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Digital Governance And Education Staff Performance: Evidence From An Electronic Correspondence System At Universitas Negeri Jakarta

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Abstract

Indonesian public universities with legal entity status (PTN-BH) are expected to combine wider autonomy with stronger accountability, and digital administration has become one of their main tools. Universitas Negeri Jakarta introduced the Electronic Correspondence Information System (SIPERAN) to manage letters, leadership dispositions, document tracking and digital archives. This study evaluates SIPERAN as an instrument of digital governance and tests how system quality, information quality and service quality affect the performance of education staff, the system's main users. Based on the DeLone and McLean information system success model, an explanatory quantitative design was used. Questionnaires were distributed to the 58 active users, and 54 complete responses (93.1%) were analysed with partial least squares structural equation modelling. The three quality dimensions together explained 67.4% of the variance in staff performance. Service quality had a positive and significant effect ($\beta = 0.666$; $p < 0.001$), whereas system quality and information quality were positive but not significant. Once a system is part of daily routine, performance appears to depend more on user support than on further technical refinement. The study extends the success model to internal administrative systems in Indonesian higher education and proposes a service-oriented model of digital governance.

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A. Introduction

Digital transformation has become a central agenda for universities. Early discussions focused on the use of digital media by students and lecturers in teaching and learning (Bond et al., 2018), but the agenda now reaches the way institutions manage academic affairs, administration, finance, human resources and public services. Reviews of the field describe digital transformation in higher education as a change in business processes, organisational structures and work culture that is supported by integrated information technology (Benavides et al., 2020; Alenezi, 2021). For this reason, the success of digitalisation depends on institutional strategy and on the capacity of people to work with new systems, not only on the purchase of software and infrastructure (Mohamed Hashim et al., 2022). Universities are now expected to function as knowledge-based organisations that rely on their ability to manage information well, and digital systems are one of the main ways they do so. In this sense,

digitalisation affects not only what students and lecturers experience in the classroom but also the daily work of the administrative staff who keep the institution running.

These changes are often discussed under the label of digital governance. Mergel et al. (2019) describe digital transformation in the public sector as a process that changes how organisations design services, manage resources, use data and relate to the people they serve. In education, software and databases have become part of the way institutions are governed, because they make information more structured, measurable and traceable (Williamson, 2015). Studies of digital government show that organisational, technological and human factors drive this transformation, while legal and organisational constraints can slow it down (Tangi et al., 2021). The idea of a smart or digitally mature university captures the same point: an institution benefits from technology when it can connect its information systems into one governance ecosystem, produce accurate data, support collaboration and improve the services it offers to its users (Alenezi, 2021). Reviews of higher education report similar patterns: digital initiatives cover teaching, research and administration, but many universities still face barriers related to strategy, resources, staff skills and organisational culture (Fernández et al., 2023; Gkrimpizi et al., 2023).

In Indonesia, the demand for stronger digital governance has grown as a number of public universities have changed their status to legal entity state universities, known as Perguruan Tinggi Negeri Badan Hukum (PTN-BH). This status gives universities wider autonomy over their resources, but it also requires higher accountability, efficiency and service quality. Evidence from Indonesian universities shows that digital technology and, above all, digital strategy shape the success of digital transformation, with leadership and governance identified as priorities (Nurjana et al., 2025), and that leadership direction, digital service tools and staff capacity work together when academic services are reformed (Mozin et al., 2026). Universitas Negeri Jakarta (UNJ), a PTN-BH that aims to build an international reputation, has placed digital transformation within its institutional development strategy. One concrete step is the Electronic Correspondence Information System, Sistem Informasi Persuratan Elektronik (SIPERAN). The system integrates incoming and outgoing letters, leadership dispositions, document tracking and digital archiving, and it is expected to reduce paper use, speed up administrative work, improve the accuracy of information and strengthen coordination between units. For a PTN-BH, these goals are directly linked to accountability, because correspondence, dispositions and archives are the records through which decisions are made, traced and audited. A correspondence system that works well can therefore make administrative decisions faster, more transparent and easier to trace.

The success of such a system cannot be judged only by its availability. The information system success model of DeLone and McLean (1992) first described success through six related dimensions: system quality, information quality, use, user satisfaction, individual impact and organisational impact. The updated model added service quality, defined as the quality of support that users receive from the unit responsible for the system, and merged individual and organisational impact into net benefits (DeLone & McLean, 2003). The model has become one of the most widely tested frameworks in information systems research. Reviews and meta-analyses confirm that its main relationships are generally supported, although their strength varies between contexts, types of systems and types of users (Petter et al., 2008; Jeyaraj, 2020; Sabeh et al., 2021; Jami Pour et al., 2022). The model is suitable for SIPERAN because the system is an administrative information system used directly by education staff in their daily tasks. Its success depends on its technical capability, on the quality of the information it produces and on the quality of the service provided to its users, which are exactly the three quality dimensions of the updated model.

In this study, system quality refers to the technical features of SIPERAN as perceived by users, such as ease of use, access speed, stability, data security and ease of navigation. Information quality refers to the accuracy, completeness, relevance, timeliness and clarity of the information that the system produces, such as letter data, disposition notes and document status. Service quality refers to the

support provided by the system managers, including responsiveness, speed of problem solving, competence, availability of technical help and user training. The individual net benefit of interest is the performance of education staff (tenaga kependidikan), that is, the extent to which non-academic staff complete administrative tasks efficiently, productively, accurately, with good quality and with effective coordination. Earlier work in Indonesian higher education has shown that information system success can be measured in a structured way at institutional level (Subiyakto et al., 2016). These definitions follow the logic of the success model, in which the three quality dimensions shape how users experience a system and, through that experience, the benefits they obtain from it.

Despite the large body of research on the model, most studies in education have examined e-learning platforms, learning management systems and academic information systems that serve students and lecturers (Sabeh et al., 2021). Internal administrative systems that support university governance have received less attention, and education staff, who interact with these systems every day, are rarely the unit of analysis. This is a significant omission, because education staff handle the documents, dispositions and records on which academic and managerial decisions depend, and their performance determines whether digital administration actually delivers faster and more accountable governance. Evaluations of electronic correspondence and archiving applications in Indonesia have mostly focused on local government offices (Tumanggor et al., 2025). The literature also shows mixed findings on which quality dimension matters most. Some studies report that system and information quality are the main drivers of user benefits, while others find that service quality becomes more important when a system is mature and used routinely (Petter et al., 2008; Jeyaraj, 2020). These differences suggest that the weight of each dimension depends on the organisational context and on the characteristics of users.

