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Enhancing Administrative Efficiency through Digital Innovation: A Quantitative Analysis of Perceived Usefulness, Ease of Use, User Satisfaction, and Process Effectiveness in SIASN's PMK Services

Gerry Ananda Pasaribu
National Civil Service Agency and State University of Jakarta

Corresponding Author: Gerry Ananda Pasaribu gerry.pasaribu@bkn.go.id

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A B S T R A C T

This study examines how Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) impact User Satisfaction (US) and Process Effectiveness (PE) in the State Civil Apparatus Information System (SIASN) for Employment Tenure Review (PMK) services at Indonesia's National Civil Service Agency (BKN). Utilizing a quantitative approach with SEM-PLS analysis, data from 56 BKN employees reveal that both PU and PEOU significantly enhance US, which positively mediates and strengthens the relationship with PE. Each variable's contribution underscores SIASN's role in improving administrative efficiency and user engagement. These findings highlight implications for public sector digitalization and user-centric design, demonstrating how effectively designed e-government services can elevate operational effectiveness and user satisfaction.

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INTRODUCTION

The demand for increased efficiency, accuracy, and accessibility in public services has become a central priority in the digital era, particularly in the context of public sector administration (Balaskas et al., 2022). In their study on digital government services in Greece, Balaskas et al. found that integrating accessible and reliable technology can enhance public trust and operational efficiency, aligning closely with the goals of Indonesia's National Civil Service Agency (BKN) in managing the Employment Tenure Review (PMK) service. The PMK process allows civil servants to gain formal recognition for their previous work experience, affecting their salary progression and thus impacting both their welfare and the broader management of human resources within government.

The implementation of the State Civil Apparatus Information System (SIASN) by BKN represents a strategic effort to improve the efficiency and accuracy of PMK administration through a digital platform. This system is designed to simplify complex administrative processes, accelerate processing times, and reduce the risk of data inaccuracies. Anthony Jnr et al. (2023) proposed similar benefits in their study on city management system digitalization, concluding that the application of technology based on enterprise architecture can support the smooth functioning of administrative processes while expanding the accessibility of public services. In the context of BKN, the deployment of SIASN as an integrated system aims to reduce bureaucratic complexity, thereby improving user satisfaction.

The Technology Acceptance Model (TAM), developed by Davis in 1989, serves as the principal theoretical framework for this study, employed to examine user acceptance of SIASN. TAM has proven effective in explaining technology adoption across sectors, particularly regarding perceived usefulness and perceived ease of use (T. T. T. Nguyen, 2023). T. T. T. Nguyen asserts that the acceptance of e-government technology is strongly influenced by users' perceptions of the technology's ease of use and usefulness, which in turn drives service effectiveness and quality. Saeidi et al. (2024) further noted that in the public transportation sector, TAM plays an essential role in identifying factors influencing technology adoption, including system accessibility and reliability—objectives that are similarly relevant to BKN's mission to optimize the PMK function through SIASN.

However, several challenges must be addressed when applying TAM to SIASN. David et al. (2023) revealed that the perceived usefulness of technology is often influenced by external factors, such as organizational support and infrastructure availability, which ultimately affect user satisfaction. Park et al. (2022) also indicated that perceived usefulness and ease of use have a direct impact on users' trust in a system, especially in the context of digitalized public services, which necessitate reliability and transparency.

Thus, this study aims to explore the influence of perceived usefulness and ease of use of SIASN on user satisfaction and the effectiveness of the PMK service within BKN. By using TAM as the theoretical framework, this research seeks to identify the extent to which these factors can enhance the quality of public services within the governmental sector. The findings of this study are expected

to provide valuable insights for the development of responsive and efficient public information systems.

LITERATURE REVIEW

Perceived Usefulness (PU)

In the context of the Technology Acceptance Model (TAM), Perceived Usefulness (PU) is frequently regarded as a critical factor influencing technology acceptance. According to Khan et al. (2021), PU refers to the extent to which an individual believes that using technology will enhance task performance. In their analysis of PU within educational systems in developing countries, Khan et al. emphasized that usefulness is closely tied to the speed and accuracy with which information can be accessed, ultimately improving operational efficiency.

In another study, Prawitasari & Lazuardi (2023) explored the adoption of electronic health systems in Indonesia and found that PU is significantly influenced by how technology assists users in achieving crucial work-related objectives. They noted that, particularly in the healthcare sector, PU is impacted by the system's ability to simplify complex processes and deliver accurate and reliable information—features similarly necessary for information technology in public administration systems like SIASN.

