*J-INTECH (Journal of Information and Technology)*
**Accredited Sinta 4 Ministry of Higher Education, Science and Technology**
**Republic of Indonesia SK No. 10/C/C3/DT.05.00/2025**
**E-ISSN: 2580-720X || P-ISSN: 2303-1425**

# Determinants of Data Quality in HIV/AIDS Information System (SIHA) Performance Using Task-Technology Fit and IPMA: The Case of West Papua

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***Keywords***
*Critical Performance Map Analysis; Partial Least Square Structural Equation Modeling; HIV/AIDS Information System; Task-Technology Fit; Data Quality.*

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***Abstract***
This study analyzes how data quality and task-technology fit affect the effectiveness of SIHA in West Papua using IPMA and PLS-SEM. The TTF model includes Task Characteristics, Technology Characteristics, Individual Characteristics, Task-Technology Fit, and Performance Impact. This study used the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with a sample size of 103 health units such as the Health Office, hospitals, health centers, and clinics in West Papua. The results showed that data quality has a significant effect on Task-Technology Fit ($t = 4.008$; $p < 0.001$) and Performance Impact ($p = 0.013$). Furthermore, Task-Technology Fit also has a significant effect on Performance Impact. In contrast, Task Characteristics, Technology Characteristics, and Individual Characteristics do not have a significant effect on performance. These findings confirm data quality in optimizing SIHA. The results of this study can serve as a reference in formulating policies and strategies to improve the effectiveness of health information systems in areas with limited infrastructure.

## 1. Introduction

HIV/AIDS is a disease caused by the Human Immunodeficiency Virus (HIV) that can damage the human immune system, making it more susceptible to infections and other diseases. Acquired Immune Deficiency Syndrome (AIDS) is an advanced stage of HIV infection, in which the immune system is almost completely destroyed. The disease is transmitted through direct contact with infected bodily fluids, such as through unsafe sexual intercourse and the use of contaminated needles [1].

HIV/AIDS remains one of the main challenges in the health sector in West Papua Province. Based on data from the West Papua Health Office, from 2013 to 2025, more than 214,000 people have undergone HIV testing, and of these, nearly 6,000 people tested positive for HIV. However, only around 1,400 people were recorded as regularly taking antiretroviral (ARV) drugs, which suppress the development of the virus in the body. This disparity between the number of positive cases and patients receiving treatment indicates that there are still many HIV cases that have not been detected or have not been medically treated. More worryingly, the spread of HIV has now reached the general population, is no longer limited to high-risk groups such as sex workers or drug users, and mostly affects the productive age group of 20-29 years. This poses a serious threat to the future of the younger generation and the competitiveness of the workforce [2].

To address this problem, the West Papua Health Office has implemented the HIV/AIDS Information System (SIHA) since 2012. SIHA aims to facilitate the management of patient data and reporting of HIV/AIDS cases, as well as support the effectiveness of disease monitoring and prevention efforts [3]. However, even though this system has been used for more than a decade, there are still serious obstacles, especially related to the quality of data inputted into the system. Poor data quality can hinder the accuracy of information, decision-making, and the overall effectiveness of SIHA's performance. This data quality issue is a major concern in this study, as inaccurate data can interfere with decision-making and affect the overall performance of the system. Therefore, it is important to evaluate the factors that affect data quality in SIHA to ensure the system can function optimally.

This study aims to identify the determinants of data quality in the performance of SIHA in West Papua. This study uses the Task-Technology Fit (TTF) approach to measure the extent to which the SIHA technology fits the tasks faced by its users, as well as Importance-Performance Map Analysis (IPMA) to evaluate factors affecting SIHA performance. Task-Technology Fit (TTF) is a theory that explains how the fit between the technology used and the tasks to be completed can affect user performance [4], this model is operationalized through four main variables, namely Task Characteristics, Technology Characteristics, Individual Characteristics, and Performance Impact [5]. In addition, this study also adds an external variable in the form of Data Quality to measure data quality in determining the overall performance of SIHA.

