

# The Effect of Work Environment, Personal Characteristics, Technical Skills, and Experience on the Performance of Contract Employees at PT Telkom Akses Lampung

Original Article

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## Abstract

This study aims to evaluate the effect of Work Environment, Personal Characteristics, Technical Skills, and Work Experience on the job performance of contract technicians at PT Telkom Akses Lampung. The urgency of this research is based on the need to optimize technical human resources in order to ensure the stability of telecommunication services. The population of this study consisted of 120 contract employees, with the sampling technique using accidental sampling, where respondents were selected based on their availability and suitability as research subjects. This study employed a quantitative approach with Structural Equation Modeling (SEM) analysis using SmartPLS software. The results show that Personal Characteristics, Technical Skills, and Work Experience have a positive and significant effect on employee performance. In contrast, the Work Environment was found to have no significant effect on technician performance in this research model. These findings indicate that individual competence and work experience are the main determinants of field technician performance. In conclusion, improving human resource quality through strengthening skills and work experience is more critical than improving the work environment in this context. The results of this study are expected to provide valuable input for company management in enhancing technician performance.

**Keywords:** Work Environment, Personal Characteristics, Technical Skills, Work Experience, Employee Performance, SmartPLS

## 1. Introduction

The rapid development of digital technology in Indonesia has positioned the telecommunications sector as one of the strategic sectors supporting economic and social activities. The implementation of national digitalization programs, such as the Electronic-Based Government System (SPBE), Making Indonesia 4.0, and the expansion of digital public services, indicates that the demand for stable and high-quality internet connectivity continues to increase. According to the Central Bureau of Statistics (Bps-statistics, 2024), the information and communication sector contributed 4.35% to Indonesia's Gross Domestic Product (GDP) in 2023 and became one of the fastest-growing sectors nationally. This condition demonstrates that telecommunications infrastructure plays a significant role in supporting digital connectivity and societal activities.

In Lampung Province, internet penetration reached 78.26% in 2025. The increasing dependence on internet services requires telecommunication infrastructure providers to



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maintain optimal service quality. One of the companies that plays a major role in this sector is PT Telkom Akses. Based on the annual report of (Telkom Indonesia, 2023), the company focuses on the development, maintenance, and management of fiber optic networks, including IndiHome installation services and network troubleshooting. In carrying out these operational activities, contract employees, particularly field technicians, hold an essential position because they directly influence the quality of services received by customers.

Internal HRD data from PT Telkom Akses Lampung in 2025 recorded approximately 120 contract technicians responsible for network installation, service migration, network maintenance, and troubleshooting activities. These technicians serve as the operational frontline in ensuring service continuity and network reliability. Therefore, employee performance becomes a critical factor affecting customer satisfaction and overall organizational effectiveness.

However, actual conditions in the field indicate a discrepancy between the expected performance standards and the realization of work implementation. HRD reports in 2025 revealed delays in resolving network disruptions, particularly in areas characterized by broad coverage, difficult geographical access, and extreme weather conditions. In addition, uneven task distribution has caused certain technicians to experience heavier workloads than others, ultimately affecting work effectiveness and service quality. (Febrianty & Hadiwijaya, 2021; Hamidha et al., 2023)

Preliminary interviews with HRD personnel and several contract technicians also identified differences in technical competence and work experience among employees. Technicians with relatively short working periods have not fully mastered fiber optic installation, device configuration, and troubleshooting procedures. In contrast, experienced technicians tend to complete tasks more efficiently and accurately. These disparities in technical skills and work experience contribute to significant variations in employee performance.

Another issue relates to the personal characteristics of employees. Based on internal evaluations and interview findings, several work-related behaviors were still identified, including tardiness, lack of accuracy in completing tasks, and non-compliance with standard operating procedures (SOPs). Such conditions increase the likelihood of human error, which may lead to repeated service disruptions and decreased service quality. (Febrianty et al., 2020; Prananta et al., 2026)

From the perspective of the work environment, contract technicians at PT Telkom Akses Lampung face physically demanding and high-risk working conditions. Their activities are predominantly conducted outdoors and involve working at heights, dealing with traffic congestion, meeting strict work targets, and adapting to unpredictable weather conditions. Furthermore, the status of contract employment potentially contributes to psychological pressure, work stress, and fatigue, which may ultimately influence employee performance stability (Anita et al., 2024; Aning et al., 2026).

Employee performance is generally defined as the level of work achievement accomplished by individuals according to organizational standards and responsibilities (Fatmawati et al., 2025). Organizational behavior theory emphasizes that employee performance is not solely determined by technical competence but is also influenced by the work environment, personal characteristics, and work experience (Lia Lestari & Mulyadin,

2023). Therefore, examining the determinants of contract employee performance is particularly important in the telecommunications sector, which is characterized by technical complexity and high work pressure.

The work environment is considered one of the important factors influencing employee performance. A conducive physical and psychological work environment can improve concentration, motivation, and occupational safety, whereas unfavorable working conditions may increase the risk of human error and reduce productivity (Heryanto & Apriadi, 2025; Arif & Windarsari, 2026). Previous international studies also demonstrated that the work environment significantly affects the performance of field technicians (Zhenjing et al., 2022). However, empirical studies focusing on contract employees in the Indonesian telecommunications sector remain limited, particularly those examining field technicians. This condition represents the first research gap addressed in the present study.

