVE) and composite reliability (CR) (Hair et al., 2019). After deleting items with outer loading <0.70, several deletion stages were carried out until a good and significant measurement model was obtained. The measurement models' external loads are displayed in Figure 4.



Source: Processed PLS data (2024)

Figure 4. First Order Model_2

The data measurements include: loading factor (LF), Composite reliability (CR), Average Variance Extracted (AVE), and Discriminant Validity (Hair et al., 2019).

Table 5. Results of LF, CR, and AVE for Dimensional Level

| Variable | Dimension | Indicator | Loading Factor (LF) | CR | (AVE) |
|---|---|---|---|---|---|
| Training | TRN1 | TRN1.1 | 0.807 | 0.723 | 0.642 |
| | | TRN1.2 | 0.841 | | |
| | | TRN1.3 | 0.754 | | |
| | TRN2 | TRN2.1 | 0.919 | 0.828 | 0.852 |
| | | TRN2.1 | 0.927 | | |
| | TRN3 | TRN3.1 | 0.859 | 0.805 | 0.719 |
| | | TRN3.2 | 0.849 | | |
| | | TRN3.3 | 0.835 | | |
| | TRN4 | TRN4.1 | 0.932 | 0.843 | 0.863 |
| | | TRN4.2 | 0.926 | | |
| | TRN5 | TRN5.1 | 0.868 | 0.796 | 0.711 |
| | | TRN5.2 | 0.849 | | |
| | | TRN5.3 | 0.811 | | |
| Competence | COM1 | COM1.5 | 0.735 | 0.880 | 0.581 |
| | | COM1.6 | 0.781 | | |
| | | COM1.7 | 0.775 | | |
| | | COM1.8 | 0.749 | | |
| | | COM1.10 | 0.768 | | |
| | | COM1.11 | 0.788 | | |
| | | COM1.12 | 0.736 | | |
| | COM2 | COM2.1 | 0.819 | 0.776 | 0.689 |
| | | COM2.2 | 0.861 | | |
| | | COM2.3 | 0.810 | | |
| | COM3 | COM3.1 | 0.737 | 0.838 | 0.667 |
| | | COM3.2 | 0.861 | | |
| | | COM3.3 | 0.817 | | |
| | | COM3.4 | 0.846 | | |
| | COM4 | COM4.1 | 0.726 | 0.844 | 0.614 |
| | | COM4.2 | 0.784 | | |
| | | COM4.3 | 0.792 | | |
| | | COM4.4 | 0.833 | | |
| | | COM4.5 | 0.778 | | |
| Performance | PER1 | PER1.1 | 0.760 | 0.790 | 0.611 |
| | | PER1.2 | 0.830 | | |

| Variable | Dimension | Indicator | Loading Factor (LF) | CR | (AVE) |
|---|---|---|---|---|---|
| | | PER1.3 | 0.791 | | |
| | | PER1.4 | 0.743 | | |
| | PER2 | PER2.1 | 0.765 | 0.777 | 0.596 |
| | | PER2.3 | 0.746 | | |
| | | PER2.5 | 0.766 | | |
| | | PER2.6 | 0.811 | | |
| | PER3 | PER3.1 | 0.762 | 0.812 | 0.565 |
| | | PER3.2 | 0.790 | | |
| | | PER3.3 | 0.760 | | |
| | | PER3.4 | 0.703 | | |
| | | PER3.5 | 0.741 | | |

Source: Processed PLS data (2024)

Table 5 shows that the loading factor value for each indicator is above 0.70. This means that the items used in the second estimation are valid for measuring the dimensions. To measure the reliability of the dimension level, it can be seen from the value that composite reliability (CR) was above 0.70. The AVE test results, with values exceeding 0.50 for all study constructs, indicate that all constructs showed convergent validity. The discriminant validity value, using the Fornell-Larcker Criterion Method, is shown in Table 6.