Based on this gap, the study evaluates the implementation of SIPERAN as an instrument of digital governance at UNJ and examines the effects of system quality, information quality and service quality on the performance of education staff. The unit of analysis is the education staff who use SIPERAN in their daily administrative work. Following the updated success model (DeLone & McLean, 2003), the study tests three hypotheses. H1: system quality has a positive effect on the performance of education staff. H2: information quality has a positive effect on the performance of education staff. H3: service quality has a positive effect on the performance of education staff. The joint explanatory power of the three dimensions is assessed through the coefficient of determination of the structural model.

The study contributes in two ways. Theoretically, it extends the information system success model to an internal administrative system in an Indonesian public university, a setting that is still rarely studied. Practically, it gives university leaders evidence on where to place resources when they develop digital services for PTN-BH governance. The rest of the article is organised as follows. The Methods section describes the design, respondents, measures and analysis. The Results section reports the respondent profile, descriptive statistics and the structural model. The Discussion section interprets the findings, compares them with earlier studies and proposes a service-oriented model of digital governance. The Conclusion summarises the main findings and outlines prospects for further research.

B. Methods

Research Design and Model

This study used an explanatory quantitative design. The design was chosen because the study aimed not only to describe the implementation of SIPERAN but also to test the effects of three quality dimensions on staff performance within a theory-based model (Creswell, 2023). The model was derived from the updated information system success model (DeLone & McLean, 2003). System quality (X1), information quality (X2) and service quality (X3) were treated as exogenous constructs, and the performance of education staff (Y) was treated as the endogenous construct. Figure 1 presents the research model and the three hypotheses.

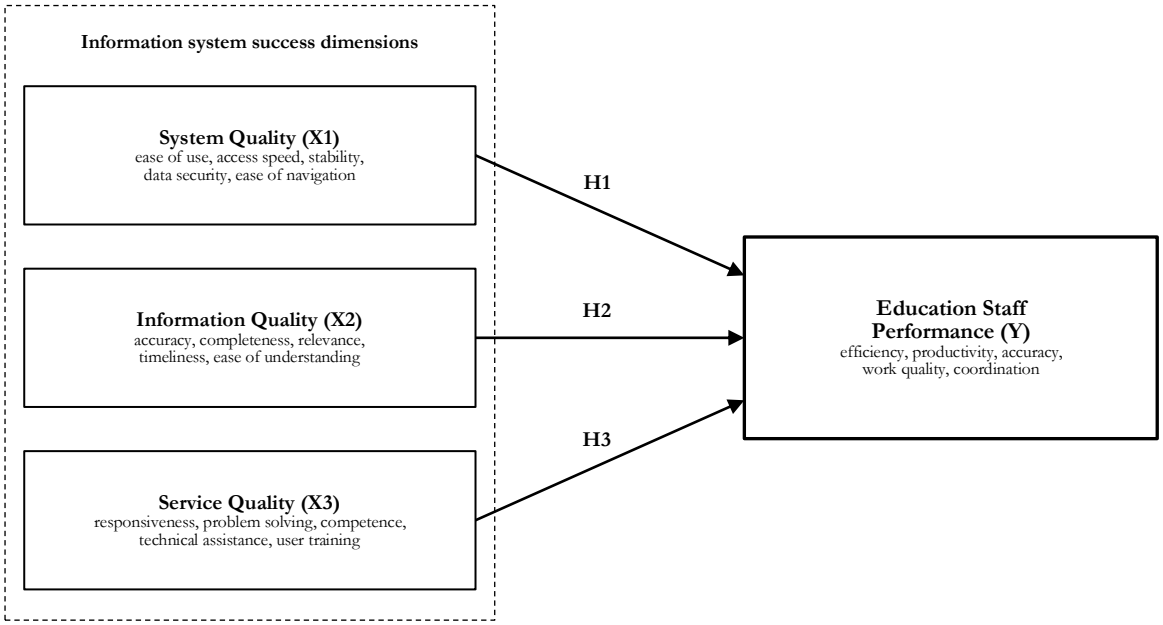


Figure 1. Research Model Based On The Information System Success Model

Figure 1 shows that each quality dimension is linked directly to staff performance. The model does not include system use and user satisfaction, which appear as intermediate constructs in the full success model. This choice reflects the focus of the study on the direct link between the quality of an administrative system and the work outcomes of its routine users, and it is revisited as a limitation in the Discussion. Treating staff performance as the outcome also matches the practical question faced by the university, namely whether the investment in SIPERAN has helped the people who use it every day to do their work better.

Setting, Population and Respondents

The study was conducted at UNJ in work units that use SIPERAN actively in their daily administrative tasks. SIPERAN was selected because it is the main platform for correspondence and electronic documentation at the university. The population consisted of all education staff registered as active SIPERAN users. According to the user data provided by the system managers, there were 58 such staff members spread across several work units. Respondents had to meet five criteria: they were active education staff at UNJ, they had an account and access to SIPERAN, they had used the system to perform administrative tasks, they used it routinely in their daily work, and they were willing to complete the questionnaire in full.

The sampling plan used proportionate stratification by work unit so that every unit of SIPERAN users would be represented (Sugiyono, 2023). Because the population was small, questionnaires were in practice delivered directly to all 58 staff members who met the criteria. A total of 54 questionnaires were returned complete and were used in the analysis, a response rate of 93.1%. The data therefore cover almost the whole population of active users. Data were collected during the active implementation period of the system, so all respondents had direct experience with the application. Partial least squares structural equation modelling (PLS-SEM) can be applied to relatively small samples as long as the sample meets the minimum requirements set by the number of indicators and structural paths in the model (Hair et al., 2022). With three predictors of one endogenous construct, the sample of 54 was considered adequate for the model. Under the commonly used ten-times rule, the largest number of structural paths pointing at a construct in this model is three, which implies a minimum of 30 cases, a level that the sample exceeds. This rule only gives a lower bound, however, and its implications for statistical power are considered in the Discussion.