Personal characteristics also play an essential role in shaping employee effectiveness and work behavior. The Big Five Personality Theory explains that traits such as conscientiousness, emotional stability, and agreeableness are closely associated with discipline, work accuracy, and the ability to manage pressure (Fukuzaki & Iwata, 2022; Dipoatmodjo et al., 2026). In highly demanding work environments, individual characteristics may influence how employees respond to occupational risks and technical challenges. Nevertheless, previous studies concerning personal characteristics have predominantly focused on the education, manufacturing, and public sectors, while studies involving contract technicians in telecommunications remain relatively scarce. Therefore, this issue constitutes the second research gap of the study. (Febrianty et al., 2019)

Technical skills are another critical determinant of employee performance, particularly in technology-based industries. In the telecommunications sector, technical competence includes fiber optic installation, device configuration, digital tool operation, and troubleshooting capabilities (Sulistari et al., 2023; Riu et al., 2026). Differences in technical skills among technicians frequently result in variations in productivity and service quality. Although prior studies have identified technical competence as a major contributor to employee productivity, limited research has simultaneously examined technical skills together with work environment, personal characteristics, and work experience variables. This limitation forms the third research gap in the current study.

Although previous studies have examined work environment, personal characteristics, technical skills, and work experience, most studies focused only on one or two variables and were conducted in different industrial settings. Research integrating these four variables simultaneously in the context of contract employees within the telecommunications industry remains limited (Baharuddin & Ali, 2025). Therefore, this study aims to analyze the influence of work environment, personal characteristics, technical skills, and work experience on the performance of contract employees at PT Telkom Akses Lampung.

Theoretically, this study is expected to contribute to the development of human resource management literature, particularly regarding contract employees in the telecommunications sector. Practically, the findings are expected to provide managerial insights for improving employee performance through technical training enhancement, work environment development, and effective management of employee experience. (Febrianty et al., 2022)

This study focuses on several key variables that are expected to influence employee performance. Work environment refers to the physical and non-physical conditions surrounding employees in carrying out their work. Physical conditions include lighting, temperature, equipment availability, and workplace safety, while non-physical conditions include interpersonal relationships, communication, and managerial support. A supportive work environment enhances employee comfort, reduces stress, and improves productivity.

Personal characteristics refer to individual traits that influence employee behavior in the workplace, including personality, attitudes, motivation, values, and emotional stability. Employees with positive characteristics such as discipline, responsibility, and adaptability tend to perform better and handle job demands more effectively.

Technical skills refer to an individual's ability to operate tools, follow procedures, and apply technical knowledge to complete job tasks. These skills are developed through training and experience and are essential in technology-based jobs. Higher technical skills lead to better efficiency, accuracy, and problem-solving ability. (Febrianty et al., 2021)

Work experience refers to the accumulation of knowledge and skills gained through job involvement over time. It includes tenure, job variety, and exposure to work problems. Employees with greater experience tend to have better decision-making abilities, faster task completion, and higher performance quality. (Anita et al., 2024)

Employee performance is defined as the level of achievement of work results in terms of quality, quantity, timeliness, responsibility, and cooperation in completing job tasks. It reflects how effectively employees perform their duties according to organizational standards.

Based on the conceptual framework presented above, the following hypotheses are formulated.

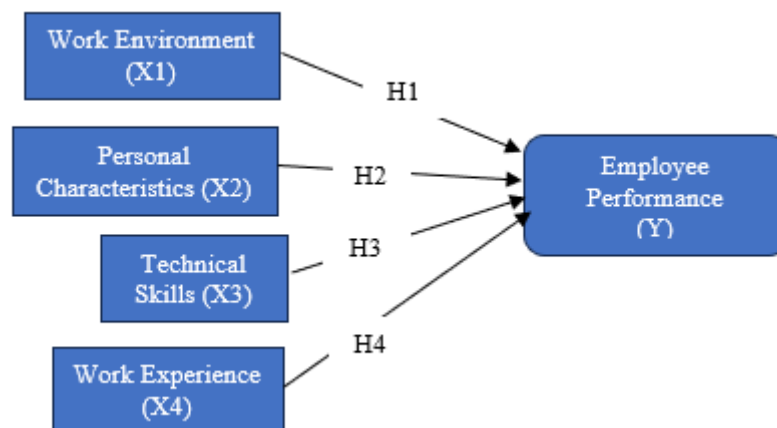


Figure 1. Conceptual Framework

Based on the theoretical review, the relationships among variables, previous empirical studies, and the conceptual framework presented, the following hypotheses are proposed in this study:

H1: Work Environment (X1) has a positive and significant effect on Contract Employee Performance (Y) at PT Telkom Akses Lampung.

H2: Personal Characteristics (X2) have a positive and significant effect on Contract Employee Performance (Y) at PT Telkom Akses Lampung.

H3: Technical Skills (X3) have a positive and significant effect on Contract Employee Performance (Y) at PT Telkom Akses Lampung.

H4: Work Experience (X4) has a positive and significant effect on Contract Employee Performance (Y) at PT Telkom Akses Lampung.

## 2. Method

Quantitative research methodology is applied in this study to examine the influence of work environment, personal characteristics, technical skills, and work experience on contract employee performance at PT Telkom Akses Lampung. Quantitative research is considered appropriate because it allows the measurement of relationships among variables and enables hypothesis testing statistically. This study adopts a correlational explanatory approach aimed at analyzing the relationship between independent variables, namely work environment, personal characteristics, technical skills, and work experience, and the dependent variable, namely employee performance.

