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Government Website and Service Monitoring System Role in Enhancing Transparency and Accountability in Malaysian Government Agencies

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Abstract: This study examines the compliance of Malaysian government agencies' websites to the Malaysian Government Website and Service Monitoring System (SPLaSK), a governmental platform for enhancing transparency and accountability. Through an analysis of 899 agencies registered with SPLaSK as of January 2024, this research employs a qualitative research design utilizing semi-structured interviews and content analysis to evaluate the platform's effectiveness across six dimensions: accessibility, ease of use, quality of content, privacy/security, responsiveness, and reliability. The findings indicate a consistent increase in registered government agencies over the last three years, from 623 agencies in 2022 to 899 agencies in 2024. Among the 899 agencies in 2024, only 544 are active, with 282 (51.8%) achieving outstanding scores of at least 80%. Preliminary results suggest that SPLaSK has significantly contributed to improving governmental website standards, thereby fostering greater transparency and accountability. This paper underscores the potential of SPLaSK to enhance public administration and governance in the digital era.

Keywords: *Website quality, transparency, accountability, e-government*

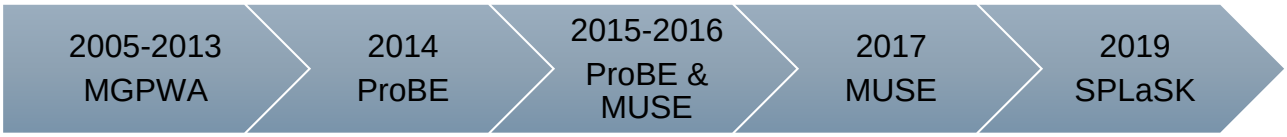
1. Introduction

The integration of digital technology into government operations has transformed how governments interact with their citizens. Numerous benefits are attributed to e-government portals such as fostering greater efficiency, transparency, and accessibility in public service delivery (Saengchaia et al., 2020). Developing an e-government portal that offers up-to-date public services on both web and mobile platforms will encourage the adoption and use of e-government services (Yıldırım & Bostancı, 2021). An important consideration in fostering effective digital disclosure by the government is the concept of website quality. Almaiah and Nasereddin (2020) and Alanezi et al. (2012) suggest that website quality such as functionality, content quality, ease of use, and security, positively influence the performance expectancy of e-government services.

In Malaysia, the Sistem Pemantauan Laman Web dan Servis Kerajaan (SPLaSK), or Government Website and Service Monitoring System, plays a critical role in this digital transformation. Administered by the Malaysian Administrative Modernization and Management Planning Unit (MAMPU), SPLaSK is designed to monitor and assess the quality of government websites and services, ensuring they adhere to standards across various dimensions, including accessibility, ease of use, content quality, security, responsiveness, and reliability (MAMPU, 2024). These dimensions are particularly relevant in the context of government disclosure practices. Government agencies are expected to provide timely, accurate, and comprehensive information to the public through their digital platforms.

SPLaSK was first introduced in 2019 after many efforts by MAMPU since 2005 to encourage and monitor the websites of government agencies. It functions as a platform to monitor the government agencies' websites based on criteria set by Provider-based Evaluation (PROBE) and Malaysian User Chronology of Government Website and Online Service Evaluation Assessment and online services provided by MAMPU.

Figure 1: Chronology of Government Website and Online Service Evaluation



Source: MAMPU (2024)

Initially, the Malaysia Government Portals and Website Assessment (MGPWA) was set up to observe the government agencies from 2005 to 2013. Then, in 2014, provider-based was introduced, with each government agency performing self-assessment on their websites. Later, from 2015 to 2016, in the transition period before MAMPU used another system called Malaysian User Satisfaction Evaluation (MUSE), the old system, ProBE, was used concurrently with MUSE. Only in 2017, MUSE is applied independently. Lastly, in 2019, MAMPU implemented the improvement project for the web and online service monitoring system (SPLaSK) V2.0, which is an initiative to enhance the existing SPLaSK system to measure the compliance level of government websites and online services for all set criteria automatically using a web crawler that is part of SPLaSK. This improved platform aims to monitor agency websites' compliance levels and performance in real-time and continuously. With the use of SPLaSK v2.0, agencies can monitor and implement improvements immediately based on compliance and performance reports to ensure websites can support and drive the country's digital government transformation agenda.