Instruments and Data Sources

Primary data were collected with a structured questionnaire. Each construct was measured with five indicators. System quality was measured through ease of use, access speed, system stability, data security and ease of navigation. Information quality was measured through accuracy, completeness, relevance, timeliness and ease of understanding of the information. Service quality was measured through the responsiveness of the service, the speed of problem solving, the competence of the system managers, the availability of technical assistance and the effectiveness of user training. Staff performance was measured through the efficiency of task completion, work productivity, accuracy of task completion, quality of work results and the ability to coordinate administrative work. All items used a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), a format that is widely used to measure perceptions in information systems research. The indicators were formulated to reflect the specific functions of SIPERAN, such as recording incoming and outgoing letters, forwarding dispositions, tracking the status of documents and storing digital archives, so that respondents assessed the system they actually use rather than information systems in general. Secondary data consisted of SIPERAN implementation documents, system development reports and UNJ policies on administrative digitalisation, which were used to describe the context of the system (Arikunto, 2022).

Data Analysis

The data were analysed with PLS-SEM using SmartPLS. PLS-SEM was chosen for three reasons. The sample was relatively small, the study was oriented towards explanation and prediction within a developing model rather than the confirmation of a fully established theory, and the method can estimate several relationships at the same time (Hair et al., 2022; Sarstedt et al., 2022). The analysis followed two stages. In the first stage, the measurement model was evaluated for convergent validity, discriminant validity and construct reliability. An indicator was considered valid when its outer loading exceeded 0.70, and a construct showed convergent validity when its average variance extracted (AVE) exceeded 0.50. A construct was considered reliable when its composite reliability and Cronbach's alpha both exceeded 0.70 (Ghozali & Latan, 2020; Hair et al., 2022). In the second stage, the structural model was evaluated through the coefficient of determination (R^2), predictive relevance (Q^2) and the significance of the path coefficients, which was estimated with bootstrapping. R^2 shows the proportion of variance in staff performance explained by the three quality dimensions, and Q^2, obtained through blindfolding, shows whether the model can predict the observed values of the endogenous construct. Bootstrapping draws repeated subsamples from the data to estimate the standard errors of the path coefficients, which allows significance testing without assuming a normal distribution of the data. A hypothesis was supported when the p-value was below 0.05 and the t-statistic exceeded 1.96 at the 95% confidence level. Reporting followed current recommendations for PLS-SEM studies (Becker et al., 2023).

C. Results

Respondent Profile

All 54 respondents were education staff who used SIPERAN in their work. Their profile was described by gender, age, length of service and frequency of SIPERAN use, as shown in Table 1. This information is important because it shows who the users of the system are and how much experience they bring to their assessment of it.

Table 1. Profile Of Respondents (n = 54)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	22	40.7
	Female	32	59.3
Age	Under 25 years	2	3.7
	25–35 years	23	42.6
	36–45 years	19	35.2
	46–55 years	10	18.5
Length of service	Less than 5 years	9	16.7
	5–10 years	17	31.5
	11–15 years	15	27.8
	More than 15 years	13	24.0
Frequency of SIPERAN use	Every day	42	77.8
	3–5 times a week	6	11.1
	1–2 times a week	2	3.7
	Rarely	4	7.4

Source: Survey data processed by the authors.

Table 1 shows that most respondents were women (59.3%), while men made up 40.7%. This composition reflects the structure of education staff in the work units that use SIPERAN, which is dominated by female employees. Most respondents were in the productive age groups of 25 to 35 years (42.6%) and 36 to 45 years (35.2%), which suggests that the users generally have work experience and a reasonable ability to adapt to technology. Length of service was spread across all groups. The largest group had worked for 5 to 10 years (31.5%), followed by 11 to 15 years (27.8%), so most respondents had enough organisational experience in administrative work. The most important figure concerns intensity of use: 77.8% of respondents used SIPERAN every day. SIPERAN has therefore become part of daily administrative routines at UNJ, and the respondents assessed the system on the basis of regular and direct experience. Only 7.4% of respondents reported using the system rarely, and 11.1% used it three to five times a week. The profile therefore describes a mature user population: staff of productive age, with several years of service, who use the system as part of their regular work. This characteristic is important for interpreting the structural results, because the effects of system features may differ between new and experienced users.

Descriptive Statistics

Descriptive analysis was carried out to describe how respondents perceived system quality, information quality, service quality and their own performance. Table 2 presents the mean score of each construct.

Table 2. Mean Scores Of The Research Variables

Variable	Mean
System quality	3.85
Information quality	3.91
Service quality	3.71
Education staff performance	3.91

Note: Five-point Likert scale (1 = strongly disagree; 5 = strongly agree). Source: Survey data processed by the authors.

Table 2 shows that all constructs had mean scores above 3.50 on a five-point scale, which indicates that respondents generally gave a positive assessment of SIPERAN. Information quality had the highest mean (3.91), which suggests that users regarded the information provided by the system as relatively accurate, relevant and easy to understand. Staff performance had the same mean (3.91), which indicates that respondents felt the system supported their administrative tasks. System quality had a

mean of 3.85. Although it was rated positively, the item responses pointed to room for improvement in system stability, with technical disruptions that still occurred from time to time. Service quality had the lowest mean (3.71). The score is still positive, but it shows that support for users was the dimension that respondents rated least favourably.

Taken together, the descriptive results show a consistent pattern. Respondents rated the content and technical features of SIPERAN slightly higher than the support they received, and they felt that the system helped their work. The narrow range of the means, from 3.71 to 3.91, also shows that perceptions of the four constructs were fairly close to each other. Descriptive scores alone, however, do not show which dimension contributes most to performance. This question is answered by the structural model.

