Equivalent : Journal Of Economic, Accounting and Management
Vol. 4, No. 2, 2026, Page : 2810 - 2823
Publisher: CV. Doki Course and Training
E-ISSN: 2985-8089 | P-ISSN: 2986-8777

The Effect of Digital-Based Training on Employee Loyalty with Job Satisfaction as an Intervening Variable at the Sidikalang Sub-district Office, Dairi Regency

Fahreja S. Anjas Ujung[1], Abdi Sugiarto[2], Hernawaty[3]
Universitas Pembangunan Panca Budi, Medan, North Sumatra [1,2,3]
Corresponding email: fahrejaujung@gmail.com[1],
Author email : abdi_sugiarto@dosen.pancabudi.ac.id[2], hernawaty@dosen.pancabudi.ac.id[3]

ARTICLE INFO

Article History
Submission : 08/06/2026
Received : 14/06/2026
Revised : 25/06/2026
Accepted : 30/062026

Keywords
Digital-based training; job satisfaction; employee loyalty.

ABSTRACT

The rapid development of digital technology has encouraged public sector organizations to adopt digital-based training as a strategic instrument in improving the quality of human resources. In addition to playing a role in improving employee competence, digital-based training is also expected to be able to influence employee attitudes, especially job satisfaction and employee loyalty. This study aims to analyze the effect of digital-based training on employee loyalty with job satisfaction as an intervening variable at the Sidikalang District Office, Dairi Regency. This study uses an associative quantitative research design. The research population includes all employees of the Sidikalang District Office which totals 47 people. Using census techniques (saturated sampling), as many as 40 employees were designated as research respondents. Data was collected through a structured questionnaire and analyzed using the Structural Equation Modeling method based on Partial Least Squares (SEM-PLS) with the help of SmartPLS software version 3.3.3. The results of the study show that digital-based training has a positive and significant effect on employee loyalty, which indicates that an effective digital training program is able to directly strengthen employee commitment and attachment to the organization. In addition, digital-based training has also been proven to have a positive and significant effect on job satisfaction, which shows that flexibility, ease of access, and suitability of training materials with job needs can increase employees' positive perception of their work. However, job satisfaction does not have a significant effect on employee loyalty. Furthermore, job satisfaction has also not been shown to mediate the relationship between digital-based training and employee loyalty, suggesting that the influence of digital-based training on employee loyalty is directly dominant. The findings of this study indicate that in public sector organizations, employee loyalty can be directly increased through the design and implementation of effective digital-based training programs without having to rely on job satisfaction as an intervening mechanism. This research makes a theoretical and practical contribution to the development of human resource management by emphasizing the strategic role of digital-based training in strengthening employee loyalty to local government institutions.

Introduction

The rapid development of digital technology has significantly transformed human resource development practices, including employee training in public sector organizations. Traditional face-to-face training models are increasingly complemented or even replaced by digital-based training systems that utilize online platforms, *learning management systems*, and multimedia learning resources. Digital-based training offers greater flexibility, accessibility, and efficiency, allowing employees to improve their competencies without being limited by time and location. In the context of local government institutions, the integration of technology is expected to improve the capabilities and adaptability of the apparatus in responding to the demands of dynamic public services.

From the perspective of human resource management, employee loyalty is a crucial factor in maintaining organizational stability and performance, especially in public institutions that demand sustainability, integrity, and commitment to community service. Employee loyalty reflects an individual's willingness to stay in the organization, show dedication, and contribute beyond the demands of formal tasks (Sutrisno 2022). High loyalty levels correlate with low turnover intention, increased organizational commitment, and improved service quality. Therefore, identifying organizational practices that are able to foster employee loyalty is an important concern in public sector management.

Digital-based training is widely seen as a strategic instrument in improving employee skills and knowledge. However, its influence is not limited to the development of competencies alone. A number of studies show that effective training programs also have a positive effect on employee attitudes, such as job satisfaction, organizational commitment, and loyalty (Noe et al. 2022; Salas et al. 2023). When employees view training opportunities as relevant, accessible, and supportive of professional development, they are more likely to feel valued by the organization, which in turn reinforces emotional attachment and loyalty. On the other hand, digital training that is not optimally designed or not adequately supported can cause frustration, learning fatigue, and dissatisfaction, especially for employees with limited levels of digital literacy.

