



## The Effect of it Sophistication and User Participation on the Effectiveness of Sipd Usage with Personal Techniques as a Moderating Variable

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| <b>Abstract</b>  | The rapid advancement of digital technology and the increasing demand for transparency and accountability in government administration have necessitated comprehensive digital transformation initiatives across Indonesian local governments, with the Regional Government Information System ( <i>SIPD</i> ) serving as a critical component of bureaucratic reform efforts aimed at enhancing efficiency, transparency, and public service delivery. This [A1] research [A2] aims to analyze the influence of information technology (IT) sophistication and user participation on the effectiveness of the Local Government Information System ( <i>SIPD</i> ) usage, with personal techniques as a moderating variable. This research employs a quantitative approach with an empirical methodology, conducted on local government agencies in Indonesia that implement <i>SIPD</i> . Data were collected through questionnaire distribution to <i>SIPD</i> users at the Denpasar City Regional Secretariat and analyzed using Moderated Regression Analysis (MRA) technique with SPSS software. The results showed that: (1) information technology sophistication did not have a significant effect on the effectiveness of <i>SIPD</i> usage; (2) user participation had a positive and significant effect on <i>SIPD</i> effectiveness; (3) the influence of IT sophistication on <i>SIPD</i> effectiveness was not significant, even when moderated by personal techniques; and (4) personal techniques significantly moderated the relationship between user participation and <i>SIPD</i> effectiveness despite negative coefficients. This research confirms that the success of <i>SIPD</i> usage is more influenced by user involvement and the moderating factor of personal techniques, while technology sophistication alone does not have a significant influence. |
| <b>Keywords:</b> | Information Technology Sophistication, Personal Engineering, <i>SIPD</i> Effectiveness, User Participation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## INTRODUCTION

The Indonesian government currently continues to encourage digital transformation in government administration as part of bureaucratic reform to realize transparency, efficiency, and public accountability (Cahyaningtyas et al., 2023). One form of implementation of this transformation is the use of the Regional Government Information System (*SIPD* or *Sistem Informasi Pemerintah Daerah* in Indonesian), which aims to integrate the process of planning, budgeting, implementing, and reporting regional development. *SIPD* is a highly influential strategic instrument in the regional development process, especially in supporting accountable and transparent financial governance (Arif & Firmansyah, 2024).

As a web-based information system, *SIPD* contains data on development planning, budgeting, and evaluation of local government performance electronically (Yuesti et al., 2022). The features in *SIPD* enable national data integration, accelerate administrative processes, and simplify the process of supervising public services. This is in line with the rapid development of information technology that encourages local governments to switch to digital systems to increase efficiency and accuracy in data-driven decision-making (Nasution & Nurwani, 2021; Andaryani et al., 2024).

Although it has been implemented nationally, the implementation of *SIPD* in various regions still faces challenges. Common problems that arise include data input errors, delays in reporting, and high dependence on technical operators (Choirinisa & Ikhwan, 2022). Some regions have not even been able to operate *SIPD* optimally due to limited human resources and supporting infrastructure (Kamawati et al., 2021). The government has issued Minister of Home Affairs Regulation Number 15 of 2024 concerning guidelines for the preparation of the 2025 Fiscal Year *APBD* (*Anggaran Pendapatan dan Belanja Daerah* or Regional Revenue and Expenditure Budget in Indonesian), which emphasizes the importance of *SIPD* as the main system in planning and managing the budget in a transparent and accountable manner (Kusnanda & Miftahuddin, 2024).

The Regulation of the Minister of Home Affairs Number 15 of 2024 concerning guidelines for the preparation of the Regional Revenue and Expenditure Budget (*APBD*) for the 2025 fiscal year emphasizes the importance of transparency and accountability in *APBD* preparation by local governments. With these regulations, local governments are expected to optimize the implementation of *SIPD* as the main tool in effective and accountable financial management (Dewi & Dharmadiaksa, 2019).

*SIPD* also functions as a means of collecting technology-based data that supports comprehensive regional management (Febrianti et al., 2020). This system has been used in various regions, such as the City of Denpasar, to support public service evaluation and electronic budget monitoring. Advances in information technology (IT) encourage local governments to adopt digital systems such as *SIPD*, which facilitate the achievement of good governance principles through increased efficiency and transparency in financial management (Yuesti et al., 2022; Andaryani et al., 2024).