Measurement Model

Before the structural relationships were tested, the measurement model was evaluated using outer loadings, AVE, composite reliability and Cronbach's alpha. The evaluation showed that all indicators met the required thresholds. Outer loadings were above 0.70, AVE values were above 0.50, and composite reliability and Cronbach's alpha were above 0.70 for every construct. All constructs were therefore considered valid and reliable, and the model was suitable for structural analysis. In practical terms, the indicators of each construct measured the same underlying concept consistently, and the constructs could be distinguished from one another. These results provide the basis for interpreting the path coefficients in the next step, because the relationships between constructs can only be trusted when the constructs themselves are measured reliably.

Structural Model

The structural model produced an R^2 value of 0.674 for staff performance. This means that system quality, information quality and service quality together explained 67.4% of the variance in the performance of education staff, while 32.6% was explained by factors outside the model. Using the guidelines of Hair et al. (2022), where values of 0.25, 0.50 and 0.75 indicate weak, moderate and substantial explanatory power, the value lies in the upper part of the moderate range and close to the substantial level. The blindfolding procedure produced a positive Q^2 value for staff performance, which shows that the model has predictive relevance for the endogenous construct. Together, the R^2 and Q^2 results show that the model explains and predicts a large part of the variation in staff performance. For a model with only three predictors and a performance outcome measured through self-assessment, this level of explanatory power is considerable, and it indicates that the quality of SIPERAN is closely related to how staff perceive their own work.

Hypothesis Testing

The hypotheses were tested with the bootstrapping procedure in SmartPLS at a significance level of 5%. Table 3 summarises the results, and Figure 2 shows the estimated paths.

Table 3. Results Of Hypothesis Testing

Hypothesis	Path	Coefficient (β)	t-statistic	p-value	Decision
H1	System quality on staff performance	0.238	1.497	0.141	Not supported
H2	Information quality on staff performance	0.129	0.939	0.352	Not supported
H3	Service quality on staff performance	0.666	5.024	0.000	Supported

Note: Bootstrapping in SmartPLS; significance at $p < 0.05$ and $t > 1.96$. R^2 (staff performance) = 0.674. Source: Survey data processed by the authors.

Table 3 shows that only H3 was supported. Service quality had a positive and significant effect on staff performance ($\beta = 0.666$; $t = 5.024$; $p < 0.001$). The size of the coefficient indicates that improvements in the support provided to SIPERAN users are followed by improvements in their

performance. System quality (β = 0.238; t = 1.497; p = 0.141) and information quality (β = 0.129; t = 0.939; p = 0.352) also had positive coefficients, but their p-values exceeded 0.05, so H1 and H2 were not supported. The direction of all three coefficients is consistent with the success model, because each quality dimension is positively related to performance. The difference lies in the strength and precision of the estimates. Only the effect of service quality is large enough, relative to its standard error, to be distinguished from zero with the available data.

In substantive terms, the results for each hypothesis can be stated briefly. For H1, staff who rated the technical features of SIPERAN more favourably did not report clearly higher performance once the other two dimensions were taken into account. For H2, the same applied to the perceived quality of the information produced by the system. For H3, staff who rated the support from the system managers more favourably reported clearly higher performance, and this relationship remained strong when system and information quality were held constant. The joint explanatory power of the three dimensions, shown by the R^2 value, is therefore carried mainly by service quality.

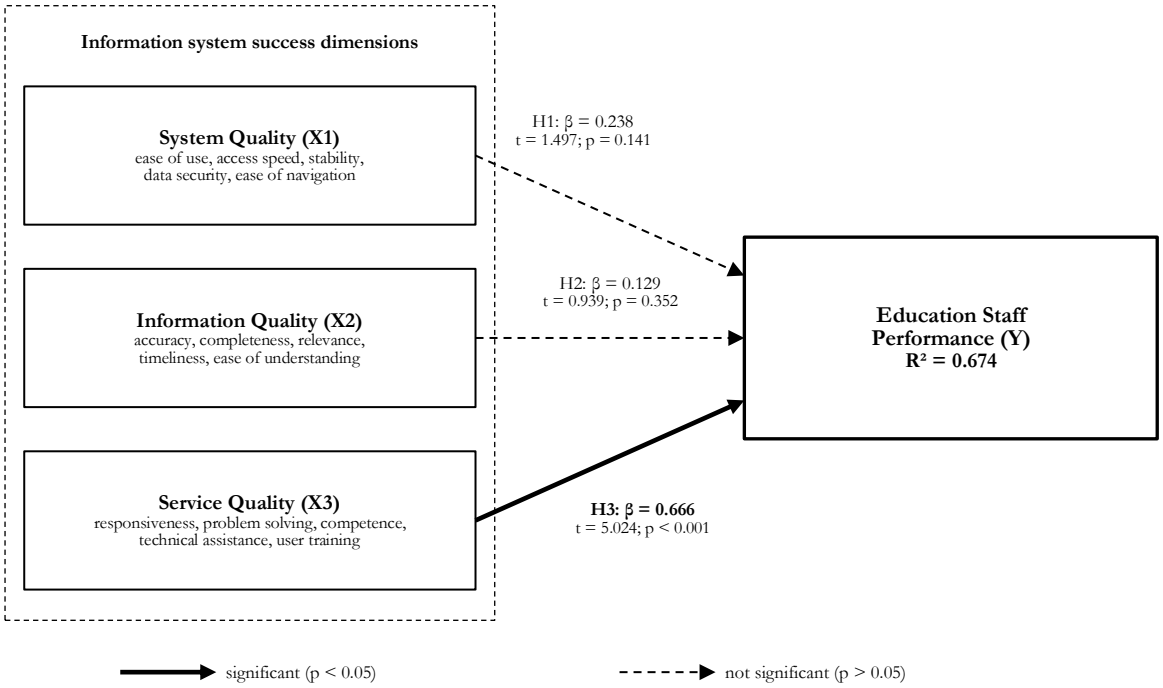


Figure 2. Structural Model Results

Figure 2 makes the pattern clear. The path from service quality is the only one that meets the significance criteria, and its coefficient is almost three times larger than that of system quality and about five times larger than that of information quality. Taken together with the R^2 value, the results indicate that the three dimensions jointly explain a large share of staff performance, but that the unique contribution of each dimension differs sharply. Within the model, the success of SIPERAN in supporting staff performance rests mainly on the quality of the support that users receive.