Several previous studies have explored various aspects related to HIV/AIDS Information Systems (SIHA) [6] examines user acceptance of SIHA using the Technology Acceptance Model approach, but has not raised data quality as a key determinant of system effectiveness [7] highlights data quality challenges in the HIV surveillance system in the United States, such as representation, completeness, and accuracy, and their impact on the country's ability to respond to the spread of HIV. While the study emphasizes the importance of data quality, the context is different with limited infrastructure such as in West Papua. On the other hand, introduced the Task-Technology Fit (TTF) model that emphasizes the importance of alignment between task, user, and technology characteristics to improve performance. However, these studies have not specifically integrated data quality variables into the TTF framework in the context of health information systems. Therefore, this study contributes by combining the TTF and IPMA approaches and adding data quality variables as additional variables to understand the effectiveness of SIHA in a challenging environment such as West Papua.

Unlike previous studies, this research integrates Data Quality as an external variable within the TTF-IPMA framework in the context of limited infrastructure, such as in West Papua. With this approach, this research is expected to make a significant contribution in filling the existing research gap, especially regarding the influence of data quality on SIHA performance in the operational context in West Papua. In addition, this study will provide new insights into the use of the Task-Technology Fit (TTF) model to measure the fit between technology and user tasks in health information systems. Thus, the results of this study can be used to improve the effectiveness of SIHA use, which in turn can support better HIV/AIDS prevention and control efforts in West Papua. Unlike similar studies conducted in better-resourced regions, this research highlights how data quality becomes a more critical factor in limited infrastructure settings like West Papua, offering context-specific insights that are often underrepresented in mainstream HIS research.

## 2. **Research Method**

This study uses a quantitative descriptive analysis method, which is a procedure that aims to solve problems by describing the state of the research object based on data obtained from the field, both in the past and present. This descriptive method emphasizes the objective disclosure of facts in accordance with the actual situation [8].

This research framework uses an extended TTF model with Task Characteristics, Technology Characteristics, Individual Characteristics and Data Quality variables as independent variables while the Performance Impact variable is the dependent variable. The SIHA Task Technology Suitability variable is referred to as a mediating variable if the independent variables Task Characteristics, Technology Characteristics, Individual Characteristics and Data Quality affect the dependent variable Performance Impact through TTF SIHA which mediates the relationship between the independent variable and the dependent variable. Based on the above framework, each variable in this study is interrelated where:

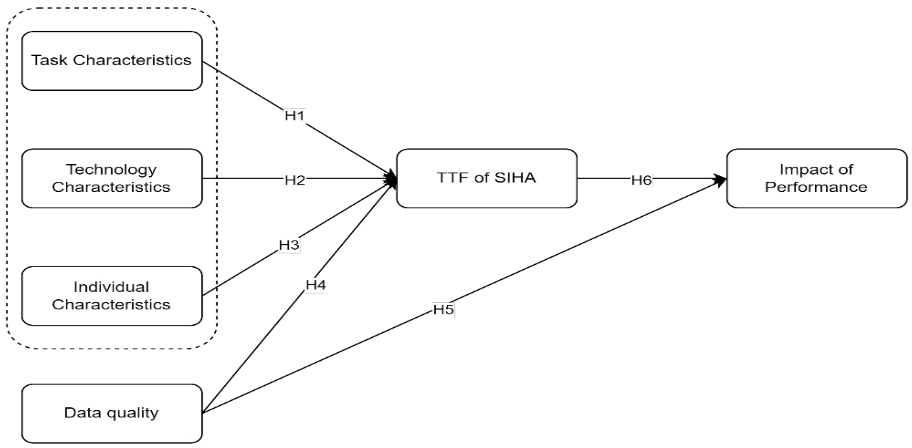


*Figure 1. Research Model*

The results of this study indicate that the higher the task characteristics owned, the higher the fit between tasks and technology (TTF) in health workers. If the task being done is in accordance with individual abilities, then this suitability will have a positive impact on performance, so that they can work more optimally. This finding is also in line with previous research by [9], so TTF helps complete the work of using technology more easily and efficiently. Based on the results, this study proposes three hypotheses namely, H1, H2, and H3:

H1: Task Characteristics have a significant influence on Task Technology Fit in the use of SIHA.

H2: Technology Characteristics have a significant effect on Task Technology Fit in the use of SIHA.

H3: Individual Characteristics have a significant influence on the Appropriateness of Task Technology Fit in using SIHA.

Individual characteristics which include abilities, values, attitudes, and interests have a significant influence on Task Technology Suitability. The results of this study reveal that the higher the individual characteristics, the higher the Task Technology Suitability of health workers. This finding is in line with previous research from [10] which shows similar results. Therefore, this study proposes hypotheses H4 and H5 as follows:

H4: Data quality has a significant influence on Task Technology Fit in the use of SIHA.

