



Digital transformation in public service delivery in Palu city: A study on the digitalization of public services through the 'SanguPalu' application

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ABSTRACT

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The background of this research is rooted in the development of a smart city initiative in Palu City; however, this initiative has so far been limited to the creation of the digital application "SanguPalu," which has not yet functioned effectively. The application is designed to facilitate public services. The purpose of this study is to analyze the digital transformation of public services in Palu City (An Analytical Study on the Digitalization of Public Services through the "SanguPalu" Application). This research employs a qualitative method with a case study approach, conducted in Palu City, Indonesia. Informants were selected through purposive sampling, targeting competent stakeholders. Data collection was carried out through observation, literature review, interviews, documentation, and focus group discussions (FGD). The data were then analyzed using SWOT analysis techniques. The findings indicate that, in terms of skill, the ability to understand ICT hardware and software as well as digital operating systems has been effectively implemented. In the ethics dimension, the ability to adapt, think rationally, and prioritize ethical behavior has also been appropriately applied. Regarding culture, the application has contributed to national awareness and identity in the digital realm. However, the safety aspect, particularly concerning personal data protection and digital security, has not been effectively implemented according to the research findings. In conclusion, the digital transformation of public services in Palu City, as examined through the "SanguPalu" application, has been initiated and shows progress. Nevertheless, certain aspects, especially security and data protection, remain underdeveloped. Based on the results of the SWOT analysis, the most appropriate strategy to enhance the performance of the "SanguPalu" application is an aggressive strategy, which seeks to maximize internal strengths and external opportunities to address existing weaknesses and challenges in government digitalization.

Contribution/Originality: This study contributes to the existing literature on the digital transformation of public services at the city level. It is one of the few studies that have investigated the implementation of the "SanguPalu" application through SWOT analysis. The main contribution of this article is identifying an aggressive strategy to maximize strengths and opportunities in government digitalization.

1. INTRODUCTION

Digital transformation has become a significant topic in the development of public services across various regions in Indonesia. Palu City, one of the major urban centers in Central Sulawesi, has also taken strategic steps to leverage

digital technology in improving its public service delivery. In 2023, the Palu City Government introduced the "SanguPalu" application as a tangible effort to realize the digitalization of public services within the region.

In comparison, the City of Makassar has already implemented public services through a smart city initiative launched in 2015, based on Regional Regulation No. 3 of 2009 concerning the formation and organizational structure of regional government agencies in Makassar. Article 21 of the regulation mandates the Communication and Information Office to formulate, oversee, and control policies in the fields of communication and information, including the development of information systems, applications, telematics, media utilization, and institutional empowerment. However, as noted by [Nurdiassa, Zulfikar, Rasyid, and Wulandari \(2021\)](#), the implementation of the smart city program in Makassar still faces challenges and has not yet reached its full potential.

Globally, Tallinn in Estonia and Barcelona have achieved maturity in utilizing public services through digital means, such as security systems that guarantee active public participation. Meanwhile, Palu City still uses a contextual approach ([Ramos, 2023](#)).

The "SanguPalu" application is expected to facilitate the access of Palu City residents to various public administration services, from submitting letters at the village level to obtaining information about available health facilities. Furthermore, this application also provides convenience for residents in need of financial assistance or scholarships without having to make direct contact with government officials. This innovation represents a concrete effort by the Palu City Government to encourage the modernization of digital-based public services.

This study aims to analyze the digital transformation in the provision of public services in Palu City through the implementation of the "SanguPalu" application. The research questions to be answered include:

1. How is the digitalization of public services implemented through the "SanguPalu" application?
2. What features are included in the application, and how are they utilized by the public?
3. What are the challenges and opportunities that arise in implementing this application as a concrete manifestation of digital transformation in the Palu City public service sector?

The Palu City Government's awareness of the importance of digital transformation is reflected in the launch of this application in 2023 as part of its strategy to provide more efficient, transparent, and responsive services. The "SanguPalu" application is designed to facilitate citizens' administrative needs, including document processing at the sub-district level and access to health service information ([Netiz.id, 2023](#)).