D. Discussion

System Quality and Staff Performance

The first finding is that system quality had a positive but non-significant effect on staff performance (β = 0.238; p = 0.141). This result does not mean that technical quality is unimportant. It suggests that, at the current stage of SIPERAN use, differences in how staff perceive ease of use, speed, stability and security do not translate directly into differences in their performance. The respondent profile offers one explanation. More than three quarters of the respondents used SIPERAN every day.

When a system becomes part of daily routines, users tend to treat its basic technical features as a given, so these features stop acting as a factor that separates higher from lower performance. Technical quality then works as a precondition for use rather than as a direct source of performance gains. From the perspective of digital governance, this means that building a good system is necessary but not sufficient. Investment in technology provides the foundation for digital administration, but it does not raise organisational benefits by itself unless it is accompanied by attention to management and user support.

The result is consistent with several Indonesian studies. Faris et al. (2024) found that system quality did not significantly affect the use of a city government application or user satisfaction, and Ramlan and Rusdan (2026) reported that system quality did not significantly affect the use of an academic information system. Other studies point the other way. In Malaysian government agencies, the system quality of an electronic document management system significantly shaped perceived usefulness and satisfaction (Gani & Kadir, 2024), and a study of academic information systems in Indonesia found significant effects of all three quality dimensions on use and satisfaction (Haerani et al., 2026). One reason for the difference may be the outcome that was measured. Most of these studies examined use or satisfaction, whereas this study examined work performance, which is further along the chain of effects described in the success model. Two methodological factors may also play a role. With 54 respondents, the study has limited statistical power to detect small and moderate effects, and the three quality dimensions are usually correlated, which can reduce the unique contribution of each one in a joint model (Hair et al., 2022; Becker et al., 2023). The non-significant coefficient should therefore be read as a weak unique effect in this setting rather than as evidence that system quality has no effect.

Information Quality and Staff Performance

Information quality also had a positive but non-significant effect ($\beta = 0.129$; $p = 0.352$), even though it received the highest mean score. The two results fit together. Respondents considered the information in SIPERAN to be adequate, so the remaining variation in their perceptions was too small to explain differences in performance. Most SIPERAN tasks are procedural: receiving dispositions, sending documents, monitoring the progress of letters and tracking files. These tasks require accurate and timely information, but they do not require the kind of complex analysis that decision support or analytics systems provide. Once the basic information is available and reliable, further improvement in information quality is unlikely to produce large gains in routine administrative performance.

This pattern resembles the findings of Zamir (2023), where system and service quality drove the job satisfaction of employees while information quality did not. It differs from studies of systems in which information is the main product. Ramlan and Rusdan (2026) found that information quality had the strongest effects on the use of and satisfaction with an academic information system, and Almutairi et al. (2024) found that information quality shaped the use of government-to-government systems by ministry employees in Kuwait. The comparison suggests that information quality matters most when users rely on the system to obtain content for decisions, and less when the system mainly moves documents through a known workflow. For SIPERAN, the practical lesson is that information quality should be maintained, while gains in performance are more likely to come from helping staff use that information in their daily work.

Service Quality as the Main Driver of Performance

The strongest finding is the significant effect of service quality on staff performance ($\beta = 0.666$; $p < 0.001$). Users appear to value the support they receive while using the system more than the technical features of the system itself. When staff face technical problems, need operational help or need training for a particular feature, a responsive support team determines whether the system helps or hinders their work. The finding also shows a gap between rating and impact. Service quality received the lowest mean score but had by far the largest effect. In other words, the dimension that matters most for performance is also the one with the most room for improvement.

This result is in line with a growing body of work. In a study of e-government users in Indonesia, service quality had the strongest effect on user satisfaction among the three quality dimensions (Hasbah et al., 2025). Among ministry employees in Kuwait, service quality and training shaped the use of government systems (Almutairi et al., 2024), and service quality, together with system quality, drove the job satisfaction of employees in the study by Zamir (2023). Studies of citizens and students report a similar role. Service quality increased the satisfaction of e-governance users in Nepal (G. C. et al., 2024), shaped the satisfaction and loyalty of young citizens towards government e-services (Alkraiji & Ameen, 2022), and was part of the set of quality factors that explained the success of e-learning systems (Al-Fraihat et al., 2020). Studies of Indonesian government employees and of learning management systems in Indonesian higher education have likewise supported the relevance of the updated success model in local settings (Miftahuddin et al., 2021; Rahmatullah et al., 2025). Not all studies agree. Faris et al. (2024) found no significant effect of service quality on satisfaction with a city government application, which suggests that the effect of support depends on how often users need it and how complex their tasks are.

The finding can also be read from the perspective of employee adaptation. Effective use of enterprise systems depends on how employees adapt their work practices when technology and tasks change (Hanafizadeh et al., 2023). Support services are one of the main channels through which organisations help staff make these adjustments. Research in the public sector shows that the digital competence of civil servants improves their performance both directly and through digital services (Nawawi et al., 2026), and that training, digital competence and organisational support are central to how employees experience digital transformation (Tzavella et al., 2025). Service quality in SIPERAN, which includes training, technical help and fast problem solving, therefore works as a form of organisational capacity for managing change. This reading has a direct implication for Indonesian higher education. Many institutions still concentrate their digitalisation budgets on software development and infrastructure, while the support services that help staff use these systems receive less attention. The findings of this study suggest that the benefits of technology depend to a large extent on the support that comes with it.

Towards a Service-Oriented Model of Digital Governance

The three findings together suggest that digital transformation at UNJ has moved beyond its early stage. In the early stage, institutions usually focus on building infrastructure, developing applications and providing digital information. When the system becomes part of everyday work, the attention of users shifts from the technology itself to their experience of using it and the support they receive. On this basis, the study proposes a Service-Oriented Digital Governance Model, shown in Figure 3. The model is a conceptual proposal derived from the results and has not yet been tested as a whole.