H5: Data quality has a significant influence on Performance Impact in the use of SIHA.

The results of this study indicate that the higher the Task Technology Fit, the higher the performance of health workers. This finding is in line with previous research by [10] which shows similar results. Where the fit of technology to user performance is able to adjust its capabilities to the tasks being carried out, so that the resulting performance becomes more optimal and maximum. Therefore, this study proposes hypothesis H6 as follows:

H6: Task Technology Fit has a significant influence on Performance Impact in using SIHA.

## 2.1 Data Collection

Population is a broad category that represents people with certain levels and characteristics chosen by researchers to study and draw conclusions [3]. In this study, the use of the G*Power tool helped assess power analysis by setting the effect size at 0.15, alpha significance at 5%, and power analysis at 95%. As there are six predictor variables, the recommended sample size is 69 respondents. However, the author managed to collect more than the recommendation with a total of 103 respondents [11]. The 103 respondents were given a google form questionnaire to complete as part of the data collection for this study, which consisted of SIHA users at the West Papua Provincial Health Office, SIHA users at hospitals in West Papua Province, and SIHA users at West Papua Provincial Health Centers, as well as SIHA users at West Papua Provincial Clinics and Health Centers.

## 2.2 Analysis Method

The research and data collection process was conducted over three months, from October to December 2024, at the West Papua Provincial Health Office with 103 valid respondents. Demographic information collected included gender, age, and education. The explanation can be seen in table I:

*Table 1. Demographic Description of Respondents*

| Category | Page | Total | Percentage |
|---|---|---|---|
| Gender | Male | 33 | 32% |
| | Female | 70 | 68% |
| Age | 18 - 35 Years | 49 | 47.6% of |
| | 36 - 50 Years | 54 | 52.4% of |
| Last education | Diploma (D1/D2/D3) | 54 | 52.4% of |
| | Bachelor (S1) | 47 | 45,6% |
| | Master (S2) | 1 | 1% |
| | More | 1 | 1% |

## 3. Result and Discussion

## 3.1. Measurement Model Evaluation

The measurement model assessment in this study examines the relationship between indicators and latent variables to ensure validity and reliability [12]. This process involves testing convergent validity, discriminant validity, and reliability to ensure that indicators effectively measure latent constructs.

The external model is the first of two indicators in the data analysis. The investigation begins by considering the Loading Factor (LF). LF values are generally accepted if they are greater than 0.7 [13]. In addition, convergent validity testing is then assessed using Average Variance Extracted (AVE). A value greater than or equal to 0.5 is acceptable [14]. Internal consistency reliability was assessed using Cronbach alpha (CA) and Composite Reliability (CR). All CA and CR values are acceptable as long as they are greater than 0.7 [13].

The indicators IC1, TCH1, and TSC3 were initially included in the model based on their relevance in previous studies on Task-Technology Fit and information system use, such as those by [8],[16]. These indicators were designed to reflect nuanced aspects of individual traits, system usability, and task complexity that are critical in evaluating SIHA. However, following the measurement model assessment, these indicators were removed due to low loading factor values. As seen in Table 2, some indicators, namely DQ3, IC1, TCH1, and TSC3, were eliminated as they did not meet the set threshold. This is because the Loading Factor value is below 0.7, with DQ3 having a value of 0.137, IC1 0.639, TCH1 0.615, and TSC3 0.340.

*Table 2. Confirmatory Variable Results*

| Variable | Code | Statement | LF |
|---|---|---|---|
| Task Characteristics (TSC) | TSC1 | I often experience problems in entering data and reporting patient data online through SIHA. | 0.932 |

