

The Effectiveness of Link Village Financial System (Siskeudes) and Cash Management System (CMS)

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Abstract—This qualitative case study research aims to analyze the effectiveness of using the Village Financial System (Siskeudes) application, namely Siskeudes Link, and Cash Management System (CMS), identify the constraints, and find solutions to these constraints using the DeLone and McLean Information System Success Model. The research data were collected through direct interviews with seven informants from five villages in Malang Regency who had provided system assistance, direct observation of system usage, and implementation documentation. This study finds that Siskeudes Link and CMS had been running quite effectively both in terms of system quality and information quality, although constraints remained. In addition, the quality of service was also adequate even though users felt that additional features were needed. The use of the system had also been maximized according to the needs of the village apparatus, while the net benefits had been felt by users, although the system did not affect village expenditures and decision-making. Of the 21 indicators analyzed, 19 were found to be effective. However, 10 indicators still encountered challenges, including double transactions and input process issues, which have been addressed with data import and feature enhancements.

Keywords: Siskeudes Link; CMS; Effectiveness; DeLone and McLean IS Success Model; Villages in Malang Regency

1. INTRODUCTION

Village is one of the government entities in Indonesia, established with the objective to improve regional welfare through effective public participation, equitable development, and the empowerment of local communities. The enactment of Law No. 6/2014 on Villages provides a new foundation for village governance by providing clear direction in resource management, increasing community participation, and empowering villages to achieve independence. The status of village government is regulated in The 4th Amendment of the 1945 Constitution of the Republic of Indonesia which affirms that the states recognizes and respects each region to regulate and manage its own government affairs according to principles of autonomy and assistance tasks such as independent decision-making, especially in village culture, social, and economic development.

The Oxford Dictionary define effectiveness as the extent to which an action or process accomplishes its aiming objectives or yields a favorable outcome. Village economic growth relies heavily on effective and transparent financial management, as village funds are the main financial resource supporting development efforts. Village funds aim to provide encouragement and stimulation so that village governments can develop and create sources of income for the village (Imawan & Mas'adah, 2021). Village funds allocated by the central government, sourced from *Anggaran Pendapatan dan Belanja Desa* (APBDes) or Village Revenue and Expenditure Budget that are consistently provided annually to support development at the village level. The funds must be managed effectively, transparently and responsibly to ensure that the budget is actually used to develop the village and improve community welfare. With this responsibility, village governments need to strengthen their planning, monitoring, and reporting systems so that the use of funds is in accordance with regulations and can provide maximum benefits for village economic and social growth.

The Village Finance System (Siskeudes) is an application developed by the Badan Pengawas Keuangan dan Pembangunan (BPKP) in collaboration with the Kementerian dalam Negeri (Mendagri) or Ministry of Home Affairs to be distributed to all villages in Indonesia in 2016. Several villages have adopted the application since its initial launch, it took time to ensure that all villages in Indonesia were fully utilizing the system. Similar to Malang Regency, which has been using the system since 2017. Through Siskeudes application, every village in Malang Regency can prepare and manage the APBDes in a more structured manner. In early 2024, the Village Financial System (Siskeudes) Link and CMS application was introduced in Malang Regency as a development of the previous Siskeudes application. This collaboration resulted in the development of the Siskeudes version 2.06 application, which is now integrated with Cash Management System (CMS). Malang Regency is one of the regions with the largest number of villages in East Java. In 2022, Malang Regency has 378 villages spread across 33 sub-districts. Due to the large number of villages in Malang Regency, this research can serve as a reference for other regions in improving their village financial systems.

Siskeudes Link is a service created by Bank Jatim that can be used online and has different functions from Siskeudes Desktop. Siskeudes Link has a function as data validation before being transacted in the CMS. The validation process is carried out by the village officers in relation to the implementation of the activities, so that the cash expenditures can be properly identified and recorded. Aside from Siskeudes Link, CMS is a banking service application that functions a tool for recapitulating data from transactions that occur by internal and external parties (Thamrin, et al., 2023). The implementation of CMS at the village level is a strategic step to modernize and strengthen village financial governance in Indonesia (Devie Melavanic, et al., 2024). CMS has several benefits, including enabling integration between Siskeudes and the banking system, transparency of village financial transactions, managing village finances, especially recording and reporting efficiency, and increasing accountability. Using the CMS-based Siskeudes application, all village cash

transaction can be recorded and monitored in real-time. The implementation of CMS enhances accountability among government personnel and helps safeguard against the risk of financial misuse in public administration.