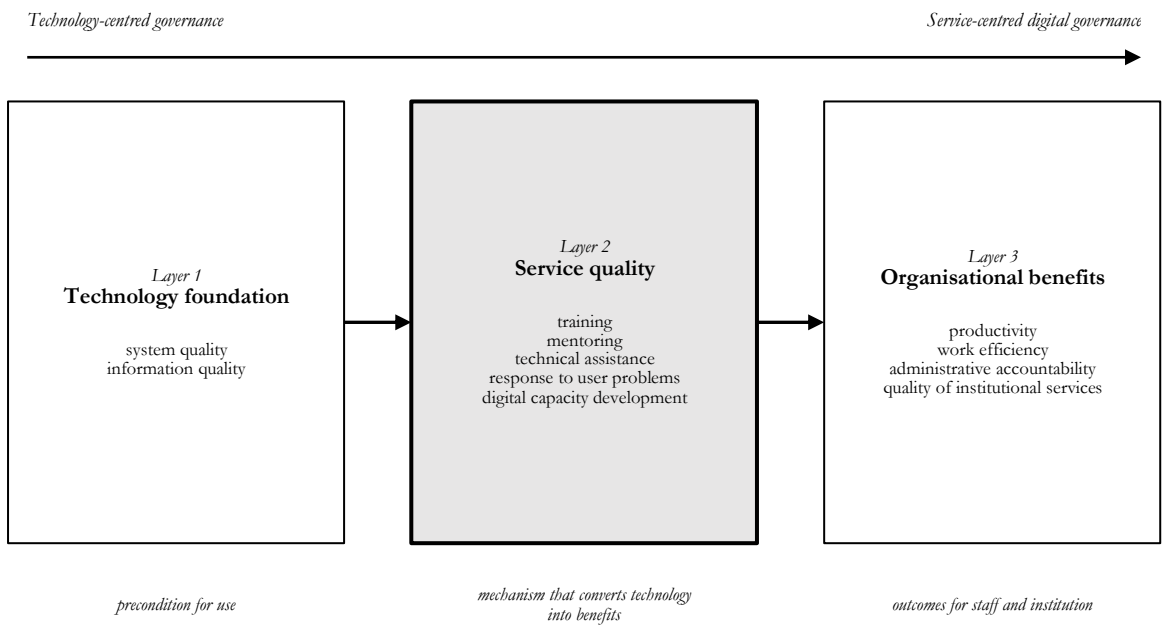


Figure 3. Service-Oriented Digital Governance Model

Figure 3 arranges the model in three layers. The first layer is the technology foundation, which consists of system quality and information quality. These dimensions are preconditions that allow the system to be used effectively. The second layer is the service quality layer, which includes training, mentoring, technical assistance, responses to user problems and the development of digital capacity. The third layer consists of organisational benefits, such as productivity, efficiency, administrative accountability and the quality of institutional services. In this model, service quality acts as the mechanism that turns the potential of technology into actual benefits. Without adequate support, a technically good system may not improve staff performance. With responsive and user-oriented support, the institution can obtain more value from the technology it has already built. The model implies a shift from technology-centred governance towards service-centred digital governance. This view is consistent with recent work on quality assurance for educational technology in developing countries, which treats quality as something that must be designed and checked systematically rather than assumed from the presence of technology (Haditia et al., 2026).

The model is particularly relevant for PTN-BH universities, where digital transformation is tied to changes in organisational culture and administrative work patterns, not only to the purchase of new technology. In such institutions, the strategy for digitalisation should aim at building a sustainable ecosystem of digital services, in which help desks, training programmes, mentoring and feedback channels are planned and funded together with applications and infrastructure. Under this view, the success of digital governance is judged by how well the institution supports its users, not only by how many systems it has launched.

Implications, Limitations and Future Research

Theoretically, the study shows that the relative weight of the dimensions of the success model can change with the maturity of system use. In the early stages of implementation, system and information quality may dominate the acceptance of a system. When use becomes routine, service quality may become the main determinant of the benefits that users obtain. Evaluations of information systems should therefore take into account the characteristics of the organisation, its level of digital maturity and the experience of users. The study also adds to research on digital governance in higher education by showing that the success of digital administration depends on the quality of institutional

support that accompanies the technology. This contribution is relevant for internal administrative systems, which have received less attention than learning and academic systems.

Practically, the results point to five priorities for UNJ. The university should strengthen user support through a more responsive information technology service unit, because the speed of problem solving and the availability of operational help matter most for staff performance. It should run continuous training and mentoring, since new features are useful only when staff can use them well. It should build a feedback mechanism that allows users to report problems and needs quickly, so that the service can be improved on the basis of user experience. It should integrate SIPERAN with other information systems as part of a broader digital governance strategy, which would speed up the flow of information and support decision making. Finally, it should include the quality of digital services among the indicators used to assess institutional governance.

The study has several limitations. It was conducted at a single institution, so the results should be generalised to other universities with care. The number of respondents was limited and only education staff were included, so the views of unit leaders, lecturers and system administrators were not captured. The data were based on perceptions, so they do not show objective indicators such as document processing time or resource savings. The model tested only three dimensions of the success model and did not include use, user satisfaction, organisational culture, digital readiness or leadership support. Future studies could involve several public and private universities, add mediating and moderating variables such as user satisfaction, digital literacy and leadership support, combine surveys with in-depth interviews, and follow the implementation of SIPERAN over time.

E. Conclusion

This study examined how system quality, information quality and service quality affect the performance of education staff who use SIPERAN at Universitas Negeri Jakarta, and it leads to the following conclusions: (1) the three quality dimensions jointly explained 67.4% of the variance in staff performance, which shows that SIPERAN has made a meaningful contribution to administrative work at the university; (2) service quality was the only dimension with a positive and significant effect on staff performance, and its effect was the largest in the model even though it received the lowest mean score; (3) system quality and information quality had positive but non-significant effects, which suggests that in a system used daily by most staff these dimensions act as preconditions rather than as direct drivers of performance; and (4) the findings support a service-oriented view of digital governance in which training, mentoring, technical assistance and fast problem solving turn the potential of technology into organisational benefits. These conclusions extend the information system success model to internal administrative systems in Indonesian higher education and give PTN-BH leaders a clear priority for investment in digital administration. Future research could test the proposed service-oriented model in several universities, include use and user satisfaction as mediators, add objective performance indicators and follow system implementation over a longer period, so that the dynamics of digital governance in higher education can be understood more fully.

