

# The Effect of Human Resource Training and Development on Employee Performance in Construction Companies

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The construction industry faces tight project schedules, high safety standards, and increasing demands for efficiency and work quality. These challenges require strategic human resource management through effective training and human resource development. This study examines the effects of training and human resource development on employee job performance in a project-based construction company. A quantitative cross-sectional survey was conducted involving all 33 employees of PT Indo Permata Jaya Palembang using a saturated sampling technique. Data were collected through a five-point Likert-scale questionnaire and analyzed using multiple linear regression with SPSS. The results indicate that training has a positive and significant effect on job performance, while human resource development shows a stronger positive and significant influence. Simultaneously, both variables significantly affect job performance, explaining 57.8 percent of its variance. These findings highlight the importance of integrating short-term skill enhancement with long-term capacity building to improve employee performance in construction projects.

**Keywords:** Training, Human Resource Development, Job Performance, Construction Industry.

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## 1. Introduction

The construction industry is one of the main drivers of infrastructure development and economic growth. However, it is also characterized by high levels of operational uncertainty, strict project deadlines, and significant occupational safety risks. Unlike routine-based industries, construction activities are generally project-oriented, requiring organizations to continuously adjust resources, workflows, and the quality of human resources. In this context, employee competence and performance become critical determinants of project success, cost efficiency, and organizational sustainability (Baldwin and Ford., 1988; Salaset al., 2023)

The increasing complexity of construction projects in the era of digitalization and Industry 4.0 further emphasizes the importance of strategic human resource management (Kim, Y.; Ployhart 2024). Construction companies are no longer evaluated solely based on technical capacity and equipment ownership, but also on their ability to develop workforce competence and performance (Garavan et al., 2021). Employees are required to possess technical expertise, discipline, coordination skills, and adaptability to changing field conditions. Therefore, human resource management practices, particularly training and human resource development, have become strategic instruments for improving employee job performance in project-based work environments (Lewaherilla 2025; Tukiran and Desianti 2025).

Training is understood as a systematic process designed to enhance employees' knowledge, technical skills, and work attitudes in order to perform tasks effectively in accordance with job requirements. In the construction industry, training plays a vital role in improving technical accuracy, compliance with occupational safety procedures, and operational efficiency. Numerous studies indicate that well-

designed and relevant training programs contribute positively to increased productivity, improved work quality, and reduced error rates (Blume et al., 2021; Satria and Nurawaliya, 2024)

In contrast to short-term oriented training, human resource development focuses on the long-term enhancement of employees' strategic capabilities, such as leadership skills, problem-solving abilities, decision-making capacity, and career readiness. Based on human capital theory, investment in human resource development increases the productive value of individuals, which ultimately leads to positive outcomes for organizational performance (Becker 1993). Several empirical studies have shown that human resource development practices, including career planning, job rotation, mentoring, and leadership development programs, significantly influence employee commitment and job performance, particularly in dynamic and high-pressure work environments (Ahmad Azril Fikri Ramadhani 2024).

Employee job performance in the construction industry is multidimensional and cannot be measured solely by output quantity. Job performance also encompasses work quality, timeliness in task completion, compliance with operational and safety standards, and the ability to collaborate effectively within project teams. Low employee performance can result in project delays, cost overruns, increased workplace accidents, and a decline in company reputation. Previous studies indicate that job performance in project-based work environments is strongly influenced by competence alignment, work motivation, and organizational support (Bucknell Bossen and Kottasz 2020; Mudiarni 2018; Satria and Nurawaliya 2024).

A number of empirical studies have confirmed the positive relationship between training, human resource development, and employee job performance. Setiyawan, Iskandar, and Wisnu Panggah Setiyono, (2025) found that technical training programs and leadership development significantly contribute to improved organizational performance. Similarly, Rahman, (2020) demonstrated that human resource development has a direct effect on employee performance, while training exerts an indirect influence through psychological variables and work attitudes. However, most of these studies have been conducted in manufacturing, service, and banking sectors, which generally operate within more stable work processes.