Primary data are collected through questionnaires distributed to contract technicians of PT Telkom Akses Lampung who are involved in network installation, maintenance, and troubleshooting activities. The population of this study consists of 120 contract technician employees at PT Telkom Akses Lampung. The study applies a non-probability sampling method using an accidental sampling technique, in which respondents are selected based on accessibility and their suitability with the research criteria during the research process. The final sample consists of 105 respondents who have worked for at least three months.

The questionnaire is developed using a five-point Likert scale to measure respondents' perceptions regarding the variables studied. The indicators include physical work conditions, discipline, technical capability, work experience, responsibility, and work quality. Prior to the main data collection, the research instrument is pre-tested to ensure validity and reliability.

Data analysis is conducted using Structural Equation Modeling–Partial Least Squares (SEM-PLS) through SmartPLS software. The analysis includes outer model testing consisting of validity and reliability assessment, as well as inner model testing to examine the relationships among variables. The analysis aims to determine the extent to which work environment, personal characteristics, technical skills, and work experience influence contract employee performance both partially and simultaneously.

## 3. Results and Discussion

### 3.1. Research Result

#### Overview of PT Telkom Akses

The study presents the findings of field research conducted on contract technician employees at PT Telkom Akses Lampung. The analysis covers respondents' characteristics using descriptive statistics, followed by evaluation of the measurement model (outer model), including convergent validity, discriminant validity, and reliability testing. Furthermore, the structural model (inner model) was evaluated through the coefficient of determination ( $R^2$ ), effect size ( $f^2$ ), predictive relevance ( $Q^2$ ), and hypothesis testing using path coefficient analysis. The data analysis process employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach using SmartPLS version 4.0.9.9.

#### Overview of Contract Employees at PT Telkom Akses

PT Telkom Akses is a subsidiary of PT Telekomunikasi Indonesia operating in the development, management, and maintenance of telecommunication network infrastructure. The company plays a significant role in supporting broadband-based telecommunication services through network installation, service maintenance, and customer disturbance handling.

As part of the Indonesian telecommunication ecosystem, PT Telkom Akses is responsible for ensuring the quality and stability of network services to meet public communication and internet needs. The company operates across several regions in Indonesia, including Lampung Province, which holds a strategic role in supporting telecommunication operations within the region.

Operational activities involve various technical tasks conducted both in offices and field locations, including network installation, equipment maintenance, network troubleshooting, and quality monitoring. These dynamic working conditions require competent human resources capable of adapting to changing work environments.

### Overview of Contract Employees at PT Telkom Akses

Contract employees at PT Telkom Akses are recruited under fixed-term employment agreements (PKWT) according to operational requirements. The contract-based employment system enables the company to adjust workforce capacity based on fluctuating technical workloads and project demands.

Contract durations vary between three months, six months, eight months, and twelve months, depending on project needs, employee performance evaluations, and company policies. Contract extensions are generally determined by employee discipline, technical competence, and work performance.

Most contract employees work as field technicians responsible for network installation, telecommunication equipment maintenance, and customer service troubleshooting. The position requires high mobility, technical capability, problem-solving skills, adaptability, and responsibility in completing tasks under demanding working conditions.

### Data Collection Results

The data used in this study is primary data collected through questionnaires distributed to contract technician employees of PT Telkom Akses Lampung. Data collection was conducted starting January 8, 2026, using Google Forms distributed via WhatsApp and direct links. A total of 105 respondents participated, consistent with the predetermined sample size.

### Respondent Characteristics

The analysis includes gender, age, tenure, and education level.

**Table 1. Frequency Distribution of Respondents**

| Variabel      | Category    | Frequency (n) | Percentage (%) |
|---------------|-------------|---------------|----------------|
| <b>Gender</b> | Male        | 105           | <b>100%</b>    |
| <b>Gender</b> | Female      | 0             | <b>0%</b>      |
| <b>Age</b>    | 20–25 years | 56            | <b>53.3%</b>   |
| <b>Age</b>    | 26–30 years | 36            | <b>34.3%</b>   |
| <b>Age</b>    | >30 years   | 13            | <b>12.4%</b>   |

|                          |                                           |    |              |
|--------------------------|-------------------------------------------|----|--------------|
| <b>Length of Service</b> | 3 months –1 years                         | 19 | <b>18.1%</b> |
| <b>Length of Service</b> | 1–2 years                                 | 59 | <b>56.2%</b> |
| <b>Length of Service</b> | >2 years                                  | 27 | <b>25.7%</b> |
| <b>Education</b>         | Senior High School/Vocational High School | 53 | <b>50.5%</b> |
| <b>Education</b>         | Diploma (D3)                              | 14 | <b>13.3%</b> |
| <b>Education</b>         | Bachelor's Degree (S1)                    | 38 | <b>36.2%</b> |

Based on Table 1, the research respondents consisted of 105 men (100%) and no female respondents (0%). This indicates that the workforce of contract technicians at PT Telkom Akses Lampung is entirely dominated by male employees, reflecting the nature of technical fieldwork that is commonly performed by men. In terms of age, the 20–25 year age group is the most dominant (53.3%), indicating that most employees are young workers in their early productive years with high adaptability and physical capability. Regarding education, the Senior High School/Vocational High School (SMA/SMK) level is the most dominant (50.5%), showing that the company employs many technicians with vocational and practical educational backgrounds. For the length of work, the majority of respondents have worked between 1 and 2 years (56.2%), indicating moderate work experience and familiarity with organizational procedures. Overall, these findings suggest that the workforce is dominated by young male technicians with relatively short to moderate work experience.

