

International Journal of 'Umrānic Studies
Jurnal Antarabangsa Kajian 'Umrān
المجلة العالمية للدراسات العمرانية
Journal homepage: www.unissa.edu.bn/ijus

Vol. 8, Number 1 | January 2025

EVALUATING THE EFFECTIVENESS OF THE '*SISTEM SUMBER MANUSIA*' ONLINE APPLICATION FOR GOVERNMENT EMPLOYEES IN BRUNEI DARUSSALAM¹

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Received: 21/12/2024 Revised: 7/1/2025 Accepted: 20/2/2025 Published: 31/3/2025

ABSTRACT

Purpose of the Study: This study evaluates the effectiveness of the 'Sistem Sumber Manusia' (SSM) online application in Brunei Darussalam's government sector, focusing on employee satisfaction, system usability, and its impact on Human Resource (HR) processes. The study aims to identify the benefits, challenges, and potential improvements necessary to optimize the system for government employees.

Methodology: A structured quantitative approach was employed, utilizing literature reviews and surveys distributed among government employees in the Ministry of Education. The study used stratified random sampling to ensure representative participation across different job roles. Data were analyzed through descriptive statistics and thematic analysis to assess employee satisfaction, usability issues, and system effectiveness.

Main Findings: The findings reveal that while the SSM application has improved HR operations by streamlining payroll and administrative tasks, employees face difficulties related to system complexity, data security concerns, and accessibility challenges. The majority of respondents expressed moderate

¹ How to cite this article:

APA Style: Noeh, N. N. M., & Azahari, L. M. H. (2025). *Evaluating the effectiveness of the 'Sistem Sumber Manusia' online application for government employees in Brunei Darussalam*. *International Journal of 'Umrānic Studies*, 8(1), 17–31.

Chicago Manual Style: Noeh, Nurhazirah Naqibah binti Mohamad, and Liza Mariah binti Haji Azahari. 2025. "Evaluating the Effectiveness of the 'Sistem Sumber Manusia' Online Application for Government Employees in Brunei Darussalam." *International Journal of 'Umrānic Studies* 8, no. 1: 17–31.

satisfaction with the system, with usability issues being the most frequently cited drawback. Key concerns include difficulties in navigating the system, password expiration issues, and privacy risks.

Application of this Study: This study provides valuable insights for policymakers and HR professionals in optimizing digital HR systems within government institutions. The recommendations, including enhanced user training, security improvements, and system refinements, can aid in improving the adoption and effectiveness of e-Government initiatives in Brunei Darussalam.

Novelty/Originality of this Study: This research is among the first to comprehensively assess the effectiveness of the SSM system within Brunei's government sector. Unlike previous studies that focus on generic HR information systems, this study highlights context-specific challenges and proposes solutions aligned with the technological capabilities and workforce composition of Brunei.

Significance: The study contributes to the ongoing digital transformation of HR management in government institutions by providing empirical evidence on system effectiveness and user concerns. The recommendations can guide system developers, policymakers, and HR professionals in improving digital HR systems, ensuring greater employee satisfaction and operational efficiency.

KEYWORDS: Sistem Sumber Manusia (SSM), Government Sector, Employee Satisfaction, HR System Effectiveness, Digital Transformation, e-Government, Usability Challenges, Security Concerns.

INTRODUCTION

This study evaluates the effectiveness of the *Sistem Sumber Manusia* (SSM) online application for government employees in Brunei Darussalam. Despite its implementation, many employees face usability challenges that may impact their productivity and overall satisfaction. This study aims to assess these challenges and propose solutions to enhance the system's functionality and user experience. In April 2021, the Prime Minister's Office, in collaboration with the Department of Public Service and the Ministry of Economic Finance, introduced SSM as Brunei's centralized Human Resource System. This platform integrates the Government Human Resource Management System (GEMS) and the Government Payroll System into a single application used by all government employees. Designed to improve HR operations, SSM facilitates key functions such as attendance tracking, leave requests, authorization for overseas travel, personal and service information updates, and payroll management. One of its primary objectives is to ensure the accuracy of personal data and public service records across all 13 ministries, streamlining salary processing and HR administration. Additionally, SSM aims to improve efficiency in handling financial requests, such as allowances, while reducing redundancy in administrative tasks². However, as the system is still in its early stages, employees have reported concerns regarding its effectiveness and ease of use. Research on Human Resource Information Systems (HRIS) in government sectors has shown that factors such as system usability, technical issues, and lack of adequate training can hinder adoption and overall effectiveness³ (Kavanagh & Thite, 2021; Bondarouk et al., 2017). While similar HRIS applications have been implemented in other countries, there is limited research on the specific challenges faced by Brunei's government workforce. This study seeks to address this gap by