| Variable | Code | Statement | LF |
|---|---|---|---|
| [15] CA, CR, AVE = 0,856, 0,858, 0,874 | TSC2 | I feel that there are often problems in using SIHA data recording and reporting. | 0,938 |
| Technology Characteristics (TCH) [15] | TCH2 | I feel that using SIHA online is not an obstacle and makes it easier for health workers to input data that needs to be updated. | 0,962 |
| CA, CR, AVE = 0,725, 1.118, 0,760 | TCH3 | I feel the use of SIHA has increased time efficiency in managing data online without having to go through complicated manual processes. | 0.771 |
| Individual Characteristics (IC) [13] | IC2 | I feel that the work experience of the health workers at SIHA has a positive influence on continuous patient monitoring. | 0.919 |
| CA, CR, AVE = 0,758, 0,781, 0,803 | IC3 | I feel that health workers' personality influences their understanding of the system and their attitude towards using SIHA. | 0.873 |
| Data quality (DQ) [16] | DQ1 | I feel that the data used in SIHA is accurate and provides information that has been rigorously validated. | 0.902 |
| CA, CR, AVE = 0,739, 0,744, 0,793 | DQ2 | I feel that the use of SIHA provides me with administrative data in carrying out HIV/AIDS reporting tasks. | 0,879 |
| TTF of SIHA (TTF) [13] CA, CR, AVE = | TTF1 | I feel SIHA supports my duties as a health worker in monitoring medication, making reports, and recording patient data. | 0.942 |
| 0,909, 0,920, 0,846 | TTF2 | I feel that SIHA provides the right answers to the demands of the tasks I need to complete as a health worker. | 0,888 |
| | TTF3 | I feel that SIHA helps healthcare workers make better decisions about the care that patients need. | 0,929 |
| Performance Impact (IOP) [16] CA, CR, AVE = 0,901, 0,904, 0,835 | IOP1 | I feel that SIHA can help me in making decisions such as: regional prioritization, resource allocation, program evaluation, trend identification, faster and more accurate education strategies. | 0.899 |
| | IOP2 | I feel that SIHA can improve efficiency in every aspect such as: continuous monitoring, automated analysis, proper allocation, evaluation of efficiency strategies, and data integration. | 0.903 |
| | IOP3 | I feel that SIHA can improve data accessibility such as: data can be accessed from anywhere, easy to understand data visualization, user role-based access rights and mobile integration. | 0,938 |

In model evaluation, discriminator validity needs to be tested to ensure that each construct in this study is truly different from one another. One method used to assess discriminant validity is the Heterotrait-Monotrait Ratio (HTMT). HTMT is an alternative method suggested to assess discriminant validity by using a multimethod multitrait matrix as the basis for measurement. The HTMT value should be less than 0.90 to ensure discriminator validity between two reflective constructs [17].

*Table 3. Discriminant Validity (HTMT)*

| | DQ | IC | IOP | TCH | TSC | TTF |
|---|---|---|---|---|---|---|
| DQ | | | | | | |
| IC | 0.304 | | | | | |
| IOP | 0.484 | 0.339 | | | | |
| TCH | 0.249 | 0.103 | 0.247 | | | |
| TSC | 0.380 | 0.220 | 0.144 | 0.310 | | |
| TTF | 0.542 | 0.276 | 0.422 | 0.213 | 0.237 | |

## 3.2 Structural Model Evaluation

In this study, the inner model analysis can be determined using several indicators. This test analyzes the relationship between variables and other variables such as variance inflorescence factor (VIF) and R-square to test the hypothesis hipotesis [18]. Linearity checks are carried out using VIF statistics with values > 0.2 and < 5. Low correlation between independent variables may indicate multicollinearity between constructs [19].

The coefficient of determination (R-Square) is used to determine the extent of the relationship between the independent variable and the dependent variable [20]. Based on the results of data processing in Table 4, it can be seen that the VIF value of each construct has a predicted value below 5, which means that there is no collinearity problem [21]. All VIF values for the constructs are well below the threshold of 5, indicating that there is no multicollinearity issue among the variables used in the model.

The purpose of hypothesis testing is to determine whether the data obtained is strong enough to accept or reject the alternative hypothesis. This process is done by comparing the T Statistic value and the P value through the bootstrap method. The hypothesis is considered acceptable if the T Statistic value> 1.96 and the P value <0.05 [22],[23].

It can be seen in table 5 that of the 6 hypotheses proposed, 3 hypotheses have a t value > 1.96 and a p value < 0.005 which indicates that the hypothesis is accepted. Meanwhile, 3 hypotheses have a value < 1.96 and a p value > 0.005, which indicates that the hypothesis is rejected. Based on the results of the hypothesis test.