Additionally, the SPLaSK system will become the reference system for public sector website monitoring through the Malaysian Government Performance Index (MyGPI) assessment, replacing the SSR Index rating system for the year 2020 and subsequent years. SPLaSK has the features of auto-notification, self-assessment, application program notification (API), real-time monitoring, Google Analytics (GA), and report analysis. It is also assisted by modules for Administrator, Customer Access Control, Dashboard and Report, Government Online Services (GOS) and Web Profiling, Notifications, and GOS and Web Assessment.

However, despite the progress made through SPLaSK, the journey toward full transparency and accountability of e-government is far from complete. Various challenges still exist, including the digital divide, which leaves some citizens without adequate access to online services. Additionally, concerns about data privacy and security continue to rise, as do evolving public expectations regarding government responsiveness. These hurdles mean that while technology can facilitate better governance, it also requires continuous effort and adaptation to meet the diverse needs of the community. Therefore, this study addresses an important question: How effectively does the SPLaSK monitoring system enhance the quality of Malaysian government websites, and what obstacles remain in the pursuit of transparency and accountability? This study seeks to uncover not only the strengths of the SPLaSK initiative but also the areas where improvement is needed.

To tackle this research problem, the primary objective of this study is to evaluate the quality of Malaysian government websites through the lens of the SPLaSK monitoring system, focusing specifically on aspects such as accessibility, content quality, and responsiveness. By diving into these key areas, this study aims to provide actionable insights that can help refine SPLaSK and enhance the overall user experience on government platforms. This research aims to contribute to a broader understanding of how digital tools can promote public trust and active participation in governance, paving the way for a more inclusive and accountable government. By analyzing the government agencies' compliance with SPLaSK, this study will also provide valuable insights into how such initiatives can be optimized to foster greater trust and efficiency in public administration. This paper is structured as follows: Section 2 reviews relevant literature; Section 3 details the research methodology; Section 4 presents the findings and discussion; and Section 5 concludes with the study's implications and recommendations.

2. Literature Review

Accountability and Transparency in Information Technology

Information technology (IT) is pivotal in modern government operations which enhances service delivery, operational efficiency, and transparency. The implementation of IT systems, such as e-government, marks a transition towards modernizing traditional government processes. This shift aims to make government services more reliable, transparent, accountable, and efficient. Over the years, the Malaysian government has adopted IT as a way of improving accountability in its operations. IT development has enhanced the delivery of public services and released information through websites to increase accountability (Zainon, 2019). Zainon (2019), further explains Public Sector Open Data Portal, which was established by MAMPU is one of the initiatives that aims to promote accountability by fostering innovation and transparency in digital technology. According to Kandhro and Pathrannarakul (2013), the more access to available information, the higher the level of transparency. The usage of IT can lead to an increase in transparency, high accountability and enhanced public trust. This is due to the digital systems are naturally equipped with features like integrated audit trails and transparency policies (Sharon, 2023).

Electronic Government in Malaysia

E-government is defined as the use of innovative information and communication technology to provide easy access to citizens and organizations for government-related information and services (Fang, 2002). The objectives of e-government include improving service quality, enhancing public participation in institutions and democratic processes, empowering citizens, improving service quality, strengthening accountability, enhancing transparency and increasing government efficiency (Ndou, 2004). E-government websites have become one of the most effective ways of disseminating information and acting as the mirror of government activities (Elahi & Ahmed, 2023).

