

Determinants of Labor Productivity and Their Implications for Employee Compensation in the Banking Sector of Mataram City

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ABSTRACT

This study examines the effects of education, work experience, digitalization, and workplace facility support on employee compensation, with labor productivity as a mediating variable in the banking sector of Mataram City. An explanatory quantitative design involved 76 purposively selected respondents from a population of 240 employees at three banking institutions. Questionnaire data were analyzed using PLS-SEM with SmartPLS 4. The results show that education and workplace facility support have positive and significant effects on compensation, whereas work experience and digitalization have no significant direct effects. Labor productivity positively affects compensation and significantly mediates only the relationship between work experience and compensation. The model explains 65.4% of labor productivity variance and 53.1% of compensation variance, with Q^2 of 0.838.

INTRODUCTION

Human resources constitute a strategic element in the banking industry because service quality, transaction accuracy, risk management, credit or financing distribution, information processing, and target achievement largely depend on employees' capabilities. In this context, labor productivity is not merely associated with the volume of work completed, but also with the quality of outcomes, timeliness, efficient use of resources, compliance with procedures, and employees' contributions to organizational goals. The study of productivity has become increasingly important as banking institutions face intensified service competition, regulatory compliance requirements, and technological changes that rapidly transform work processes.

The human capital perspective provides a theoretical foundation for understanding differences in productivity among employees. (Becker, 1964) conceptualizes education and capability development as investments that enhance individuals' productive capacity, while (Mincer, 1974) demonstrates that education and work experience are associated with the economic value of labor. Within an organizational context, education can strengthen employees' ability to understand procedures, analyze information, solve problems, and learn new technologies. Work experience complements human capital through learning by doing, enabling employees to develop accuracy, speed, situational knowledge, and the ability to address operational problems that cannot always be acquired through formal education.

Previous empirical findings indicate that the relationship between human capital and productivity is not always consistent. (Firmansyah, 2015) demonstrates associations between age, education, wages, and labor productivity, while (Taufiqurahman, 2013) emphasizes the importance of education and experience in explaining income. (Rahmawati dkk., 2023) also find that work experience, together with the work environment and incentives, is associated with employee productivity. At the organizational level, (Huselid, 1995) shows that human resource management practices may be related to productivity and financial performance. These findings suggest that human capital should be examined alongside the organizational context that enables individual capabilities to be translated into work outcomes.

In addition to human capital, technological development has become an important factor in banking productivity. (Solow, 1956) identifies technological progress as one of the sources of productivity growth, while studies on technology acceptance emphasize that the benefits of technology depend on its perceived usefulness and ease of use in performing work-related tasks. (Venkatesh dkk., 2003) demonstrate that technology acceptance is influenced by perceived usefulness, ease of use, and facilitating conditions. In the financial services sector, (Malaquias & Hwang, 2019) show that the use of mobile banking services is also influenced by user characteristics and technology acceptance. Thus, the availability of digital systems does not automatically enhance employees' economic value when technology is not effectively integrated with competencies, work processes, and organizational support.

Workplace facility support complements the relationship between individual capabilities and technology. Work equipment, networks, applications, service facilities, workspaces, and organizational infrastructure determine how effectively employees can perform their duties. Adequate facilities can reduce operational barriers and enable employees to utilize their competencies and technology more optimally. At the same time, compensation represents the rewards employees receive in return for their work, responsibilities, and contributions. Therefore, the relationship between productivity and compensation is particularly important: the greater an employee's effective contribution to the organization, the stronger the economic rationale for linking rewards to performance and productivity.

In the banking sector, evidence regarding the role of knowledge and intellectual capital in productivity has continued to develop. (Ulm, 2008) highlights the importance of intellectual capital performance in the Indonesian banking sector. (Alhassan & Asare, 2016) find that intellectual capital is associated with bank productivity in emerging markets. (Johan & Hapsari, 2020) also identify the human capital perspective as one of the explanations for banking performance in Indonesia. A more recent study by (Damayanti dkk., 2025) examines intellectual capital and bank productivity in the Indonesian and Malaysian contexts, while (Maryadi dkk., 2026) through a systematic review, emphasize that employee performance is shaped by a combination of individual and organizational factors.