Additionally, Hanifan & Noviaristanti (2022) highlighted the broad implications of PU within the public sector, particularly regarding technology acceptance among civil servants. They suggested that PU plays a pivotal role in enhancing government employees' productivity, especially when technological systems are designed to simplify and automate administrative processes.

Suryanegara (2023) expanded on this view, positing that PU encompasses not only the direct benefits of technology but also users' perceptions of the system's reliability and credibility. His study underscored the importance of PU within the context of public service digitalization in Indonesia, where users need to trust that technology can meet their needs effectively and efficiently. In the case of SIASN, this perspective is relevant as BKN's applied technology must reliably support users' confidence in the system.

M. del R. M. González (2024) further added that PU can influence users' motivation to engage with a system, particularly in electronic management systems related to public administration. He argued that when technology demonstrates clear benefits for work processes, such as through ease of data access and reduced processing time, users are more likely to adopt and use it regularly.

In a study on AI adoption in e-commerce, Kanchanatanee (2024) observed that PU shapes positive user attitudes toward technology, as perceived usefulness provides added value to users in maximizing their performance. Similarly, research by Saputra et al. (2022) in the medical sector underscored that PU affects users' intention to use technology and also enhances the quality of services delivered through the technology—an essential aspect that can be applied to SIASN.

Drawing from these various perspectives, PU emerges as a multidimensional concept that encompasses users' perceptions of performance benefits, speed, and technological accuracy within public sector applications. In the context of BKN and SIASN, PU plays a vital role, as the system is designed to streamline and automate administrative tasks, thereby fostering technology acceptance among employees. A deep understanding of PU will thus be instrumental in evaluating how well technology meets users' needs and supports the successful implementation of information technology within public administration.

Perceived Ease of Use (PEOU)

In the TAM framework, Perceived Ease of Use (PEOU) refers to users' perceptions that a technology can be used effortlessly, requiring minimal effort to operate. According to Prawitasari & Lazuardi (2023), PEOU includes ease of access and intuitive navigation, both of which play crucial roles in technology acceptance within the healthcare sector. In their study, users of a maternal and child health cohort system demonstrated higher acceptance levels when the system was perceived as easy to use.

Khan et al. (2021) argued that PEOU encompasses not only the technical aspects of interface design but also the adaptability of the technology to users with diverse technical backgrounds. In the context of digital learning in developing countries, ease of use significantly affects users' intentions to adopt educational technologies, highlighting the importance of accessibility for a broad user base.

Hanifan & Noviaristanti (2022) emphasized the critical role of PEOU in public administration. They found that when information systems are designed to be easily accessible and comprehensible, public employees experience increases in productivity and work efficiency. In this context, PEOU includes system features that expedite administrative processes and reduce procedural complexity, contributing positively to workplace efficiency.

In another study on employee self-service applications in Indonesia, Atika & Handayani (2024) highlighted that ease of use not only influences technology adoption intentions but also determines the level of user satisfaction. Systems that are easy to use enhance users' trust and reinforce positive perceptions of the application, which can be crucial for sustained engagement.

Kanchanatanee (2024) underscored the powerful impact of PEOU on the acceptance of AI-based technology in e-commerce. She observed that user-friendly technology improves user experiences, thereby increasing the likelihood of deeper interaction with the technology over time. This reinforces that intuitive design and ease of navigation can significantly boost user adoption in digitally intensive environments.

In the healthcare sector, Saputra et al. (2022) found that PEOU encompasses a system's ability to adapt to user needs, facilitating easier adoption in environments with varying levels of technological proficiency. In the case of electronic medical records, ease of use enhances a sense of security and efficiency

in the daily tasks of healthcare professionals, showing how PEOU can affect both the usability and trustworthiness of technology in high-stakes settings.

M. del R. M. González (2024) observed that, in the context of cybersecurity in the public sector, PEOU positively correlates with technology acceptance. When users perceive security systems as easy to navigate and operate, they are more likely to trust these technologies to protect personal data. M. del R. M. González asserted that users who experience ease in accessing and managing security technologies are more consistent in their adoption and utilization of these systems.