Job satisfaction is one of the most important psychological factors that links training initiatives to employee loyalty. Job satisfaction refers to an individual's overall emotional response to his or her job, which includes aspects of working conditions, recognition, career development opportunities, and organizational support (Robbins and Judge 2023). Empirical evidence shows that employees who have a high level of job satisfaction tend to show stronger loyalty, higher motivation, and a greater desire to stay in the organization (Kumari and Afroz 2024). In this context, digital-based training has the potential to affect employee loyalty indirectly through increased job satisfaction, which is obtained from the perception of increased competence, career development opportunities, and autonomy in the learning process.

Equivalent : Journal Of Economic, Accounting and Management
Vol. 4, No. , 2, 2026, Page : 2810-2823

Although studies on digital training, job satisfaction, and employee loyalty continue to grow, existing empirical findings still show inconsistent results. Several studies report that digital-based training significantly improves job satisfaction and employee loyalty through support for continuous learning and professional development (Almeida and Santos 2023). However, other research highlights various challenges, such as anxiety about technology, inequality of access to digital resources, and limited institutional support, which can lower satisfaction and weaken employee loyalty (Putra et al. 2022). These differences in findings indicate that the relationship between digital-based training and employee loyalty may not be direct, but rather mediated by job satisfaction.

The research gap is increasingly visible when viewed from an organizational context. Most previous research on digital-based training and employee loyalty has been conducted on private sector organizations or large companies with relatively advanced technological infrastructure. In contrast, empirical research focusing on local government institutions, especially sub-district offices, is still limited. Public sector organizations generally operate in bureaucratic structures, budget constraints, and standardized regulations, which can affect how digital training programs are implemented and perceived by employees (Wibowo et al. 2022). Therefore, findings from the private sector are not necessarily fully applicable to the local government environment.

The results of initial observations at the Sidikalang District Office, Dairi Regency, show that there are a number of challenges in the implementation of digital-based training. Some employees reported difficulties in adapting to online training platforms, limited technical support, and mismatches between training materials and actual job demands. This condition is perceived to affect employee job satisfaction, especially related to the perception of organizational support and career development opportunities. At the same time, there was a variation in employee loyalty levels that were reflected in differences in commitment, work involvement, and the desire to stay in the organization.

These preliminary findings indicate that job satisfaction has an important role in shaping the relationship between digital-based training and employee loyalty in the context of local government. Without an adequate support system, digital training initiatives have the potential to fail to produce a positive attitude impact and can even reduce employee satisfaction and loyalty. Therefore, a more in-depth empirical study is needed to clarify the relationship between these variables.

Based on empirical phenomena, inconsistencies in previous research findings, and limitations of research focus on local government institutions, this study aims to analyze the effect of digital-based training on employee loyalty with job satisfaction as an intervening variable at the Sidikalang District Office, Dairi Regency. In particular, this study aims to analyze the direct influence of digital-based training on employee loyalty, examine the influence of digital-based training on job satisfaction, assess the influence of job satisfaction on employee loyalty, and examine the role of job satisfaction in mediating the relationship between digital-based training and employee loyalty.

Method

This study uses an associative quantitative research design that aims to test the relationship between two or more variables (Ning Wahyuni and Rindrayani 2025). The research model consists of digital-based training as an exogenous variable (X), employee loyalty as an endogenous variable (Y), and job satisfaction as an intervening variable (Z). This approach was chosen to empirically test the direct and indirect relationships between constructs within an integrated structural framework.

The research was carried out at the Sidikalang District Office, Dairi Regency, which is located at Jl. Merdeka No.02, Sidikalang City, North Sumatra, Indonesia. The data collection was carried out for four months, from September to December 2025, to provide sufficient time for the process of distributing questionnaires and collecting data.

The research population includes all employees of the Sidikalang District Office which totals 47 people. Population is defined as a whole subject that has certain characteristics that are relevant to the research problem and become the basis for generalizing research results (Sugiarto et al. 2024). Given the relatively small population, this study uses a census (saturated sampling) technique, which involves all members of the population as research respondents. However, only 40 employees met the criteria and were designated as the final sample of the study.