IT sophistication plays an important role in supporting the effectiveness of *SIPD* usage (He et al., 2021; Hendra & Sinurat, 2023; Hung Kee & Basher Rubel, 2021; Iqbal et al., 2022). The modern technology used in this system allows the data processing to run faster, more accurately, and in a more integrated manner (Maceli & Burke, 2016; Pangestu, 2020). Features such as automation, advanced data analysis, and robust information security minimize manual errors and accelerate the decision-making process. With the support of advanced IT, *SIPD* can serve as a strategic tool to improve the quality of financial statements and enable valid, up-to-date data-driven budget management (Paat et al., 2023).

The development of information technology (IT) has encouraged local governments to adopt systems that increase transparency and accountability in financial management (Petricelia & Ompusunggu, 2024). One of the IT implementations that supports this goal is the Local Government Information System (*SIPD*). However, the effectiveness of *SIPD* usage depends not only on the sophistication of the technology used but also on user acceptance and participation in operating the system (Andaryani et al., 2024).

The sophistication of information technology plays an important role in increasing the effectiveness of Local Government Information System (*SIPD*) usage (Paranoan et al., 2019). More advanced technology allows the system to operate more quickly, accurately, and in an integrated manner, thereby supporting more efficient regional financial data management (Marikyan & Papagiannidis, 2024). A system equipped with automation features, advanced data analysis, and high information security can reduce the risk of human error in data input and facilitate stakeholder access to information. With IT sophistication in *SIPD*, local

governments can improve financial reporting quality, accelerate the planning and budgeting process, and ensure that policies are based on valid and up-to-date data (Paat et al., 2023).

In addition to technological sophistication, user participation is also a factor that determines the success of *SIPD* implementation. User participation includes the active involvement of government personnel in the use, maintenance, and development of information systems. When users feel involved in the implementation process and are provided with adequate training, they tend to be more receptive to new technologies and use them optimally. Conversely, low levels of user participation can lead to resistance to change, lack of understanding in system operation, and increased risk of errors in regional financial management (Maryani, 2020).

In this research, the Technology Acceptance Model (TAM) is a relevant approach to understanding the factors that affect the acceptance and effectiveness of *SIPD* usage. Davis stated that TAM represents technology acceptance influenced by the perception of ease of use and perceived usefulness. The more sophisticated the technology used, the higher the likelihood that its use will improve the efficiency and quality of regional financial statements. However, technological sophistication alone is insufficient if users do not have adequate skills to operate the system. Therefore, user participation in the *SIPD* implementation process, such as involvement in training, preparation of system requirements, and application testing, is an important factor that can increase the effectiveness of its usage (São Paulo, 2017).

IT sophistication and user participation are inseparable from the technical readiness of the individuals operating the system. Even though the technology used is highly advanced and users have been actively involved, the system's success still depends heavily on the user's personal ability to manage the technology optimally. In this context, personal techniques act as a moderating variable that influences the strength of the relationship between IT sophistication and user participation in the effectiveness of *SIPD* usage.

Factors such as the level of training, user experience in using information systems, and the availability of technical support are the main indicators of personal techniques. These three aspects can strengthen or even weaken the effectiveness of system usage, depending on each individual's condition. Users with good technical skills tend to be more receptive to and utilize technology optimally, while limitations in personal technique aspects can be obstacles in implementing complex systems (Haniko et al., 2023).

The phenomenon observed shows that even though the Regional Government Information System (*SIPD*) has been implemented in various regions in Indonesia, there are still numerous obstacles in its usage. Some local governments have difficulty operating *SIPD* effectively due to lack of user participation, limited technical skills, and adaptation to information technology sophistication. This demonstrates that factors such as information technology (IT) sophistication, user participation, and personal techniques play important roles in determining the success of *SIPD* implementation.

One concrete example can be found at the Regional Secretariat of Denpasar City. Even though they have participated in *SIPD* training organized by the Ministry of Home Affairs, the *SIPD*-Based Regional Financial Administration Technical Guidance (Regional Government Information System) has been attended by numerous employees who still find it difficult to operate certain modules, such as planning and reporting modules. Some reports suggest that limitations in digital literacy lead to low effectiveness in *SIPD* usage. Additionally, there are indications that user participation in the system development or customization process is very limited, so *SIPD* applications are often not fully suited to the operational needs of their work

environment. This condition is exacerbated by the lack of personal techniques such as communication skills, adaptability, and good time management among *SIPD* users.