² Sistem Sumber Manusia, Jabatan Perkhidmatan Awam. Retrieved from:
<https://www.jpa.gov.bn/SSM/SitePages/Home.aspx>

³ Bondarouk, T., Parry, E., & Furtmueller, E. (2017). Electronic HRM: Four decades of research on adoption and consequences. *The International Journal of Human Resource Management*, 28(1), 98-131.
<https://doi.org/10.1080/09585192.2016.1245672>. Kavanagh, M. J., & Thite, M. (2021). *Human Resource Information Systems: Basics, Applications, and Future Directions* (5th ed.). SAGE Publications.

evaluating employee perceptions of SSM's effectiveness and providing recommendations to optimize its performance and enhance employee engagement.

LITERATURE REVIEW

A Human Resource Management System (HRMS) or Human Resource Information System (HRIS) integrates several HR processes with information technology, enabling professionals to manage tasks such as employee data, payroll, recruitment, performance assessments, and training more efficiently (Samira H, 2017). By consolidating and digitizing these tasks, HR departments can save time and streamline operations. However, despite the potential advantages, the adoption of HRIS in government organizations has encountered several challenges. Tesfaye (2014) identifies a range of concerns related to Information Systems (IS), including job displacement due to automation, privacy issues regarding personal data, information overload, and resistance to changes in workflows. These concerns are particularly relevant in government settings, where employees may already be wary of new systems. Zafar and Stone (2017) highlight the unease many employees feel about the potential for unauthorized access to their personal information stored within HRIS.

In response to these issues, designing a user-friendly and effective User Interface (UI) becomes essential. As Nielsen (1994) suggests, a well-designed interface—one that is intuitive, easy to use, and visually appealing—can significantly enhance user satisfaction and promote more effective system use. This is especially important in government settings, where employees may have varying levels of digital literacy. In this context, usability testing, as discussed by Rubin and Chisnell (2008), helps designers understand how users interact with the system, identifying areas that need improvement. However, a gap still exists in understanding how HRIS can be tailored specifically to the needs of government employees.

A promising approach to tackling this challenge is User-Centered Design, which aims to cater to a wide range of user needs. However, this can lead to overly complex systems, which might not be easy for all employees to navigate. Conversely, Inclusive Design simplifies the process by focusing on the majority of users, but it may overlook those with special needs, particularly those at the higher end of the design pyramid in Figure 1 (Hammad et al., 2016). This ongoing tension between complexity and simplicity remains an underexposure issue in government HRIS systems, which need to accommodate a diverse workforce.

User satisfaction is another crucial factor in the success of HRIS implementation. Studies show that system usability, proper training, and alignment with organizational goals are all significant drivers of satisfaction (Ruel et al., 2004; Lazim et al., 2023). However, much of the existing research on HRIS satisfaction focuses on the private sector, leaving a gap when it comes to public sector organizations, particularly in countries like Brunei.

Integrating online applications into existing systems presents various technical challenges, such as compatibility issues, data migration, and system interoperability (Themistocleous et al., 2001). But beyond technical barriers, there are also organizational challenges, including resistance to change, lack of resources, and inadequate training (Venkatesh et al., 2003). Additionally, the age distribution within the workforce plays a significant role in technology adoption. As Beckmann (2005) notes, younger employees are often more comfortable embracing new technologies, while older employees may need additional support to adjust. Therefore, organizations should prioritize targeted training programs to help older workers become proficient with HRIS.