Despite the growing body of research on training and human resource development, empirical studies that simultaneously examine their effects on employee job performance within project-based construction companies remain limited, particularly in the context of local and medium-sized firms. Previous studies have often addressed training and human resource development separately, even though both practices are closely interrelated in shaping employee performance. This gap highlights the need for an integrated examination of how short-term skill development and long-term capacity building jointly influence job performance in dynamic project environments. Accordingly, this study investigates the effects of training and human resource development on employee job performance at PT Indo Permata Jaya Palembang, with the aim of providing empirical evidence relevant to human resource management practices in project-based construction companies.

## 2. Methods

This study employs a quantitative approach with a cross sectional survey design. The quantitative approach was selected because it aims to examine relationships among variables objectively and measurably through numerical data, as stated by Sugiyono (2017). This approach is appropriate since the study seeks to empirically and quantitatively test the relationships and effects of training and human resource development on employee job performance. The cross sectional design was applied because

data collection was conducted at a single point in time without any specific treatment or intervention by the researcher.

The object of this study is PT Indo Permata Jaya Palembang, a construction company that operates under a project based work system. The selection of the research object and population was intended to obtain empirical evidence that aligns with the characteristics of the research problem, in accordance with quantitative research principles that emphasize data representativeness (Sugiyono 2017). The research population consists of all employees of the company, totaling 33 individuals. Given the relatively small population size, this study applies a saturated sampling technique, in which all members of the population are included as research respondents. This approach was chosen to obtain a comprehensive overview of human resource conditions and employee job performance within the company. The data used in this study are primary data obtained directly from respondents through questionnaire distribution. The research instrument was designed in the form of closed ended statements using a five point Likert scale, ranging from 1 indicating strongly disagree to 5 indicating strongly agree. The use of the Likert scale aims to systematically measure respondents' attitudes, perceptions, and opinions, as recommended in quantitative research (Sugiyono 2017). The questionnaire was designed to assess employees' perceptions of training, human resource development, and job performance.

The training variable was measured using several indicators reflecting the quality and relevance of training programs received by employees, including the suitability of training materials to job requirements, instructor competence, training delivery methods, and evaluation of training outcomes. The human resource development variable was measured based on indicators representing the company's efforts to enhance employees' long term capacity, such as career planning, opportunities for competency development, coaching and mentoring, as well as promotion and job rotation opportunities. Meanwhile, the employee job performance variable was measured through indicators including quality of work outcomes, quantity of completed tasks, timeliness of task completion, and the ability to work collaboratively in teams while complying with company operational standards.

Prior to data analysis, the research instrument was tested for validity and reliability to ensure its appropriateness as a measurement tool. Validity testing was conducted using item total correlation, in which each statement item is considered valid if its correlation coefficient exceeds the predetermined minimum threshold. This procedure aims to ensure that the instrument accurately measures the intended constructs (Sugiyono 2017). Reliability testing was performed using the Cronbach's alpha coefficient to assess the internal consistency of the instrument, with an alpha value greater than 0.70 indicating an acceptable level of reliability.

Data analysis was conducted using the Statistical Package for the Social Sciences software. The data analysis stages were systematically arranged, beginning with descriptive statistics and followed by inferential analysis, in line with quantitative data analysis procedures suggested by Sugiyono (2017). The analysis stages included descriptive analysis to describe respondent characteristics and response tendencies, classical assumption tests consisting of normality, multicollinearity, and heteroscedasticity tests, as well as multiple linear regression analysis. Regression analysis was used to examine the partial and simultaneous effects of training and human resource development on employee job performance. Partial significance testing was conducted using the t test, while simultaneous effect testing was performed using the F test. In addition, the coefficient of determination was used to assess the extent to which independent variables explain variations in employee job performance.

In conducting this study, the researcher paid close attention to research ethics by ensuring the confidentiality of respondents' identities and confirming that participation was voluntary. The data

obtained were used solely for academic purposes and were presented in aggregate form without disclosing individual respondent information.

### 3. Results and Discussion

This study involved 33 respondents, all of whom were employees of PT Indo Permata Jaya Palembang. All distributed questionnaires were returned and deemed usable, resulting in a questionnaire return rate of 100 percent. Data processing was conducted using SPSS software version 19.