Overall, PEOU emerges as a key variable that enhances technology acceptance across various sectors, including healthcare, education, e-commerce, and public services. Critical aspects of PEOU include ease of access, intuitive interfaces, and the technology's adaptability to user needs. In the context of the State Civil Apparatus Information System (SIASN) at the National Civil Service Agency (BKN), PEOU plays a significant role, as the system is expected to streamline complex administrative processes, improve productivity, and meet the needs of users from diverse backgrounds.

User Satisfaction

User satisfaction has become a primary focus in various studies on technology acceptance, particularly in the application of the Technology Acceptance Model (TAM). According to García-Alonso et al. (2024), user satisfaction relates to the perception that technology meets users' needs and expectations in real-world usage contexts. They observed that users who feel satisfied with a technology, such as AI-based learning applications, tend to exhibit higher levels of acceptance.

In a study on user satisfaction within the e-commerce sector, McNamara (2024) found that satisfaction is closely associated with user experience, especially in terms of ease of use and the relevance of technology features. User satisfaction is measured by the perception that technology is not only effective but also facilitates seamless interaction and consistently meets users' expectations over time.

Susanto & Bonita (2022) emphasized that in TAM applications for city guide e-books, user satisfaction is a crucial indicator of whether a technology positively impacts users' intentions for continued use. They noted that user satisfaction is achieved when an application has clear utility and reliability, enhancing the user experience.

In the context of cybersecurity in the public sector, M. del R. M. González (2024) explained that user satisfaction is also influenced by trust in the security and personal data protection provided by the technology. This aspect is particularly relevant to government technology applications, where security is a critical factor in building user satisfaction.

Kanchanatanee (2024), in her study on AI adoption in e-commerce, highlighted that user satisfaction results from the perception that technology

efficiently and easily helps users achieve their objectives. This study demonstrated that user satisfaction is crucial for the successful adoption of AI-based technologies.

Saputra et al. (2022) identified that in the healthcare sector, user satisfaction with electronic medical records depends on the system's ability to deliver consistent benefits and easy access. They noted that user satisfaction positively correlates with the repeated use of technology, underscoring the importance of functional reliability.

According to Mondego & Gide (2024), the integration of artificial intelligence in cloud-based payment systems increases user satisfaction by accelerating and simplifying transaction processes. The study concluded that user satisfaction depends not only on ease of use but also on the speed and accuracy of the services provided.

Overall, user satisfaction can be understood as the outcome of the perception that technology fulfills users' functional needs, offers easy access, and delivers the expected security and efficiency. In the context of the State Civil Apparatus Information System (SIASN) at the National Civil Service Agency (BKN), user satisfaction plays a critical role in ensuring the continuity and effectiveness of technology use within the public sector.

Process Effectiveness

In the context of public administration, Process Effectiveness refers to how well a process or series of activities achieves the desired objectives in an efficient, responsive, and targeted manner. Letor & Taebenu (2023), in their study on bureaucratic reform in Indonesia, explained that process effectiveness is closely tied to the integration of contemporary administrative policies focused on efficiency and accountability in governance. They argued that this effectiveness is also highly dependent on adopting the New Public Service approach, which aims to enhance public engagement and service quality.

Rajhlina & Patrusheva (2022) emphasized that digital transformation is a primary factor in improving process effectiveness within the public sector. In their research on public administration digitalization in Yaroslavl, they concluded that digital processes not only expedite service delivery times but also improve service quality by enhancing transparency and accuracy.

Iswanto & Putra (2023) delved into how world-class public service-oriented bureaucratic reforms necessitate improved process effectiveness by streamlining complex administrative processes. They noted that this effectiveness is highly dependent on institutional capacity to manage resources, along with continuous monitoring and evaluation of achieved results.

In the context of regional management, Thwala (2023) demonstrated that process effectiveness in the public sector can be optimized by implementing administrative modernization methods, such as digital tax management systems designed to reduce data errors and increase document processing speed. This approach is relevant for reducing administrative burdens across various levels of government.

Mozin & Nggilu (2023) examined the role of institutional capacity in enhancing the effectiveness of higher education processes in Gorontalo, Indonesia. According to their findings, process effectiveness is measured by how well institutions can adapt strategies and policies to meet community needs and labor market demands.

Satibi (2023) also highlighted that process effectiveness in the public sector requires continuous improvements in bureaucratic practices, particularly within reforms promoting efficiency and flexibility. This study found that process effectiveness can be improved by focusing on human resource management that is more responsive to policy changes and public demands.

