Optimization of SILAW MAS Application Implementation

Jamilah,Yohny Anwar, Darmilisani

Abstract

This study aims to analyze the effect of innovation and the implementation of the SILAW MAS application on employee performance with job satisfaction as an intervening variable at Pangkalan Susu Subdistrict Office. This research uses a quantitative approach with a survey method. The population in this study consisted of all employees of the Pangkalan Susu Subdistrict Office totaling 89 people, and the sampling technique used was saturated sampling, so the entire population was used as the research sample. The data analysis technique used was Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the assistance of SmartPLS software. The results showed that innovation has a positive and significant effect on job satisfaction and employee performance. Job satisfaction also has a positive and significant effect on employee performance. The implementation of the SILAW MAS application has a positive and significant effect on job satisfaction, but does not have a significant direct effect on employee performance. In addition, job satisfaction is proven to mediate the effect of innovation and the implementation of the SILAW MAS application on employee performance. The conclusion of this study is that increasing innovation and optimizing the implementation of the SILAW MAS application can improve job satisfaction, which in turn has an impact on improving employee performance. Therefore, the institution is expected to strengthen innovation and improve the quality of application system implementation to achieve more optimal employee performance.

Keywords: SILAW MAS Application Implementation, Job Satisfaction, Employee Performance

Jamilah[1]
[1]Management, Universitas Pembangunan Pancabudi, Indonesia
e-mail: cutmila1980@gmail.com[1]

Yohny Anwar[2], Darmilisani[3]
[2,3]Management, Universitas Pembangunan Pancabudi, Indonesia
e-mail: yohnyanwar@dosen.pancabudi.ac.id[2], Darmilanisani@gmail.com[3]
2nd International Conference on Islamic Community Studies (ICICS)
Theme: History of Malay Civilisation and Islamic Human Capacity and Halal Hub in the Globalization Era
https://proceeding.pancabudi.ac.id/index.php/ICIE/index

Introduction

The complexity of community needs demands a fast, precise, and integrated service system. To answer these challenges, the Pangkalan Susu Subdistrict developed and implemented the SILAW MAS application (Community Administration Service System) as a form of digital innovation in public services. This application is designed to simplify the process of handling correspondence, population administration, and various other administrative services to make them more systematic and well-documented. The implementation of the SILAW MAS application is expected to accelerate service flow, reduce administrative errors, improve the timeliness of document completion, and create a more orderly and transparent work system. With an integrated system, employees can work more effectively because the processes of recording, data storage, and reporting are carried out digitally. However, the success of innovation does not only depend on the sophistication of the system used but also on the readiness of the human resources as system implementers. Employees are required to have technological competence, the ability to adapt to change, and a positive attitude towards digital transformation. The implementation of digital systems can have a positive impact in the form of ease of work and reduction of manual administrative burdens, which ultimately increases comfort and job satisfaction. Employees who are satisfied with their work tend to show higher commitment, good morale, and optimal productivity. Furthermore, digital transformation brings significant changes in work culture, from manual systems to application-based systems. This change demands increased competence, adjustment of work patterns, and mental readiness of employees to accept updates. If innovation and application implementation can be managed well and supported by a high level of job satisfaction, then employee performance is expected to increase significantly. However, if job satisfaction is not achieved, the impact of innovation on performance may not be optimal. Based on these conditions, it is important to conduct research that deeply analyzes how innovation and the implementation of the SILAW MAS application affect employee performance, and to what extent job satisfaction acts as an intervening variable in this relationship.

Literature Review

Employee Performance

According to Ramadhan & Putri (2021), employee performance is the individual's ability to carry out tasks effectively and efficiently and contribute to achieving organizational goals. Wijaya & Kusumawati (2019) define employee performance as the level of achievement of individual work results based on organizational standards measured through quality, quantity, and timeliness of task completion.

Indicators of Employee Performance

1. Efficiency in carrying out tasks
2. Effectiveness in achieving targets
3. Contribution to organizational goals
4. Initiative at work

Innovation

According to Putra & Wibisono (2020), innovation is the introduction of new ideas, practices, or methods that are considered different by organizational members and are used to improve service quality and organizational performance. Innovation emphasizes the element of novelty and internal acceptance of the changes made. Innovation is not only related to new products but also includes changes in work processes, service methods, and operational systems that support the achievement of organizational goals more optimally.

Indicators of Innovation

1. Existence of new ideas or work methods

2. Employee acceptance of innovation
3. Improvement in service quality
4. Impact of innovation on organizational performance

Implementation of the SILAW MAS Application (Information Technology Implementation)

According to Saputra & Ariani (2021), the implementation of information technology applications is the use of integrated digital systems in routine work processes to reduce manual workload and increase the effectiveness and efficiency of public services. Based on this opinion, the implementation of the SILAW MAS Application can be interpreted as the use of digital systems in public services aimed at increasing the speed, accuracy, and quality of services to the community.