*Table 4. Variance Inflation Factor (VIF) Test Results*

| | **DQ** | **IC** | **IOP** | **TCH** | **TSC** | **TTF** |
|---|---|---|---|---|---|---|
| **DQ** | | | 1.249 | | | 1.152 |
| **IC** | | | | | | 1.071 |
| **IOP** | | | | | | |
| **TCH** | | | | | | 1.068 |
| **TSC** | | | | | | 1.163 |
| **TTF** | | | 1.249 | | | |

*Table 5. Hypothesis Test Results*

| **Hypothesis** | **Variable** | **T statistic** | **P value** | **Description** |
|---|---|---|---|---|
| H1 | TCH → TTF | 1.244 | 0.214 | Rejected |
| H2 | TSC→ TTF | 0.542 | 0.588 | Rejected |
| H3 | IC → TTF | 1.613 | 0.107 | Rejected |
| H4 | DQ → TTF | 4.008 | 0.000 | Accepted |
| H5 | DQ → IOP | 2.494 | 0.013 | Accepted |
| H6 | TTF → IOP | 2.878 | 0.004 | Accepted |

Among the six hypotheses tested, three were accepted (H4, H5, H6), showing significant effects from Data Quality on both Task-Technology Fit and Performance Impact, and from TTF on performance. The other three (H1, H2, H3) were rejected due to non-significant statistical results.

The Coefficient of Determination (R Square) is used to explain the extent of the influence exerted by the independent variable on the dependent variable. An R-Square value of 0.75 is categorized as strong, 0.50 as moderate, and 0.25 as weak [24].

*Table 6. Determinant Coefficient (R-Square)*

| | R-square | Information |
|---|---|---|
| IOP | 0.212 | Weak |
| TTF | 0.234 | Weak |

Based on Table VI, the R-Square value for the Performance Impact variable is 0.212. These low $R^2$ values (0.212 for IOP and 0.234 for TTF) indicate weak explanatory power of the model, suggesting that other unmeasured variables may influence SIHA performance more substantially. This value indicates that the variables of Task Characteristics, Technology Characteristics, Individual Characteristics, Data Quality, and TTF SIHA affect Performance Impact by 21.2%.

Thus, this research model has weak predictive power. Meanwhile, the remaining 78.8% is influenced by other variables that are not included in the research construction. Furthermore, the R-Square value of the TTF SIHA variable is 0.234. This value indicates that the Performance Impact variable affects TTF SIHA by 23.4%. This result shows that this research model has weak predictive power. While the remaining 76.6% is influenced by other variables that are not included in the research construction.

### 3.3 Importance-Performance Map Analysis (IPMA)

IPMA or importance-performance matrix, is a method in PLS-SEM that adds the dimension of the average value of latent variable scores to analyze the total influence of the previous construct on the target construct. IPMA helps identify factors that have high influence but low performance, so that they can be prioritized for improvement [25].