Marišová et al. (2021) concluded that administrative process effectiveness also requires the development of feedback systems to ensure policies are implemented in line with intended outcomes. They emphasized that involving local communities in process evaluations can support more effective achievement of policy objectives.

Overall, in the context of this study, Process Effectiveness is closely related to efforts to enhance the quality, speed, and accuracy of administrative services within the National Civil Service Agency (BKN). This approach involves the application of technology and policy reform to create responsive and efficient processes, aligned with the evolving demands of the public.

Theoretical Framework and Hypothesis Development

A theoretical framework is typically developed based on a thorough understanding and analysis of the topic or phenomenon under investigation. This framework provides a conceptual foundation that supports and guides the research, helping to clarify the relationships between key variables and identify potential influences or outcomes. This theoretical framework offers a structured approach to analyzing the acceptance and impact of SIASN within BKN's administrative functions. By examining these relationships, the study aims to provide insights into how technological innovation can support public sector efficiency and service quality, aligning with BKN's objectives for streamlined civil service management.

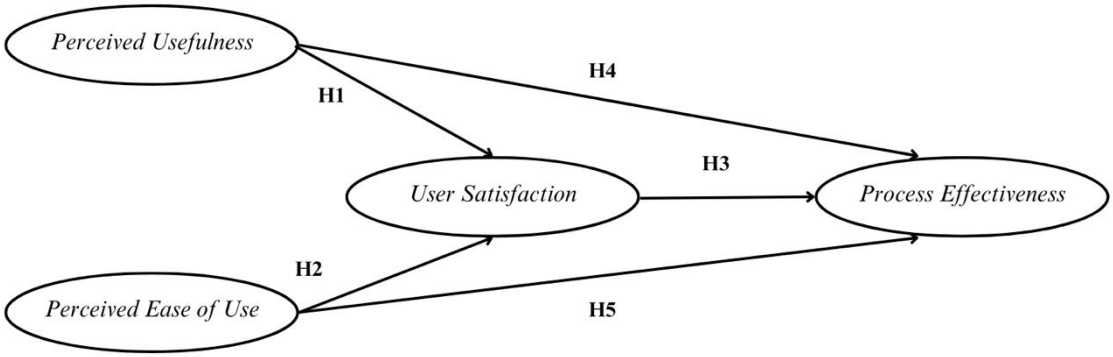

Figure 1. Conceptual Framework

H1: Perceived Usefulness has a Positive Effect on User Satisfaction

Perceived Usefulness (PU), within the context of information technology, refers to the perception that a particular technology or system can enhance user performance and productivity, which in turn increases user satisfaction. In their study on a hypertension management application, He et al. (2024) found that PU significantly influences user satisfaction, particularly in applications designed to improve users' health and quality of life. They emphasized that users' perception of the functional benefits of the application directly correlates with higher levels of satisfaction.

In the field of e-commerce, Kanchanatanee (2024) demonstrated that PU has a significant impact on user satisfaction with artificial intelligence (AI) technology, as users feel that AI facilitates the shopping experience and provides substantial added value. The perception that technology enhances convenience and efficiency in transaction processes has been shown to positively impact satisfaction.

Saputra et al. (2022) identified that PU plays a central role in influencing user satisfaction within the context of electronic medical records. Users who perceive direct benefits from the system, such as quick and accurate access to health information, are more likely to feel satisfied and continue using the technology.

M. del R. M. González (2024) found that in the cybersecurity sector, PU influences user satisfaction through the perception that the system provides benefits aligned with users' expectations, particularly in protecting personal data. This suggests that users who perceive the technology as beneficial to security are more satisfied in their usage.

Zambiasi & Pozzebon (2024) , in their study on augmented reality experiences in e-commerce, observed that PU creates perceived value for users, ultimately increasing their satisfaction. They found that when users experience tangible benefits from technology, such as improved visual quality and interaction during shopping, they report higher satisfaction levels.

In digital healthcare services, Hotanen (2024) discovered that PU is linked to user satisfaction, as beneficial technology is perceived to meet user needs, particularly for fast and efficient service access. This finding aligns with the view that PU enhances the fit between technology functions and specific user needs.