Data collection was carried out using a structured questionnaire. Quantitative data analysis was carried out using the Structural Equation Modeling (SEM) method based on Partial Least Squares (PLS) using SmartPLS software version 3.3.3. This analysis technique was chosen because it is suitable for a relatively small sample size and is able to test research models involving complex mediation relationships.

The evaluation of the measurement model (outer model) is carried out through validity and reliability testing. The validity of the construct is used to ensure that the questionnaire item is able to accurately measure the variable in question. Reliability is measured using Cronbach's alpha and composite reliability values, with values above 0.70 indicating an acceptable level of reliability (Cheung 2024).

Furthermore, the evaluation of the structural model (inner model) was carried out to test the relationship between constructs according to the research hypothesis (Hair et al. 2021). The model assessment includes the value of the determination coefficient (R^2) to measure the explainability of the model, the Stone–Geisser's Q^2 value to test the predictive relevance, and the bootstrapping procedure to test the significance of the path coefficient. The model is declared to have predictive relevance if the Q^2 value is greater than zero (Fauzi 2022). Hypothesis testing was carried out with a t-statistical value greater than 1.96 at a significance level of 5 percent. The path coefficient is used to determine the direction and strength of the relationship between variables, while a Normed Fit Index (NFI) value close to 1 indicates a good level of model fit (Hair et al. 2022).

Equivalent : Journal Of Economic, Accounting and Management
Vol. 4, No. , 2, 2026, Page : 2810-2823

Results and Discussion

Results

Outer Model *Analysis*

The outer model test in this study uses algorithm analysis in SmartPLS software version 3.0, in order to obtain an outer loading value that meets the requirements for validity and reliability.

Convergent Validity Test Results

The convergent validity of the measurement model with the reflexive indicator can be seen from the correlation between the item/indicator score and the construct score.indicators that have an individual correlation value greater than 0.7 are considered valid but at the development stage of research the indicator values of 0.5 and 0.6 are still acceptable. Based on the results for outer loading, it shows that there is an indicator of loading below 0.60 and is insignificant. The following is presented the results of the outer loading value in the following table.

Table 1. *Outer Loading*

Indicator	*Outer Loading*	Remarks
Digital-based training (X)		
PBD.1	0,982	Valid
PBD.2	0,987	Valid
PBD.3	0,987	Valid
PBD.4	0,981	Valid
PBD.5	0,967	Valid
PBD.6	0,946	Valid
Job satisfaction (Z)		
KPK.1	0,987	Valid
KPK.2	0,971	Valid
KPK.3	0,989	Valid
KPK.4	0,915	Valid
KPK.5	0,975	Valid
Employee Loyalty (Y)		
LP.1	0,963	Valid
LP.2	0,942	Valid
LP.3	0,972	Valid
LP.4	0,970	Valid
LP.5	0,955	Valid

Source : PLS Smart Output, 2025

Based on Table 1. The results of the convergent validity test showed that all indicators used in this study had an outer loading value above 0.60, so that they could be declared valid and feasible for use in the measurement model. This is in line with the criteria put forward by Ghozali and Latan (2015) which states that an indicator is said to meet convergent validity if it has a loading factor value of ≥ 0.60, because this value shows the ability of the construct to adequately explain the variance of the indicator.

In the Digital-Based Training (X) variable, all indicators (PBD.1 to PBD.6) showed a very high outer loading value, ranging from 0.946 to 0.987. This value indicates that each indicator has a very strong correlation with digital-based training constructs. Thus, considerations such as material quality, flexibility, interactivity, learning effectiveness, evaluation, and organizational support have been optimally represented by the indicators used.

Furthermore, in the Job Satisfaction (Z) variable, the KPK.1 to KPK.5 indicator also shows a very good outer loading value, which is in the range of 0.915 to 0.989. These findings show that feelings of satisfaction with work, job comfort, satisfaction with the work environment, and satisfaction with job rewards and responsibilities measure the construct of job satisfaction consistently and reliably.

Meanwhile, the Employee Loyalty variable (Y) has an outer loading value of the LP.1 to LP.5 indicator which ranges from 0.942 to 0.972. These values reflect that loyalty indicators, such as commitment to perseverance, loyalty to the organization, dedication, and willingness to contribute more, are able to represent the employee loyalty construct very strongly.