Table 6. Fornell-Larcker Criterion for Dimension Level

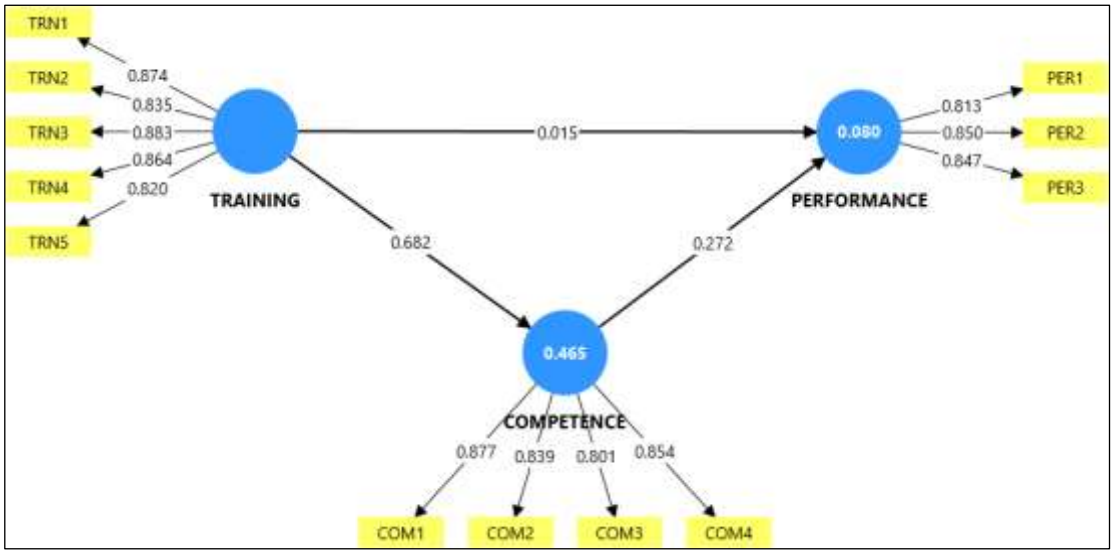
| | Training | Competence | Performance |
|---|---|---|---|
| Training | 0.754 | | |
| Competence | 0.686 | 0.698 | |
| Performance | 0.241 | 0.295 | 0.683 |

Source: Processed PLS data (2024)

In this study, the cross-loading criteria by Fornell and Larcker were used to evaluate discriminant validity. As shown in Table 6, all indicators for a given construct display higher loadings than those on other constructs, thus supporting the cross-loading principles (by row).

3.3.2. Variable Level (Second-order)

Furthermore, for the second-order construct, the analysis approach continues by evaluating the relationship between the second-order construct and the first-order construct that forms it. This study uses the Hierarchical Component Model (HCM) approach with a two-stage approach, where the first-order construct score is used as an indicator of the second-order construct in the second stage (Pico-Saltos et al., 2023).




Source: Processed PLS data (2024)

Figure 5. Second-order Model

Figure 5 is a structural equation model of the research measured by the dimensions of each variable. Meanwhile, the results for the loading factor, composite reliability, and average variance extracted result at the variables can be seen in Table 5 below:

Table 7. Results of LF, CR, and AVE for Variable Level

| Variable | Dimension | Loading Factor (LF) | CR | (AVE) |
|---|---|---|---|---|
| Training | TRN1 | 0.874 | 0.910 | 0.732 |
| | TRN2 | 0.835 | | |
| | TRN3 | 0.883 | | |
| | TRN4 | 0.864 | | |
| | TRN5 | 0.820 | | |
| Competence | COM1 | 0.877 | 0.867 | 0.711 |
| | COM2 | 0.839 | | |
| | COM3 | 0.801 | | |
| | COM4 | 0.854 | | |
| Performance | PER1 | 0.813 | 0.802 | 0.700 |
| | PER2 | 0.850 | | |
| | PER3 | 0.847 | | |

Source: Processed PLS data (2024)

Table 7 indicates that all indicator loadings exceed 0.70, confirming that the items in the second-order model are valid for measuring the construct. Each variable has a composite reliability (CR) value above 0.70, which means all are reliable. The results of the AVE test, with values above 0.50 for all research constructs, indicate that all constructs show convergent validity. The discriminant validity value, using the Fornell-Larcker Criterion Method in Table 8. The results show that all indicators for a construct show higher loadings than indicators in other constructs, thus supporting the principle of cross-loading (based on rows).