### Descriptive Statistics of Research Variables

The descriptive statistical test aims to provide a general overview of all variables used in this study.

**Table 2. Descriptive Statistics**

| <b>Variabel</b> | <b>Mean</b> | <b>Scale min</b> | <b>Scale max</b> | <b>Standard deviation</b> | <b>Excess kurtosis</b> | <b>Skewness</b> | <b>Cramér-von Mises P value</b> |
|-----------------|-------------|------------------|------------------|---------------------------|------------------------|-----------------|---------------------------------|
| LK1             | 4.286       | 1.000            | 5.000            | 0.686                     | 3.651                  | -1.161          | 0.000                           |
| LK2             | 4.295       | 2.000            | 5.000            | 0.661                     | 1.258                  | -0.814          | 0.000                           |
| LK3             | 4.257       | 1.000            | 5.000            | 0.769                     | 4.887                  | -1.630          | 0.000                           |
| LK4             | 4.419       | 2.000            | 5.000            | 0.644                     | 0.739                  | -0.886          | 0.000                           |
| LK5             | 4.324       | 2.000            | 5.000            | 0.710                     | -0.086                 | -0.729          | 0.000                           |
| LK6             | 4.276       | 2.000            | 5.000            | 0.640                     | 0.435                  | -0.547          | 0.000                           |
| LK7             | 4.276       | 2.000            | 5.000            | 0.697                     | -0.090                 | -0.613          | 0.000                           |
| LK8             | 4.362       | 2.000            | 5.000            | 0.649                     | 0.505                  | -0.742          | 0.000                           |
| KP1             | 4.486       | 3.000            | 5.000            | 0.603                     | -0.408                 | -0.736          | 0.000                           |
| KP2             | 4.562       | 1.000            | 5.000            | 0.616                     | 8.931                  | -2.100          | 0.000                           |
| KP3             | 4.419       | 1.000            | 5.000            | 0.659                     | 5.414                  | -1.521          | 0.000                           |
| KP4             | 4.400       | 1.000            | 5.000            | 0.698                     | 3.990                  | -1.423          | 0.000                           |
| KP5             | 4.457       | 3.000            | 5.000            | 0.570                     | -0.743                 | -0.457          | 0.000                           |
| KP6             | 4.476       | 3.000            | 5.000            | 0.554                     | -0.882                 | -0.417          | 0.000                           |
| KP7             | 4.495       | 3.000            | 5.000            | 0.571                     | -0.615                 | -0.604          | 0.000                           |

| Variabel | Mean  | Scale min | Scale max | Standard deviation | Excess kurtosis | Skewness | Cramér-von Mises P value |
|----------|-------|-----------|-----------|--------------------|-----------------|----------|--------------------------|
| KP8      | 4.581 | 3.000     | 5.000     | 0.565              | -0.047          | -0.967   | 0.000                    |
| KP9      | 4.476 | 3.000     | 5.000     | 0.603              | -0.451          | -0.700   | 0.000                    |
| KP10     | 4.448 | 3.000     | 5.000     | 0.647              | -0.447          | -0.765   | 0.000                    |
| KT1      | 4.429 | 3.000     | 5.000     | 0.567              | -0.797          | -0.351   | 0.000                    |
| KT2      | 4.457 | 3.000     | 5.000     | 0.648              | -0.408          | -0.798   | 0.000                    |
| KT3      | 4.390 | 3.000     | 5.000     | 0.594              | -0.663          | -0.397   | 0.000                    |
| KT4      | 4.467 | 2.000     | 5.000     | 0.663              | 0.843           | -1.070   | 0.000                    |
| KT5      | 4.390 | 2.000     | 5.000     | 0.669              | 1.503           | -1.042   | 0.000                    |
| KT6      | 4.352 | 1.000     | 5.000     | 0.703              | 4.367           | -1.458   | 0.000                    |
| PK1      | 4.352 | 1.000     | 5.000     | 0.676              | 4.348           | -1.324   | 0.000                    |
| PK2      | 4.343 | 1.000     | 5.000     | 0.701              | 4.366           | -1.438   | 0.000                    |
| PK3      | 4.419 | 2.000     | 5.000     | 0.673              | 0.522           | -0.936   | 0.000                    |
| PK4      | 4.448 | 1.000     | 5.000     | 0.662              | 5.555           | -1.606   | 0.000                    |
| PK5      | 4.457 | 2.000     | 5.000     | 0.677              | 2.882           | -1.434   | 0.000                    |
| PK6      | 4.429 | 1.000     | 5.000     | 0.728              | 4.990           | -1.772   | 0.000                    |
| PK7      | 4.457 | 1.000     | 5.000     | 0.662              | 5.618           | -1.636   | 0.000                    |
| PK8      | 4.476 | 2.000     | 5.000     | 0.663              | 0.900           | -1.104   | 0.000                    |
| Y1       | 4.467 | 3.000     | 5.000     | 0.603              | -0.490          | -0.665   | 0.000                    |
| Y2       | 4.467 | 3.000     | 5.000     | 0.633              | -0.387          | -0.785   | 0.000                    |
| Y3       | 4.343 | 1.000     | 5.000     | 0.701              | 4.366           | -1.438   | 0.000                    |
| Y4       | 4.390 | 3.000     | 5.000     | 0.640              | -0.608          | -0.576   | 0.000                    |
| Y5       | 4.457 | 3.000     | 5.000     | 0.586              | -0.614          | -0.551   | 0.000                    |
| Y6       | 4.467 | 3.000     | 5.000     | 0.570              | -0.717          | -0.493   | 0.000                    |
| Y7       | 4.390 | 3.000     | 5.000     | 0.625              | -0.611          | -0.526   | 0.000                    |
| Y8       | 4.476 | 3.000     | 5.000     | 0.603              | -0.451          | -0.700   | 0.000                    |
| Y9       | 4.486 | 3.000     | 5.000     | 0.587              | -0.509          | -0.659   | 0.000                    |
| Y10      | 4.533 | 3.000     | 5.000     | 0.553              | -0.649          | -0.647   | 0.000                    |