Overall, the results of this outer loading test show that all indicators in the study have met the criteria for convergent validity, so that the measurement model (outer model) can be declared good and feasible to proceed to the structural model testing stage (inner model). The *outer loading* model is visually displayed in the following structural model image:

Results of *the Discriminat Validity Test*

The next test is to test the validity of the discriminant, this test aims to determine whether a reflective indicator is a good measurement for its contrast based on the principle that the indicator is highly correlated with its contrast. The following are the results of cross loading from the discriminatory validity test as shown in the following table:

Table 2. *Discriminant Validity*

Indicator	Job Satisfaction (Z)	Employee Loyalty (Y)	Digital-Based Training (X)
KPK.1	**0,987**	0,948	0,954
KPK.2	**0,971**	0,940	0,961
KPK.3	**0,989**	0,963	0,970
KPK.4	**0,915**	0,829	0,898
KPK.5	**0,975**	0,925	0,939
LP.1	0,989	**0,963**	0,970
LP.2	0,873	**0,942**	0,915
LP.3	0,927	**0,972**	0,941
LP.4	0,902	**0,970**	0,942
LP.5	0,880	**0,955**	0,912
PBD.1	0,983	0,961	**0,982**
PBD.2	0,969	0,952	**0,987**
PBD.3	0,956	0,942	**0,987**
PBD.4	0,934	0,955	**0,981**
PBD.5	0,912	0,970	**0,967**
PBD.6	0,958	0,925	**0,946**

Source: PLS Smart Output, 2025

Equivalent : Journal Of Economic, Accounting and Management
Vol. 4, No. , 2, 2026, Page : 2810-2823

Based on table 2. It can be seen that *the value of cross loading* in each indicator and variable is greater than other variables and indicators, cross loading of digital-based training variables, job satisfaction and employee loyalty shows that cross loading indicators are greater than other latent variable cross loading, cross loading indicators of work motivation variables show that the value of *cross loading* indicators greater than other latent variables, and *cross loading* of employee performance variables also show greater cross loading value of indicators than latent variable cross loading. Based on this data, it can be stated *discriminatically that* the results of *cross loading* are considered valid.

Composite reliability *test results*

The test then determines the reliability value with *the composite reliability* of the indicator block that measures the construct. S uatu construct value that is said to be reliable if the indigo *composite reliability* is above 0.60. In addition to looking at *the composite reliability value*, the reliability value can be seen in the value of the variable construct with *the alpha cronbachs* of the indicator block that measures the construct. A construct is declared reliable if *the cronbachs alpha value* is above 0.7. The following is a table of loading values for the construct of research variables resulting from running the Smart PLS program in the following table.

Table 3. *Construct Reliability and Validity*

Indicator	Cronbach's Alpha	Composite Reliability	Mean Variance Extracted (AVE)
X (Digital-based training)	0,990	0,991	0,951
Y (Employee Loyalty)	0,979	0,983	0,922
Z (Job Satisfaction)	0,983	0,987	0,936

Source: *PLS Smart Output,* 2024

Based on Table 4, it can be explained that the AVE value of each variable tested has a value of > 0.5, indicating that all variables in this study meet the *criteria of discriminant validity*. To determine the reliability in this study, *the composite reliability* value was used. The accepted value for the reliability level is > 0.7. Based on these criteria, it can be seen that all variables in this study have a > value of 0.70 so that it can be stated that all variables tested meet the reliability of the construct.

Evaluation of Structural Models (*Inner Model*)

Evaluation of the structural model (*inner model*) is carried out to ensure that the structural model is built robust and accurate. The stages of analysis carried out in the evaluation of the structural model are seen from several indicators, namely:

Determination Coefficient Test Results (R2)

The determination coefficient test (R2) is used to see the influence of certain independent latent variables on the dependent latent variable whether it has a substantive influence. Based on the data processing that has been carried out using the SmartPLS 3.0 program, the R Square value is obtained as in the following table.

Table 4.4 R Square Results

Variable	R Square	Adjusted R Square
Job Satisfaction (Z)	0,953	0,952
Employee Loyalty (Y)	0,951	0,948

Source: *PLS Smart Output,* 2025

Based on Table 4. The results of the determination coefficient test (R Square) show the ability of exogenous variables to explain endogenous variables in the research model.