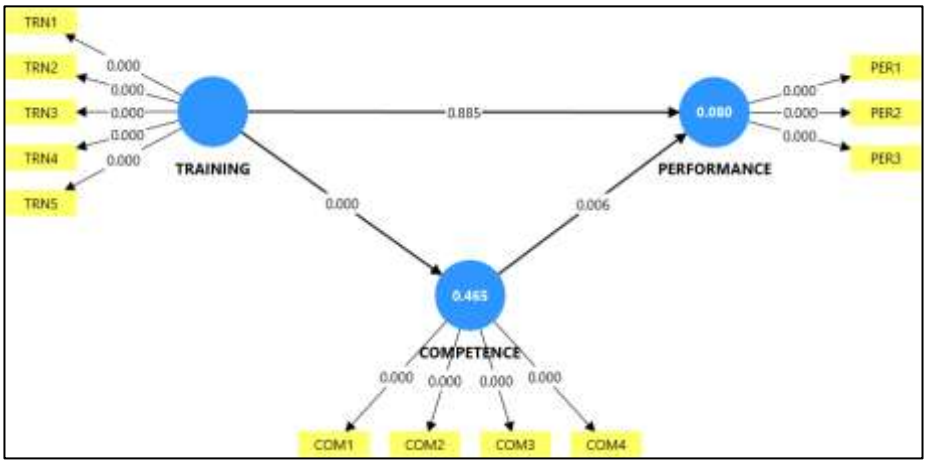
Table 8. Fornell-Larcker Criterion for Variable Level

| | Competence | Performance | Training |
|---|---|---|---|
| Competence | 0.843 | | |
| Performance | 0.283 | 0.837 | |
| Training | 0.682 | 0.201 | 0.855 |

Source: Processed PLS data (2024)

3.4. Evaluation of Structural Model (Inner Model)

After the measurement model adjustment is complete, the structural model will be assessed. The structural model initially offers a comprehensive explanation of the relationships between the research variables, emphasizing the interactions between external and endogenous factors within the research context. The suggested parameter values are then used to evaluate the structural model, considering the direction, magnitude, and significance of the variables. The structural equation model, measured by the dimensions of each variable, can be seen in Figure 6.




Source: Processed PLS data (2024)

Figure 6. Structural Model

To assess model fit, the standardized root mean square residual (SRMR) value can be measured. If it's less than 0.08, the model is considered fit (Hair et al., 2019). The results of the model fit measurement are presented in Table 9 below:

Table 9. SRMR Value

| | Saturated Model | Estimated Model |
|---|---|---|
| SRMR | 0.060 | 0.060 |

Source: Processed data (2024)

The $R^2$ value enhances the predictive power of the structural model, with a higher value indicating a stronger model. Generally, $R^2$ values of 0.7 and above are considered excellent, falling within the range of -1 to 1. The Partial Least Squares (PLS) algorithm in this study determined that the $R^2$ is comparable to classical regression and adheres to similar principles (Chin, 1998).

Table 10. Power Explanatory $R^2$

| Dependent variable | R-Square | R-Square Adjusted |
|---|---|---|
| Competence | 0.465 | 0.462 |
| Performance | 0.080 | 0.070 |

Source: Processed data (2024)

The examination of the endogenous constructs' explanatory power in Table 8 shows that performance, the primary outcome measure of the model, has a weak $R^2$ value of 0.080 (between 0.02 and 0.12), whereas the prediction of competence has a substantial value with an $R^2$ value of 0.465 (Cohen, 1988).

3.5. Hypothesis Testing

The outcomes of the hypothesis test can be tabulated as follows, as shown

Table 11. Hypothesis Testing

| H | Structural Relationship | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics (O/STDEV) | P values | Conclusion |
|---|---|---|---|---|---|---|---|
| H1 | Training -> Competence | 0.682 | 0.685 | 0.046 | 14.698 | 0.000 | Influential |
| H2 | Training -> Performance | 0.015 | 0.018 | 0.105 | 0.145 | 0.885 | No effect |
| H3 | Competence -> Performance | 0.272 | 0.278 | 0.099 | 2.758 | 0.006 | Influential |
| H4 | Training -> Competence -> Performance | 0.186 | 0.190 | 0.070 | 2.663 | 0.008 | Mediating |

Source: Processed data (2024)

Table 11 concludes as follows: a) the impact of training on competence is substantial. Meanwhile, the original sample value of 0.682 shows that the direction of the relationship between training and competence is positive; that is, competence rises in tandem with training quality. Training does, in fact, improve competence, proving and accepting the first hypothesis (H1); b) There is no statistically significant relationship between training and performance. So, the second hypothesis was not accepted (H2); c) performance is impacted by competence. An increase in competence will lead to a corresponding rise in performance, since the positive coefficient value suggests a favorable influence. As a result, the third hypothesis is accepted (H3); d) the result of p-value less than 0.05 ($0.008 < 0.05$), which means that training has an indirect influence on performance; that is, competence has a significant influence in mediating the relationship between training and performance, as proven. The fourth hypothesis is accepted (H4).