A number of prior studies have investigated the Siskeudes application, such as Faudiana, et al., (2024) which indicate that the Siskeudes application has been effective and efficient from planning to accountability stages. Ariyanto, et al., (2022) shows Siskeudes improves village financial accountability through trust and system quality, but limited service quality shows it's still a developing system. Kusmayadi (2023) found that the implementation of the Siskeudes application was highly effective in Wandanpuro Village, as it improved village financial management from the planning stage to reporting. Meanwhile Irnanta and Putri (2021) found that the use of Siskeudes in Tanjungsari Village since 2019 has improved financial accountability, despite some human resource and system challenges. In addition, research on the Siskeudes application using the DeLone and McLean IS Success model has been conducted by Candrawati and Alfian (2024) who found that the implementation of Siskeudes in villages within Pare District was not yet effective, although it showed some positive aspects. Nofita and Veri (2024) using quantitative methods which show that information quality has a positive and significant effect on the use of Siskeudes, while there is no significant influence between information quality and user satisfaction. Other studies have also explored the implementation of the CMS application, such as Devie Melavanic, et al., (2024) research indicated that the implementation of the cashless policy through CMS in villages within Kubu Raya Regency improved financial efficiency, transparency, and accountability, despite challenges such as users' adaptation levels. Similarly, Thamrin, et al., (2023) using a quantitative approach, found that CMS had a positive impact on the quality of financial reports, internal control, and village financial management.

The emergence of this new phenomenon in Malang Regency has led to several new challenges. Firstly, some village officials do not have sufficient knowledge and competence in finance and information technology. Second, there are several potentials for optimizing the system in terms of its features, functionality, and security to enhance the efficiency of financial management. Third, the reliability and accountability of the resulting data also remain a concern, considering that data accuracy and transparency are crucial for the villages governance. In addition, another challenge lies in the long-term implications of CMS, including how well the system can continue to adapt to evolving needs and regulations, and whether it can remain effective and relevant over time. Considering the new phenomenon of system development in Malang Regency, research is needed to comprehensively assess the effectiveness of the newly implemented system, which are Siskeudes Link and CMS.

2. RESEARCH METHODS

2.1 Research Methodology

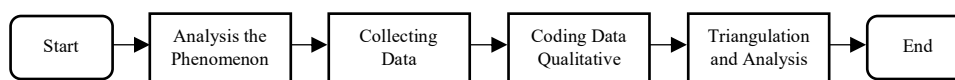


Figure 1. Research Methodology

This study employs a qualitative approach through a case study design, allowing for an in-depth understanding of how Siskeudes Link and CMS are implemented in village financial governance. According to Rusandi and Rusli (2021), qualitative research methods focus on an in-depth understanding of a problem. Based on this definition, it can be concluded that qualitative method research is data collection to provide a deep understanding or interpret a phenomenon with other supporting instruments. Meanwhile, the case study approach according to Rusandi and Rusli (2021) is research that aims to describe specifically related to a case or phenomenon along with its chronology in the field. As presented in Figure 1, this research focuses on the phenomenon of adopting a new system, viewed through the perspectives of its users.

The data sources in this study are divided into primary data and secondary data. Primary data sources obtained through interviews and documentation, as well as secondary data sources obtained through other written documents. The data were collected through semi-structured interviews with informants who have direct experience in operating the system, namely Siskeudes Village Operators and Village Treasurers, with a total of seven informants. The researcher conducted both direct and indirect interviews with Siskeudes Village Operators and Village Treasurers, using the 21 indicators from six dimensions of the DeLone and McLean IS Success Model as a reference. Additional questions were asked when the researcher did not fully understand the informant's response or when further information was needed.