Based on Table 2, the results indicate that all research variables have relatively high mean values, ranging from 4.257 to 4.581, with standard deviation values below 0.80. This suggests that respondents generally have positive perceptions regarding the work environment, personal characteristics, technical skills, work experience, and employee performance. The low standard deviation values also indicate that respondents' answers are relatively consistent and homogeneous, reflecting a similar level of agreement toward the statements used in the questionnaire.

### Convergent Validity

Convergent validity is assessed through Outer Loadings and Average Variance Extracted (AVE).

**Table 3. Outer Loading Validity Test**

| Variabel | DWB | M | WFA | WLH | Y     | Result |
|----------|-----|---|-----|-----|-------|--------|
| KK1      |     |   |     |     | 0.654 | Valid  |

| Variabel | DWB   | M     | WFA   | WLH   | Y     | Result |
|----------|-------|-------|-------|-------|-------|--------|
| KK2      |       |       |       |       | 0.763 | Valid  |
| KK3      |       |       |       |       | 0.798 | Valid  |
| KK4      |       |       |       |       | 0.769 | Valid  |
| KK5      |       |       |       |       | 0.795 | Valid  |
| KK6      |       |       |       |       | 0.702 | Valid  |
| KK7      |       |       |       |       | 0.744 | Valid  |
| KK8      |       |       |       |       | 0.771 | Valid  |
| KK9      |       |       |       |       | 0.741 | Valid  |
| KP1      |       | 0.730 |       |       |       | Valid  |
| KP2      |       | 0.679 |       |       |       | Valid  |
| KP3      |       | 0.746 |       |       |       | Valid  |
| KP4      |       | 0.741 |       |       |       | Valid  |
| KP5      |       | 0.720 |       |       |       | Valid  |
| KP6      |       | 0.772 |       |       |       | Valid  |
| KP7      |       | 0.745 |       |       |       | Valid  |
| KP8      |       | 0.758 |       |       |       | Valid  |
| KP9      |       | 0.731 |       |       |       | Valid  |
| KT1      |       |       | 0.826 |       |       | Valid  |
| KT2      |       |       | 0.799 |       |       | Valid  |
| KT3      |       |       | 0.829 |       |       | Valid  |
| KT4      |       |       | 0.843 |       |       | Valid  |
| LK3      | 0.563 |       |       |       |       | Valid  |
| LK4      | 0.819 |       |       |       |       | Valid  |
| LK5      | 0.706 |       |       |       |       | Valid  |
| LK6      | 0.793 |       |       |       |       | Valid  |
| LK7      | 0.779 |       |       |       |       | Valid  |
| LK8      | 0.817 |       |       |       |       | Valid  |
| PK1      |       |       |       | 0.795 |       | Valid  |
| PK2      |       |       |       | 0.721 |       | Valid  |
| PK3      |       |       |       | 0.779 |       | Valid  |
| PK4      |       |       |       | 0.819 |       | Valid  |
| PK5      |       |       |       | 0.760 |       | Valid  |
| PK6      |       |       |       | 0.833 |       | Valid  |

Based on Table 3, all indicators show loading factor values ranging from 0.563 to 0.843, with most values exceeding the threshold of 0.70. The lowest loading value is 0.563 (LK3), while the highest is 0.843 (KT4). Therefore, all indicators are declared valid and are considered capable of adequately reflecting their respective latent constructs.

**Table 4. Average Variance Extracted (AVE) Validity Test**

| Variabel | Average variance extracted (AVE) | Threshold | Result |
|----------|----------------------------------|-----------|--------|
|----------|----------------------------------|-----------|--------|

|    |       |             |       |
|----|-------|-------------|-------|
| LK | 0.565 | $\geq 0.50$ | Valid |
| KP | 0.542 | $\geq 0.50$ | Valid |
| KT | 0.679 | $\geq 0.50$ | Valid |
| PK | 0.585 | $\geq 0.50$ | Valid |
| KK | 0.562 | $\geq 0.50$ | Valid |

Table 4 shows that all latent variables have an AVE value  $> 0.50$ , meaning each construct has met the criteria for convergent validity.

### Discriminant Validity

Discriminant validity is measured using the Fornell-Larcker Criterion and the Heterotrait-Monotrait Ratio (HTMT).

**Table 5. Fornell-Larcker Criterion Discriminant Validity**

| Result | LK    | KP    | KT    | PK    | KK    |
|--------|-------|-------|-------|-------|-------|
| Y      | 0.501 | 0.727 | 0.757 | 0.692 | 0.727 |
| X4     | 0.427 | 0.715 | 0.739 | 0.765 |       |
| X3     | 0.547 | 0.802 | 0.774 |       |       |
| X2     | 0.605 | 0.728 |       |       |       |
| X1     | 0.751 |       |       |       |       |

Based on table 5 the cross-loading results, each indicator exhibits higher loading values on its respective construct compared to other constructs. This indicates that discriminant validity has been adequately established.