The Adjusted R Square value in the Job Satisfaction (Z) variable is 0.952 or 95.2%. This shows that Digital-Based Training (X) was able to explain the variation in Job Satisfaction by 95.2%, while the remaining 4.8% was influenced by other factors outside of this research model, such as work environment, leadership style, compensation, and organizational culture. This value is in the very high category, which indicates that digital-based training has a very strong role in increasing employee job satisfaction.

Furthermore, the Adjusted R Square on the Employee Loyalty variable (Y) is 0.948 or 94.8%. These findings show that Digital-Based Training (X) and Job Satisfaction (Z) were simultaneously able to explain the variation in Employee Loyalty by 94.8%, while the remaining 5.2% was influenced by other variables that were not studied in this study, such as organizational commitment, leadership, and work climate. This value is also very high, which indicates that the structural model has a very strong explanatory power in explaining employee loyalty.

Meanwhile, the value of R Square on Job Satisfaction (Z) of 0.953 and R Square on Employee Loyalty (Y) of 0.951 further confirms that the research model built has a very good match, both in explaining intervening variables and dependent variables.

Thus, it can be concluded that the research model has very high predictive power, especially in explaining the role of Job Satisfaction as an intervening variable that significantly bridges the influence of Digital-Based Training on Employee Loyalty. This strengthens the position of job satisfaction as the main psychological mechanism in shaping employee loyalty within the organization.

Goodness of Fit *Test Results*

Goodness of Fit test is a statistical method used to evaluate how well the model or statistical distribution being tested is in accordance with the observed data. The Goodness of Fit test aims to determine the extent to which the observed data corresponds to the theoretical distribution assumed by the model or hypothesis. The goodness of fit model test can be seen by looking at the NFI value on the program. If the NFI value > SRMR and is closer to 1, then the better the model (good fit). Based on the data processing that has been carried out using the SmartPLS 3.0 program, the Model Fit value is obtained as follows.

Table 5. Model Fit

	Saturated Model	Estimated Model
SRMR	0,030	0,030
d_ULS	0,119	0,119
d_G	2,411	2,411
Chi-Square	670,513	670,513
NFI	0,705	0,705

Source: PLS Smart Output, 2025

Equivalent : Journal Of Economic, Accounting and Management
Vol. 4, No. , 2, 2026, Page : 2810-2823

Based on table 7, it can be seen that the NFI value is 0.705 > 0.030 so that it can be stated that the model in this study has sufficient *goodness of fit* and is suitable to be used to test the research hypothesis.

Hypothesis Testing

After conducting an inner model analysis, the next thing is to evaluate the relationship between latent constructs in order to answer the hypothesis in this study. The hypothesis test in this study was carried out by looking at T-Statistics and P-Values values. The hypothesis is stated to be accepted if the *T-Statistics value is* > 1.96 and the P-Values < 0.05. The following are the results *of Path Coefficients* of direct influence between variables as shown in the following table.

Table 4.6 *Path Coefficients* (Direct Influence)

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Results
Job Satisfaction (Z) -> Employee Loyalty (Y)	0,019	0,009	0,270	0,071	0,944	**Rejected**
Digital-Based Training (X) -> Job Satisfaction (Z)	0,976	0,978	0,008	127,924	0,000	**Accepted**
Digital-Based Training (X) -Employee Loyalty > (Y)	0,956	0,969	0,262	3,649	0,001	**Accepted**

Source: PLS Smart Output, 2023

Based on Table 4.6, the results of the direct influence test (path coefficients) show the causal relationship between variables in the research model analyzed using SmartPLS.

First, the effect of Digital-Based Training (X) on Employee Loyalty (Y) showed a path coefficient value of 0.956 with T-Statistics of 3.649 > 1.96 and P-Values of 0.001 < 0.05. These results indicate that digital-based training has a positive and significant influence on employee loyalty. In other words, improving the quality of digital-based training can directly increase employee loyalty to the organization. Therefore, the hypothesis that digital-based training has a positive and significant effect on employee loyalty is accepted.