Observations involving human behavior, work processes, natural phenomena, or when the number of respondents is too large to observe directly. In this research, a non-participatory observation was conducted by the researcher to examine the use of Siskeudes Link dan CMS, without direct involvement in the implementation process. Therefore, the researcher only acts as an observer and pays attention to the use of Siskeudes Link and CMS shown by the informants.

Document analysis was also conducted, involving the collection and review of materials relevant to the research topic. Documents in research can be various types of written sources, archives, or visual materials relevant to the research topic. These documents were obtained from both official and unofficial sources.

According to Assyakurrohim, et al., (2023), data analysis is a process that aims to give by organizing, compiling, classifying, giving codes or signs, and categorizing data into certain parts based on the established classification, so as to produce findings that are relevant to the problems that have been formulated. The results of the data obtained will be

analyzed based on Miles and Huberman's qualitative data analysis, namely data reduction, data presentation, and data conclusion and verification.

Ensuring the credibility and validity of the data is essential to prevent any doubts regarding its accuracy; therefore, a validity check is often applied in qualitative research. Validity refers to the extent to which the results of a data collection method can be trusted to accurately reflect the reality being studied. In order to ensure that the data obtained is valid, the researcher uses triangulation of data sources which will be compared with one another in order to obtain the appropriate and required results.

2.2 DeLone and McLean Information Success Model

The DeLone and McLean Information Success Model was introduced in 1992 and was designed to provide a comprehensive understanding of the success and effectiveness of information systems. Due to many studies that tested the cause-and-effect relationship between dimensions in the 1992, DeLone and McLean updated their model in 'The DeLone and McLean Model of Information Systems Success: A Ten-Year Update' which released in 2003. This model can help measure the effectiveness of using information systems through various dimensions, which are illustrated in Figure 2.