Al-Barrak & Al-Alawi (2024) , in their study on chatbots, highlighted that PU enhances user satisfaction, especially when chatbots provide quick and relevant solutions in customer service. Users who find the chatbot beneficial report increased satisfaction as it efficiently addresses their concerns.

H2: Perceived Ease of Use has a Positive Effect on User Satisfaction

Perceived Ease of Use (PEOU) represents users' perception that a technology is easy to understand and operate, which significantly impacts User Satisfaction. Saputra et al. (2022) identified PEOU as a critical factor in electronic medical record systems. In their study conducted in Indonesia, they found that users who experienced ease in accessing and utilizing the system exhibited higher levels of satisfaction with the technology they used.

Kanchanatanee (2024) emphasized that PEOU has a significant impact on user satisfaction in AI-based e-commerce applications. This study demonstrated that user-friendly technology enhances user comfort and reinforces positive perceptions, ultimately leading to increased satisfaction. Key factors, such as intuitive navigation and interface design, were found to play a decisive role in boosting User Satisfaction.

In his analysis of cloud-based payment systems, Mondego & Gide (2024) found that PEOU not only affects user satisfaction but also strengthens trust in the system. He noted that when technology is perceived as easy to use, users are more likely to feel satisfied and trust that it can meet their needs efficiently.

Atika & Handayani (2024) , in her study on employee self-service applications, concluded that ease of use is a major determinant of user satisfaction. The findings indicate that users who find the application easy to operate tend to feel more comfortable and are more likely to hold positive perceptions of the service provided.

Hotanen (2024) also discovered that in the context of digital healthcare services, PEOU plays a crucial role in enhancing user satisfaction. A system that is easy to use enables users to access services independently, without requiring significant assistance, which enhances their perception of service quality.

H3: User Satisfaction has a Positive Effect on Process Effectiveness in the PMK Process

User Satisfaction plays a crucial role in enhancing Process Effectiveness across various contexts. Nugraha et al. (2024) observed that user satisfaction positively impacts the effectiveness of data quality management in the Indonesian Customs Office. Their findings indicated that when users are satisfied with the quality of the implemented information system, the data management process becomes more effective and efficient.

In a study on hypertension management applications, He et al. (2024) developed indicators to evaluate user satisfaction. They found that when users are satisfied, the application becomes more effective in helping patients manage their blood pressure, suggesting that user satisfaction contributes to the effectiveness of health technology-based programs.

M. R. M. González (2024) argued that in the context of sustainable development, user satisfaction is a determining factor in the effectiveness of technology to improve service efficiency and reliability. This is particularly relevant in the management of public information technology, where user satisfaction reinforces the effectiveness of ongoing administrative processes.

In a study on employee self-service applications, Atika & Handayani (2024) stated that user satisfaction with internal company applications is directly related to the operational effectiveness of the organization. User-friendly and satisfying applications can reduce processing time and improve workflow, leading to more effective processes.

Hotanen (2024) demonstrated that in the context of digital social and health services, user satisfaction enhances service quality and efficiency. They found that applications tailored to user needs can improve the effectiveness of digital services and reduce operational errors, ultimately increasing user trust.

H4: Perceived Usefulness has a Positive Effect on Process Effectiveness in the PMK Process through User Satisfaction

Perceived Usefulness (PU) has consistently been shown to significantly influence User Satisfaction, which in turn contributes to improved Process Effectiveness. According to Kalankesh et al. (2020), PU drives user satisfaction by enhancing the efficiency and reliability of systems, thereby strengthening the effectiveness of technology-based healthcare services. This suggests that users who perceive a system as beneficial are more satisfied and can utilize the system more effectively.

Alkraiji (2021) argued that PU directly affects user satisfaction in e-government services, which subsequently enhances the effectiveness of public administrative processes. In this study, user satisfaction serves as a bridge between the perceived usefulness of the technology and operational quality, reinforcing the understanding that beneficial technology contributes to both satisfaction and process effectiveness.

Saura et al. (2024), in their research on digital reservation systems for the circular economy, found that PU creates positive perceptions that lead to user satisfaction, thus enhancing service effectiveness. They observed that user satisfaction is a key indicator of the extent to which PU influences operational outcomes, particularly in digital reservation systems.

Al-Okaily et al. (2023) demonstrated that PU enhances user satisfaction, which plays a critical role in the effectiveness of data analysis processes within large organizations. This study highlighted that PU not only directly affects satisfaction but also underpins productivity and operational effectiveness within organizational functions.