The process of modernizing public services in Palu City through the "SanguPalu" application began with mapping community needs and identifying various obstacles faced in conventional public service systems. According to a report by the [Palu City Communications and Informatics Office \(2023\)](#), before the application's development, citizens often encountered obstacles such as long queues, complicated bureaucratic procedures, and limited information regarding available services. These conditions negatively impacted the effectiveness and efficiency of public services.

In response to these issues, the Palu City Government designed the "SanguPalu" application, which is integrated with service systems across various government agencies. The development process involved cross-sectoral collaboration, particularly between the Communication and Informatics Office, the Population and Civil Registration Office, and the Palu City Health Office ([Palu City Communications and Informatics Office, 2023](#)). This inter-agency synergy is an important foundation for creating digital-based public services that are more responsive, integrated, and adaptive to community needs. Through this collaboration, the "SanguPalu" application is designed to meet the community's need for more efficient and effective public services. The following are the application's features and uses:

1. The "SanguPalu" application provides a variety of functions that assist residents of Palu City in managing administrative tasks. According to the Palu City Government, the application includes the following features ([Netiz.id, 2023](#)):

2. Lapor Wali Kota (Report to the Mayor): This feature allows citizens to submit reports, complaints, or suggestions directly to the mayor through a digital platform.
3. Financing Registration: Residents can apply for various types of funding, such as MSME assistance, home renovation grants, and scholarships, without the need for face-to-face meetings with government officials.
4. Important Contact Information: The application provides essential contact details such as phone numbers and addresses of hospitals, health clinics (puskesmas), and other government institutions in Palu City.
5. Latest News: This feature provides up-to-date information on governmental programs and activities initiated by the Palu City Government.
6. Official Announcements: Citizens can receive notifications of official announcements issued by the city government directly through the application.

According to data from the Palu City Communication and Information Office, the "SanguPalu" application was officially launched in September 2023 and has since been downloaded by over 50,000 users in Palu City. This high number of downloads indicates strong public interest in utilizing the application as a communication tool and as a means to simplify various administrative processes (Palu City Communications and Informatics Office, 2023).

One of the common ways citizens utilize the "SanguPalu" application is to request official letters from their local subdistrict offices (kelurahan). Previously, residents were required to visit these offices in person to complete such tasks. With the introduction of this digital service, they can now submit their requests via smartphone and receive a notification when the document is ready (Interview article with the subdistrict head of) Kelurahan (2023). This innovation has significantly saved time, reduced the administrative burden, and lowered the costs typically borne by residents.

Furthermore, the utilization of the financing registration feature has shown a significant increase among residents of Palu City. According to data from the Palu City Office of Cooperatives, MSMEs, and Labor, since the launch of the "SanguPalu" application, there has been a 25% increase in the number of MSME assistance applications compared to the previous period (Palu City Communications and Informatics Office, 2023). This demonstrates that the accessibility of various government programs through this application has positively impacted public participation.

Elderly communities and individuals from low-income backgrounds often face limitations in accessing and operating digital technology. This situation is a major obstacle to the effective and efficient implementation of the "SanguPalu" application across all levels of society. In addition to limited access, issues related to security and personal data protection are also crucial concerns. The Palu City Government is required to ensure that all personal information registered with the "SanguPalu" application is optimally protected from potential cyber threats and data leaks (Interview with the Head of the) Palu City Communications and Informatics Office, (2023). Adequate data protection is a key factor in maintaining public trust in this digital service system.

Nevertheless, the implementation of the "SanguPalu" application also presents a strategic opportunity for the Palu City Government to improve the effectiveness and efficiency of public services. Digitization enables faster and more transparent administrative procedures, while reducing government operational costs (Interview with the Palu City Communications and Informatics Office (2023)). Furthermore, the "Report to the Mayor" feature available in the application provides a space for the public to convey aspirations, criticism, or suggestions directly, which can then be used as a basis for evaluating and improving public service policies in the future.

2. LITERATURE REVIEW

2.1. Digital Transformation in Public Services

Kumorotomo (2010) emphasized that digitalization is not solely related to the use of information technology but includes the use of this technology to produce changes that have a positive impact. Digital transformation in the public sector has led to a paradigm shift in administrative systems, aimed at enhancing efficiency (as discussed by

Aminah & Saksono in a 2021 study cited by Arief Seno Nugroho). The practical implementation of digitalization does not occur instantly; rather, it involves a series of systematic steps to be successfully realized, as emphasized by Heilig, Müller, and Künzel (2023).