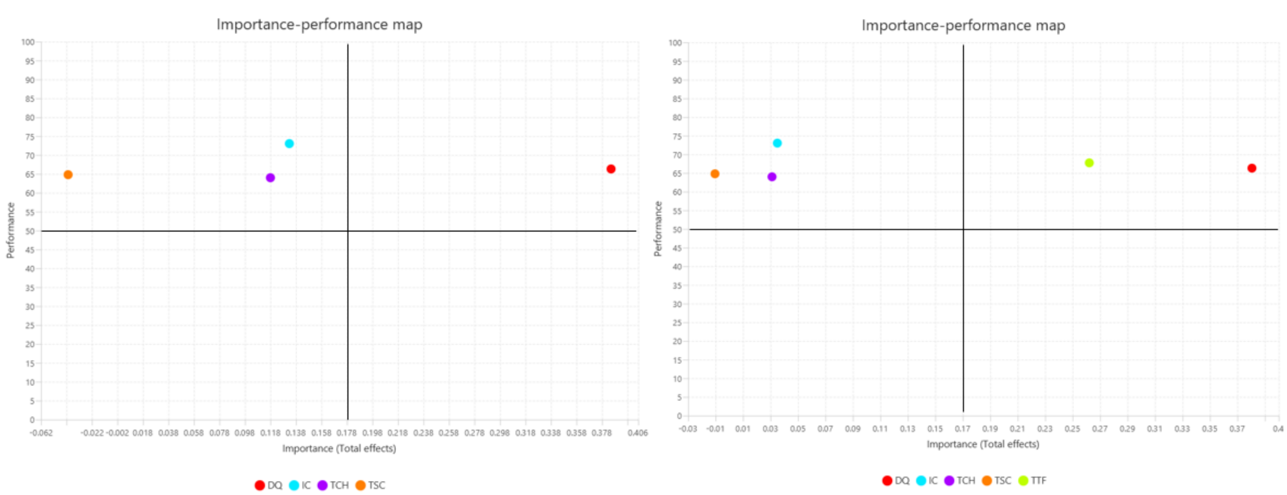


*Figure 2. IPMA-A (TTF) dan IPMA-B (IOP)*

Based on the results of the Importance-Performance Map (IPMA) analysis of the Task-Technology Fit (TTF) and Impact on Performance (IOP) variables. In graph (a), Data Quality (DQ) occupies the position with the highest level of importance and performance, indicating that data quality is the dominant factor in determining the fit of technology and tasks. In contrast, Task Characteristics (TSC) and Technology Characteristics (TCH) are in the area of low importance and performance values, indicating minimal contribution to TTF.

Meanwhile, graph (b) shows that TTF has the most significant influence on IOP, with high importance and performance values. This confirms that the more appropriate the technology is to the user's task, the higher the impact on system performance. The Individual Characteristics (IC) factor, although high in performance, is low in importance, indicating its limited influence on system performance. Overall, these results suggest that improving data quality and optimizing technology-task fit should be a priority in the development of SIHA.

*Table 7. IPMA for all dependent variables.*

| | IOP | | TTF | |
|---|---|---|---|---|
| | Performance | Total Effect | Performance | Total Securities |
| DQ | 66.318 | 0,38 | 66.318 | 0,385 |
| IC | 73.030 | 0,035 | 73.030 | 0,132 |
| TCH | 63.999 | 0,031 | 63.999 | 0,117 |
| TSC | 64.806 | -0,011 | 64.806 | -0,041 |
| TTF | 67.739 | 0,262 | | |

Table 7 shows that Data Quality (DQ) has the highest total effect on both IOP (0.38) and TTF (0.385), confirming its dominant role in improving both system fit and performance. Despite its high performance value, Individual Characteristics (IC) has minimal influence on IOP (0.035), while Task Characteristics (TSC) shows a negative total effect, indicating a lack of contribution to system effectiveness. These findings suggest that improving DQ should be a strategic priority for enhancing SIHA.

However, its influence on performance is very small. TCH (Technology Characteristics) has a performance of 63.999 and a total effect of 0.031, indicating lower performance than other factors and its effect on performance is also small. TSC (Task Characteristics) with a performance of 64.806 and a total effect of -0.011 has a fairly good performance, but its effect on performance is negative. While TTF (Task Technology Fit) has a performance of 67.739 and a total effect of 0.262 which means that the fit of technology to the task has a significant effect on performance. In TTF, DQ has a performance of 66.318 and a total effect of 0.385 which indicates that data quality has a significant influence on technology fit with the task. IC has a performance of 73.030 and a total influence of 0.132, which indicates high performance with a considerable influence on TTF. TCH has a performance of 63,999 and a total effect of 0.117, which indicates the lowest performance but still has an influence on TTF. TSC has a performance of 64,806 and a total effect of -0.041, which indicates that task characteristics do not contribute very positively to the suitability of technology to the task.

## 4. Conclusion and Future Works

The results of hypothesis testing in this study show variations in the influence between variables on the effectiveness of using the HIV/AIDS Information System (SIHA). The first hypothesis (H1), which states that task characteristics affect task and technology fit (TTF), is rejected because it has a T-Statistic value of 1.244 (< 1.96) and a P-Value of 0.214 (> 0.05). This means that task characteristics perceived by users do not have a significant effect on TTF, in line with the findings of [4]. Similarly, the second hypothesis (H2) which examines the effect of technology characteristics on TTF is also rejected, with a T-Statistic value of 0.542 and a P-Value of 0.588. This indicates that users' perceptions of the technology used have not been able to significantly influence the fit between tasks and technology, this is in line with research conducted by oleh [26]. The insignificant results of Task Characteristics (TSC) and Technology Characteristics (TCH) may be attributed to the contextual limitations of the study area. In West Papua, many healthcare workers still rely on manual processes and may not fully utilize the advanced features of SIHA, reducing the perceived relevance of task and technology fit. Additionally, some items under TSC and TCH were dropped during validity testing, which might have weakened the construct's explanatory power.