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F. References

Al-Fraihat, Dimah, Mike Joy, Ra'ed Masa'deh, and Jane Sinclair. "Evaluating E-Learning Systems Success: An Empirical Study." *Computers in Human Behavior* 102 (2020): 67–86. https://doi.org/10.1016/j.chb.2019.08.004.

Alenezi, Mamdouh. "Deep Dive into Digital Transformation in Higher Education Institutions." *Education Sciences* 11, no. 12 (2021): 770. https://doi.org/10.3390/educsci11120770.

Alkraiji, Abdullah, and Nisreen Ameen. "The Impact of Service Quality, Trust and Satisfaction on Young Citizen Loyalty towards Government E-Services." *Information Technology & People* 35, no. 4 (2022): 1239–70. https://doi.org/10.1108/ITP-04-2020-0229.

Almutairi, F. L. F. H., R. Thurasamy, J. A. L. Yeap, I. L. F. H. Almutairi, and B. F. Alazemi. "Modelling Government-to-Government (G2G) Usage among Government Employees in Kuwait: The Contingent Role of Task Interdependence." *Journal of Infrastructure, Policy and Development* 8, no. 8 (2024): 5498. https://doi.org/10.24294/jipd.v8i8.5498.

Arikunto, Suharsimi. *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta, 2022.

Becker, Jan-Michael, Jun-Hwa Cheah, Rasoul Gholamzade, Christian M. Ringle, and Marko Sarstedt. "PLS-SEM's Most Wanted Guidance." *International Journal of Contemporary Hospitality Management* 35, no. 1 (2023): 321–46. https://doi.org/10.1108/IJCHM-04-2022-0474.

Benavides, Lina María Castro, Johnny Alexander Tamayo Arias, Martín Darío Arango Serna, John William Branch Bedoya, and Daniel Burgos. "Digital Transformation in Higher Education Institutions: A Systematic Literature Review." *Sensors* 20, no. 11 (2020): 3291. https://doi.org/10.3390/s20113291.

Bond, Melissa, Victoria I. Marín, Carina Dolch, Svenja Bedenlier, and Olaf Zawacki-Richter. "Digital Transformation in German Higher Education: Student and Teacher Perceptions and Usage of Digital Media." *International Journal of Educational Technology in Higher Education* 15 (2018): 48. https://doi.org/10.1186/s41239-018-0130-1.

Creswell, John W. *Research Design: Pendekatan Metode Kualitatif, Kuantitatif, dan Campuran*. 4th ed. Yogyakarta: Pustaka Pelajar, 2023.

DeLone, William H., and Ephraim R. McLean. "Information Systems Success: The Quest for the Dependent Variable." *Information Systems Research* 3, no. 1 (1992): 60–95. https://doi.org/10.1287/isre.3.1.60.

DeLone, William H., and Ephraim R. McLean. "The DeLone and McLean Model of Information Systems Success: A Ten-Year Update." *Journal of Management Information Systems* 19, no. 4 (2003): 9–30. https://doi.org/10.1080/07421222.2003.11045748.

Faris, H. A., A. Wedhasmara, A. Putra, R. D. Kurnia, A. Bardadi, and S. Fitri. "DeLone and McLean Model Analysis of Success Factors of SIDEMANG Application in Palembang City." *Jurnal Sisfokom* 13, no. 2 (2024): 154–61. https://doi.org/10.32736/sisfokom.v13i2.1894.

Fernández, Alfredo, Beatriz Gómez, Kleona Binjaku, and Elinda Kajo Meçe. "Digital Transformation Initiatives in Higher Education Institutions: A Multivocal Literature Review." *Education and Information Technologies* 28 (2023): 12351–82. https://doi.org/10.1007/s10639-022-11544-0.

G. C., S. B., S. K. Gurung, S. B. J. B. Rana, and B. R. Dhungana. "E-Governance, Citizen Satisfaction and Net Benefits: The Moderating Effect of Digital Divide." *Cogent Business & Management* 11, no. 1 (2024): 2402512. https://doi.org/10.1080/23311975.2024.2402512.

Gani, Dayangku Horiah Awang, and Irwan Kamaruddin Abdul Kadir. "Electronic Document Management: The Essence of Effective Modern Organisation." *Journal of Information and Knowledge Management* 14, no. 2 (2024). https://doi.org/10.24191/jikm.v14i2.4472.

Ghozali, Imam, and Hengky Latan. *Partial Least Squares: Konsep, Teknik dan Aplikasi Menggunakan SmartPLS 3.0*. Semarang: Badan Penerbit Universitas Diponegoro, 2020.

Gkrimpizi, Thomais, Vassilios Peristeras, and Ioannis Magnisalis. "Classification of Barriers to Digital Transformation in Higher Education Institutions: Systematic Literature Review." *Education Sciences* 13, no. 7 (2023): 746. https://doi.org/10.3390/educsci13070746.

Haditia, M., I. Y. Abubakar, Rokimin, and A. Fauzi. "Design and Validation of a Quality Assurance Framework for AI Educational Technology in Low-Resource Settings." *Educational Technology in Developing Countries* 1, no. 1 (2026): 83–102. https://doi.org/10.64929/etdc.v1i1.68.

Haerani, R., T. K. A. Rahman, D. I. Putri, R. Apriani, and M. Y. Putra. "Analysis of Information Systems Acceptance and Success Models in Higher Education." *Intensif: Jurnal Ilmiah Penelitian dan Penerapan Teknologi Sistem Informasi* 10, no. 1 (2026). https://doi.org/10.29407/intensif.v10i1.24969.

Hair, Joseph F., G. Tomas M. Hult, Christian M. Ringle, and Marko Sarstedt. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. 3rd ed. Thousand Oaks, CA: Sage, 2022.

Hanafizadeh, P., A. Taherianfar, and M. Alami Neisi. "Individual Adaptation in the Face of Enterprise IT Changes in the Organization." *Journal of Telecommunications and the Digital Economy* 11, no. 1 (2023): 57–90. https://doi.org/10.18080/jtde.v11n1.663.

Hasbah, N. I., A. J. Purwanto, and Rulinawaty. "Assessing E-Government User Satisfaction with DeLone & McLean IS Success Model and Digital Literacy." *JIAP: Jurnal Ilmu Administrasi Publik* 13, no. 2 (2025): 81–99. https://journal.ummat.ac.id/index.php/JIAP/article/view/33124.