Hajesmaeel-Gohari et al. (2022) emphasized that in mobile health services, PU strengthens user satisfaction, which in turn influences the efficiency and effectiveness of service processes. User satisfaction reflects the system's ability to deliver tangible benefits, which has a positive impact on overall process effectiveness.

H5: Perceived Ease of Use has a Positive Effect on Process Effectiveness in the PMK Process through User Satisfaction

Perceived Ease of Use (PEOU) in information technology is a significant factor influencing User Satisfaction and Process Effectiveness. According to Zaman (2020), in the context of Enterprise Resource Planning (ERP) adoption, PEOU enhances user satisfaction by facilitating more efficient and understandable processes for users, ultimately impacting operational effectiveness.

Anthony Jnr et al. (2023) discussed that in digital city governance, PEOU within Enterprise Architecture not only boosts user satisfaction but also supports

the effectiveness of digital transformation efforts in city management. This suggests that when users perceive a technology as easy to use, they are more satisfied, and the technology becomes more effective in improving organizational performance.

The study by Balaskas et al. (2022) demonstrated that in e-government services, PEOU improves both user satisfaction and the effectiveness of government services. Their findings indicated that ease of use enhances satisfaction by reducing the time required to navigate the system, which positively impacts administrative process effectiveness.

Zardari et al. (2021) emphasized that in e-learning, PEOU and user satisfaction are interrelated and contribute to the effectiveness of the learning process. By making e-learning technology accessible and intuitive, user satisfaction increases, which in turn strengthens the effectiveness of the digital learning process.

In the healthcare sector, M. Nguyen et al. (2020) found that PEOU supports user satisfaction and process effectiveness in palliative care services. They highlighted that services perceived as easily accessible provide users with a sense of control, which enhances satisfaction and positively influences overall process outcomes.

METHODOLOGY

This study was conducted at the National Civil Service Agency (BKN) in Indonesia over a three-month period, from July to October 2024. Employing a quantitative approach, the research utilized a Likert-scale-based questionnaire consisting of 30 questions that covered indicators for the variables Perceived Usefulness, Perceived Ease of Use, User Satisfaction, and Process Effectiveness. The study population comprised all employees using the Employment Tenure Review (PMK) service at BKN, totaling 56 individuals, allowing the inclusion of the entire population as respondents without the need for sampling.

The research process involved five key stages: planning (research design and hypothesis formulation), preparation (questionnaire pretesting and instrument revision if necessary), data collection (distribution of the questionnaire to respondents), data processing (analysis using Structural Equation Modeling (SEM) with the Partial Least Square (PLS) approach), and reporting (final report preparation). SEM-PLS was selected as the analytical technique due to its effectiveness in examining relationships between latent variables and addressing challenges associated with small sample sizes.

This analysis is expected to provide a comprehensive understanding of the influence of Perceived Usefulness and Perceived Ease of Use on User Satisfaction and Process Effectiveness within the context of the PMK service at BKN.

RESEARCH RESULTS

Validity Test Results

Convergent validity was employed to ensure that the indicators in this study accurately measure the intended constructs or latent variables. Convergent validity was assessed using two methods: the loading factor and the Average Variance Extracted (AVE). For the loading factor method, each indicator is required to have a value greater than 0.7, while for the AVE method, a minimum threshold of 0.5 is necessary.

Table 1. Validity Test Results (Loading Factor)

Variables	Indicator	Loading Factor
Perceived Usefulness	PU_1	0.812
	PU_2	0.824
	PU_3	0.838
Perceived Ease of Use	PEOU_1	0.803
	PEOU_2	0.826
	PEOU_3	0.815
User Satisfaction	US_1	0.857
	US_2	0.849
	US_3	0.833
Process Effectiveness	PE_1	0.841
	PE_2	0.860
	PE_3	0.851

All indicators demonstrated loading factor values above 0.7, indicating that they meet the criteria for convergent validity. Additionally, the AVE values were calculated for each variable, with all values satisfying the minimum requirement of 0.5.

Table 2. AVE Validity Test Results

Variable	AVE Value	Description
Perceived Usefulness	0.676	Valid
Perceived Ease of Use	0.668	Valid
User Satisfaction	0.724	Valid
Process Effectiveness	0.718	Valid

The AVE results for each variable exceeded the minimum threshold of 0.5, indicating that all indicators effectively capture the intended latent variables.