Malaysia introduced e-government in 1995 with the launch of eGOV1.0. Since then, e-government has evolved significantly. Initially, it began as a website aimed solely at informing people about available services. Today, under eGOV3.0 it leverages information and communication technologies (ICT) and advancements in scientific and technological fields to address societal issues, optimize resources, and enhance citizen well-being (Rahim et al., 2019).

The evolution from e-government to digital government reflects a broader global trend of integrating advanced technologies to enhance public sector efficiency and citizen engagement. This evolution is defined as the production and delivery of information and services inside the government and between the government and the public using a range of information and communication technologies (Rahim et al., 2019). In addition, according to Naswir et al. (2019), digital government is a way of digitizing government services to improve service delivery systems efficiently and effectively to maintain relations with the citizens. It leads to the improvement of government functions and services and works to provide comprehensive service delivery that will satisfy the citizens.

Dimensions in Enhancing Transparency and Accountability in Government Websites

Based on the literature and the standards issued by MAMPU, this study highlights six key dimensions that contribute to enhancing transparency and accountability in government websites. These dimensions consist of (1) accessibility; (2) ease of use; (3) quality of content; (4) privacy policy; (5) responsiveness; and (6) reliability, and are elaborated in the subsequent sections.

Accessibility is indeed a fundamental aspect of government websites that enhances user experience and engagement, particularly for individuals with disabilities. Raut and Singh (2024) highlight that government websites must adhere to accessibility standards to ensure usability for all citizens, which includes optimizing for mobile devices and different operating systems. Despite the progress in e-government, the research indicates that while there has been progress in the use of Malaysia's e-government platform, compliance with web accessibility standards remains inadequate (Ahmi & Mohamad, 2016). ***The ease of use*** of e-government refers to the websites must be accessible and user-friendly to ensure effective communication and service delivery to citizens. Research indicates that perceived ease of use is a critical determinant of citizen satisfaction, ranking alongside service quality and content quality as significant predictors of overall

satisfaction with e-government portals in Malaysia (Baharon et al., 2017). Furthermore, studies show that perceived ease of use, along with perceived usefulness, positively affects citizens' intentions to engage with these services (Zubir et al., 2023).

The ***quality of content*** includes the depth of the information, formatting and layout, readability, and engagement. Alanezi et al. (2012) highlighted that the content provided on the e-government website included format information, personalization and information available on the government website should be accurate, current, and easy to understand. The quality of content on Malaysian government websites is evaluated through various metrics and dimensions that significantly impact user satisfaction. Key metrics identified include security, performance, content structure, technology, and accessibility, which are essential for effective e-government services (Rakhani et al., 2023). The integration of ***privacy policy*** and security measures in government websites is crucial. A study by Wijaya et al. (2024) indicates that e-government policies significantly improve public service by facilitating faster service delivery and increasing citizen engagement, but challenges such as data security and uneven access remain. Furthermore, many governments' online services fail to meet international security standards, exposing sensitive data to potential threats (Silva et al., 2023). Research by Dayanand & Jeberson (2024) presents several key findings regarding the effectiveness of CAPTCHA in improving the security of government websites. The CAPTCHA test is designed to determine if an online user is a human and not a bot, and the test significantly reduces the risk of various cyber threats, including brute force attacks, credential stuffing, and unauthorized access.

The ***responsiveness*** of government websites to citizen inquiries significantly boosts public satisfaction and engagement. Shadu et al. (2024) stated by incorporating public feedback through consultations and surveys, governments can enhance the effectiveness of their services and build trust with the community. In addition to that, an analysis of the Chinese e-government system (Lyu & Zhao, 2021) highlights that the efficiency of government responsiveness directly correlates with citizen satisfaction, suggesting that complex or lengthy responses can diminish perceived accountability. ***The reliability*** of e-government emphasizes the consistency and dependability of the services. According to Taufiqurokhman et al. (2024), technology-enabled service processes can streamline time and cost, quick processing time, and prompt responses may contribute to a positive user experience. The study by Fisdian et al. (2024) identifies significant obstacles in implementing website-based digital public services including the lack of reliable internet connectivity in many areas which affects the accessibility of digital services to the public.