**Table 6. Heterotrait-Monotrait Ratio (HTMT)**

| Variabel | LK    | KP    | KT    | PK    | Y |
|----------|-------|-------|-------|-------|---|
| LK       |       |       |       |       |   |
| KP       | 0.696 |       |       |       |   |
| KT       | 0.588 | 0.845 |       |       |   |
| PK       | 0.490 | 0.780 | 0.731 |       |   |
| Y        | 0.556 | 0.785 | 0.803 | 0.758 |   |

Based on Table 6, the Heterotrait-Monotrait Ratio (HTMT) values for all constructs are below the recommended threshold of 0.90. Therefore, discriminant validity is established for all constructs in the model.

### Reliability Test

Reliability is measured using Cronbach's Alpha and Composite Reliability.

**Table 7. Cronbach's Alpha Reliability Test**

| <i>Variabel</i> | <i>Cronbach's alpha</i> |
|-----------------|-------------------------|
| LK              | 0.843                   |
| KP              | 0.844                   |
| KT              | 0.845                   |

|    |       |
|----|-------|
| PK | 0.846 |
| KK | 0.847 |

Table 7 shows that all constructs (LK, KP, KT, PK, and KK) have good reliability, with reliability values ranging from 0.843 to 0.847. Since all values exceed the recommended threshold of 0.70, each construct can be considered reliable and suitable for further analysis.

**Table 8. Composite Reliability**

| Variabel | Composite Reliability ( $\rho_a$ ) | Interpretasi Reliabilitas | Result   |
|----------|------------------------------------|---------------------------|----------|
| LK       | 0.885                              | Reliabel                  | Accepted |
| KP       | 0.914                              | Reliabel                  | Accepted |
| KT       | 0.894                              | Reliabel                  | Accepted |
| PK       | 0.918                              | Reliabel                  | Accepted |
| KK       | 0.920                              | Reliabel                  | Accepted |

Based on Table 8, all constructs demonstrate good internal reliability, with Composite Reliability ( $\rho_a$ ) values ranging from 0.885 to 0.920. Since all values exceed the recommended threshold of 0.70, all constructs are considered reliable and suitable for further structural analysis.

### Structural Model Analysis (Inner Model)

The structural model was evaluated using the coefficient of determination ( $R^2$ ) and predictive relevance ( $Q^2$ ). The  $R^2$  value indicates the explanatory power of the exogenous variables on the endogenous variable, while the  $Q^2$  value assesses the model's predictive relevance.

**Table 9. Coefficient of Determination ( $R^2$ )**

| Variabel | R Square | R Square Adjusted |
|----------|----------|-------------------|
| Y        | 0.633    | 0.618             |

Based on Table 9, the R-square value for Employee Performance (KK) is 0.633. This indicates that the independent variables (LK, KP, KT, and PK) explain 63.3% of the variance in employee performance, while the remaining 36.7% is explained by other factors outside the model. Therefore, the model demonstrates moderate explanatory power.

**Table 10 Predictive Relevance ( $Q^2$ )**

| Variabel | SSO     | SSE     | $Q^2 (=1 - SSE/SSO)$ |
|----------|---------|---------|----------------------|
| KK       | 945.000 | 627.126 | 0.336                |

Based on Table 10, the  $Q^2$  value for Employee Performance (KK) is 0.336. Since the  $Q^2$  value is greater than zero, it indicates that the model has predictive relevance for the endogenous construct.

## Hypothesis Testing Results

The following figure illustrates the relationships between the measurement model (outer model) and the structural model (inner model)

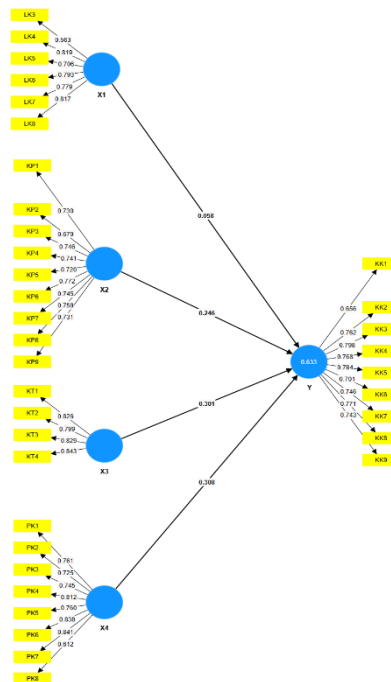


Figure 2. Direct Relationship Between Variables

Table 11. Direct Effects

| <i>Variable</i> | <i>Original sample (O)</i> | <i>Sample mean (M)</i> | <i>Standard deviation (STDEV)</i> | <i>T statistics ( O/STDEV )</i> | <i>P values</i> | <i>Result</i>   |
|-----------------|----------------------------|------------------------|-----------------------------------|---------------------------------|-----------------|-----------------|
| LK -> Y         | 0.062                      | 0.068                  | 0.073                             | 0.846                           | 0.398           | Not significant |
| KP -> Y         | 0.267                      | 0.264                  | 0.130                             | 2.053                           | 0.040           | significant     |
| KT-> Y          | 0.314                      | 0.304                  | 0.092                             | 3.423                           | 0.001           | significant     |
| PK-> Y          | 0.260                      | 0.270                  | 0.117                             | 2.228                           | 0.026           | significant     |

The results in Table 11 indicate that Personal Characteristics (KP), Technical Skills (KT), and Work Experience (PK) significantly and positively affect Employee Performance (Y), while Work Environment (LK) does not have a significant effect.