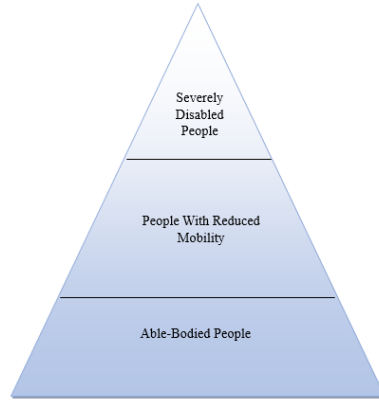


Figure 1: User Types Based on Abilities

Lastly, integrating Islamic ethics into HRIS design could enhance employee trust and ensure that the system aligns with cultural values. Ahmad and Omar (2014) argue that incorporating Shariah principles into HR technology fosters transparency, fairness, and ethical decision-making in the workplace. These values are reflected in the Quran, which emphasizes the importance of justice and fulfilling obligations. For instance, Surah An-Nisa (58) states:

إِنَّ اللَّهَ يَأْمُرُكُمْ أَنْ تُؤَدُّوا الْأَمَانَاتِ إِلَىٰ أَهْلِهَا وَإِذَا حَكَمْتُمْ بَيْنَ النَّاسِ أَنْ تَحْكُمُوا بِالْعَدْلِ ۗ إِنَّ اللَّهَ نِعِمَّا يَعِظُكُمْ بِهِ ۗ إِنَّ اللَّهَ كَانَ سَمِيعًا بَصِيرًا

“Indeed, Allah commands you to return trusts to their rightful owners; and when you judge between people, judge with fairness. What a noble commandment from Allah to you! Surely Allah is All-Hearing, All-Seeing”⁴

This teaching emphasizes fairness and justice, qualities that can be applied to workplace practices such as performance recognition and fair compensation. Similarly, the Quran stresses the importance of recognizing and rewarding those who contribute, as highlighted in Surah Al-Anfal (75), which says:

وَالَّذِينَ آمَنُوا مِنْ بَعْدُ وَهَاجَرُوا وَجَاهَدُوا مَعَكُمْ فَأُولَٰئِكَ مِنْكُمْ ۗ وَأُولُوا الْأَرْحَامِ بَعْضُهُمْ أَوْلَىٰ بِبَعْضٍ فِي كِتَابِ اللَّهِ ۗ إِنَّ اللَّهَ بِكُلِّ شَيْءٍ عَلِيمٌ

“And those who later believed, migrated, and struggled alongside you, they are also with you. But only blood relatives are now entitled to inherit from one another, as ordained by Allah. Surely Allah has full knowledge of everything”⁵

Additionally, in HRIS systems, attendance is a critical component that reflects integrity and the fulfillment of obligations. The Quran further emphasizes honesty and upholding promises in various verses. Surah Al-Mumtahanah (60:8) states:

لَا يَنْهَىٰكُمْ اللَّهُ عَنِ الَّذِينَ لَمْ يُقَاتِلُوكُمْ فِي الدِّينِ وَلَمْ يُخْرِجُوكُمْ مِنْ دِيَارِكُمْ أَنْ تَبَرُّوهُمْ وَتُقْسِطُوا إِلَيْهِمْ ۗ إِنَّ اللَّهَ يُحِبُّ الْمُقْسِطِينَ

⁴ Surah An-Nisa verse 58. Translation by Dr. Mustafa Khattab. Retrieved from: <https://quran.com/an-nisa/58-68>

⁵ Surah Al-Anfal verse 75. Translation by Dr. Mustafa Khattab. Retrieved from: <https://quran.com/en/al-anfal/75>

“Allah does not forbid you from those who do not fight you because of religion and do not expel you from your homes—from being righteous toward them and acting justly toward them. Indeed, Allah loves those who act justly”⁶

CONCEPTUAL FRAMEWORK

The conceptual framework of this study is shown in Figure 2:

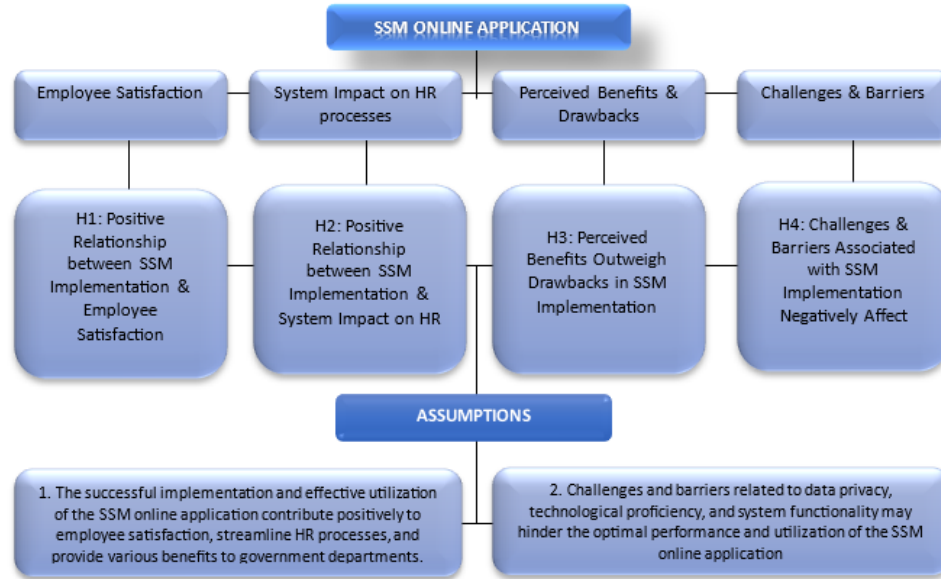


Figure 2: Conceptual Framework SSM Online Application

RESEARCH QUESTION

1. How satisfied are government employees in Brunei Darussalam with the usability and user-friendliness of the '*Sistem Sumber Manusia*' online application?
2. What are the perceived benefits and drawbacks of the '*Sistem Sumber Manusia*' online application as reported by government workers in Brunei Darussalam?
3. What solutions can be implemented to address the challenges and barriers encountered during the integration of the '*Sistem Sumber Manusia*' application into the government's HR processes?

SIGNIFICANCE OF THE STUDY

This study aims to provide valuable insights that will enable government employers to better understand the existing gaps within the Human Resource System and enhance the overall workplace environment. The findings of this research have the potential to influence government institutions to reevaluate their strategies for addressing these challenges, while also mitigating the risk of broader societal issues, such as employee reluctance to use the system and its related consequences, including potential impacts on the country as a whole. Furthermore, the research outcomes may serve as a valuable reference point for future studies

⁶ Surah Al-Mumtahanah verse 8. Translation by Dr. Mustafa Khattab. Retrieved from: <https://quran.com/en/al-mumtahanah>

conducted by various stakeholders interested in optimizing the effectiveness of the Human Resource System within Brunei Darussalam's public sector.

RESEARCH METHODOLOGY

The research methodology employed a structured quantitative approach to assess the effectiveness of the SSM application among government employees in Brunei, specifically within the Ministry of Education. A stratified random sampling technique was used to select participants, ensuring a representative sample across various job roles and demographics. Data were collected through a structured questionnaire distributed via Google Forms, with a mix of Likert scale and open-ended questions designed to assess user satisfaction, usability, and perceptions of the HR system. The data were analyzed using descriptive statistics and thematic analysis, with Microsoft Excel serving as the primary tool for analysis due to time constraints. Bias was mitigated through random sampling, clear questionnaire design, and systematic data analysis procedures. While the focus on a single ministry may limit the generalization of the findings, the methodology's transparency and rigorous approach provide valuable insights into the HRIS effectiveness within this specific context, ensuring that the results offer meaningful implications for future HR system implementations in Brunei.

FINDINGS

User Feedback and System Evaluation

Research Question One: How satisfied are government employees in Brunei Darussalam with the usability and user-friendliness of the '*Sistem Sumber Manusia*' online application?

Tables 1 and 2 illustrate responses pertaining to the initial objective of this study, which aims to assess user satisfaction and usability of the SSM online application. The findings are discussed across five sections. From the data in Table 1, respondents expressed their agreement (Yes) or disagreement (No) regarding the application's usability. The results of the questionnaire about the difficulties employees have utilizing the SSM online application are insightful. A significant 83.9% of respondents reported having issues using the application, suggesting challenges in adapting to or using the SSM platform. Conversely, 16.1% of the workforce did not identify any difficulties, indicating that some employees find the online Human Resource System (HRS) easy to use or have successfully navigated initial challenges.