The third hypothesis (H3), namely the effect of individual characteristics on TTF, is also rejected because the T-Statistic value is 1.613 and the P-Value is 0.107, indicating that individual factors do not have a significant effect on task-technology fit. This result is different from the research [27] which found a significant effect of individual factors. The rejection of H1, H2, and H3 suggests that in the context of West Papua, task, technology, and individual characteristics may not be the primary drivers of perceived task-technology fit. This may be due to the strong influence of external constraints such as infrastructure limitations, policy mandates, or limited user autonomy in system use, which can overshadow the role of internal or perceptual factors. Theoretically, this indicates that the classical TTF constructs may require modification or expansion when applied to low-resource settings. Future studies should consider incorporating contextual and environmental variables to improve the explanatory power of TTF-based models in similar regions.

In contrast, the fourth hypothesis (H4) was accepted with a T-Statistic of 4.008 (> 1.96) and a P-Value of 0.000 (< 0.05), indicating that data quality has a significant effect on TTF. This reinforces the importance of accurate and complete data in supporting the suitability between technology and tasks carried out through SIHA. The fifth hypothesis (H5) was also accepted, with a T-Statistic value of 2.494 and a P-Value of 0.013. This indicates that data quality not only affects TTF but also has a significant impact on the performance of SIHA users. In addition, the sixth hypothesis (H6), which examines the effect of TTF on performance impact, is accepted with a T-Statistic of 2.878 and a P-Value of 0.004. This means that the higher the task and technology fit, the better the performance of system users, this finding is in line with previous research by [16].

However, the R-Square value indicates that the predictive power of the model is still relatively low. For the Technology-to-Task Fit (TTF) variable, the R-Square value was recorded at 0.234, while for the performance impact variable it was 0.212. This means that the model is only able to explain a small part of the variation in the two variables, namely 23.4% and 21.2%. Thus, there is a large amount of variation of around 76.6% and 78.8% that cannot be explained by the model, which may be caused by other factors outside the framework of this study. This finding suggests that there is still a need to identify additional factors that may affect the effectiveness of the SIHA information system more thoroughly.

These unexplained variances indicate the potential relevance of other influencing variables that were not included in the current framework. Future research could explore the role of moderating or mediating variables, such as organizational support, user satisfaction, or training and system usability, which may better capture the complexity of factors influencing SIHA performance. Including such variables could help enhance the model's explanatory power and provide a more comprehensive understanding of system effectiveness, particularly in low-resource settings like West Papua.

Based on the Importance-Performance Map Analysis (IPMA) results, data quality emerged as the most influential factor on system effectiveness, especially in terms of reporting accuracy and completeness. Therefore, improving data quality and the fit between technology and tasks are important aspects that need to be prioritized in the development of SIHA in order to optimally support HIV/AIDS prevention and control.

This study found that data quality is the only factor that significantly affects both Task-Technology Fit (TTF) and performance impact. This finding has not been widely discussed in previous studies, such as [10] and [4] which highlight the influence of technology and task characteristics. In the context of health information systems in deprived areas, the results of this study suggest that data quality plays a more important role. This means that the success of the information system is determined more by the accuracy and reliability of the data, not just by the suitability of the technology to the task.

## 4.1 Theoretical Implications

Furthermore, this study opens up opportunities for further exploration of external factors that affect system effectiveness, such as Task Characteristics, Technology Characteristics, and Individual Characteristics. Although these factors were not found to have a significant influence on Task-Technology Fit in this study, they may still have a role in shaping system usage. This research also highlights the need for further theory development to explore the influence of these factors on technology adoption. In addition, the findings underscore the importance of improving data quality and task-technology fit as part of policy development to optimize health information system performance. The insights gained provide a solid basis for further research as well as practical applications to improve technology use in the health sector.

Furthermore, this study opens up opportunities for further exploration of external factors that influence system effectiveness, such as Task Characteristics, Technology Characteristics, and Individual Characteristics. Although these factors were not found to have a significant effect on Task-Technology Fit in this study, they still have a role in shaping system usage. This research also highlights the need for further theory development to explore the influence of these factors on technology adoption. In addition, the findings underscore the importance of improving data quality and task-technology fit as part of policy development to optimize health information system performance. The insights gained provide a strong basis for further research as well as practical applications to improve technology use in the health sector.