#### Instrument Reliability Test

The reliability test was conducted to assess the internal consistency of the research instrument. Based on the results of SPSS data processing, all variables obtained Cronbach's alpha values greater than 0.60, indicating that the instrument is reliable.

**Table 1.** Instrument Reliability Test

Variable	Cronbach's Alpha	Criteria	Description
Training	0.71	> 0.60	Reliable
Human Resource Development	0.834	> 0.60	Reliable
Job Performance	0.879	> 0.60	Reliable

#### Multiple Linear Regression Analysis

Multiple linear regression analysis is used to examine the effects of training and human resource development on employee job performance.

**Table 2.** Results of Multiple Linear Regression Analysis

Variable	B	Std. Error	Beta	t	Sig.
Constant	-2.7	7.304	-	-0.37	0.714
Training (X1)	0.323	0.206	0.245	4.408	0.000
Human Resource Development (X2)	0.702	0.190	0.578	6.075	0.000

Based on the results of the analysis, the regression equation obtained is as follows: Job Performance =  $-2.700 + 0.323 + 0.702$

#### Model Summary

The coefficient of determination is used to assess the ability of the independent variables to explain the variation in the dependent variable.

**Table 3.** Model Summary

R	R Square	Adjusted R Square
0,76	0,578	0,55

The results indicate that 57.8 percent of the variation in employee job performance can be explained by the training and human resource development variables, while the remaining

Percent is influenced by other factors outside the research model.

#### ANOVA Test (F Test)

The F test is conducted to examine the simultaneous effect of training and human resource development on employee job performance.

**Table 4.** Results of the ANOVA Test

Model	F	Sig.
Regresi	20,551	0

The results of the ANOVA test show a significance value of 0.000, which is lower than 0.05. This indicates that training and human resource development simultaneously have a significant effect on employee job performance.

## Discussion

The empirical results demonstrate that training and human resource development jointly play a critical role in shaping employee job performance in a project-based construction environment. The strength of the regression model indicates that performance improvement is not effectively achieved through isolated human resource practices, but rather through the combined influence of short-term skill enhancement and long-term capacity building. In construction projects, where work demands fluctuate and time pressure is high, this interaction becomes particularly relevant in maintaining consistent performance outcomes.

Training shows a positive and significant effect on employee job performance, indicating that improvements in training quality and relevance are directly associated with better work outcomes. In project-based settings, training primarily functions as a mechanism for strengthening task-specific competencies, enabling employees to perform their duties with greater accuracy, efficiency, and procedural compliance. These improvements are especially important in construction activities, where technical errors and inefficiencies can lead to project delays and increased operational risks.

Human resource development exerts a more dominant influence on job performance, suggesting that long-term developmental practices have a stronger impact than training alone. Development initiatives such as continuous competency enhancement, career development support, and preparation for broader responsibilities contribute to sustained employee readiness and commitment. Unlike training, which focuses on immediate skill acquisition, human resource development reinforces long-term capability and motivational stability, allowing employees to adapt more effectively to the dynamic nature of project-based work.

Taken together, these findings indicate that employee job performance in construction firms is best supported through an integrated human resource approach. Training provides the technical foundation required for short-term task execution, while human resource development ensures long-term performance consistency and adaptability. For project-based construction companies, aligning these two practices within a coherent human resource strategy is essential to achieving both operational effectiveness and sustainable performance improvement.

## 4. Conclusion

This study examines the effects of training and human resource development on employee job performance in a project based construction company, PT Indo Permata Jaya Palembang. The findings from multiple linear regression analysis demonstrate that both training and human resource development significantly enhance employee job performance. Training contributes positively by improving technical competence, work accuracy, and task effectiveness when aligned with job requirements and project characteristics. Human resource development exerts a more substantial influence, indicating that long term initiatives such as career development and leadership capability building are critical for sustaining employee motivation, commitment, and performance. Moreover, the simultaneous effect of training and human resource development confirms that employee performance improvement in the construction sector requires an integrated human resource management approach that combines short term skill enhancement with long term capacity development. These results provide empirical support for human capital theory and contribute to the human resource management literature

by highlighting the strategic role of integrated training and development practices in enhancing performance within project based construction environments.

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