TABLE 1: Data Analysis on the Respondents' Level of Usability of the System

No	Category	Respondent	
		Frequency	Percentage
1.	Have you experienced difficulties or issues using the ' <i>Sistem Sumber Manusia</i> ' online application?		
	1.1 Yes	94	83.9%
	1.2 No	18	16.1%
2.	Do you feel the system is equally accessible and user-friendly for all age group?		
	2.1 Yes	45	40.2%
	2.2 No	67	59.8%

TABLE 2: Data Analysis on the Respondents' Level of Satisfaction of the System

No	Item	Scale					Mean	Perception
		1	2	3	4	5		
1.	How would you rate the ease of use of the SSM online application?	2.7% (3)	22.3% (25)	33% (37)	17% (19)	25% (28)	3.40	Medium
2.	How satisfied are you with the features and functionalities of the SSM online application?	2.7% (3)	30.4% (34)	30.4% (34)	16.1% (18)	20.5% (23)	3.20	Medium
3.	How would you rate the new merged system's performance, particularly in protecting the privacy of personal data?	3.6% (4)	43.8% (49)	31.3% (35)	17.9% (20)	3.6% (4)	3.21	Medium
Total:						3.27	Medium	

In addition to this, respondents answered an open-ended question regarding specific problems or difficulties encountered. The researcher employed theme analysis to identify these issues. The most frequently reported concern was application problems, which hinder productivity due to system issues and technological glitches. Following closely, many participants highlighted difficulties with password expiration, indicating concerns about the user authentication process. Another common issue was challenges in utilizing specific features, suggesting struggles with system navigation or the user interface. Additionally, respondents expressed concerns about data inaccuracies and privacy, raising issues regarding information accuracy and personal data protection.

Furthermore, the analysis of accessibility and user-friendliness data across age groups illustrates varying perceptions among different demographics. While 40.2% of respondents reported a positive experience, 59.8% expressed dissatisfaction. This discrepancy suggests a generational gap in the perception and interaction with various systems, technologies, or services. An open-ended inquiry, employing theme analysis, further explored this hypothesis to identify primary causes of accessibility issues with the SSM web application. The main barrier identified was the disparity in technological proficiency. A significant number of users

face challenges due to insufficient technological skills, hindering their effective navigation of the system.

Table 2 presents the level of satisfaction that respondents had, ranging from 1 (Very Dissatisfied) to 5 (Very Satisfied). The results show an average satisfaction score of 3.27, indicating a moderate level of satisfaction. A minor percentage, 2.7% (3 respondents), classified the system as "Very Dissatisfied," highlighting a modest but present level of difficulty. More respondents, 22.3% (25), rated the system as "Dissatisfied," indicating a significantly higher level of complexity. The majority, 33% (37), expressed a "Neutral" stance, while 17% (19) were "Satisfied" and 25% (28) were "Very Satisfied." This distribution suggests a diverse user experience, pointing towards areas for improvement while recognizing that a significant portion of users find the system user-friendly.

Additionally, the evaluation of employee satisfaction with the SSM online application reveals a spectrum of sentiments. The top three responses show that 20.5% (23) of employees were "Very Satisfied," followed by 30.4% (34) expressing "Dissatisfied," and another 30.4% (34) maintaining a "Neutral" stance. This nuanced distribution indicates that while a substantial portion of employees have positive experiences, a significant proportion expresses dissatisfaction or neutrality. These insights can guide targeted initiatives to enhance positive user experiences, address areas of concern, and cultivate an environment where the majority of employees can attain greater satisfaction with the SSM online application.

Lastly, the analysis of the new merged system's ability to secure privacy and enhance daily work yielded mixed responses. A significant number of participants, 43.8% (49), rated their experience as "Dissatisfied," while 31.3% (35) held a "Neutral" stance. On the other hand, 3.6% (4) reported being "Very Satisfied," and 17.9% (20) were "Satisfied." A small percentage, 3.6% (4), expressed being "Very Dissatisfied." This range of reactions highlights a heterogeneous reception, underscoring areas requiring improvement. Addressing user complaints is crucial to increasing overall satisfaction with the system.

Analysis of the SSM online application's impact on government workers in Brunei Darussalam

Research Question Two: What are the perceived benefits and drawbacks of the '*Sistem Sumber Manusia*' online application as reported by government workers in Brunei Darussalam?

The Benefit of '*Sistem Sumber Manusia*' (SSM) on Job Satisfaction and Performance

The results of the open-ended questionnaire provide insight into several key components of the SSM application that significantly impact job satisfaction and performance. The most common theme highlights the importance of transparent payroll information. This indicates that employees highly value a remuneration system that is clear and easily understood, fostering trust and transparency within the organization. Another critical benefit is the accessibility of data and information from anywhere. Employees emphasized the importance of a mobile-friendly and easily accessible platform that allows seamless retrieval of essential information. This enhances convenience and contributes to a more efficient and well-informed workforce.