Second, the effect of Digital-Based Training (X) on Job Satisfaction (Z) showed a path coefficient value of 0.976 with T-Statistics of 127.924 > 1.96 and P-Values of 0.000 < 0.05. This value shows that there is a positive and very significant influence between digital-based training on job satisfaction. This means that the better the implementation of digital-based training, the higher the level of employee job satisfaction. Thus, the hypothesis that digital-based training has a positive and significant effect on job satisfaction is accepted.

Third, the effect of Job Satisfaction (Z) on Employee Loyalty (Y) showed a path coefficient value (Original Sample) of 0.019 with a T-Statistics value of 0.071 < 1.96 and P-Values of 0.944 > 0.05. These results show that job satisfaction has a positive influence, but it is not statistically significant on employee loyalty. Thus, it can be concluded that the level of employee job satisfaction has not been able to directly increase employee loyalty. Therefore, the hypothesis that job satisfaction has a positive and significant effect on employee loyalty is rejected.

Overall, the results of the direct influence testing show that digital-based training is a key variable that significantly affects job satisfaction and employee loyalty. However, job satisfaction has not been shown to have a direct effect on employee loyalty, so its role as an intervening variable in this model needs to be further analyzed through testing for *specific indirect effects* as follows:

Table 4.7 Indirect Effects

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Results
Digital-Based Training (X) -> Job Satisfaction (Z) -> Employee Loyalty (Y)	0,019	0,009	0,265	0,071	0,944	**Rejected**

Source: PLS Smart Output, 2025

Based on Table 4.7, the results of the indirect influence test showed that Job Satisfaction (Z) did not play an intervening variable in the relationship between Digital-Based Training (X) and Employee Loyalty (Y).

Statistically, the indirect effect of Digital-Based Training (X) on Employee Loyalty (Y) through Job Satisfaction (Z) has an Original Sample value of 0.019, with a T-Statistics of 0.071, which is smaller than a critical value of 1.96, and a P-Value of 0.944, which is greater than 0.05. These results show that these indirect influences are not statistically significant.

The very small value of the path coefficient and the low level of significance indicate that Job Satisfaction has not been able to become a mediating mechanism that bridges the relationship between Digital-Based Training and Employee Loyalty. In other words, while digital-based training has a direct effect on job satisfaction and employee loyalty (as shown in direct influence testing), job satisfaction does not reinforce or perpetuate these influences indirectly.

Thus, the hypothesis that Digital-Based Training has an effect on Employee Loyalty through Job Satisfaction is rejected. These findings indicate that the increase in employee loyalty is more influenced by the direct influence of digital-based training, rather than through the mediating role of job satisfaction.

Overall, the results of the indirect influence analysis confirm that Job Satisfaction (Z) is not proven to be an intervening variable in this research model, so the relationship between Digital-Based Training and Employee Loyalty is more appropriately explained through the direct route.

Discussion

Based on the results of the hypothesis test in Table 4.6, it is known that Job Satisfaction (Z) does not have a significant effect on Employee Loyalty (Y). This is shown by the T-Statistics value of 0.071 (< 1.96) and P-Values of 0.944 (> 0.05), with a path coefficient (Original Sample) of 0.019. Thus, the hypothesis that job satisfaction has a positive and significant effect on employee loyalty is rejected.

These findings show that the level of job satisfaction felt by employees is not strong enough to form loyalty. In this context, employee loyalty is not only determined by job satisfaction, but also by other strategic and instrumental factors.

This result is in line with the view of Afandi (2018) who states that job satisfaction is not always directly proportional to employee loyalty, especially in public sector organizations. Afandi emphasized that job satisfaction is emotional and situational, while loyalty is more of a long-term

Equivalent : Journal Of Economic, Accounting and Management
Vol. 4, No. , 2, 2026, Page : 2810-2823

commitment influenced by self-development opportunities, organizational justice, and managerial policies that are directly benefited by employees.

The test results showed that Digital-Based Training (X) had a positive and significant effect on Job Satisfaction (Z). This is evidenced by a T-Statistics value of 127.924 (> 1.96) and a P-Values of 0.000 (< 0.05), as well as a path coefficient of 0.976. Thus, the hypothesis is accepted.

These findings indicate that digital-based training can significantly increase employee job satisfaction. Digital training provides ease of access, time flexibility, and material relevance to work needs, so that employees feel more valued and facilitated by the organization.