3. Methodology

For this study, a mixed-method design is adopted. First, a content analysis of the rates issued to the government agencies' websites by MAMPU through SPLaSK is explored. By December 2023, 899 agencies had registered with MAMPU for the SPLaSK application, but only 527 had established their websites. For this study, six (6) main dimensions outlined by MAMPU are summarized in Table 1. Later, interviews were conducted to gain better insight into the role of SPLaSK in promoting and ensuring compliance levels of government websites and online services. The interviews were conducted with the staff of MAMPU's IT Department headed by its Head of Department and five (5) other staff responsible for administering and monitoring SPLaSK. The compliance for SPLaSK is assessed using six (6) dimensions set by MAMPU as follows:

Table 1: Dimensions and criteria for SPLaSK assessment

Dimensions	Criteria
Accessibility	Active Link
	Device responsiveness
	Search Engine Optimization (SEO)
	Mobile App
	Multi-language Content
	Sitemap
	Find Website using Search Too
Ease of Use	Link to MyGov Portal
	Search Function
	W3C Disability Accessibility

	Advanced Search Option
Quality of content	Publication
	Updated Content
	Number of Online Services
	Electronic Archive
	Publicizing an agency CIO/CDO or equivalent
	Online procurement announcement
	Online E-Participation
Policy/Security	Privacy Policy
	HTTPS Availability
Responsiveness	Feedback form
Reliability	Loading Time
	Downtime

(Source: MAMPU, 2024)

SPLaSK users are assessed based on the grading scale below, with very low for grading less than 20% to very high for more than 80% marks. The diagrammatic flow of the grading scale is depicted in Figure 1. The formula for the grading is based on the below formula:

SPLaSK's grade = [(Accessibility dimensions/7)*100) + ((Ease of use dimension/4) * 100) + ((Quality of Content/9) * 100)) + ((Privacy/Security dimension/2)*100) + (Responsiveness dimension *100) + ((Reliability dimension)/2 * 100)

Figure 1: Grading scale



Source: (MAMPU, 2024)

For this study, MAMPU has provided data that, while valuable, is not entirely comprehensive due to confidentiality constraints. As a result, only the outcomes or grading scales for the total number of government agencies registered with MAMPU have been made available for analysis.

4. Findings and Discussion

Demographics of interviewees

For the study, an interview was set up with the MAMPU's IT department's staff discussing their role and duties in handling SPLaSK. Table 2 summarizes the interviewees' position within MAMPU.

Table 2: Demographics of interview participants

Respondents Denotation	Position
R1	Head of Department
R2	Assistant Manager
R3	IT Executive 1
R4	IT Executive 2
R5	IT Officer 1
R6	IT Officer 2

For the interview session, the study managed to secure views and information on SPLaSK's operation from six (6) respondents ranging from the Head of Department, Assistant Manager, two (2) IT Executives, and two (2) IT Officers.

Table 3: Registered Agencies Website Ratings using SPLaSK Scoring Scale for 2022-2024

	Number of Government Agencies		
Scale (in percentage, %)	2022*	2023	2024**
Very low (0 -20)	117	31	32
Low (20 – 40)	143	125	125
Moderate (40 – 60)	58	61	60
High (60 – 80)	13	26	28
Outstanding (80 – 100)	90	284	282
Total websites	421	527	544
Total government agencies registered for SPLaSK.	623	838	899
Percentage of websites established over registered agencies	67.58%	62.89%	60.5%