Nevertheless, previous studies have tended to examine education and work experience as human capital factors, digitalization as a technological factor, and workplace facilities as organizational resources separately. The relationships between these factors and

compensation have also frequently been analyzed directly, without positioning productivity as a mechanism that explains how individual capabilities and workplace support are translated into employees' economic value. This gap provides the basis for the present study. Accordingly, this study integrates education, work experience, digitalization, and workplace facility support into a single model to explain employee compensation both directly and indirectly through labor productivity.

The study was conducted at PT BPR NTB (Perseroda), PT BPRS PNM Patuh Beramal Amali, and Bank Muamalat Indonesia Tbk, Mataram Main Branch Office. These three banking institutions differ in their institutional characteristics and operational scale; however, all require human resources capable of achieving targets, maintaining service quality, utilizing technology, and performing their duties with adequate workplace facility support. These variations provide an empirical context for assessing whether individual characteristics and organizational support exhibit similar patterns of influence on employee compensation.

Based on the preceding discussion, this study aims to analyze the effects of education, work experience, digitalization, and workplace facility support on employee compensation; examine the mediating role of labor productivity in these relationships; and analyze the effect of labor productivity on employee compensation. The contribution of this study lies in integrating human capital, technology, and organizational resources into a single empirical PLS-SEM model within the banking sector of Mataram City.

RESEARCH METHODS

This study employed a quantitative approach with an explanatory field research design. This design was selected because the study aimed to examine causal relationships among variables based on empirical data collected directly from employees. The research was conducted in 2026 in Mataram City and involved three banking institutions: PT BPR NTB (Perseroda), PT BPRS PNM Patuh Beramal Amali, and Bank Muamalat Indonesia Tbk, Mataram Main Branch Office. The unit of analysis consisted of active employees involved in banking operations and service activities.

The study population comprised 240 employees, consisting of 90 employees from PT BPR NTB, 80 employees from PT BPRS PNM Patuh Beramal Amali, and 70 employees from Bank Muamalat Indonesia, Mataram Main Branch Office. The minimum sample size was determined using Slovin's formula with a 10% margin of error, resulting in a minimum requirement of 71 respondents. During the fieldwork, 76 complete questionnaires were obtained, all of which were included in the analysis. A purposive sampling technique was employed based on the following criteria: respondents were active employees, worked at one of the three banking institutions included in the study, had at least one year of work experience, understood their job duties and responsibilities, were willing to participate in the study, and completed the questionnaire in full.

Primary data were collected through a closed-ended questionnaire using a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Six constructs were

analyzed: Education (X1), Work Experience (X2), Digitalization (X3), Workplace Facility Support (X4), Labor Productivity (Z), and Employee Compensation (Y). Education reflects employees' perceptions of the contribution of education to job understanding, analytical ability, problem-solving, and competency development. Work experience reflects the skills, accuracy, speed, adaptability, and independence acquired through work practice. Digitalization measures ease of use, technological support for work speed and efficiency, adaptability, and improvements in work quality. Workplace facility support encompasses the availability of facilities, infrastructure, systems, and a supportive work environment. Labor productivity measures target achievement, work quality, time efficiency, compliance with work standards, and responsibility, while employee compensation measures employees' perceptions of rewards and their appropriateness in relation to job duties, workload, productivity, and contribution.

Data analysis was conducted using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The first stage involved evaluating the reflective measurement model through outer loadings, Cronbach's Alpha, Composite Reliability, Average Variance Extracted (AVE), discriminant validity, and the Variance Inflation Factor (VIF). The second stage involved evaluating the structural model using the coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2). Hypothesis testing was conducted through bootstrapping to obtain path coefficients, T-statistics, and p-values. A relationship was considered statistically significant when the T-statistic exceeded 1.96 and the p-value was less than 0.05. Indirect effects were examined to assess the mediating role of labor productivity.

RESULTS AND DISCUSSION

Evaluasi Model Pengukuran

A total of 76 valid responses that met the study criteria were included in the analysis. The initial evaluation of the outer model indicated that three indicators did not meet the outer loading threshold applied in this study, namely one indicator of Work Experience (b1) and two indicators of Workplace Facility Support (d1 and d3). These three indicators were therefore removed, and the model was re-estimated. After the elimination process, all retained indicators had outer loading values above 0.70, ranging from 0.717 to 0.932. These results indicate that the final set of indicators adequately reflected their respective constructs.