Indicators of Information Technology Implementation

1. Use of applications in routine tasks
2. Ease of use of the system
3. Reduction of manual work
4. Improvement in service effectiveness

Job Satisfaction

According to Nurhayati & Astuti (2019), job satisfaction is an employee's positive or negative feeling towards their work that arises as a result of evaluating working conditions, relationships between employees, rewards, and the work results achieved. According to Hidayat & Siregar (2021), job satisfaction is a positive emotional condition felt by employees because the work performed is in accordance with their expectations, needs, and personal goals. Based on this opinion, job satisfaction is an employee's emotional state that reflects the level of pleasure and comfort in carrying out their duties.

Indicators of Job Satisfaction

1. Suitability of work with expectations
2. Motivation in carrying out tasks.
3. Feeling appreciated by the organization
4. Satisfaction with workload

Research Methodology

This research uses a quantitative approach with an associative method. According to Sugiyono (2019), quantitative research is a research method based on the philosophy of positivism and is used to research a specific population or sample with the aim of testing predetermined hypotheses.

According to Sugiyono (2019), the population is a generalization area consisting of objects or subjects that have certain characteristics determined by the researcher to be studied and then conclusions drawn. The population in this study were all employees working at the Pangkalan Susu Subdistrict Office, totaling 89 people.

According to Sugiyono (2019), saturated sampling is a sampling determination technique when all members of the population are used as samples. Because the total population is only 89 people, the entire population was used as the research sample, so the number of samples in this study was 89 employees.

This study used the Partial Least Squares – Structural Equation Modeling (PLS-SEM) method with the help of SmartPLS software. According to Hair et al. (2019), PLS-SEM is a multivariate analysis technique used to analyze complex relationships between latent variables with a relatively small sample size and does not require strict normal data distribution.
The analysis stages in SmartPLS include:

a. Evaluation of the Measurement Model (Outer Model)

1. Convergent Validity, Seen from loading factor values (>0.70) and Average Variance Extracted (AVE >0.50).
2. Discriminant Validity, Seen from the Fornell-Larcker Criterion and cross-loading values.
3. Reliability, Seen from Composite Reliability values (>0.70) and Cronbach's Alpha (>0.70).

b. Evaluation of the Structural Model (Inner Model)

1. R-Square (R^2) Test, To see the ability of independent variables to explain the dependent variable.
2. Path Coefficient Test (Bootstrapping), To determine the significance of the effect between variables by looking at the t-statistic (>1.96) and p-value (<0.05).
3. Mediation Effect Test (Indirect Effect), To see the role of the intervening variable in mediating the relationship between the independent variable and the dependent variable.

Results

Outer Model Analysis

Testing the measurement model, or the outer model, can be used to specifically determine the relationship between latent variables and manifest variables. This test has convergent, discriminant, and reliable properties.

Convergent Validity

A measurement model with convergent validity of reflective indicators is indicated by the relationship between the item/indicator score and the construct score. During the research development stage, it is permissible to use indicators with individual correlation values higher than 0.7. The structural model of the research is shown in the following figure:

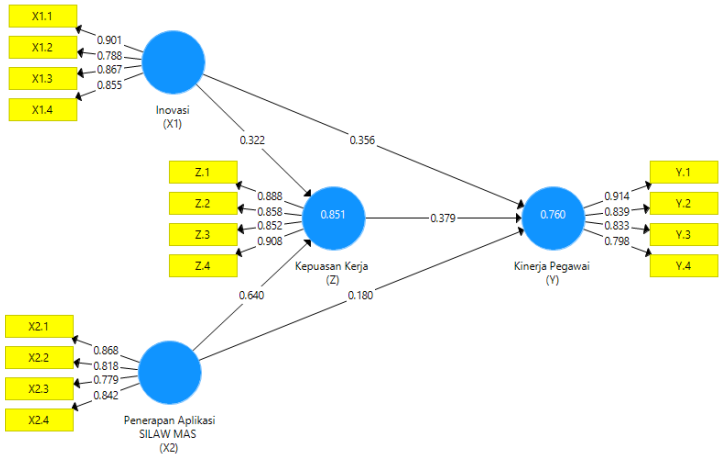

Figure 1. Outer Model

Table 1. Outer Loadings

	Innovation_ (X1)	Job Satisfaction _(Z)	Employee Performance _ (Y)	Implementation of t he SILAW MAS Application _(X2)
X1.1	0,901			
X1.2	0,788			
X1.3	0,867			
X1.4	0,855			
X2.1				0,868
X2.2				0,818