This opinion is in line with Afandi (2018) who states that job satisfaction can be improved through competency development and the provision of continuous learning opportunities. Afandi emphasized that appropriate, modern, and appropriate training will increase employees' positive perception of the organization, which ultimately increases job satisfaction.

The results of this study are also supported by previous research that states that technology-based training has a significant contribution to job satisfaction, especially in the face of increasingly dynamic work demands in the digital era.

Furthermore, the test results showed that Digital-Based Training (X) had a positive and significant effect on Employee Loyalty (Y). This is evidenced by a T-Statistics value of 3.649 (> 1.96) and a P-Values of 0.001 (< 0.05), with a path coefficient of 0.956. Thus, the hypothesis is accepted.

These findings show that digital-based training not only impacts job satisfaction, but also directly shapes employee loyalty. Employees who receive digital training tend to feel cared for, developed, and prepared to face work challenges, so a sense of attachment and commitment to the organization emerges.

According to Afandi (2018), employee loyalty can grow if the organization consistently provides real support for human resource development. Afandi emphasized that training is one of the strategic instruments in building loyalty, because employees will feel that they have a clear future in the organization.

When associated with the results of indirect influence testing, it is known that Job Satisfaction is unable to mediate the relationship between Digital-Based Training and Employee Loyalty. This shows that the influence of Digital-Based Training on Employee Loyalty is more dominant through direct channels.

These findings reinforce Afandi's view that employee loyalty is not always formed through job satisfaction, but can emerge directly through organizational policies that are perceived to be fair, relevant, and beneficial. In this context, digital-based training serves as a strategic factor that directly affects loyalty without having to go through job satisfaction as an intermediate variable.

This finding confirms that digital-based training is a key factor in increasing employee loyalty, as emphasized by Afandi that targeted human resource development is more effective in building loyalty than simply increasing job satisfaction.

Conclusion

Based on the results of the analysis of the structural model (inner model) using the SEM-PLS approach and the discussions that have been carried out, several conclusions can be drawn as follows:

1. Digital-Based Training (X) has been proven to have a direct and significant effect on Employee Loyalty (Y), with a T-Statistics value of 3.649 (> 1.96), P-Values of 0.001 (<

0.05), and a path coefficient of 0.956. These findings show that digital training not only improves employability, but is also able to foster a sense of attachment, commitment, and loyalty of employees to the organization.

2. The results of the study also showed that Digital-Based Training (X) had a positive and significant influence on Job Satisfaction (Z), with a T-Statistics value of 127.924 (> 1.96), P-Values of 0.000 (< 0.05), and a path coefficient of 0.976. This proves that the implementation of digital-based training is able to increase employee job satisfaction through ease of access, flexibility, and suitability of materials with work needs.
3. Job Satisfaction (Z) was not shown to have a significant effect on Employee Loyalty (Y), as shown by the T-Statistics value of 0.071 (< 1.96) and P-Values of 0.944 (> 0.05), with a path coefficient of 0.019. These findings indicate that the level of job satisfaction felt by employees is not strong enough to form loyalty. Employee loyalty is more influenced by other factors that are strategic and long-term oriented, as emphasized by Afandi (2018).
4. The results of the indirect influence test showed that Job Satisfaction (Z) was unable to mediate the relationship between Digital-Based Training (X) and Employee Loyalty (Y). Thus, the influence of Digital-Based Training on Employee Loyalty is more dominant through direct channels. This finding confirms that employee loyalty can be formed directly through targeted human resource development policies, as stated by Afandi (2018), without having to go through increased job satisfaction as an intermediate variable.

References

Afandi, P. (2018). *Human resource management (Theory, concepts and indicators).* Zanafa Publishing.

Ateeq, A., et al. (2023). Impact of employee loyalty on job performance: Mediating role of job satisfaction. *Problems and Perspectives in Management.*

Chatterjee, S., Rana, N. P., Tamilmani, K., & Sharma, A. (2023). Digital workplace and organization performance: An integrative view. *Journal of Innovation & Knowledge, 8*(1), 12–25. https://doi.org/10.1016/j.jik.2022.100356

Cheung, G. W. (2024). Methods for assessing reliability. *Asia Pacific Journal of Management, 41*(1), 123–145. https://doi.org/10.1007/s10490-023-09871-y

Elagaili, T. A. M. (2024). Role of training and development programs in enhancing the employee loyalty and job satisfaction. *S.B.S.E.E.*

Fauzi, M. A. (2022). Evaluate the structural model using the PLS-SEM approach: R-square, Q-square, and effect size. *Scientific Journal of Management, 12*(2), 55–67. https://doi.org/10.21009/jim.122.05

Ghozali, I., & Latan, H. (2015). *Partial least squares: Concepts, techniques and applications using the SmartPLS 3.0 program*. Publishing Agency of Diponegoro University.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook.*

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage Publications.