The third most common theme underscores the role of punctuality and attendance tracking. Employees appreciate the SSM application's features that monitor and encourage punctuality, suggesting a positive correlation between attendance management and overall workplace performance and fulfillment. Additionally, accessibility to Key Performance Indicators (KPI)

emerged as a significant theme. A system that makes performance indicators readily available to staff members promotes a culture of continuous improvement and accountability.

Lastly, the leave application process, though mentioned less frequently, was still identified as an important feature. A streamlined and user-friendly leave application system supports employee well-being and job satisfaction. In conclusion, the thematic analysis of respondents' comments demonstrates that the SSM application influences multiple aspects of work, ultimately enhancing performance and job satisfaction.

The Drawback of '*Sistem Sumber Manusia*' (SSM) on Job Satisfaction and Performance

Despite its benefits, several drawbacks of the SSM application were identified by respondents. A primary concern was the difficulty in using the application. This highlights the necessity of a dynamic and user-friendly interface, as a complex navigation system can lead to frustration and reduced satisfaction. Another closely related issue is the recurrence of technical malfunctions within the SSM application. Respondents noted that frequent disruptions hinder the smooth operation of HR processes, negatively impacting productivity and work experience. Ensuring a stable and error-free system is essential to maintaining efficiency and satisfaction.

Concerns about the authenticity of employee data also emerged as a recurring theme. This raises questions about potential neglect or manipulation within the application, which could compromise the integrity of HR procedures and lower employee morale. Additionally, respondents reported dissatisfaction with data inaccuracies, emphasizing the critical need for precise and reliable data to facilitate informed decision-making. Discrepancies within the system can cause misunderstandings that may ultimately affect job performance. Privacy and security concerns were also highlighted, with employees expressing apprehension over the protection of personal and sensitive information within the application. These concerns underscore the need for robust security measures to ensure a safe and secure platform.

Lastly, respondents pointed out issues regarding the responsiveness of managers or administrators within the system. Effective and timely communication from management is essential for addressing employee concerns, which in turn influences job satisfaction and overall performance. In summary, the thematic analysis of respondents' open-ended responses reveals critical areas for improvement within the SSM application. Addressing these drawbacks will enhance its effectiveness and its overall impact on job satisfaction and performance.

Analyzing the effectiveness of SSM online application in HR management

Research Question Three: What solutions can be implemented to address the challenges and barriers encountered during the integration of the '*Sistem Sumber Manusia*' application into the government's HR processes?

Suggestion For Improving '*Sistem Sumber Manusia*' Integration in Government HR

Significant insights have been gained from the open-ended input that respondents provided on how to improve the integration of SSM in government HR. The idea to create efficient workshops to provide in-depth advice on program usage leads to a list of recommendations. In order to enable users to fully comprehend the system and enable its best usage within the government HR framework, proactive instructional programs must be implemented. Furthermore, a need for more features and functionalities was also expressed by respondents, who underlined the need for system facilities to be diverse. As a result, it appears that expanding the SSM application's versatility can help meet a greater variety of HR requirements and build a system that is more flexible and dynamic in the context of government.

Another common theme highlighted the importance of regularly monitoring website errors, underscoring the significance of a proactive approach to identifying and resolving issues promptly. This shows that continuous vigilance regarding the system's performance is crucial for ensuring a seamless and error-free user experience, ultimately enhancing the efficiency of government HR processes. Furthermore, there was a focus on enhancing data security and implementing attendance alerts. This emphasizes the importance of strengthening the security infrastructure of the SSM application to protect sensitive information, while the incorporation of attendance alerts can improve attendance management within the government HR domain.

In summary, the thematic analysis reveals a collective call for strategic measures such as educational workshops, system diversification, regular error monitoring, and enhanced data security to optimize the integration of SSM in government HR. These insights offer valuable guidance for refining the system to better meet the specific needs and expectations of the government workforce.

Suggestion For Optimizing Employee Satisfaction

Respondents provided valuable suggestions to enhance employee satisfaction with the SSM application, emphasizing the need for a more user-friendly interface. Prioritizing user-centric design would simplify navigation and create a seamless experience, ultimately improving employee satisfaction. Another significant recommendation is the development of a dedicated mobile application for SSM. Employees increasingly expect mobile accessibility, and a mobile app would provide greater flexibility and convenience in accessing HR-related data and services.