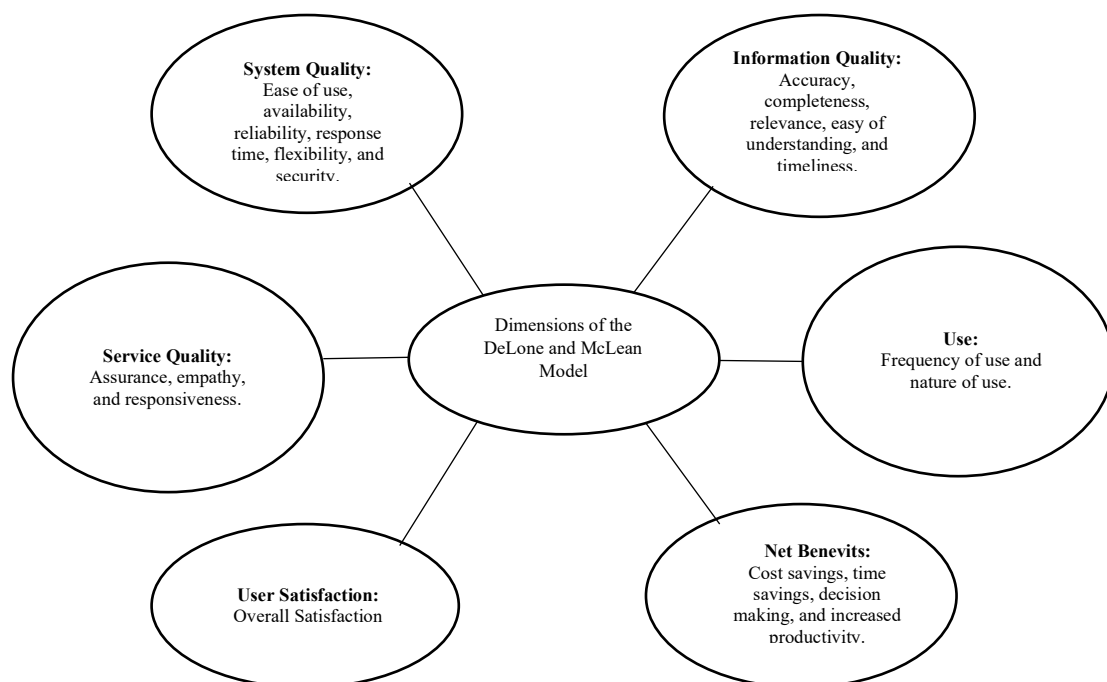


Figure 2. Research Framework

- System quality referring to the system's ability or performance in delivering information that meets the needs of its users (Candrawati & Alfian, 2024). The indicators in this dimension are ease of use, availability, reliability, response time, flexibility, as well as security.
- Information quality is referring to the quality of the results produced by the system (Nofita & Veri, 2024). The indicators in this dimension are accuracy, completeness, relevance, easy of understanding, and timeliness.
- Service quality is referring to users' expectations of the service they will receive from the system developer (Nofita & Veri, 2024). The indicators in this dimension are assurance, empathy, and responsiveness.
- Use is referring to how often an information system is used by its users (Nofita & Veri, 2024). The indicators in this dimension are frequency of use and nature of use.
- User satisfaction is referring to an overall evaluation of the user's experience with the system used, where user satisfaction will affect their intention to use the system again (Permana & Mudiyantri, 2021). This dimension can be assessed using the overall satisfaction indicator.
- Net benefits refer to the value of an information system can be measured through the quality of the outputs and the success or performance improvements experienced by users (Candrawati & Alfian, 2024). The indicators in this dimension are cost savings, time savings, decision making, and increased productivity.

3. RESULTS AND DISCUSSION

3.1 Description of Location

Malang Regency is the fourth largest regency on the island of Java and the second largest in East Java after Banyuwangi Regency, with a total area of 3,473.439 km². Geographically, Malang Regency is located between 112°17'10.90" and

112°57'00.00" East Longitude, and between 7°44'55.11" and 8°26'35.45" South Latitude. It is bordered to the north and east by Pasuruan and Probolinggo Regencies, to the east by Lumajang Regency, to the west by Blitar Regency, to the northwest by Kediri and Mojokerto Regencies, and to the south by the Indian Ocean. As one of the largest regencies in East Java, Malang Regency consists of 33 districts, comprising 12 urban villages (*kelurahan*) and 378 rural villages (*desa*), making it one of the regions with the highest number of villages in the province. This study was conducted in one village from each of five districts in Malang Regency: Bedali Village, Mangliawan Village, Purwoasri Village, Tawangasari Village, and Tlogosari Village.

3.2 Transaction Process that Support Effectiveness

The transaction process through Siskeudes Link and CMS carried out in Malang District must be followed by a disbursement process. Village funds need to be disbursed so that they can be used in various transactions that support the implementation of village government. The implementation of initial administration, the village government will conduct planning for the following year which is carried out in December of the current year by making *Rencana Anggaran Biaya* (RAB) or Cost Estimation Plan, matrix, *Rencana Anggaran Kas* (RAK) or Cash Budget Plan, and other important documents. After preparing the work program or planning activities for the upcoming year, the village government must hold deliberations with the community and the Badan Permusyawaratan Desa (BPD) so that the APBDes can be approved before the deadline, which is 31 December of the current year.

Funds for an activity received by the village government may be disbursed in accordance with the prescribed procedures. This process begins by using Siskeudes Desktop to create a *Surat Perintah Pembayaran* (SPP) that contains initial data such as the recipient of the money, budget, or tax amount. In addition to the SPP, there are other documents required such as the *Surat Pernyataan Tanggung Jawab Belanja* (SPTJB) or Expenditure Accountability Statement and *Surat Permohonan Pencairan* (SPM) or Disbursement Request Letter. The system then performs validation on either the draft or the final version. The documents that have been created are then printed to be uploaded on Siskeudes Link in PDF form to validate what has been inputted previously.

After validation in Siskeudes Link, it will integrate to the CMS. CMS consists of two types, one of which is designated for the village head and is commonly referred to as CMS Approval is a special account for the village head that is used to approve the disbursement of activity funds to be carried out, and the Treasurer's CMS is used for transaction execution. The treasurer can make transactions when the token code filling page has been filled in. The token code can be accessed through the CMS Token installed on the cell phone. After inputting the token received and pressing the final button, the money is automatically disbursed or transferred.