Another problem that frequently occurs is technical glitches in the *SIPD* system itself, such as the inability to access the system at certain times, especially when there is a traffic spike at the end of the month or approaching reporting deadlines. Incidents like this directly impact delays in the process of entering expenditures into the system, which can ultimately disrupt the flow of financial administration and cause inconsistencies in recording time in regional financial statements. This creates high dependence on the condition of the central system (which is nationally integrated), while network capacity and technical support at the regional level remain limited.

One study that supports this problem was conducted by Kelana & Fahlevvi (2024), who found that at the Riau Provincial Inspectorate, the *SIPD* system often experiences errors and servers cannot be accessed when used simultaneously. This directly impacts delays in data entry and makes integration with financial statements difficult. They recommend infrastructure improvements, data synchronization, and strengthening system technical management to overcome these barriers.

Conversely, some studies show that technical constraints are not always the main barrier to *SIPD* effectiveness. Research shows that although infrastructure and user capabilities have significant impact, formal training or socialization does not have a real impact on system effectiveness. It was also found that although most users did not fully understand *SIPD* features, the system was still considered effective in accelerating the process and improving planning quality. These findings indicate that technical constraints do not necessarily fully hamper *SIPD* performance in the regions (Princess & Zuripal, 2024; Alfani & Nasution, 2022).

Previous research has highlighted the importance of IT sophistication and user participation in determining information system effectiveness. However, research integrating personal techniques as a moderating variable in the *SIPD* context is still limited. Therefore, the researcher wants to investigate the use of the Regional Government Information System (*SIPD*) because of the important role of information technology in increasing regional financial management effectiveness. With the complexity of administrative needs and increasing demands for transparency, a deep understanding of how IT technology sophistication can impact *SIPD* performance has become crucial.

The primary objectives of this research are to: (1) analyze the direct effects of IT sophistication and user participation on *SIPD* effectiveness in the Indonesian local government context; (2) examine the moderating role of personal techniques in strengthening or weakening the relationships between IT sophistication, user participation, and *SIPD* effectiveness; (3) provide empirical evidence for the integrated model of *SIPD* effectiveness determinants that can guide policy formulation and system implementation strategies; and (4) offer practical insights for local government administrators, IT managers, and policymakers regarding optimal *SIPD* deployment and user management practices. The benefits of this research include enhancing theoretical understanding of technology acceptance and effectiveness in public sector contexts, providing evidence-based recommendations for improving *SIPD* implementation across Indonesian local governments, supporting the development of training programs and capacity-building initiatives for government employees, and contributing to the broader literature on digital transformation in emerging market public administration. The implications of this research extend to informing national policy on digital government

initiatives, guiding resource allocation for IT infrastructure and human capital development, and establishing best practices for similar technology implementations in other developing countries facing comparable digital transformation challenges.

## RESEARCH METHOD

This research is designed to investigate the influence of IT sophistication and user participation on the effectiveness of *SIPD* usage, with personal techniques acting as a moderating variable. Employing a quantitative approach, the study utilizes a purposive sampling technique to gather data. The analysis will be conducted statistically using Moderated Regression Analysis (MRA) to test the predetermined hypotheses, ultimately leading to results, discussions, and conclusions aligned with the research objectives (Sugiyono, 2011).

The data for this study consist of quantitative primary data, collected directly from the original source through an online questionnaire distributed to respondents. This instrument utilizes a 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree," to measure attitudes, opinions, and perceptions regarding the social phenomena under investigation. The questionnaire is designed to capture numerical data that can be used to rigorously test the study's hypotheses.

For the data analysis, the research employs Moderated Regression Analysis techniques. The collected data, which represent the selected sample, will be processed using SPSS software as the primary testing tool to examine the relationships between the variables and the moderating effects.