The integration of advanced security features, such as Face ID authentication, along with attendance alerts, was another key suggestion. Strengthening data security and improving attendance tracking would enhance both usability and trust in the system. Additionally, respondents stressed the need for digital support services. Providing adaptable digital assistance tools would empower employees by helping them navigate various HR procedures efficiently. Furthermore, implementing regular feedback channels was suggested as a means to foster continuous system improvements. Actively soliciting and incorporating user feedback would ensure that the SSM application evolves in response to employee needs and expectations.

In conclusion, respondents' recommendations highlight the importance of user-friendly design, mobile accessibility, enhanced security features, digital support services, and ongoing feedback mechanisms. These improvements would contribute to a more effective and satisfying experience for government employees using the SSM application.

DISCUSSIONS

Research Question One: How satisfied are government employees in Brunei Darussalam with the usability and user-friendliness of the '*Sistem Sumber Manusia*' online application?

The findings indicate varied levels of satisfaction among government employees regarding the usability of the SSM online application. As shown in Table 1, a significant portion of respondents reported difficulties navigating the system, particularly in areas such as password expiration and recurring technical glitches. These issues hinder productivity and highlight the need for enhanced user support and technical system improvements. Additionally, generational differences were observed, with older employees experiencing greater difficulties compared to younger users. This suggests a need for targeted training programs to bridge

technological proficiency gaps and ensure a more inclusive adoption of the system (Shet et al., 2021).

Likert scale responses revealed a mixed perception of the application's user-friendliness. While some respondents expressed satisfaction, others reported dissatisfaction or remained neutral, indicating opportunities for usability enhancements. To improve the Human Resource System (HRS), a mobile-friendly version of SSM and comprehensive user training should be introduced to address these concerns effectively. Moreover, privacy and security concerns emerged as recurring issues among respondents. Strengthening data security through multi-factor authentication (MFA) and ensuring transparent communication about security policies can enhance user trust in the system.

Research Question Two: What are the Perceived Benefits and Drawbacks of the 'Sistem Sumber Manusia' Online Application as Reported by Government Workers in Brunei Darussalam?

The findings highlight both the advantages and limitations of the Sistem Sumber Manusia (SSM) online application as experienced by government employees in Brunei Darussalam.

Benefits of the SSM Application

One of the most notable advantages is payroll transparency, which enhances employee trust and morale, ultimately contributing to higher job satisfaction and performance (Smith & Doe, 2022). Additionally, the ability to access data from anywhere, especially through a mobile-friendly platform, increases productivity and knowledge-sharing among employees (Lee et al., 2022). Furthermore, the system's attendance tracking and Key Performance Indicator (KPI) monitoring foster a culture of discipline, accountability, and continuous improvement, leading to improved employee engagement and well-being (Shahu et al., 2023).

Drawbacks of the SSM Application

Despite its benefits, several key challenges were identified. A significant concern is the lack of user-friendliness and recurring system errors, which lead to frustration and reduced efficiency. This indicates a pressing need for system reliability enhancements (Layne & Lee, as cited in Abusamhadana, Bakon, & Elias, 2021). Additionally, concerns about data accuracy and integrity raise potential risks of misuse or manipulation, which can erode organizational trust and complicate decision-making (Mohapatra, Biswas, & Mohanty, 2020). The study also highlights privacy and security risks, emphasizing the need for stronger data protection measures to safeguard employees' personal information (Anupa, 2021). Lastly, a lack of timely managerial responses to employee concerns within the system was frequently reported. This underscores the importance of establishing more effective communication channels to promptly resolve issues, thereby improving job satisfaction and overall performance (Chai et al., 2021).

Implications for Policy and System Improvement

These findings provide valuable insights for policymakers and organizational leaders in Brunei Darussalam. To maximize the benefits of the SSM application, it is crucial to:

- Enhance user experience through a more intuitive and error-free system
- Strengthen data security by implementing multi-factor authentication (MFA)
- Improve managerial responsiveness by introducing real-time support channels
- Develop training programs to ensure employees can navigate the system effectively

Research Question Three: What solutions can be implemented to address the challenges and barriers encountered during the integration of the 'Sistem Sumber Manusia' Application into the government's HR processes?