3.3 System Quality of Siskeudes Link and CMS

According to Alwi, et al., (2023), system quality is a characteristics of information system that is expected by its user. System quality plays an important role in assisting the implementation of user activities. Good system quality must be carefully designed to optimize the use of applications or systems. System quality can be assessed using six assessment indicators. The findings from the research conducted in Malang Regency are as follows:

- a. According to Candrawati and Alfian (2024), The ease of use of the Siskeudes application is influenced by user competence in adapting to the system. A user-friendly system is accessible to users who lack a background in technology, enabling them to understand and operate it with ease. The majority of Siskeudes operators and village treasurers stated that the system is easy to use in village financial administration and does not make it difficult if users already understand how to use it. One of the interview excerpts was provided by Mr. AH, who served as one of the informants in this study. "... Of course with the existence of Siskeudes Link and CMS, it makes it easier for me, especially as a village finance/treasurer who is also a Siskeudes Operator, it makes it easier to, what, um... manage village finances ..." (10/12/2024), he said. This has shown effectiveness in the system quality indicator. However, this effectiveness is not fully optimal because there are still challenges that require additional efforts by users to adapt to the system because they are accustomed to using only one transaction system. Therefore, users must use the system regularly so that they get used to operating it.
- b. Availability indicates the degree to which a system remains continuously accessible and operational whenever the user requires it. Siskeudes Link and CMS demonstrate effective availability, as they can be accessed daily and from various locations to support operational activities. However, users reported occasional technical issues such as access interruptions and slow server performance. This was explained by Mr. AH, one of the informants, who stated that, "... Well, um... the problem, first, is with the server. So, this server usually comes from Kominfo. So, when there is trouble or an error with the Kominfo server, we can't do anything. So, the application can't be used. Second, the problem is the local network. So, the network in the village, um... whether it's stable or not. If it's not stable, then we have to look for another network that is more stable. ..." (10/12/2024).
- c. As a system becomes more reliable, users tend to develop greater confidence in its performance. This is because reliability occurs when there are no errors in the system. Operators and treasurers explained that Siskeudes Link has a data verification feature to detect errors displayed as red symbols. However, there were some problems such as unclear transaction status when there was a disruption, and the emergence of double transactions due to the absence of validation or detection for receipt numbers. The identification of the issue was informed by an interview with Mr. MA, who stated that, "... After the error, we don't know whether the error transaction actually made it into the

vendor's account or not. ..." (03/12/2024). This shows that the reliability of the system is basically effective, but there are still technical problems that need to be re-evaluated.

- d. The ability of the system to quickly process user inputs and provide immediate responses and confirmations is an essential factor in assessing response time. Siskeudes Link and CMS have not been effective in responding to user commands. According to one informant, the system still takes several seconds to respond to commands, resulting in noticeable waiting time. Mr. E stated, "...because usually, when we click or wait for confirmation on whether it was successful or not. That alone can take around 10 to 15 seconds just to wait for that. ..." (5/12/2024). The waiting time is influenced by network factors and the hardware that is used.
- e. A system is deemed effective if it can adjust to changing circumstances and user demands. In its role as a non-cash transaction platform, CMS is designed to align with updates from Siskeudes Desktop to ensure consistency and prevent reporting errors. This indicates that the system's flexibility is effective in adapting to changing conditions.
- f. Cybersecurity breaches are a common issue faced by users of information technology. These breaches raise concerns among users, requiring them to exercise caution when using the system. System users are worried that the system is misused by irresponsible parties, so users take preventive steps to minimize it. Apart from user prevention efforts, the system enhances security by adding feature auto logout and employing feature password during login to protect against unauthorized access as shown in Figure 3. Therefore, from a security perspective, the system is effective in safeguarding data by implementing preventive measures against potential issues.