To achieve successful digital transformation in Palu City, it is essential to address the issue of digital literacy. There are at least four foundational pillars that must be upheld, namely:

1. Skill: The ability to understand ICT hardware and software, as well as digital operating systems. This skill can be developed through both online and offline learning, and is most effective when driven by individual initiative.
2. Ethics: The ability to adapt, think rationally, and prioritize ethical considerations. For example, in using social media, individuals must be aware of numerous moral and even legal boundaries. This is reflected in the popular saying, "your thumbs are your tiger," implying that online behavior has real consequences. Hence, one must always filter before sharing.
3. Culture: The capacity to build a sense of national identity and awareness in digital interactions. Digital spaces should be used wisely for positive and constructive purposes.
4. Safety: The ability to raise awareness regarding data protection and personal cybersecurity (Priyatno, 2023).

This four-pillar model is derived from established theoretical frameworks, and in this study, it is further developed to explore theoretical novelty in the context of public sector digital transformation. The findings of this study have several implications, particularly for electronic-based government systems (SPBE). First, there is a need for standardized yet flexible systems tailored to local government needs. Second, the importance of digital literacy and regional capacity building must be emphasized. Third, collaboration between public and private sectors should be actively encouraged. Fourth, digital momentum must be utilized, especially in times of crisis.

The OECD (2016) describes digitalization as the use of technology to enhance government performance, while Janowski (2015) defines it as "technology in government," referring to the application of technology in governance. Both perspectives highlight the same principle: the integration of technology to support public administration functions. According to OECD (2016), digitalization comprises two core components: internal management functions within government organizations and the service functions directed toward users. In practice, digitalization seeks to achieve efficiency and effectiveness, targeting both authority structures and passive service users.

2.2. Digital Governance and Public Engagement Model

The concept of government as a platform and co-production emphasizes that the community is not merely a recipient of public services but also an active participant in their implementation. This approach involves feedback mechanisms, reporting, and joint innovation, where community members contribute to the development and improvement of public services (Yu & Robinson, 2012). However, in the context of public administration literature related to the city of Palu, there is limited research and discussion available on this topic.

2.3. Data Privacy, Cybersecurity, and AI in Public Services

According to several expert opinions, including Wirt, Smith, and Johnson (2022), public trust can be undermined by the use of technology that endangers users. Meanwhile, the Organisation for Economic Co-operation and Development (2021) emphasizes the importance of user data security as a foundation for the provision of sustainable, technology-based public services.

3. RESEARCH METHODOLOGY

This study employed a qualitative method with a case study approach, conducted in the city of Palu. Informants were selected using purposive sampling, involving stakeholders who possess relevant experience and authority in digital transformation within public service delivery in Palu. The total number of informants was five, comprising

two government officials (from the Communication and Information Agency and the Regional Development Planning Agency), one application developer, and two active users of digital public service applications.

Data collection was carried out through five techniques: observation, literature review, interviews, documentation, and focus group discussions (FGD). The researcher conducted two FGD sessions, each lasting 90 minutes. The first session included government officials and the application developer, while the second involved users and representatives of digital community groups.

Data analysis followed the three-stage model proposed by Miles, Huberman, and Saldana (2014):

- Data Condensation: Involving filtering, selecting, and coding essential quotations using open coding;
- Data Display: The codes were then organized into consistent themes.
- Verification and conclusion drawing: Cross-verification among informants was performed to ensure consistency and credibility of findings.

The researcher also performed a SWOT analysis following this qualitative investigation. A strategic planning methodology called SWOT (Strengths, Weaknesses, Opportunities, and Threats) is used to methodically identify different internal and external aspects that affect the formation of a strategy (Rangkuti, 2008). A SWOT analysis is a strategic approach used to identify and evaluate internal factors, including strengths and weaknesses, as well as external factors, including opportunities and threats, that impact an organization's performance. External information regarding opportunities and threats can be obtained from various sources, such as customers, official documents, suppliers, banking institutions, and business partners (David, 2006). In practice, many organizations utilize third-party services to obtain secondary data, such as media archives, online surveys, and analyses of domestic and global trends.