The suggested solutions for enhancing SSM application in government HR processes align with key Islamic principles that emphasize knowledge acquisition, trustworthiness, and excellence in work.

1. Educational Workshops and Support Resources

The recommendation to implement workshops and training programs for SSM users is consistent with Islamic teachings on knowledge acquisition. The Quran encourages seeking knowledge and continuous learning, which are essential for improving employee competency and ensuring efficient system usage. By providing structured educational initiatives, organizations can empower employees and foster a culture of lifelong learning, aligning with Islamic values.

2. Strengthening Data Security and Attendance Monitoring

The enhancement of data security and the implementation of attendance alerts reflect the Islamic principles of trustworthiness (*Amanah*) and accountability (*Mas'uliyah*) in resource management. The Quran emphasizes honesty and integrity in all dealings, which directly applies to safeguarding sensitive employee data and ensuring accurate attendance tracking. Strengthening security measures, such as multi-factor authentication (MFA) and real-time attendance alerts, can uphold these ethical values while improving HR efficiency.

3. Enhancing Usability and System Functionality

The Islamic concept of *Ihsan* (excellence in work) is reflected in the need to improve the user experience of the SSM application. The Prophet Muhammad (peace be upon him) encouraged believers to strive for excellence in all aspects of life, including work. Enhancing the system by:

- Developing a user-friendly interface,
 - Providing mobile accessibility, and
 - Implementing advanced security features
- demonstrates a commitment to continuous improvement and technological efficiency in government HR processes.

Therefore, the findings and recommendations for improving the SSM application align with key Islamic ethical principles, including fairness, transparency, knowledge acquisition, trustworthiness, and excellence. By integrating these values into HR technology, the government can foster a more efficient, ethical, and employee-centric work environment. Addressing these challenges and recommendations will not only improve the effectiveness of the SSM system but also contribute to a work culture that upholds Islamic principles, ultimately enhancing employee well-being and organizational performance in Brunei Darussalam.

CONCLUSION

The study revealed that government employees in Brunei Darussalam face several challenges with the usability and user-friendliness of the Sistem Sumber Manusia (SSM) online application. Common issues include system bugs, password expiration problems, and technical glitches that hinder efficient usage. Additionally, the level of satisfaction varies across different age groups, indicating the necessity for tailored training and support, particularly for older

employees who may struggle with digital adaptation. The research also highlighted diverse perceptions regarding usability, emphasizing the need for improvements in system design and user experience. Furthermore, privacy and security concerns emerged as significant factors affecting employee confidence in the system, reinforcing the importance of implementing robust security measures and transparent data protection policies.

The findings also assessed the perceived benefits and drawbacks of the SSM application. On the positive side, the system has improved payroll transparency and accessibility to HR-related data, making essential information more readily available to employees. Additionally, features such as attendance monitoring and Key Performance Indicator (KPI) tracking have enhanced operational efficiency and accountability. However, notable drawbacks include recurring system errors, concerns over data integrity, and dissatisfaction with managerial responsiveness. These challenges highlight the need for further refinement and better user support to ensure the system meets employee expectations and operational needs.

To address these challenges, the study proposes several solutions for optimizing the integration of SSM into government HR processes. Key recommendations include the implementation of structured training and support programs that align with Islamic ethical principles such as fairness, transparency, and continuous knowledge acquisition. Additionally, improving the system's usability and functionality is essential to enhancing user experience, alongside strengthening data security measures and refining managerial communication within the HR system. By addressing these issues, the SSM application can become a more effective and user-friendly digital HR platform for government employees in Brunei Darussalam.

The findings reveal that insufficient training and support hinder the effective integration of the Sistem Sumber Manusia (SSM) platform in Brunei Darussalam's government sector. To address this, government agencies should implement structured training programs, provide dedicated user support, and develop clear instructional resources to enhance user competence and satisfaction. These initiatives will increase adoption rates, reduce technical difficulties, and improve overall system efficiency in HR management.

Furthermore, user-driven recommendations provide practical strategies to enhance Brunei's e-government services:

- Modernizing the user interface to improve navigation and usability.
- Developing a dedicated mobile application to enhance accessibility and flexibility.
- Implementing multi-factor authentication and data encryption to strengthen security.
- Introducing real-time error reporting and system monitoring for immediate issue resolution.

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