## 4.2 Practical Implications

Based on the results of hypothesis testing, Data Quality (DQ) and Performance Impact (IOP) have a significant influence on Task-Technology Fit (TTF) in the use of HIV/AIDS Information Systems (SIHA). These findings provide practical insights for health workers to improve the effectiveness of SIHA use in West Papua. Through the results of Task-Technology Fit (TTF) and IPMA analysis, it shows that data quality (DQ) factors have a high level of importance in the successful implementation of SIHA, while Impact of Performance (IOP) also plays an important role in improving system effectiveness.

Therefore, health workers need to prioritize improving data quality and user experience in using SIHA, so that it can support the optimization of data management and decision making in the HIV/AIDS response in West Papua. For this reason, efforts to improve data quality, such as ensuring accuracy, completeness, and consistency of information in the system, need to be a top priority. Based on the IPMA findings, system administrators should prioritize improving data quality through targeted training programs focused on accurate and timely data entry. Since Data Quality and Task-Technology Fit were identified as high-importance but variably performed factors, administrators can also develop policy interventions that enforce standardized data validation procedures. Additionally, the low performance of Technology Characteristics suggests the need to upgrade system usability or provide user manuals and hands-on tutorials to bridge the usability gap. These strategic actions can significantly enhance system adoption and overall performance in resource-constrained environments. In addition, Technology Characteristics (TCH) and Individual Characteristics (IC) also play a role in increasing user acceptance of SIHA. For this reason, continuous training and adequate technical support are needed so that health workers are more prepared and confident in using the system.

On the other hand, Task Characteristics (TSC) showed a negative impact, indicating the need to re-evaluate the suitability of SIHA features to the needs of users in the field. Upgrading from SIHA 1.7 (based on aggregate data) to SIHA 2.1 (based on individual data) is an important step to ensure that the system can meet the needs of health workers. By improving these factors, SIHA can be optimized to support data management and reporting of HIV/AIDS cases, thereby accelerating decision-making and strengthening HIV/AIDS prevention and control efforts in West Papua.

## 4.3 Limitations and Future Research Directions

This study has limitations that need to be considered in future research. This study was only conducted on the use of HIV/AIDS information systems (SIHA) in West Papua, so the results cannot be generalized to other regions that have different conditions, such as differences in geography, infrastructure, culture, and health policies. Therefore, this study focuses more on Task-Technology Fit (TTF) and Data Quality (DQ) factors, and future research is expected to cover a wider area in order to understand how SIHA is implemented in various geographical and infrastructure conditions. In addition, this study only focuses on the Task-Technology Fit (TTF) and Data Quality (DQ) factors, while there are other variables that may be influential but have not been analyzed in this study, such as organizational support, user experience, and socioeconomic factors. Further research is recommended to consider some additional aspects.

The results of Importance Performance Map Analysis (IPMA) show that Data Quality (DQ) and Task-Technology Fit (TTF) are the main factors that have a large influence and high performance, so they need to be maintained and improved. Meanwhile, Individual Characteristics (IC), Technology Characteristics (TCH), and Task Characteristics (TSC) have less influence on SIHA performance. Although not a top priority, so that system performance remains optimal and does not experience a decline. In addition, future research can explore other factors such as technology adoption, health policy, and social aspects that may affect the effectiveness of SIHA use. The low R-square value also indicates that there are other factors that have not been considered in this study and can be the focus of future research.

To overcome these limitations, future research is recommended to expand the scope of the study area to understand SIHA implementation in various geographical and infrastructure conditions. In addition, future research could consider additional variables, such as organizational support and socioeconomic factors, that could potentially influence the effectiveness of SIHA. Further evaluation of Individual Characteristics (IC) and Task Characteristics (TSC) factors is also needed to ensure the system remains optimized and in line with user needs. In addition, exploration of other factors such as technology and health policy aspects may provide additional insights into the effectiveness of SIHA.

A more in-depth understanding of improving the effectiveness of SIHA. With this in mind, future research is expected to provide a more comprehensive picture of the challenges and development of SIHA in West Papua. Future research is recommended to consider additional variables such as organizational support, user training, health policy, and social and cultural aspects to improve the predictive value of the model. Despite its limitations, this study has significant practical implications for users' understanding of the use, benefits, and challenges of SIHA in West Papua.

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