Figure 3. Login feature interface on the Siskeudes Link (Source: Village apparatus, 2024)

3.4 Information Quality of Siskeudes Link and CMS

Information quality is crucial because the data produced will be the main reference for the organization. The information quality dimension focuses on the output generated from the information system (Permana & Mudiyantri, 2021). The objective of evaluating information quality is to ascertain if the information provided by the system meets the users' requirements (Viontita & Er, 2024). Therefore, the dimensions of information quality can be assessed through accuracy, completeness, relevance, easy of understanding, and timeliness indicators. The results of the research conducted on five villages in Malang Regency are as follows:

- a. Accuracy refers to the degree to which the output of an information system reflects correct and error-free results. The accuracy of the information generated by Siskeudes Link and CMS has proven to be effective and consistently reflect the data entered into the system. One of the informants stated that, "... So we have to be extra careful, and for other payments, we need to be thorough, Miss, because we input everything from the beginning until the transaction is completed, Miss." (03/12/2024). Therefore, users must be careful in ensuring the accuracy of the data inputted in the system.
- b. Comprehensive information ensures that every transaction is accurately recorded, thereby minimizing the risk of recording errors. The data in CMS becomes more complete if the transaction data is recorded properly in Siskeudes Desktop. It shows that the completeness of information generated by the system is effective. The user's way of minimizing errors is by reconfirming the manual records made by village officials with the records in the system.
- c. Relevance refers to the extent to which information fulfills the requirements of its users. One way to assess the relevance of information in the village context is to determine whether the information produced aligns with the specific needs of the village. According to users, the information produced by Siskeudes Link and CMS is appropriate and fulfills the needs of the village, which indicates effectiveness in terms of relevance, such as reports that are complete and sufficient for auditing purposes, more organized, and with supporting documents that are easily accessible.
- d. Based on research conducted by Hasliani and Yusuf (2021), information can be considered understandable when financial data is presented clearly, using forms and terms that are appropriate to the user's level of comprehension. The transaction evidence generated by CMS is considered effective due to its clarity and ease of comprehension. Mr. AH stated that, "Yes, it's easy. Everything is clearly stated — the recipient, the budget amount, the tax deductions, the net amount received, the receipt number, and the tax billing number. All of that is clear." (10/12/2024). The evidence of transactions that is generated similar to the evidence generated by mobile banking with complete content

and in line with the needs. The activity reports are generated clearly and concisely, following an easy-to-understand format suitable for public presentation.

- e. Automation and integration in cash management systems play a crucial role in ensuring timely and accurate financial data processing and reporting (Thamrin, et al., 2023). Operators and village treasurers assessed that the evidence of transactions generated can be obtained in real-time after the transaction is completed through direct printing or by downloading the evidence as presented in Figure 4, which indicates the effectiveness of the CMS in terms of timeliness. Additionally, the transfer history feature enables users to retrieve financial information efficiently.

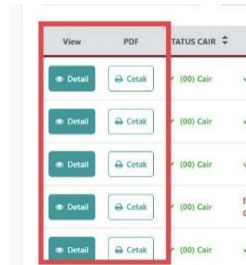


Figure 4. Print and download feature in CMS (Source: Village apparatus, 2024)

3.5 Service Quality of Siskeudes Link and CMS

According to Kalew, et al., (2022) service quality emphasizes users' expectations and impressions of the services they actually receive. Service quality illustrates the relationship between technicians or system developers and its users. Good service quality can increase system usage, and vice versa. This dimension can be assessed with three indicators:

- a. Assurance reflects the level of competence, respectful behavior, and reliability demonstrated by technicians when offering quality service (Setiono & Hidayat, 2022). Therefore, technicians play an important role in ensuring the service runs well, especially certainty in technical support. The majority of users stated that there were technicians from the regency government and Dinas Pemberdayaan Masyarakat dan Desa (DPMD) to serve users. The technician is a Siskeudes Operator from DPMD who acts as a contact person. The assurance provided by the technician is effective because the solutions provided by the technician are easy to understand and there is technical guidance to maximize understanding of the use of the system.
- b. Empathy is one aspect of service quality that emphasizes the ability to compasses the ease of forming connections, maintain clear communication, and user understanding (Setiono & Hidayat, 2022). Communication is carried out via WhatsApp or telephone. According to Ms. I, "Yes, as for the DPMD, thankfully the staff are very welcoming. So, um... they're actually not technicians, what is it... they're operators. Fellow operators, so they... what is it... It's like, for us, when we consult, it's not only about CMS. ..." (04/12/2024). From this, it can be inferred that users perceive the communication process has been established effectively and delivered in a friendly manner. This shows that technicians are considered fully effective in the empathy aspect.
- c. Responsiveness refers to a company's ability to offer clear and diverse programs, clearly communicated waiting times, delivers accurate, and comprehensive information to customers (Setiono & Hidayat, 2022). Technician responsiveness in handling problems faced by users is an important factor in ensuring the quality of system services. The information provided by technicians is delivered quickly to users. This indicates that the responsiveness indicator has been effective. However, some informants stated that sometimes there are delays caused by the response from Bank Jatim which takes time, so that further evaluation needs to be done.