## RESULTS AND DISCUSSION

### Hypothesis Test Results

#### 1. Test F

The F statistical test aims to evaluate whether the regression model used as a whole is able to explain the phenomenon under research. Although this research did not directly test the influence of all independent variables on the dependent variables simultaneously, this test was still conducted to assess the feasibility of the regression model used. Nevertheless, the results of this statistical test are not used as a basis for supporting or rejecting the hypothesis proposed, as decision-making remains based on a significance level of 0.05. The results of the F statistical test are presented as follows.

**Table 1. Results of Statistical Test F**  
**ANOVA**

| Type       | Sum of Squares | Df | Mean Square | F      | Sig.   |
|------------|----------------|----|-------------|--------|--------|
| Regression | 236.651        | 4  | 59.163      | 17.206 | <0.001 |
| Residual   | 154.729        | 45 | 3.438       |        |        |
| Total      | 391.380        | 49 |             |        |        |

*Source: primary data processed (2025)*

Based on the results of the statistical test F in the table above, it is known that the significance value is  $< 0.001$ , which means it is smaller than the significance limit of 0.05. This shows that all the independent variables in the model simultaneously have a significant influence on the dependent variables. Thus, it can be concluded that the regression model used in this research is feasible to be used in explaining the relationship between variables and has overall predictive power.

## 2. T Test

The t-statistical test aims to measure the extent of the influence of each independent variable partially in explaining the variation that occurs in the dependent variable, with the test being carried out at a significance level of 0.05. The following are the results of the t-statistical test.

**Table 2. Moderated Regression Analysis Test Results**

| Type       | B      | Std. Error | Beta   | t      | Sig.  | Information |
|------------|--------|------------|--------|--------|-------|-------------|
| (Constant) | -3,536 | 1,864      |        | -1,897 | 0,064 |             |
| X1         | -1,54  | 0,926      | -1,533 | -1,663 | 0,103 | H1 rejected |
| X2         | 2,479  | 0,983      | 3,237  | 2,522  | 0,015 | H2 accepted |
| X1. M      | 0,134  | 0,068      | 3,15   | 1,969  | 0,055 | H3 rejected |
| X2. M      | -0,175 | 0,073      | -4,186 | -2,41  | 0,02  | H4 accepted |

*Source: primary data processed (2025)*

In interpreting the results of the statistical test, a comparison of the probability of the results of the statistical test is carried out with the significance level limit with the following conditions:

- If the significance  $\leq 0.05$ , then H0 is rejected and H1 is accepted, which shows that the influence of the variable being tested has a statistically significant effect.
- If the Significance  $> (0.05)$ , then H0 is accepted, which indicates that the influence of the variable being tested has no statistical effect

Based on the results of the statistical test presented in the table above, the constant of -3.536 shows that if there is no influence of the variables of IT Sophistication, User Participation, and Personal Engineering, then the variable of Effectiveness of the Use of SIPD is -3.536. The regression coefficient of the IT Sophistication variable is -1.540. The regression coefficient of the User Participation variable is 2.479. The interaction coefficient of the variables of IT Sophistication, User Participation was 0.134, -0.175. The nature of moderation in the two variables is classified as a type of moderation (*quasi moderator*) because the interaction of the moderation variables is not significant so that there is no evidence of a moderation effect.

The following is the interpretation of the results of the hypothesis test with the t-statistical test as follows:

- 1) The Influence of Information Technology (IT) Sophistication on the Effectiveness of SIPD Use

The significance value of the variable of Information Technology Sophistication (X1) on the Effectiveness of SIPD Use was 0.103 ( $0.103 > 0.05$ ). H1 was therefore rejected. Based on this significance value, it can be concluded that the Sophistication of Information Technology does not have a significant effect on the Effectiveness of the Use of SIPD in the agency that is the object of the research. The coefficient value of -1.540 indicates that if the level of information technology sophistication increases by 1 unit, then the effectiveness of SIPD use tends to decrease by 1.540 units, although this relationship is not proven to be statistically significant.

- 2) The Effect of User Participation on the Effectiveness of SIPD Use

The significance value of the User Participation variable (X2) on the Effectiveness of SIPD Use was 0.015 ( $0.015 < 0.05$ ). H2 is therefore accepted. Based on this significance value, it can be concluded that User Participation has a significant effect on the Effectiveness of SIPD Use in the agency that is the object of the research. The coefficient value of 2.479 shows that if user participation increases by 1 unit, then the effectiveness of SIPD use will also increase by 2.479 units.