The reliability and convergent validity of the constructs also met the established criteria. Cronbach's Alpha values for all constructs exceeded 0.70, while all Average Variance Extracted (AVE) values were above 0.50. Therefore, the measurement instrument was considered reliable and demonstrated adequate convergent validity, allowing the analysis to proceed to the structural model evaluation. A summary of the Cronbach's Alpha and AVE values is presented in Table 1.

Table 1. Construct Reliability and Convergent Validity

Konstruk	Cronbach's Alpha	AVE
Education	0,875	0,667

Konstruk	Cronbach's Alpha	AVE
Work Experience	0,775	0,599
Digitalization	0,861	0,584
Workplace Facility Support	0,812	0,640
Employee Compensation	0,934	0,752
Labor Productivity	0,874	0,617

Source: SmartPLS 4 data processing results, 2026

Structural Model Evaluation

The evaluation of the inner model indicated that the model had a reasonably good explanatory power. The R^2 value for Labor Productivity was 0.654, with an adjusted R^2 of 0.635. This means that 65.4% of the variance in labor productivity could be jointly explained by education, work experience, digitalization, and workplace facility support, while the remaining 34.6% was explained by other factors not included in the model. For Employee Compensation, the R^2 value was 0.531, with an adjusted R^2 of 0.498, indicating that 53.1% of the variance in employee compensation could be explained by the four exogenous variables together with labor productivity.

The f^2 values showed that the largest contribution to Employee Compensation came from Workplace Facility Support, with an effect size of 0.528. Work Experience had an f^2 value of 0.262 for employee compensation, followed by Labor Productivity at 0.101, Education at 0.023, and Digitalization at 0.000. With respect to Labor Productivity, the f^2 values were 0.081 for Education, 0.001 for Work Experience, 0.003 for Digitalization, and 0.074 for Workplace Facility Support. The Q^2 value of 0.838 indicated a high level of predictive relevance for the model.

Table 2. Summary of the Explanatory Power of the Structural Model

Endogenous Variable	R^2	Adjusted R^2
Labor Productivity	0,654	0,635
Employee Compensation	0,531	0,498

Source: SmartPLS 4 data processing results, 2026; model $Q^2 = 0.838$

Hypothesis Testing and Discussion

The bootstrapping analysis produced nine main paths comprising both direct and indirect effects. Four hypotheses were supported, namely the effect of Education on Employee Compensation, the effect of Workplace Facility Support on Employee Compensation, the indirect effect of Work Experience on Employee Compensation through Labor Productivity, and the effect of Labor Productivity on Employee Compensation. The remaining five paths did not meet the 5% significance level. The complete results are presented in Table 3.

For the direct effects, Education, Workplace Facility Support, and Labor Productivity had significant effects on Employee Compensation, whereas Work Experience and Digitalization were not statistically significant. Regarding the mediating effects, only the

indirect effect of Work Experience on Employee Compensation through Labor Productivity was significant (coefficient = 0.152; p-value = 0.034). This pattern indicates that the mechanisms through which compensation is determined differ across the examined variables.

Table 3. Results of Direct and Indirect Effect Testing

H	Path	Coefficient	T-statistic	p-value	Decision
H1	Education → Employee Compensation	0,235	2,780	0,006	Supported
H2	Work Experience → Employee Compensation	-0,036	0,274	0,784	Not Supported
H3	Digitalization → Employee Compensation	0,051	0,421	0,674	Not Supported
H4	Workplace Facility Support → Employee Compensation	0,263	2,207	0,028	Supported
H5	Education → Labor Productivity → Employee Compensation	0,039	1,022	0,307	Not Supported
H6	Work Experience → Labor Productivity → Employee Compensation	0,152	2,131	0,034	Supported
H7	Digitalization → Labor Productivity → Employee Compensation	-0,003	0,078	0,938	Not Supported

H	Path	Coefficient	T-statistic	p-value	Decision
H8	Workplace Facility Support → Labor Productivity → Employee Compensation	0,180	1,894	0,059	Not Supported
H9	Labor Productivity → Employee Compensation	0,370	2,240	0,026	Supported