3.6 User Satisfaction of Siskeudes Link and CMS

According to Permana and Mudiyaniti (2021), user satisfaction refers to a comprehensive assessment of the user's interaction with an information system, indicating the extent to which the system meets user expectations and fulfills their needs. Usually, user satisfaction measures how satisfied users are with the system (Viontita & Er, 2024). If the user is satisfied with the experience obtained or the more positive the experience is felt, the greater the chance that the information system will be accepted. The results showed that some users were satisfied (effective) and some were not (ineffective). Users were satisfied because Siskeudes Link and CMS were considered sufficient to fulfil financial-related needs, system features were easy to use, made it easy to understand data, the required reports were fulfilled, and transaction efficiency. Meanwhile, some users were dissatisfied because the data input process was time-consuming because it had to be done one by one, there was no data import feature, it was easy for double transactions to occur, it was difficult to get evidence if an error occurred, and there was no timer for the auto login feature.

3.7 Use of Siskeudes Link and CMS

According to Viontita and Er (2024), "use" pertains to evaluating user interaction or behavior while utilizing the system. User interaction includes factors such as frequency of use, duration, and the range of features accessed. High usage indicates that an information system is successfully adopted. The findings from the research conducted in Malang Regency are as follows:

- a. Frequency of use can be identified through the average duration spent using Siskeudes and its role in village financial management (Candrawati & Alfian, 2024). Each user has a different frequency of use of the system. The majority of users use Siskeudes Link and CMS almost every day because transactions can be made without delay. In addition, some users schedule transactions or rely on the timely execution of those transactions. This indicates that the system has been used effectively, as users engage with it almost daily.
- b. The nature of use relates to what a system is used for by users, especially when the system can be used in various contexts. When using Siskeudes Link and CMS, users used the system for a variety of reasons. The majority users answered that they used Siskeudes Link and CMS for transactions and checking balances. In addition, the system is utilized not only to correct transactions but also to serve as evidence of transactions. This demonstrates the system's effectiveness through its diverse range of uses.

3.8 Net Benefits of Siskeudes Link and CMS

Based on research conducted by Elazzaoui, et al., (2024), one type of net benefit is the benefit perceived by the organization or its personnel, which includes four key aspects: cost reduction, time efficiency, improved decision-making, and enhanced productivity. The findings from the research conducted in Malang Regency are as follows:

- a. An effective system can help reduce operational expenditures required to complete tasks, allowing users to perceive greater benefits compared to the costs incurred. Users felt that Siskeudes Link and CMS did not affect cash expenditure because the processes implemented by the tools were still the same. However, the majority of users thought that Siskeudes Link and CMS increased cash expenditures, such as parking fees, printing costs, and stationery costs, indicating that the system has not provided effective net benefits. This was conveyed by Ms. I, one of the informants, who stated that "... In the past, the bankbook would only show one item — I mean, one SPP. But now, it's not like that. It's per activity." (04/12/2024).
- b. The term "time" in net benefits describes how the system reduces the amount of time needed to finish tasks (Elazzaoui, et al., 2024). Village officials no longer need to queue at the bank after using Siskeudes Link and CMS because they can be accessed at any time without fear of holidays, so the system is said to be effective. However, the system has a long flow that is quite time-consuming in implementing a series of verifications for a transaction.
- c. According to Thamrin, et al., (2023), an effective cash management system is able to provide the information needed to support decision making related to financial management. Overall, the system is said to be ineffective because the information generated by the CMS does not affect financial decision-making in the village. This is because decision-making is carried out before the budget is approved, which is in accordance with the village RAB. However, decision-making is carried out differently in the case of incidental needs, as explained by one of the informants. "... But for incidental expenditures, we refer back to the village regulations, such as for construction — we wait for the village head. ... We wait for the decision from Village Head on when it will begin. ..." (10/12/2024), said Mr. AH.
- d. Productivity is a person's ability to produce outputs by maximizing available resources. Productivity is the ability of village officials to utilize or maximize existing information systems to complete tasks in a certain amount or level. The use of Siskeudes Link and CMS causes users to be more productive with more reports produced, more alert in managing funds, and easy access to the system which indicates that the system is effective. However, users also argued that the use of the system only helped alleviate a little work, so it was the same as before using the system.