Jami Pour, M., J. Mesrabadi, and M. Asarian. "Meta-Analysis of the DeLone and McLean Models in E-Learning Success: The Moderating Role of User Type." *Online Information Review* 46, no. 3 (2022): 590–615. https://doi.org/10.1108/OIR-01-2021-0011.

Jeyaraj, Anand. "DeLone & McLean Models of Information System Success: Critical Meta-Review and Research Directions." *International Journal of Information Management* 54 (2020): 102139. https://doi.org/10.1016/j.ijinfomgt.2020.102139.

Mergel, Ines, Noella Edelmann, and Nathalie Haug. "Defining Digital Transformation: Results from Expert Interviews." *Government Information Quarterly* 36, no. 4 (2019): 101385. https://doi.org/10.1016/j.giq.2019.06.002.

Miftahuddin, Lantip Diat Prasojo, and Awnis Akalili. "The Validation of the Information Systems Success Model: LMS Integration during Covid-19." *Indonesian Research Journal in Education* 5, no. 2 (2021). https://doi.org/10.22437/irje.v5i2.15300.

Mohamed Hashim, Mohamed Ashmel, Issam Tlemsani, and Robin Matthews. "Higher Education Strategy in Digital Transformation." *Education and Information Technologies* 27, no. 3 (2022): 3171–95. https://doi.org/10.1007/s10639-021-10739-1.

Mozin, S. Y., Y. Aneta, Y. N. Nani, and R. Tohopi. "Reimagining Academic Service Management in Higher Education: Transformational Strategies for Organizational Change and Student Success." *Journal of Governance and Public Policy* 13, no. 2 (2026): 154–68. https://doi.org/10.18196/jgpp.v13i2.27998.

Nawawi, S., K. Ingsih, F. Riyanto, R. A. A. R. P. Sari, and M. Sartika. "Does Digital Competence Improve Employee Performance? The Role of Smart Digital Services Mediation in the Public Sector." *Jurnal Penelitian Ekonomi dan Bisnis* 11, no. 1 (2026): 77–89. https://doi.org/10.33633/jpeb.v11i1.15497.

Nurjana, N., A. Sukmawati, and H. Koeswanda. "Key Factors Influencing Digital Transformation Success and Strategic Implications for Indonesian Higher Education: Evidence from IPB University." *Jurnal Kependidikan* 11, no. 4 (2025): 1359–71. https://doi.org/10.33394/jk.v11i4.17807.

Petter, Stacie, William DeLone, and Ephraim McLean. "Measuring Information Systems Success: Models, Dimensions, Measures, and Interrelationships." *European Journal of Information Systems* 17, no. 3 (2008): 236–63. https://doi.org/10.1057/ejis.2008.15.

Rahmatullah, R., A. Habibi, K. Khaeruddin, L. N. Yaqin, T. M. Alharmali, M. S. O. Fauzee, and J. Mahat. "A Study of User Satisfaction and Net Benefits in Indonesia through the DeLone and McLean Model for E-Government Success." *Discover Sustainability* 6 (2025). https://doi.org/10.1007/s43621-025-01645-4.

Ramlan, I., and M. Rusdan. "An Evaluation of Academic Information System Success at Widyatama University Using the DeLone and McLean Model." *Jurnal Sistem Informasi dan Teknologi Informasi* 3, no. 1 (2026): 191–201. https://doi.org/10.33197/justinfo.v3i1.3412.

Sabeh, Hala Najwan, Mohd Heikal Husin, Daisy Mui Hung Kee, Ahmad Suhaimi Baharudin, and Rosni Abdullah. "A Systematic Review of the DeLone and McLean Model of Information Systems Success in an E-Learning Context (2010–2020)." *IEEE Access* 9 (2021): 81210–35. https://doi.org/10.1109/ACCESS.2021.3084815.

Sarstedt, Marko, Joseph F. Hair, Mandy Pick, Benjamin D. Liengaard, Lăcrămioara Radomir, and Christian M. Ringle. "Progress in Partial Least Squares Structural Equation Modeling Use in Marketing Research in the Last Decade." *Psychology & Marketing* 39, no. 5 (2022): 1035–64. https://doi.org/10.1002/mar.21640.

Subiyakto, A'ang, Abd. Rahman Ahlan, Mira Kartiwi, and Syopiansyah Jaya Putra. "Measurement of the Information System Project Success of the Higher Education Institutions in Indonesia: A Pilot Study." *International Journal of Business Information Systems* 23, no. 2 (2016): 229–47.

Sugiyono. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta, 2023.

Tangi, Luca, Marijn Janssen, Michele Benedetti, and Giuliano Noci. "Digital Government Transformation: A Structural Equation Modelling Analysis of Driving and Impeding Factors." *International Journal of Information Management* 60 (2021): 102356. https://doi.org/10.1016/j.ijinfomgt.2021.102356.

Tumanggor, T., D. Setiawan, and Y. Noverina. "Evaluation of the Effectiveness of SRIKANDI Application Implementation in Archive Management at the Jambi Province PUPR Office Using the DeLone and McLean Model Approach." *J-AKSI* 6, no. 2 (2025). https://doi.org/10.31949/j-aksi.v6i2.14260.

Tzavella, V., A. Konstantinopoulou, and A. Lazakidou. "Measuring Job Satisfaction of Government Employees and the Impact of Digital Transformation in the Public Sector." *Acta Universitatis Bohemiae Meridionalis* 28, no. 1 (2025): 1–13. https://doi.org/10.32725/acta.2025.001.

Williamson, Ben. "Governing Software: Networks, Databases and Algorithmic Power in the Digital Governance of Public Education." *Learning, Media and Technology* 40, no. 1 (2015): 83–105. https://doi.org/10.1080/17439884.2014.924527.

Zamir, Z. "Can the System, Information, and Service Qualities Impact Employee Learning, Adaptability, and Job Satisfaction?" *Applied Computer Science* 19, no. 1 (2023): 25–46. https://doi.org/10.35784/acs-2023-03.