According to Rangkuti (2008), in Mashuri and Nurjannah (2020), every organization inherently possesses a combination of strengths and weaknesses across various aspects of its operations. No business entity is uniformly strong or weak across all functional areas, so it is crucial for organizations to specifically identify strategic areas requiring improvement or strengthening through a comprehensive SWOT analysis.

4. RESULTS AND DISCUSSION

4.1. Research Findings

4.1.1. SKILL (Development of Digital Competencies)

Based on research on information and communication technology (ICT) training for public service users in Palu City, as well as the utilization of the "SanguPalu" application, it was discovered that the Palu City Government consistently provides digital training for public service officials. This training is implemented in a structured and ongoing manner through collaboration with technical agencies, particularly the Communication and Information Agency (Diskominfo). Training materials cover the use of hardware such as computers and tablets, as well as software supporting digital public services.

In addition to general introductions to operating systems and digital service applications, specific training related to the use of the "SanguPalu" application is also provided. This training focuses on increasing the capacity of officials to manage and operate the application effectively, including understanding its available features and strategies for establishing digital communication and interaction with the public.

Beyond focusing on internal capacity building, the Palu City Government also initiates outreach and mentoring programs for the general public, the end users of the application. The goal is to build digital literacy in the community so they are more adaptable to the use of technology to access public services.

As part of the competency development strategy, employees are encouraged to participate in professional capacity-building programs through online training and webinars on digital technology tailored to their work needs. The government also implements a reward system for officials who demonstrate significant progress and innovation

in the application of digital technology as an incentive to foster a culture of independent learning and innovation within the bureaucracy.

Furthermore, each agency is required to establish internal discussion forums and study groups to share knowledge and best practices in implementing digital-based public services (Source: 5 Informants, 2024).

4.1.2. *ETHICS (Rational and Ethical Thinking in Digital Utilization)*

Based on interviews with five informants (2024), the implementation of ethical principles in digital interactions through the "SanguPalu" application has become a primary focus in the provision of public services in Palu City. Digital ethics are realized through providing clear guidelines to public service officials regarding how to communicate professionally, politely, and responsibly when serving the public through this online platform. Officials are required to maintain the confidentiality of users' personal data and provide responses quickly, accurately, and in accordance with applicable public service standards.

The implementation of digital ethics also includes respecting public input and complaints. Every response provided by officers is directed at resolving problems objectively and without offending any party. The use of polite, friendly, and neutral language is a crucial element in creating constructive communication. Furthermore, integrity in handling complaints is a priority, with officers expected to provide transparent responses and not ignore concerns raised by the public.

The ethical standards applied in digital services encompass several fundamental principles. First, the obligation to provide timely responses in accordance with service time requirements. Second, ensuring all communications are delivered professionally and without offending users. Third, actively listen and provide solutions that prioritize the public interest. Fourth, uphold integrity in every digital interaction process.

The Palu City Government has also implemented a public education program that emphasizes the importance of critical and responsible thinking when using digital channels, including the "SanguPalu" application. This digital literacy campaign is conducted through various communication media, both online and offline, with the aim of raising public awareness of the ethics of disseminating information. The public is encouraged to verify information before sharing it with others to prevent the spread of hoaxes and detrimental social impacts. The government also warns that the dissemination of inaccurate information can result in legal consequences for those who spread it. In addition to serving as a public service, the "SanguPalu" application is expected to become a platform that supports social order through the active participation of ethical, responsible, and constructive citizens in the digital space.

4.1.3. *Culture (Fostering National Awareness through Digital Interaction)*

Research results obtained from five informants (2024) indicate that the implementation of the "SanguPalu" application has significantly contributed to building national insight and strengthening the values of unity within the Palu City community. This application facilitates digital communication for citizens with the government, thereby strengthening the emotional bond between the public and public institutions. Active public involvement in using this application also fosters a sense of ownership in the city's development process, which in turn strengthens awareness of national identity and civic responsibility.

One important aspect highlighted is transparency and accountability in the provision of public services. Through this application, citizens can more easily access information and directly monitor administrative processes, thereby fostering public trust in the local government. By directly engaging in public affairs, citizens better understand their rights and obligations as part of a sovereign and democratic community.