3) The Interaction of Information Technology (IT) Sophistication with Personal Engineering

Based on the table above, it is known that the significance value of the moderation variable of Personal Engineering to the Sophistication of Information Technology (X1. M) is 0.055 ( $0.055 > 0.05$ ). The value of the coefficient is 0.134. Thus, the Personal Engineering variable was not able to strengthen the influence of the relationship between Information Technology Sophistication on the Effectiveness of SIPD Use, because the interaction was not statistically significant. H3 was therefore rejected.

4) User Participation Interaction with Personal Techniques

Based on the table above, it is known that the significance value of the Moderation variable of Personal Engineering on User Participation (X2. M) is 0.020 ( $0.020 < 0.05$ ). The value of the coefficient is -0.175. It can be concluded that the Personal Engineering variable is able to significantly strengthen or moderate the influence of the relationship between User Participation on the Effectiveness of SIPD Use. Thus, H4 was accepted.

3. Determinant Coefficient ( $R^2$ )

The determination coefficient test (*Adjusted  $R^2$* ) is used to measure how much the proportion of independent variables influence the dependent variables in a model. The *Adjusted  $R^2$*  value is in the range of 0 to 1; the closer it is to 1, the stronger the model's ability to explain the relationships between variables. Conversely, if the value is close to 0, then the model's ability to explain dependent variables becomes weak. The results of the determination coefficient test (*Adjusted  $R^2$* ) are presented as follows.

**Table 3. Determinant Test Results ( $R^2$ )**

| Type | R     | R Square | Adjusted R Square | Std. Error of the Estimate |
|------|-------|----------|-------------------|----------------------------|
| 1    | 0.778 | 0.605    | 0.570             | 1.854                      |

*Source: primary data processed (2025)*

Based on the results of the determination coefficient test in the Model Summary Table above, it is known that the Adjusted  $R^2$  value is 0.570, which means that 57% of the dependent variable (Y) can be explained by the variation of the four independent variables (X1, X2, X1. M, and X2. M) in this regression model. Meanwhile, the remaining 43% were influenced by other factors outside of the research model, which were not included in the analysis. This fairly high Adjusted  $R^2$  value shows that the model has a good ability to explain dependent variables.

## Discussion of Research Results

### *The Influence of Information Technology (IT) Sophistication on the Effectiveness of SIPD Use*

Based on the results of the hypothesis test presented in Table 5.11, the X1 variable (Information Technology Sophistication) has a significance value of  $0.103 > 0.05$ , which means that it is not statistically significant to the effectiveness of the use of SIPD. A coefficient value of -1.54 indicates a negative influence direction, but it is not strong enough to prove the existence of a statistical relationship (Petricelia & Ompusunggu, 2024). Thus, the H1 hypothesis is rejected, because the sophistication of information technology has not been shown to have a significant effect on the effectiveness of the use of SIPD (Pangestu, 2020).

The rejection of this hypothesis can be explained through the perspective of the Technology Acceptance Model (TAM) developed by Fred Davis in 1986. TAM states that user acceptance of technology is influenced by the perception of ease of use and the perception of usability. Even though the information technology used is sophisticated, if users feel that the system is not easy to use, then its effectiveness will not be achieved. This shows that

technological sophistication alone is not enough without the support of users' understanding and skills of the system.

These findings are in line with the research Mantika & Praptiningsih, (2023); Stuart (2020) , which Shawn, (2020) states that the sophistication of information technology (IT) has no effect on the effectiveness of the use of SIPD. This can be interpreted that user involvement and ease of access to the system are the main determinants of successful use, not just the sophistication of the technology.

Based on the results of the analysis, it can be concluded that the H1 hypothesis is rejected, which means that the sophistication of information technology does not have a significant effect on the effectiveness of the use of SIPD. These findings show that although the technology used in the government system is already sophisticated, it does not necessarily have a direct impact on the effectiveness of its use. The effectiveness of SIPD depends heavily on how the technology is accepted and utilized by users, not just in terms of technical specifications or advanced features. This means that factors such as an individual's ability to operate the system, an understanding of the functionality of the SIPD, and the perception of the system's usability and ease (as described in the TAM model), determine its effectiveness more than just the sophistication of its technology. These findings signal for the relevant governments to not only focus on system development, but also on education and training for users so that sophisticated systems can be truly used effectively and optimally.