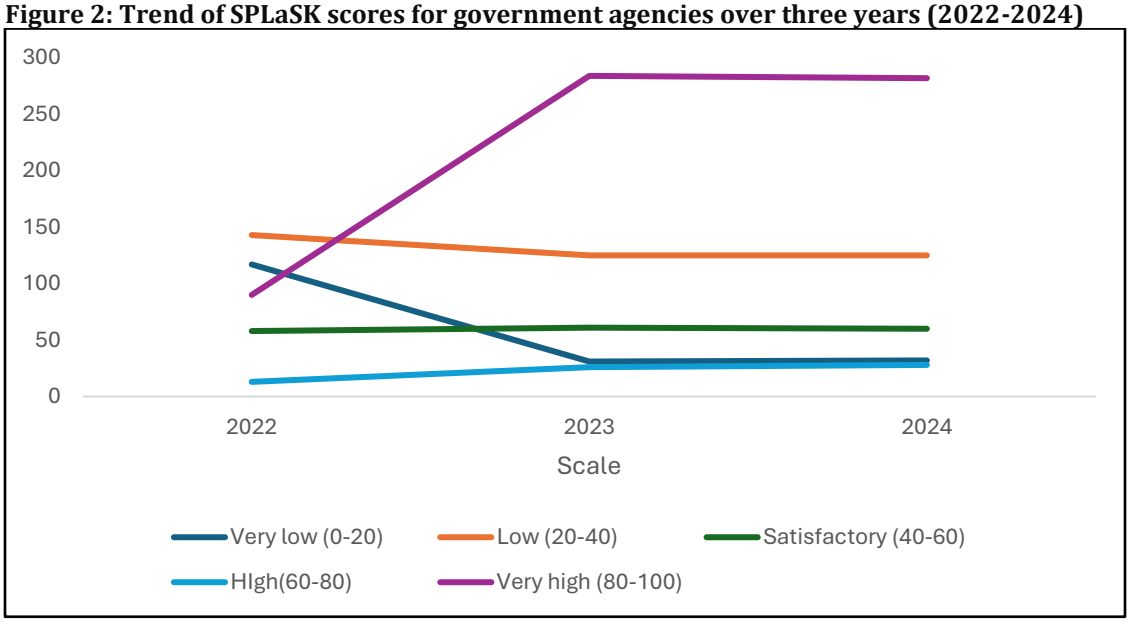
*Only from September 2022, **Only for up to 30 January 2024
(Source: MAMPU, 2024)

Data furnished by MAMPU in Table 3 revealed that a positive trend is shown over the three years spanned from 2022 for agencies registered for SPLaSK, a significant increase of 44.3% from the year 2022 to 2023 and a slight increase of 7.3% from the year 2023 to 2024. The trend over the last three (3) years up to September 2024 can be shown in Figure 2. Even though there has been an increase in the total of government agencies registered for SPLaSK, the total number of websites established fulfilling SPLaSK's requirement has surprisingly decreased over the three years. On the other hand, in terms of SPLaSK scoring, while most agencies (33.97%, 143/421) scored ranging from 20 to 40 in 2022, the pattern has changed in 2023 and 2024 with most of the agencies scoring outstandingly (score of 80 to 100) with 53.89% (284/527) and 51.83% (282/544) for 2023 and 2024 respectively.

With regards to the number of websites established in comparison to the number of agencies registered for SPLaSK, the respondents explained the possible reasons,

"Firstly, perhaps they are not ready to launch their website to comply with the SPLaSK requirement, so they want to make sure they are ready and get a good score. The cost factor could also play a role. The agency needs to engage a vendor to install the coding, as they have no experts to set up the website. They need an expert webmaster. Still, we have provided them with a manual and a WhatsApp group to assist them. We are more than willing to demonstrate the system whenever they inform us, we are more than willing to assist" (R1)

Figure 2: Trend of SPLaSK scores for government agencies over three years (2022-2024)



According to the respondents, the increase in scoring is due to the awareness and understanding of the agencies to maintain the SPLaSK system besides constant monitoring by MAMPU. The scoring system allows MAMPU to encourage the agencies better to maintain their websites for the benefit of their users. As reiterated by one of the respondents, R1,