## 3.2. Discussion

### The Effect of Work Environment on Employee Performance

The results of hypothesis testing using Partial Least Squares (PLS) indicate that Work Environment does not have a significant effect on employee performance. This is evidenced by a t-statistic value below 1.96 and a p-value above 0.05, leading to the rejection of H1. This finding is inconsistent with several previous studies that suggest a significant relationship between work environment and employee performance. Prior research argues that a conducive work environment enhances comfort and productivity. However, the present study reveals that work environment is not a dominant factor influencing the performance of contract employees

at PT Telkom Akses Lampung. The non-significant effect may be explained by the fact that the working environment conditions are already perceived as adequate by employees. Factors such as workplace comfort, facilities, safety, and coworker relationships do not serve as differentiating elements in improving performance. Contract employees tend to be more task-oriented and focused on achieving targets rather than being influenced by environmental conditions.

#### The Effect of Personal Characteristics on Employee Performance

The results show that Personal Characteristics have a significant positive effect on employee performance, supported by t-statistic values above 1.96 and p-values below 0.05, thus supporting H2. This finding is consistent with previous studies emphasizing the importance of individual traits in improving employee performance. Characteristics such as responsibility, discipline, self-confidence, and self-control contribute to better and more consistent work outcomes. Therefore, this result strengthens prior empirical evidence regarding the role of personal characteristics in determining performance. The significant effect occurs because these characteristics are inherent in employees, encouraging them to work more diligently, responsibly, and in accordance with organizational standards, ultimately improving both the quality and quantity of performance.

#### The Effect of Technical Skills on Employee Performance

The results indicate that Technical Skills have a significant positive effect on employee performance, as evidenced by t-statistic values above 1.96 and p-values below 0.05, supporting H3. This finding aligns with previous studies showing that employees with strong technical skills are able to complete tasks more effectively and efficiently. Technical competence enhances accuracy, productivity, and problem-solving ability in the workplace. The significance of this variable is explained by employees' proficiency in operating work tools, understanding work procedures, executing technical tasks accurately, and solving technical problems. These abilities enable employees to perform tasks more quickly and with fewer errors, leading to improved performance.

#### The Effect of Work Experience on Employee Performance

The results reveal that Work Experience has a significant positive effect on employee performance, supported by t-statistic values above 1.96 and p-values below 0.05, thus accepting H4. This finding is consistent with previous literature stating that work experience plays a crucial role in improving employee performance. Employees with greater experience tend to have better understanding of job responsibilities and work processes. The significance of this relationship is explained by indicators such as length of service, mastery of work procedures, ability to handle job-related problems, and decision-making skills. These factors enable experienced employees to work more efficiently and effectively, resulting in higher performance levels.

## 4. Conclusion

This study investigated the effect of Work Environment, Personal Characteristics, Technical Skills, and Work Experience on Employee Performance using the Partial Least Squares (PLS) approach. The findings reveal that Personal Characteristics, Technical Skills, and Work Experience have a significant positive effect on Employee Performance, while Work Environment does not have a significant effect.

In addition, the model demonstrates a moderate level of explanatory power based on the  $R^2$  value, indicating that the independent variables are able to explain a substantial proportion of the variance in Employee Performance. The  $Q^2$  value further confirms that the model has predictive relevance.

Overall, it can be concluded that individual-related factors (Personal Characteristics, Technical Skills, and Work Experience) play a more dominant role in influencing Employee Performance compared to environmental factors.

## 5. References

- Aning, S., Hartono, S., & Wijianto. (2026). The Effect of Leadership, Compensation, and Work Environment on Employee Work Spirit : Study at CV. Subur Makmur, Japan Village, Babadan District, Ponorogo. *Journal Management & Economics Review (JUMPER)*, 3(10), 597–608. <https://doi.org/10.59971/jumper.v3i10.967>
- Anita, Pratama, R. H., Pratama, M. I., & Alfredo, H. K. (2024). Overcoming Quarter Life Crisis and Increasing Self-Potential Through Self-Healing Methods. 2(2), 270–275.
- Anita, H. K. A., Pratama, M. I., & Malahayati, U. (2024). Should Investors Choose ESG ? Empirical Evidence Of The Shiller P / E Ratio. 4(10), 8540–8550.
- Anita, Pratama, M. I., & Alfredo, H. K. (2024). The Sharia Financial Literacy Movement Educates the Public in Understanding Financial Products. 4(1), 1254–1261.
- Arif, H. M., & Windarsari, W. R. (2026). Between Algorithm and Adat: How Bugis-Makassar MSMEs Negotiate AI Marketing Through the Lens of Siri' na Pacce. *Economics and Business Journal (ECBIS)*, 4(3), 897–908. <https://doi.org/10.47353/ecbis.v4i3.308>
- Baharuddin, S. R., & Ali, A. M. T. (2025). Analysis of the Influence of Ergonomics on Occupational Health and Safety (K3) in the Information and Communication Technology Sector. *Teknologi*, 26(1), 10–14. <https://ejournal.polindo.ac.id/index.php/ecohealth/index#Hal.7-13>
- Bps-statistics. (2024). Indonesia Economic Growth Quarter IV-2023. 13.
- Dipoatmodjo, T. S. P., Burhanuddin, & Arif, H. M. (2026). Employee Adaptation To Artificial Intelligence In The Workplace: A Phenomenological Study In South Sulawesi Companies. *Economics and Business Journal (ECBIS)*, 4(2), 547–564. <https://doi.org/10.47353/ecbis.v4i2.379>
- Fatmawati, D., Nazmi, I., & Falah, N. (2025). Human Resource Performance Management Strategies to Enhance Employee Retention Through Job Satisfaction. *Journal of Economics and Management*, 3(1), 21–27. <https://doi.org/10.70716/ecoma.v3i1.137>
- Febrianty, Divianto, Hidayat, R., Fatmariansi, & Rohana, T. (2019). The perception on