### ***The Effect of User Participation on the Effectiveness of SIPD Use***

Based on the results of the hypothesis test presented in Table 5.11, it shows that the User Participation variable has a significance value of 0.015 ( $< 0.05$ ) and a t-value of 2.522. This value shows that user participation has a positive and significant effect on the effectiveness of SIPD use. Thus, H2 is supported by data and declared accepted. The acceptance of this hypothesis can be explained through the perspective of *the Technology Acceptance Model (TAM)* theory developed by Fred Davis, which states that the acceptance of information systems is influenced by users' perception of the usefulness and convenience of the system. User participation in the process of designing, developing, and implementing SIPD increases understanding and ownership of the system, which ultimately increases the effectiveness of use. In accordance with the principles of TAM, user engagement can be an early indicator of the success of the system implementation because users feel the system is in line with their needs.

These findings are in line with research that states that user participation has an effect on the effectiveness of SIPD use. This can be interpreted that active user engagement, such as providing input, taking training, and participating in the system implementation process, can improve understanding and ease of operating SIPD. That way, the system is not only an administrative tool, but is actually used to the maximum to support the effectiveness of using the SIPD system. Dewi et al., (2024); Permana & Suryana, (2020) Putu Ardiwinata & Sujana, (2019)

Based on the results of the analysis, it can be concluded that the H2 hypothesis is accepted, which means that user participation has a positive and significant effect on the effectiveness of SIPD use. These findings show that the more active user involvement in the process of using or developing the system, the higher the effectiveness of the system is felt. This is because the users involved usually have a better understanding of how the system works, feel more confident in operating it, and have a sense of responsibility for the successful implementation of SIPD. According to TAM theory, the acceptance and effectiveness of a technology is greatly influenced by the extent to which users feel the system is useful and easy to use.



***The Effect of Information Technology (IT) Sophistication on the Effectiveness of the Use of SIPD with Personal Techniques as a Moderator***

Based on the results of the hypothesis test presented in Table 5.11, the Information Technology Sophistication variable showed a significance value of  $0.103 > 0.05$ , which means that it is not statistically significant to the effectiveness of the use of SIPD. Although the regression coefficient value is  $-1.54$ , which indicates the direction of the negative influence, the influence is not strong enough to prove the existence of a statistically significant relationship. Thus, the H1 hypothesis is rejected, which means that Information Technology Sophistication does not have a significant effect on the effectiveness of SIPD use. When the sophistication of information technology is moderated by the variable of Personal Engineering (X1. M), the significance value is at  $0.055$ , slightly above the threshold of  $0.05$ . Although the beta value is quite high at  $3.15$ , this result is not strong enough to suggest that Personal Engineering significantly moderates the influence of IT Sophistication on the effectiveness of SIPD. Therefore, the H3 hypothesis is also rejected.

This result can be explained through the perspective of the *Technology Acceptance Model* (TAM) developed by Fred Davis, which states that user acceptance of technology is determined by the perception of ease of use and the perception of usability. Even though the technology used is sophisticated, its effectiveness will still be low if users find it difficult to operate it or do not understand its practical benefits in supporting work. This indicates that the sophistication of technology cannot stand alone in creating the effectiveness of individual abilities and a personal approach in using technology is a key factor. The insignificance of the Moderation variable of Personal Engineering also shows that even if users have a certain personal approach to using the system, it is not enough to strengthen the relationship between the sophistication of technology and the effectiveness of using SIPD. This may be due to a lack of system personalization training, a limited user understanding of advanced features, or an uneven adaptation of the user to a particular technical approach.

Hail also reinforces the findings of , which found that moderation variables such as Personal Engineering do not necessarily strengthen the relationship between technological sophistication and the effectiveness of information system use, especially if the user does not have adequate technical abilities or preferences in adjusting to the system. Putri & Juliarsa, (2021) (Sasongko, 2020)

Thus, both in terms of technological sophistication and in terms of personal user techniques, it is not enough to rely only on technical factors or individual preferences. The successful implementation of the local government information system (SIPD) is greatly influenced by the readiness of human resources, continuous training, and integration between technology and the real needs of users in the field (Prayoga, 2017; Qomariah, 2022).