Source: SmartPLS 4 data processing results, 2026

Effect of Education on Employee Compensation

Education has a positive and significant effect on employee compensation, with a coefficient of 0.235 and a p-value of 0.006. This finding indicates that employees' educational qualifications and the perceived benefits of education are associated with the economic rewards they receive. From a human capital perspective, education enhances analytical capacity, knowledge, problem-solving ability, and the ability to learn new procedures. When these competencies are relevant to banking activities, education can serve as a basis for job placement, career development, and reward allocation. This finding is consistent with the arguments of (Becker, 1964) and (Mincer, 1974) as well as with the evidence reported by (Firmansyah, 2015) and (Taufiqurahman, 2013) who identify education as an important factor in labor productivity and income.

However, the indirect effect of education on compensation through labor productivity is not significant (coefficient = 0.039; p-value = 0.307). This means that, in the institutions examined, the relationship between education and compensation operates more strongly through a direct pathway than through labor productivity. This condition may occur because banking compensation systems also take into account formal qualifications, job positions, grades, certifications, or remuneration structures that do not depend entirely on individual productivity. Therefore, investment in education remains important, but organizations need to ensure that educational development is effectively linked to productivity indicators so that its benefits extend beyond the administrative aspects of formal qualifications.

Work Experience, Labor Productivity, and Employee Compensation

Work experience does not have a significant direct effect on employee compensation (coefficient = -0.036; p-value = 0.784), whereas its indirect effect through labor productivity is significant (coefficient = 0.152; p-value = 0.034). This pattern is an important finding because it indicates that longer work experience does not automatically lead to higher compensation. Work experience gains economic value when it can be translated into the

ability to complete tasks more quickly, accurately, and efficiently. This finding is consistent with (Mincer, 1974) view that experience represents part of accumulated human capital, although its economic returns depend on the productivity it generates.

This result can also be interpreted alongside the findings of (Rahmawati dkk., 2023) who reported an association between work experience and productivity. For banking management, the implication is that employee development systems should not rely solely on length of service. Organizations need to transform experience into capability through mentoring, coaching, job rotation, knowledge documentation, and challenging assignments. Through these mechanisms, work experience can become a source of learning that enhances productivity and, ultimately, can be taken into account in the compensation system.

Digitalization and Employee Compensation

Digitalization does not have a significant effect on employee compensation, either directly (coefficient = 0.051; p-value = 0.674) or indirectly through labor productivity (coefficient = -0.003; p-value = 0.938). This finding indicates that the availability and use of technology do not automatically translate into individual economic rewards. (Solow, 1956) identifies technology as an important source of productivity growth; however, at the employee level, the benefits of technology still depend on adoption capability, implementation quality, and its integration into organizational processes. (Venkatesh dkk., 2003) likewise emphasize that technology acceptance and utilization are influenced by perceived usefulness and facilitating conditions.

In banking services, digitalization often initially generates organizational benefits in the form of faster processes, reduced administrative workloads, greater accuracy, and expanded access to services. (Malaquias & Hwang, 2019) show that the use of technology-based banking services is influenced by user characteristics and technology acceptance. Therefore, the insignificant effect of digitalization may reflect a time lag between technological investment and employee reward mechanisms. Technology should be accompanied by digital training, evaluation of system utilization, integration with performance indicators, and recognition of digital competencies so that its benefits can be more clearly reflected in productivity and compensation.

Effect of Workplace Facility Support on Employee Compensation

Workplace facility support has a positive and significant effect on employee compensation, with a coefficient of 0.263 and a p-value of 0.028. This finding indicates that supportive working conditions are associated with more favorable perceptions of compensation. In this study, workplace facilities refer not only to physical resources, but also to equipment, infrastructure, systems, and other forms of support that enable employees to perform their duties effectively. When adequate facilities are available, operational constraints can be reduced and working conditions become more supportive, allowing workplace facilities to form part of the broader package of employee rewards and well-being.

In contrast, the indirect effect of workplace facility support on compensation through labor productivity is not significant at the 5% level (coefficient = 0.180; p-value = 0.059), although the relationship is positive and close to the significance threshold. This result suggests that workplace facility support is more strongly associated with compensation through a direct pathway than through labor productivity. Organizations should therefore continue investing in workplace facilities, as their benefits extend beyond work output to include employee comfort, operational efficiency, service quality, and perceptions of organizational support.