- technology acceptance to the behaviors on the use of social media for marketing and its implications on the turnover of creative industry MSMEs in villages The perception on technology acceptance to the behaviors on the use of social med. IOP Conference Series: Journal of Physics: Conference Series, 1175(1), 012216. <https://doi.org/10.1088/1742-6596/1175/1/012216>
- Febrianty, F., Annisa, M. L., Pratiwi, Y. N., & Putri, T. (2022). Training and Assistance in Business Financial Management and Utilization of SME Accounting Applications ( Training and Assistance of Business Financial Management and Utilization of SME Accounting Software). *Yumary: Jurnal Pengabdian Kepada Masyarakat*, 2(4), 229–237.
- Febrianty, F., & Hadiwijaya, H. (2021). Effects of WFH (Work From Home) Policies, Perceived Organizational Support, Job Stress, and the Ability to Use Technology on Lecturer Performance During the New Normal. *Advances in Economics, Business and Management Research*, 191(AICoBPA 2020), 263–271.
- Febrianty, F., Hadiwijaya, H., & Octafian, D. T. (2021). System Development Management E-School as a Students Information Media. *Journal of Physics: Conference Series*, 1783(1), 012026. <https://doi.org/10.1088/1742-6596/1783/1/012026>
- Febrianty, F., Sherly, S., Wicaksono, G., Puspitasari, D., Suandi, S., Sinaga, O. S., Silitonga, H. P., Indajang, K., Suhartini, S., Kristanto, T., Putri, D. E., Supitriyani, S., & Nuraeni, Y. A. (2020). *Human Resource Management: Urgency, Trends, and Scope*. Widina Bhakti Persada.
- Fukuzaki, T., & Iwata, N. (2022). Association between the five-factor model of personality and work engagement: a meta-analysis. *Industrial Health*, 60(2), 154–163. <https://doi.org/10.2486/indhealth.2021-0051>
- Hamidha, A. N., Hasbiah, S., Ruma, Z., Tawe, A., Natsir, U. D., & Natsir, U. D. (2023). The Effect Of Work Environment And Work Spirit On Employee Performance At Pt. Nadia Baruna Jaya. *Journal Management & Economics Review (JUMPER)*, 1(2), 75–84. Retrieved from <https://malaqbipublisher.com/index.php/JUMPER/article/view/43>
- Heryanto, H., & Apriadi, D. (2025). The Influence of Work Environment and Work Discipline on Employee Performance. *Jurnal Ekonomi, Bisnis Dan Manajemen*, 4(3), 166–179. <https://doi.org/10.58192/ebismen.v4i3.3691>
- Lia Lestari, & Mulyadin Mulyadin. (2023). The Influence of Individual Characteristics, Emotional Intelligence and Work Environment on Employee Performance at the Public Works and Spatial Planning Office (PUPR) of Bima Regency. *Jurnal Manajemen Dan Bisnis Ekonomi*, 1(4), 114–141. <https://doi.org/10.54066/jmbe-itb.v1i4.709>
- Novita, L. (2024). The Role of Work Experience in Improving Lola's Employee Performance. *Economics and Digital Business Review*, 5(2), 839–850.
- Prananta, A. W., Suyadnya, I. W., Kusumawardana, I. J., & Abidin, Z. (2026). The Role of Customer Experience, Service Quality, and Customer Satisfaction on Consumer Loyalty. *Journal Management & Economics Review (JUMPER)*, 4(2), 821–834. <https://doi.org/10.59971/jumper.v4i2.289>
- Riu, I. A., Radjab, I., Arif, H. M., Haeruddin, M. I. W., & Aswar, N. F. (2026). Consumer Trust In Influencer-Based Digital Marketing: A Qualitative Study Among Beauty Product

- Consumers In Makassar City. *Economics and Business Journal (ECBIS)*, 4(2), 533–546. <https://doi.org/10.47353/ecbis.v4i2.378>
- Sulistari, Sofia Susetyowati, & Mufti Digor. (2023). The Effect of Skills and Personality Characteristics on Employee Performance at PT Telkom Access Sorong. *Journal Economics and Management (JECMA)*, 5(1), 1–13.
- Telkom Indonesia. (2023). a N N U a L R E P O R T Esg Bold Moves, Boosting Sustainable Growth. <http://www.telkom.co.id>
- Zhenjing, G., Chupradit, S., Ku, K. Y., Nassani, A. A., & Haffar, M. (2022). Impact of Employees' Workplace Environment on Employees' Performance: A Multi-Mediation Model. *Frontiers in Public Health*, 10(May). <https://doi.org/10.3389/fpubh.2022.890400>