X2.3				0,779
X2.4				0,842
Y.1			0,914	
Y.2			0,839	
Y.3			0,833	
Y.4			0,798	
Z.1		0,888		
Z.2		0,858		
Z.3		0,852		
Z.4		0,908		

Source : Output Smart PLS 3.3.3

Based on Table 1 Outer Loadings, all indicators for each variable have loading factor values above 0.70, thus declared valid. For the Innovation variable (X1), the outer loading values range from 0.788 to 0.901, with the highest indicator on X1.1. The SILAW MAS Application Implementation variable (X2) has values between 0.779 and 0.868, with the highest value on X2.1. Furthermore, the Employee Performance variable (Y) shows loading values between 0.798 and 0.914, with indicator Y.1 being the highest. Meanwhile, the Job Satisfaction variable (Z) has values between 0.852 and 0.908, with indicator Z.4 being the most dominant. Thus, all indicators are declared capable of reflecting the latent variables well.

Discriminat Validity

Next, a discriminant validity test was conducted. The purpose of this test is to determine whether the reflection indicators are a good measurement for a particular construct based on the hypothesis that an indicator has a strong relationship with that construct. The results of the cross-loading discriminant validity test are presented in the following table.

Table 2. Discriminant Validity

	Innovation_(X1)	Job Satisfaction _(Z)	Employee Performance _(Y)	Implementation of the SILAW MAS Application _(X2)
X1.1	0,901	0,822	0,765	0,794
X1.2	0,788	0,654	0,755	0,632
X1.3	0,867	0,682	0,669	0,673
X1.4	0,855	0,718	0,613	0,683
X2.1	0,702	0,753	0,686	0,868
X2.2	0,656	0,669	0,635	0,818
X2.3	0,602	0,696	0,675	0,779
X2.4	0,740	0,857	0,694	0,842
Y.1	0,769	0,742	0,914	0,707
Y.2	0,695	0,698	0,839	0,632
Y.3	0,686	0,776	0,833	0,751
Y.4	0,638	0,633	0,798	0,664
Z.1	0,744	0,888	0,717	0,815

Z.2	0,793	0,858	0,706	0,800
Z.3	0,674	0,852	0,735	0,806
Z.4	0,756	0,908	0,797	0,750

Source :Output Smart PLS3.3.3

Based on Table 3 Discriminant Validity, it can be seen that all indicators have the highest loading value on their respective construct variables compared to other variables. This indicates that each indicator is able to distinguish the measured construct well. Thus, it can be concluded that the model has met the discriminant validity criteria, so each variable such as Innovation (X1), Job Satisfaction (Z), Employee Performance (Y), and SILAW MAS Application Implementation (X2) is declared valid and there is no discriminant problem between constructs.

Composite reliability

To determine the reliability value in subsequent tests, an indicator block that evaluates composite construct dependency is used. The construct value is considered reliable if the composite reliability value is more than 0.60. The construct value of the variable from the indicator block that measures the construct can be used to calculate the reliability value using Cronbach's alpha in addition to testing the composite reliability value. An item is considered credible if its Cronbach's alpha value is greater than 0.7. The following table displays the construct loading values of the research variables obtained through the use of the Smart PLS program:

Table 3. Construct Reliability and Validity

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Innovation_(X1)	**0,875**	**0,915**	**0,729**
Job Satisfaction _(Z)	**0,899**	**0,930**	**0,769**
Employee Performance _(Y)	**0,868**	**0,910**	**0,718**
Implementation of the SILAW MAS Application _(X2)	**0,846**	**0,897**	**0,685**

Source :Output Smart PLS3.3.3

Based on Table 3 Construct Reliability and Validity, all variables show Cronbach's Alpha and Composite Reliability values above 0.70, which means all constructs are declared reliable. Additionally, the Average Variance Extracted (AVE) value for each variable is also above 0.50, thus meeting the convergent validity criteria. Therefore, the variables Innovation (X1), Job Satisfaction (Z), Employee Performance (Y), and SILAW MAS Application Implementation (X2) are declared to have good reliability and validity.

Inner Model Analysis

The structural model, also known as the inner model, is assessed to ensure its accuracy and reliability. Several indicators such as the following can be used to visualize the stages of structural model evaluation analysis:

1.Coefficient of Determination (R2)

Based on data processing using the SmartPLS 3.0 program, the R Square values obtained are as follows:

Table 4. R Square Results

	R Square	Adjusted R Square
Job Satisfaction _(Z)	0,851	0,848

Employee Performance _(Y)	0,760	0,751

Source : Output Smart PLS 3.3.3

Based on Table 4, R Square Results, the R Square value for the Job Satisfaction variable (Z) is 0.851 (Adjusted R Square 0.848), indicating that 85.1% of the variation in Job Satisfaction can be explained by the independent variables in the model, while the remaining 14.9% is influenced by other factors outside the model. Meanwhile, the Employee Performance variable (Y) has an R Square value of 0.760 (Adjusted R Square 0.751), meaning that 76.0% of the variation in Employee Performance can be explained by the variables in the model, and the remaining 24.0% is influenced by other variables outside the research.