Handoko, T. H. (2013). *Management* (2nd ed.). BPFE.

Hernawaty. 2021. "Leadership Style, Motivation and Work Environment Influence Employee Performance." *Smart Scientific Journal* 1(1). http://stmb-multismart.ac.id/ejournal.

Ivan, Y. (2024). Improving the digital skills of state civil servants (ASN) through training and development programs. *Journal of SDSEPS, 5*(2), 77–89.

Miqdarsah, M. (2024). The effect of flexible working arrangements and digital workplace on employee satisfaction and loyalty. *Journal of Economics & Business, 15*(1), 101–114.

Mushofa, M., Hermina, D., & Huda, N. (2024). Understanding populations and samples: A key pillar in quantitative research. *Journal of Syntax Admiration, 5*(12), 5937–5948. https://doi.org/10.46799/jsa.v5i12.1992

Nguyen, T. N., Le, Q. H., & Pham, H. T. (2025). Job satisfaction, work performance, and loyalty of employees: Evidence from emerging markets. *Asian Journal of Business Research, 15*(2), 55–72. https://ajbr.co.nz

Ning Wahyuni, & Rindrayani, S. R. (2025). Associative research methodology. *Jupiter: Journal of Management, Accounting, and Economics, 14*(9), 41–50. https://doi.org/10.8734/musytari.v14i9.10767

Noe, R. A. (2017). *Employee training and development* (7th ed.). McGraw-Hill Education.

Rahayu, W. S., Prasetyo, D., & Siregar, H. (2024). Challenges and opportunities in the era of e-government (Indonesia). *PJLSS, 8*(1), 33–45.

Ravid, D., Tomczak, D. L., White, B., & Behrend, T. S. (2025). A meta-analysis of electronic performance monitoring and work outcomes. *Journal of Applied Psychology*. Advance online publication. https://www.researchgate.net

Saragih, Roy Sahputra, and engki Maacai Parulian Simarmata. 2019. "Leadership, Job Satisfaction and Motivation for Employee Performance." *Scientific Journal of Management and Business* 19(2):124–33. doi:10.30596/jimb.v19i2.2146.

Shiri, R., Falah-Hassani, K., & Falah-Hassani, F. (2023). The role of continuing professional training on work participation: A systematic review. *BMC Public Health, 23*(1124). https://doi.org/10.1186/s12889-023-1124

Silver, M. S. (2023). The public sector's digital skills gap in Indonesia. *Governance Journal: STIALAN Journal, 9*(2), 55–70.

Sugiarto, Abdi, Yohanes Kamakaula, Lela Susanty, and Periansya. 2024. *Research Methodology. Theory & Practice*. Karawang: Saba Jaya Press.

Susanto, P. C., Arini, D., et al. (2024). Quantitative research concepts: Population, sample, and data analysis (a literature review). *Journal of Multidisciplinary Science, 3*(1), 9–20.

Susilawati, E., Nurhayati, T., & Handayani, F. (2023). The effect of job satisfaction on employee loyalty in the digitalization era. *Journal of Management Science, 12*(1), 45–56.

Sutrisno, E. (2019). *Human resource management*. Kencana.

Tamali, Hendro, and Adi Munasip. 2019. "The Influence of Compensation, Leadership, and Work Environment on Job Satisfaction." Maneggio: Scientific Journal of Master of Management 2(1):55–68. doi:https://doi.org/10.30596/maneggio.v2i1.3403.

Zareisaroukolaei, M., Jandaghi, G., & Aghaei, M. (2024). Effectiveness evaluation indicators of organizational e-training: A systematic review. *Hell, 10*(4), e27651. https://doi.org/10.1016/j.heliyon.2024.e27651