Reliability Test Results

Reliability was tested using the Composite Reliability (CR) and Cronbach's Alpha methods. Both CR and Cronbach's Alpha values must exceed 0.7 to ensure the internal consistency of the constructs.

Table 3. Reliability Test Results

Variable	Composite Reliability	Cronbach's Alpha	Description
Perceived Usefulness	0.908	0.875	Reliable
Perceived Ease of Use	0.902	0.870	Reliable
User Satisfaction	0.926	0.893	Reliable
Process Effectiveness	0.912	0.879	Reliable

The CR and Cronbach's Alpha results for each variable showed values above 0.7, indicating that all constructs demonstrate good internal consistency.

Hypothesis Test Results

The hypothesis test was conducted to examine the influence of independent variables on dependent variables through path coefficient analysis in SEM-PLS. The table below presents the hypothesis test results along with statistical significance values.

Path	T-Statistics	P-Value	Conclusion
Perceived Usefulness → User Satisfaction	4.231	0.000	Significant
Perceived Ease of Use → User Satisfaction	3.847	0.000	Significant
User Satisfaction → Process Effectiveness	5.123	0.000	Significant
Perceived Usefulness → Process Effectiveness (via User Satisfaction)	4.679	0.000	Significant
Perceived Ease of Use → Process Effectiveness (via User Satisfaction)	4.392	0.000	Significant

Each hypothesis yielded significant results, with T-statistics greater than 1.96 and P-values below 0.05. This indicates that Perceived Usefulness and Perceived Ease of Use have significant effects on User Satisfaction and Process Effectiveness, both directly and through the mediation of User Satisfaction.

DISCUSSION

This study found that the variables Perceived Usefulness, Perceived Ease of Use, User Satisfaction, and Process Effectiveness in the context of the SIASN service for PMK at BKN exhibited significant effects. These findings support the concept that digitalization of services enhances satisfaction and administrative process effectiveness within the public sector.

According to the statistical test results, Perceived Usefulness significantly impacts User Satisfaction, with loading factor values for PU_1 = 0.812, PU_2 = 0.824, PU_3 = 0.838, and a T-statistic of 4.231 (P-value = 0.000). This finding aligns with the results of Khan et al. (2021), who found that perceived usefulness in digital systems fosters increased user satisfaction within public services. Furthermore, Ferreira et al. (2020) emphasized the importance of perceived usefulness in enhancing system effectiveness, which is consistent with our findings on the SIASN platform at BKN. SIASN has successfully supported PMK services by improving efficiency and providing a better user experience.

Perceived Ease of Use also demonstrated a significant effect on User Satisfaction, as evidenced by loading factor values for PEOU_1 through PEOU_3, all exceeding 0.8, and a T-statistic of 3.847 (P-value = 0.000). Sofiyah et al. (2024) highlighted that user-friendly digital services increase user satisfaction and accelerate technology adoption within public organizations. This finding is relevant in the context of SIASN, where the system's ease of use enables BKN employees to complete the PMK process more efficiently. Additionally, research by Wilson et al. (2021) reinforces this result, affirming that perceived ease of use plays a crucial role in user satisfaction in digital environments, especially when users are actively engaged with the technology.

Furthermore, User Satisfaction significantly impacts Process Effectiveness, with a T-statistic of 5.123 (P-value = 0.000). This result is consistent with the study by Bansah & Agyei (2022), which found that increased user satisfaction correlates with the effectiveness of digital services, particularly in systems that require continuous user interaction. This suggests that user satisfaction in SIASN's digital services directly contributes to the effectiveness of the PMK process, which is essential for human resource management in the public sector. This effectiveness is supported by SIASN's design, which facilitates access and shortens the duration of administrative processes.

Moreover, the mediation test indicated that User Satisfaction serves as a mediating variable between Perceived Usefulness and Process Effectiveness, with a T-statistic of 4.679 (P-value = 0.000). This finding is supported by Nyathi & Kekwaletswe (2024), who revealed that user satisfaction can strengthen the influence of perceived usefulness on system effectiveness, particularly when users are satisfied with their experience. This is also reflected in our findings, where the SIASN platform helps BKN employees complete administrative tasks more efficiently and accurately, supporting the primary goals of responsive and efficient public service digitalization.