3.9 Challenges on Siskeudes Link and CMS

Based on the results of the analysis of the effectiveness of the implementation of Siskeudes Link and CMS using the DeLone and McLean IS Success Model, this study found several challenges that still occur in the field. A significant obstacle mentioned by informants is that the transaction process often occurs double transactions or double recording, which is mentioned in the reliability indicator and user satisfaction or overall satisfaction. The informant mentioned that this obstacle was caused by the system not being able to detect the same receipt number, as well as the auto logout feature during the transaction which caused the transaction to not be recorded perfectly and resulted in users making transactions more than once. These challenges can be overcome by adding an automatic validation feature for the receipt number, as well as a visualization of the auto logout time.

Another obstacle is found in the user-friendliness and overall satisfaction indicators, which found that transactions can only be inputted one by one because there is no data import feature. This constraint causes the input process to be quite time-consuming for users. Moreover, the flow to carry out one transaction is quite long. This can be overcome by adding an import feature

In the availability indicator, there are two challenges that are significant enough to hinder the implementation of the system, namely server capacity and frequent errors in viewing evidence of transaction history. This obstacle can be overcome by increasing the server in each system. The obstacle in the responsiveness indicator leads to the slow response given by Bank Jatim when making improvements or updates. This obstacle arises from the fact that system-related issues cannot be reported directly to Bank Jatim, but must be conveyed through a contact person or district-level Siskeudes operator. To overcome this, a WhatsApp communication group involving Bank Jatim can be created, or alternatively, a complaint form can be developed that connects users directly to both Bank Jatim and Malang Regency government.

Another obstacle found in the cost-saving indicator is that Siskeudes Link and CMS increase village treasury expenses. This is due to the fact that each transaction requires three to five sheets of paper to be printed. Therefore, this

constraint can be minimized by optimizing the use of digital documents in some internal reporting and only printing documents required by regulations.

4. CONCLUSION

Measuring the effectiveness and success of Siskeudes Link and CMS using 21 indicators of the DeLone and McLean model is considered effective. The quality of the system is considered easy to use although there are some challenges, always available every day for 24 hours, enough to minimize errors even though the system often experiences double transactions, the system needs time to respond to commands, the system can keep up with changes, and there are security features such as in m-banking. The quality of information produced is accurate depending on data input, the output is more completed and detailed, in accordance with village needs, easy to read and understand, and information can be obtained by print or download. In terms of service quality, there are technicians from the Malang Regency government and DPMD who participate in the implementation of technical guidance, communication with technicians can be done via telephone and WhatsApp messages, and the response given by technicians is quite fast, although further evaluation is needed. User satisfaction with Siskeudes Link and CMS that the features in the system have been helpful to users, but there are still some factors that cause dissatisfaction such as the absence of data import features. The use of the system by village officials is almost daily and some are scheduled for uses such as checking balances, transactions, corrections, and the need for proof of transactions. While village officials acknowledged improved time efficiency and productivity, most also reported increased administrative costs and no significant impact on financial decision-making. Based on these results, challenges were found in several indicators, such as double transactions, time-consuming one-by-one input processes, server capacity and frequent errors, slow response of system builders, and increased village cash expenditure due to the use of paper. Therefore, solutions were found to minimize the challenges found, such as adding automatic validation features and visualization of auto logout time, adding data import features, upgrading servers, creating groups or complaint forms, and optimizing the use of digital documents. In relation to these findings, further research could broaden the perspective by applying alternative models or theories and incorporating the viewpoints of system developers, technicians, and inspectorates to enrich the overall results.

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