"We are continuously asked about the performance of each agency. So SPLaSK makes it easy for us to monitor them. Assessment is performed. Hourly. The agency can amend its websites and may request an on-demand assessment"

While SPLaSK demonstrates positive trends in agency registration and website quality, some challenges persist. However, the potential for increased stakeholder engagement, enhanced public trust, and, greater government transparency and accountability is significant. With continued focus on addressing implementation hurdles and fostering collaborative engagement, SPLaSK can solidify its role as a powerful tool for a more open and accountable government. These findings are consistent with Bukhari (2023) which suggests that technology is playing an increasingly important role in the leadership and governance of organizations especially to facilitate better communication, increase transparency and improve decision-making.

Improvement in websites

SPLaSK acts as a cornerstone for accessible and user-friendly government websites in Malaysia. Government agencies leverage this system as a monitoring tool to identify website shortcomings. SPLaSK pinpoints issues like broken links and tracks website performance against key performance indicators (KPIs). This translates to improved service delivery by allowing agencies to identify areas for improvement. Ultimately, SPLaSK aims for a high bar of user satisfaction, targeting a 90% satisfaction rate for government online services. As explained by one of the respondents,

"*When we first started SPLaSK version 1, there were only 15 criteria, but with the second version, it has increased to 25 criteria based on ProBE. Each agency needs to have a webmaster and supervisor to run the module design except for the administrative function, which is only for MAMPU. For the assessment, we have set two methods: one is automatic in the morning, roughly at 1 a.m., and the other is on-demand. On-demand assessment is used whenever there is any improvement or change to the websites. No need for the webmaster to inform SPLaSK, the webmaster simply needs to press a button to see the compliance result*" (R2)

SPLaSK acts as a powerful driver for user-friendly government websites in Malaysia. By pinpointing website issues and monitoring performance, it empowers agencies to identify areas for improvement. Additions to the assessment criteria can be translated to MAMPU's effort for better service delivery and ultimately aims for a high bar of user satisfaction. With its automated and on-demand assessment features, SPLaSK ensures websites are constantly monitored and refined, paving the way for a more user-friendly online government experience.

Challenges in implementing SPLaSK

However, SPLaSK's effectiveness hinges on overcoming some challenges. One hurdle is the frequent turnover of staff responsible for the system within government agencies. This necessitates ongoing training sessions for new personnel to ensure they can effectively utilize SPLaSK. As elaborated by R1,

"*Employee turnover in the agency can be a challenging condition for us. The challenges are that work will be stalled and tasks will change. The solution is to provide training, or often when people change, they will ask to be shown again. Sometimes we will go there, or they will come here*"

Another challenge in handling SPLaSK highlighted by the IT Officer (R4) stressed that,

"The vast array of content management systems (CMS) used by different agencies creates a challenge. Providing specific training for each platform is difficult, and agencies may lack the in-house expertise to implement tagging, a crucial SPLaSK functionality, across all these diverse CMS systems. Furthermore, technical limitations can arise when agencies lack the skills to fix errors identified by SPLaSK. Finally, SPLaSK itself can be blocked by agency servers or the Public Sector Data Center (PDSA), hindering its ability to effectively crawl and monitor websites"

Despite the success of the monitoring practice, SPLaSK's long-term effectiveness hinges on addressing staff turnover and compatibility issues. Ongoing training for new personnel is crucial, but a more permanent solution might be sought. Additionally, the vast array of CMS systems and potential technical limitations across

agencies necessitate exploring ways to provide standardized tagging functionalities and troubleshooting support. These findings support the challenges identified in the literature. For example, the challenges include improving interoperability between the various public agencies, the security and protection of data, and the availability of specialized human talent. In the case of SPLaSK, addressing potential SPLaSK blocking by agency servers and the PDSA requires collaboration to ensure seamless crawling and website monitoring. By overcoming these challenges, SPLaSK can solidify its role as a valuable monitoring tool.