The final findings indicate that Perceived Ease of Use has a significant effect on Process Effectiveness through User Satisfaction, with a T-statistic of 4.392 (P-

value = 0.000). This result is supported by De Leon et al. (2020), who noted that ease of use in digital services can enhance service effectiveness if accompanied by high levels of user satisfaction. In this study, SIASN proved effective in expediting the PMK process and improving employee productivity at BKN, aligning with findings by Siagian et al. (2022), which emphasized that ease of access to digital systems supports productivity and user satisfaction.

Overall, this study concludes that the implementation of SIASN has successfully enhanced the efficiency of PMK services at BKN through increased perceived usefulness and perceived ease of use. These findings suggest that user satisfaction plays an important mediating role between positive perceptions of technology and process effectiveness. Supported by statistical evidence, our study demonstrates that digitalization in public services, as exemplified by SIASN, is effective in improving organizational performance and productivity. These findings align with the growing trend of digitalization in public services, where technology is leveraged to provide more responsive and high-quality services within the government sector.

CONCLUSIONS AND RECOMMENDATIONS

1. **Perceived Usefulness Significantly Impacts User Satisfaction:** This study demonstrates that perceived usefulness has a significant impact on user satisfaction in the context of SIASN usage, with loading factor values of PU_1 = 0.812, PU_2 = 0.824, and PU_3 = 0.838, and a T-statistic of 4.231 (P-value = 0.000). This finding supports our hypothesis that the higher the perceived usefulness of SIASN, the higher the level of user satisfaction with the PMK service. This underscores the vital role of SIASN in simplifying administrative processes and enhancing user satisfaction through its functionality.
2. **Perceived Ease of Use Positively Influences User Satisfaction:** The study results indicate that perceived ease of use has a significant effect on user satisfaction, with loading factor values above 0.8 for indicators PEOU_1 through PEOU_3 and a T-statistic of 3.847 (P-value = 0.000). This finding aligns with our hypothesis that systems that are easy to use tend to increase user satisfaction. In the context of SIASN, a user-friendly interface enables BKN employees to complete the PMK process more efficiently, improving their experience and work productivity.
3. **User Satisfaction as a Primary Driver of Process Effectiveness:** This study reveals that user satisfaction directly influences process effectiveness, with a T-statistic of 5.123 (P-value = 0.000). This finding supports the hypothesis that when BKN employees are satisfied with SIASN, the effectiveness of the PMK process increases. High satisfaction levels contribute to a more efficient workflow, reduced processing times, and improved accuracy, highlighting the crucial role of user satisfaction in optimizing administrative services.
4. **User Satisfaction as a Mediator Between Perceived Usefulness and Process Effectiveness:** The study finds that user satisfaction mediates the

relationship between perceived usefulness and process effectiveness, with a T-statistic of 4.679 (P-value = 0.000). This result suggests that while perceived usefulness has a direct effect on effectiveness, its impact is stronger when users are satisfied. Therefore, enhancing the perceived usefulness of SIASN can improve its effectiveness, particularly when users are pleased with their experience.

5. **Importance of Ease of Use in Enhancing Process Effectiveness Through User Satisfaction:** The results indicate that perceived ease of use significantly affects process effectiveness through user satisfaction, with a T-statistic of 4.392 (P-value = 0.000). This finding suggests that the accessibility and ease of use of SIASN contribute to PMK process efficiency, especially when users are satisfied. It emphasizes the importance of ease of use as a foundational factor in system adoption and productivity in administrative tasks.

ADVANCED RESEARCH

This study has demonstrated that perceived usefulness and perceived ease of use in the SIASN service significantly impact user satisfaction, ultimately enhancing the effectiveness of the PMK process at BKN. However, this research opens opportunities for further studies that could deepen the understanding of factors underlying satisfaction and effectiveness in digital services within the governmental context. Future studies may explore additional variables such as user trust in technology or the organizational support provided to employees, as these factors also have the potential to influence the effectiveness of digital service processes in government institutions.

In addition to technical aspects and user experience, future research could broaden its focus to examine the impact of SIASN adoption on overall organizational productivity and its effect on operational efficiency. Expanding this research by conducting comparative analyses of SIASN's effectiveness with similar systems in other government agencies, both regionally and internationally, could help identify best practices in the digitalization of public services. Consequently, advanced studies could not only strengthen current findings but also contribute more broadly to understanding how digital technology implementation enhances service quality in the public sector.

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