Furthermore, the results show that the training variable does not directly affect performance, but it does influence performance through competence. This indicates that competence fully mediates the relationship and plays a key role in enhancing teacher performance. The path coefficient for the relationship between training and performance through competence is 0.186, with a t-statistic of 2.663 ($\geq 2.58$), indicating a highly significant effect. This finding reflects a positive influence with a relatively weak-to-moderate strength, yet it remains substantively meaningful due to its high statistical significance.

3.6. Discussion

Based on the research findings, training does not directly improve teacher performance, but it does improve competence, and it is this competence that fully mediates the improvement in teacher performance (Hayes, 2018).

It's meaningful that training has a significant indirect influence on teacher performance through competence among vocational high school (SMK) teachers in Palembang City. This result aligns with the Human Capital Theory, which views education, training, and skill development as forms of investment that enhance individuals' productivity and performance. In this context, training functions as a strategic investment enabling teachers to strengthen their pedagogical and professional competencies, which in turn improve instructional effectiveness and job performance (Landa et al., 2021; Maritasari et al., 2020).

Furthermore, competence serves as a mediating factor linking training to performance, suggesting that the impact of training is realized when teachers can internalize and apply the competencies acquired. This finding supports the human capital perspective that individuals with greater knowledge and skills contribute more effectively to organizational and societal advancement (Tan et al., 2023; Yusnita et al., 2018). Therefore, continuous investment in teacher training is essential for developing high-quality human resources, enhancing school performance, and achieving sustainable educational outcomes consistent with the principles of Human Capital Theory (Wicaksono, 2020). The results of this study support the findings of previous research has proven that training has a positive and significant effect on employee performance through work competence as an intervening variable (Efendi et al., 2025). Therefore, the role of competency mediation is important to ensure the effectiveness of training programs in the long term (Blömeke et al., 2022).

Increasing the competence of vocational high school teachers also needs to be supported by industrial teacher internships, short courses at other educational institutions, internal school development, and further study at higher levels of education (Ramdhani & Adawiyah, 2023). Additionally, the inability to effectively apply training or the lack of post-training support may reduce the positive impact of training on teacher performance (Oluwatosin, 2022). More teaching experience provides better practical skills (Vilppola et al., 2022). Education policies and curriculum that are aligned, as well as ongoing professional development, also play a significant role in supporting teacher performance (Kholifah et al., 2024).

## 4. Conclusion

With the help of this study's findings, vocational high schools can be better positioned to identify the dominant factors influencing teacher performance. Furthermore, this study also helps focus future decision-making on developing strategic investments that enhance individual productivity and contribute to educational advancement, which in turn impacts national progress. Strengthening teacher competency through sustainable and well-structured training programs enables teachers to apply their knowledge and skills effectively, resulting in improved teaching quality and performance outcomes. Therefore, educational institutions and policymakers should prioritize sustained investment in teacher development as a means of building strong human capital and achieving long-term educational excellence. The descriptive analysis highlights three key variables—training, competence, and teacher performance—each consisting of essential dimensions that shape instructional quality in vocational education. Across these variables, the lowest-rated dimensions were training method, professional competence, and learning assessment. The low score for the training method suggests that the strategies used were not sufficiently practical or aligned with learner needs. The weak evaluation of professional competence indicates gaps in subject mastery and applied technical expertise, which are crucial in vocational settings. Likewise, the low score for learning assessment indicates difficulties in developing suitable assessment tools, accurately evaluating students' abilities, and utilizing the results to enhance the teaching process.

To address these issues, several improvements are recommended. Training effectiveness can be enhanced through varied and interactive methods such as simulations, case-based tasks, and digital learning tools. Strengthening professional competence requires industry-based training, updated subject knowledge, certification, and collaboration with practitioners. Improving learning assessment involves developing authentic assessment skills, using digital tools, analyzing results more effectively, and providing ongoing professional development. Together, these efforts are expected to enhance the overall quality of training, competence, and teacher performance. To better understand teacher performance, other variables such as teaching experience, relationships with students, as well as access to resources and facilities, should also be considered. Findings of several studies examining teacher performance in vocational high schools, internal factors, such as commitment, can also influence teacher performance (Siri et al., 2020) and external factors such as work environment, managerial support, and family sociology also greatly impact teacher performance (Kholifah et al., 2024). A systematic literature review study states that the central role of intrinsic characteristics, like self-efficacy and motivation impact on enhancing training outcomes within educational contexts (Samad et al., 2025). The future researcher might incorporate self-efficacy and motivation as mediators in the relationship between training factors and performance.

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