Monitoring SPLaSK

The SPLaSK platform can be monitored in real-time daily to ensure that agencies comply with the criteria set within the six (6) dimensions mentioned in Table 1 earlier. MAMPU's IT officer will also monitor if the related agency achieved 100% marks to ensure its correctness. At this junction, one of the respondents explained,
"Here, we do not explain everything in detail, but we want to make sure the functionality is there. We prioritize quality and use this system for automated checks only. For example, UiTM requested the scores for the Islamic religious councils. We downloaded the report and sorted the scores for each month from September 2022 to January 2024. There is not much data for September 2023 because version 2 was just completed. A score of 1 indicates compliance, while a score of 0 indicates non-compliance" (R3)

He also added to the agency's website content,
"Yes, we will check especially those with scores that consistently maintain 100%. We will issue a report twice a year and send it to the Chief Secretary to the government of each agency" (R3)
The monitoring practice has provided valuable insights into SPLaSK functions, allowing for a clear understanding of its effectiveness in assessing the progress or performance of the registered websites. By analyzing the data collected, respective agencies may determine the next steps based on future improvement.

5. Conclusion

This study has explored SPLaSK's role in enhancing transparency and accountability within Malaysian government agencies, analyzing the performance metrics of 899 agencies registered by January 2024. It highlights how SPLaSK has transformed governance through benchmarks in accessibility, ease of use, quality of content, privacy/security, responsiveness, and reliability, significantly boosting public sector website standards and fostering a culture of transparency. Despite these achievements, the path to full transparency and accountability continues. Challenges such as the digital divide, data privacy concerns, and evolving public expectations persist, underscoring the need for ongoing efforts to enhance SPLaSK's effectiveness. The research emphasizes the critical role of stakeholder engagement and the establishment of feedback loops for continuous platform improvement. SPLaSK represents a major step forward in Malaysia's effort to make governance more open and transparent. It shows how digital platforms can greatly improve government openness and accountability. Its success highlights the need for ongoing dedication, teamwork, and new ideas to deal with the challenges of digital governance. This provides important lessons on how to increase public trust and involvement in government activities.

Based on the analysis of SPLaSK's role and its impact on governance in Malaysia, some recommendations could be derived. To maximize the SPLaSK's impact, the government should enhance digital inclusion by bridging the digital divide such as expanding internet access in rural and underserved areas and providing digital literacy programs that will empower the government's staff to effectively use online platforms like SPLaSK. Robust cybersecurity protocols and data protection policies should be established to address concerns about the data security of the government website besides regularly auditing the platform to ensure compliance with privacy laws and international standards, such as the General Data Protection Regulation (GDPR). Stakeholders, for example, civil society, private sectors, and academic experts should actively be involved in the design and periodic review of SPLaSK to ensure accountability and effectiveness. Finally, SPLaSK must evolve with public expectations, incorporating innovative features like AI chatbots, predictive analytics, and participatory tools to enhance citizen engagement and governance outcomes.

To enhance digital governance, SPLaSK should be integrated into Malaysia's e-government strategy, aligning with national digital transformation goals. A robust legal framework is essential, including strengthened transparency laws, mandated public sector performance disclosures, and enforced accountability standards.

Dedicated funding and resources should be allocated for the platform's maintenance, upgrades, and staff training. Collaborative efforts with tech companies and NGOs can help expand SPLaSK's features and reach, while a dedicated task force should periodically review and refine digital governance policies based on SPLaSK's progress. Additionally, benchmarking against international best practices through collaboration and knowledge exchange will ensure continuous improvement and global competitiveness. These recommendations and policy implications offer a path forward for utilizing SPLaSK as a fundamental component of responsible and transparent governance in Malaysia. This offers valuable insights on how to boost public confidence and participation in governmental operations.

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