Hypothesis Testing

After assessing the inner model, the next stage is to examine the proposed relationships between latent constructs in this study. This research hypothesis testing technique uses T-Statistics and P-Values. A hypothesis is considered accepted if the T-Statistics value is greater than 1.96 and the P-Value is less than 0.05. The following are the results of the direct effect path coefficients:

Table 5. Path Coefficients (Direct Effects)

	Original Sample (O)	T Statistics (| O/STDEV |)	P Values	Results
Innovation_(X1) -> Job Satisfaction _(Z)	0,322	4,084	**0,000**	**Accepted**
Innovation_(X1) -> Employee Performance _(Y)	0,356	3,757	**0,000**	**Accepted**
Job Satisfaction _(Z) -> Employee Performance _(Y)	0,379	2,938	**0,002**	**Accepted**
Implementation of the SILAW MAS Application _(X2) -> Job Satisfaction _(Z)	0,640	8,710	**0,000**	**Accepted**
Implementation of the SILAW MAS Application _(X2) -> Employee Performance _(Y)	0,180	1,435	**0,076**	**Rejected**

Source :Output Smart PLS3.3.3

1. Innovation (X1) has a positive and significant effect on Job Satisfaction (Z) with a coefficient value of 0.322, t-statistic 4.084, and p-value 0.000. This shows that the higher the innovation, the higher the employee job satisfaction, so the hypothesis is accepted.
2. Innovation (X1) has a positive and significant effect on Employee Performance (Y) with a coefficient value of 0.356, t-statistic 3.757, and p-value 0.000. This means that increased innovation can improve employee performance, so the hypothesis is accepted.
3. Job Satisfaction (Z) has a positive and significant effect on Employee Performance (Y) with a coefficient value of 0.379, t-statistic 2.938, and p-value 0.002. This shows that the higher the job satisfaction, the higher the employee performance will be, so the hypothesis is accepted.

4. SILAW MAS Application Implementation (X2) has a positive and significant effect on Job Satisfaction (Z) with a coefficient value of 0.640, t-statistic 8.710, and p-value 0.000. This means the better the application implementation, the higher the employee job satisfaction will be, so the hypothesis is accepted.
5. SILAW MAS Application Implementation (X2) has a positive but not significant effect on Employee Performance (Y) with a coefficient value of 0.180, t-statistic 1.435, and p-value 0.076. This shows that the application implementation has not been able to have a significant effect on improving employee performance, although the direction of the effect is positive.

Table 6 . Path Coefficients (Indirect Effects)

	Original Sample (O)	T Statistics (| O/STDEV |)	P Values	Results
Innovation_(X1) -> Job Satisfaction _(Z) -> Employee Performance _(Y)	0,122	2,210	**0,014**	**Accepted**
Implementation of the SILAW MAS Application _(X2) -> Job Satisfaction _(Z) -> Employee Performance _(Y)	0,243	2,886	**0,002**	**Accepted**

Source :Output Smart PLS3.3.3

1. Innovation (X1) has an indirect effect on Employee Performance (Y) through Job Satisfaction (Z) with a coefficient value of 0.122, t-statistic 2.210, and p-value 0.014. This shows that Job Satisfaction is able to significantly mediate the effect of Innovation on Employee Performance. Thus, the hypothesis is accepted.
2. SILAW MAS Application Implementation (X2) has an indirect effect on Employee Performance (Y) through Job Satisfaction (Z) with a coefficient value of 0.243, t-statistic 2.886, and p-value 0.002. This shows that Job Satisfaction is able to significantly mediate the effect of SILAW MAS Application Implementation on Employee Performance. Thus, the hypothesis is accepted.

Conclusion

1. It is concluded that innovation has a positive and significant effect in increasing employee job satisfaction.
2. It is concluded that innovation plays an important role in directly improving employee performance.
3. It is concluded that job satisfaction has a significant contribution in improving employee performance.
4. It is concluded that the implementation of the SILAW MAS application has a strong influence in increasing employee job satisfaction.
5. It is concluded that the implementation of the SILAW MAS application has not yet had a significant direct effect on employee performance.
6. It is concluded that job satisfaction is able to significantly mediate the effect of innovation on employee performance.
7. It is concluded that job satisfaction is able to significantly mediate the effect of the SILAW MAS application implementation on employee performance

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