Effect of Labor Productivity on Employee Compensation

Labor productivity has a positive and significant effect on employee compensation, with a coefficient of 0.370 and a p-value of 0.026. This finding confirms that productivity is an important factor in explaining variations in employee compensation. Employees who are able to achieve targets, produce high-quality work, use time efficiently, and fulfill their job responsibilities tend to generate greater value for the organization. This result is consistent with the human capital framework, which views productive capability as a source of economic value, as well as with (Huselid, 1995) perspective on the relationship among human resource practices, productivity, and organizational performance.

In the banking context, productivity should be understood in a balanced manner. Productivity is not limited to the number of transactions completed or the achievement of sales targets, but also includes accuracy, compliance with procedures, service quality, risk management, and efficiency. Therefore, productivity-based compensation systems should apply proportional performance measures and should not encourage target achievement at the expense of quality and compliance. This approach is consistent with studies on intellectual capital and banking productivity that emphasize the quality of human resources as a source of organizational value (Alhassan & Asare, 2016; Damayanti dkk., 2025; Johan & Hapsari, 2020; Ulum, 2008).

Implications of the Research Model

Overall, the model explains 65.4% of the variance in labor productivity and 53.1% of the variance in employee compensation, with a Q^2 value of 0.838. These results indicate that the integration of human capital, digitalization, workplace facilities, labor productivity, and employee compensation provides adequate explanatory relevance within the context of this study. However, the patterns of influence are not uniform. Education and workplace facility support exert stronger effects through direct pathways to compensation; work experience generates economic value when mediated by labor productivity; whereas digitalization does not demonstrate a significant effect. This pattern supports the view that employee performance is shaped by a combination of individual and organizational factors, as emphasized in the review by (Maryadi dkk., 2026).

These findings provide an important practical implication that human resource policies should avoid relying on a single-factor approach. Educational development should be linked

to relevant competencies; work experience should be managed as a source of learning and productivity; workplace facilities should be maintained as resources that enable employees to perform their duties effectively; and digital investment should be accompanied by competency development and integration with performance management systems. Employee compensation systems can subsequently be designed by considering employees' contributions and productivity while maintaining internal equity, job structures, and the specific characteristics of each position.

CONCLUSIONS AND RECOMMENDATIONS

The findings indicate that the factors associated with employee compensation in the banking sector of Mataram City exhibit different patterns of influence. Education has a positive and significant effect on compensation, as does workplace facility support. In contrast, work experience and digitalization do not have significant direct effects on compensation. Labor productivity has a positive and significant effect on compensation, confirming that employees' effective contributions constitute an important basis for determining rewards.

The mediating role of labor productivity is significant only in the relationship between work experience and compensation. Work experience generates economic value when it can be translated into higher productivity. Labor productivity does not significantly mediate the relationships between education, digitalization, and workplace facility support and employee compensation. These findings indicate that, in the institutions examined, education and workplace facility support are more strongly related to compensation through direct pathways, whereas digitalization has not yet demonstrated a sufficiently strong relationship with compensation, either directly or through labor productivity.

The practical implication of this study is that banking institutions need to develop a more integrated human resource management system that connects competencies, work experience, workplace support, productivity, and compensation. Educational development and certification should be aligned with job requirements; work experience should be managed through mentoring, job rotation, and career development; workplace facilities should be maintained to support efficiency and service quality; while digitalization should be accompanied by training and evaluation of technology utilization. Compensation systems should also consider employee productivity and contribution while maintaining internal equity and compliance with organizational policies.

This study has several limitations. It was conducted in only three banking institutions in Mataram City, relied on perception-based questionnaire data, and employed a cross-sectional design. The model also did not include other potentially relevant factors such as motivation, job satisfaction, workload, career level, leadership, and reward systems. In addition, the measurement of digitalization did not distinguish among types of technology, intensity of use, digital competence, and system quality. Future research is therefore recommended to expand the geographical coverage and types of financial institutions examined, combine perceptual

data with objective measures of productivity and compensation, employ longitudinal research designs, and develop more specific measures of digitalization.

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