Although the technology used is relatively sophisticated, it does not necessarily have a direct impact on the effectiveness of its use. Factors such as user understanding, adequate training, and perception of the ease of the system are more important than the sophistication of the technology.

***The Effect of User Participation on the Effectiveness of Using SIPD with Personal Techniques as a Moderator***

Based on the results of the hypothesis test presented in Table 5.11, the User Participation variable has a significance value of  $0.015 (< 0.05)$  and a t-value of  $2.522$ , which means that user participation has a positive and significant effect on the effectiveness of the use of the Local Government Information System (SIPD). Thus, the H2 hypothesis is accepted, which indicates that the higher the level of user involvement, the higher the effectiveness of SIPD use. This result was strengthened by the results of the moderation interaction between user participation and personal technique (X2. M) which has a significance value of  $0.020 (< 0.05)$

and a t-value of -2.410. Although the direction of the coefficient is negative ( $B = -0.175$ ), but because the significance value is below 0.05, the interaction has a significant effect, so the H4 hypothesis is accepted. This means that Personal Techniques have been shown to moderate the relationship between user participation and the effectiveness of SIPD use (Sayuti et al., 2023).

This finding can be explained through the *Technology Acceptance Model* (TAM) framework by Fred Davis, which emphasizes that the acceptance of information systems is strongly influenced by the perception of usability and ease of use (Rabbani & Najicha, 2023). User participation in the design, development, and implementation process of SIPD increases a sense of ownership and understanding of the system (Sayekti & Putarta, 2016). When this is accompanied by appropriate personal techniques (e.g. adaptive approaches, experience-based training, or system utilization strategies tailored to individual characteristics), the effectiveness of the use of the system will be more optimal. However, the presence of a negative interaction coefficient value ( $B = -0.175$ ) indicates that personal technique plays a negative moderator, or in other words, weakens the positive influence of user participation on the effectiveness of SIPD. This can happen when users who rely too much on personal techniques (e.g., informal approaches, personal intuition, or old habits) actually hinder the standard of using systems that have been systematically designed. In other words, if the personal techniques used are not in accordance with the operational mechanism of SIPD, then the effectiveness can decrease even if the user is actively involved (Maceli & Burke, 2016).

These findings are in line with research that states that user participation has an effect on the effectiveness of SIPD use (Paranoan et al., 2019). However, in a context moderated by a personal approach, these results also reinforce the findings of Hakim & Prabowo (2020) who affirm that personalization of system use can be effective if it is aligned with the system, but counterproductive if it is contrary to the operational design of the information system (Marikyan & Papagiannidis, 2024). Critically, these findings reflect that high user participation does not necessarily have a positive impact on the effectiveness of system use, especially when moderated by external factors such as non-standardized personal techniques. In other words, the success of an information system is determined not only by how much user involvement it is, but also by how that engagement is directed and facilitated within the right operational framework. When personal techniques are used inappropriately or indirectly in line with the established flow of the system, not only the effectiveness of the system is threatened to decrease, but also the consistency, accuracy, and sustainability of the use of SIPD in the long term. Dewi et al., (2024); Saputra et al., (2024); Syamsa et al., (2024)

## CONCLUSION

Based on the findings of this study, it can be concluded that user participation plays a critical and statistically significant role in enhancing the effectiveness of the Regional Government Information System (SIPD), whereas the sophistication of information technology alone does not exert a significant direct influence. The research further reveals that personal techniques act as a significant moderating variable in the relationship between user participation and SIPD effectiveness, albeit with a negative coefficient, suggesting that improper or misaligned personal approaches may weaken the positive impact of user involvement. These results underscore that the success of SIPD implementation relies more heavily on human and participatory factors—such as engagement, training, and adaptive strategies—than on technological advancement alone.

For future research, it is recommended to expand the scope of the study to include a more diverse range of local governments across Indonesia to enhance the generalizability of the findings. Additionally, investigating other potential moderating or mediating variables—such

as organizational culture, leadership support, or system customization—could provide a more comprehensive understanding of the factors influencing *SIPD* effectiveness. Longitudinal studies are also recommended to examine how these relationships evolve over time, particularly as users become more familiar with the system and as technological updates are implemented. Such efforts would contribute to developing more robust and context-sensitive strategies for successful digital transformation in the public sector.

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