The "SanguPalu" application is equipped with several features designed to encourage constructive interactions between the government and the public. The "public complaints" feature allows citizens to submit criticism, suggestions, or reports directly to the relevant authorities, while the "service tracking" feature provides users with access to monitor the progress of administrative processes in real time. These two features not only increase

transparency but also create a space for productive dialogue, where public participation can be used as evaluation material to improve the quality of public services.

Furthermore, this application plays a crucial role in building social cohesion and strengthening the spirit of unity. By providing an inclusive public service platform accessible to all levels of society without discrimination, "SanguPalu" facilitates the formation of a sense of equality and social justice. The application also provides public consultation and deliberation features that encourage collective participation in local decision-making processes. In this context, "SanguPalu" functions not only as an administrative tool but also as a social development medium that fosters solidarity, mutual cooperation, and active citizen involvement in achieving regional development goals.

4.1.4. *Safety (Data Protection and Security Awareness)*

Based on interviews with five informants (2024), personal data protection efforts in the implementation of the "SanguPalu" application are deemed to be less than optimal. Although the Palu City Government has begun implementing basic measures, such as an encryption system and the use of passwords, the technical implementation of these policies remains inadequate. Officers' understanding of the urgency of data security also varies, creating the risk of information leaks and privacy breaches. The existing digital security infrastructure is still under development and has not been tested against complex cyber threats.

Furthermore, there is still no standardized and regularly updated data protection policy for dissemination to all users. Efforts to educate the public about the importance of protecting personal data through the use of the "SanguPalu" application have also not shown significant results. Outreach efforts so far have focused primarily on the technical aspects of application use, without providing an in-depth understanding of digital security risks and how to mitigate them. As a result, many citizens still lack adequate awareness of the importance of protecting personal information when accessing public services online.

On the other hand, there is no comprehensive protocol to prevent potential cybercrime and data loss within the application system. While some basic measures, such as authentication systems, have been implemented, a comprehensive protection system is lacking, including real-time threat monitoring mechanisms and security incident response procedures. Neither application users nor technical staff responsible for system management have received specific cybersecurity training. Furthermore, there are no standard procedures in place to handle potential data overload or other digital incidents. This situation indicates that local preparedness to address digital risks in public service platforms like "SanguPalu" still needs significant improvement.

4.2. *Research Findings*

1. **Public Response and Implementation Barriers:** Public response to the "SanguPalu" application has varied significantly. Some groups have welcomed this initiative, believing it facilitates digital access to public services. However, concerns about the protection and privacy of personal data stored within the application system have emerged as a significant issue. Another major challenge lies in low digital literacy among the public, particularly among users unfamiliar with information technology. This discomfort is exacerbated by limited outreach and minimal training provided to equip the public to understand and optimally utilize the application. The lack of technical assistance is a significant barrier to technology adoption at the end-user level.
2. **The process of digitizing public services through the "SanguPalu" application is currently still in the development stage and has not yet fully reflected tangible improvements in efficiency or transparency.** The integration of services from various agencies into the application has not been fully implemented, resulting in a number of available features not being fully utilized by the public. Furthermore, the lack of clear information regarding the status of service applications is a barrier, causing confusion among users. The lack of systematic notification or tracking makes it difficult for the public to understand the service procedures being

implemented, so the primary goal of digitalization to speed up and simplify the service process has not been fully achieved.

3. Future strategic efforts to increase the utilization of the "SanguPalu" application focus on strengthening socialization activities and providing intensive training for the community. The primary objective of these initiatives is to enhance public understanding of how to use the application and to raise awareness of the importance of personal data protection within the context of digital services. Local governments are expected to develop additional features that are functionally capable of increasing the efficiency of service procedures while reinforcing transparency in the public service delivery process. Innovation in application development, when combined with an effective and inclusive communication strategy, is believed to promote increased adoption of the application by the wider community and to accelerate the digital transformation of responsive and participatory public services. Collaboration with local communities is a crucial step to gather valuable input and to encourage government employees to actively promote the "SanguPalu" application. It is anticipated that these measures will lead to an increase in effective application usage among the public.

4.3. Analysis of Public Service Digitalization through the "SanguPalu" Application

The results of this study were analyzed using SWOT analysis, which identifies the strengths, weaknesses, opportunities, and threats associated with the implementation of the "SanguPalu" application in the context of public service digitalization.

Strengths:

- Easy access and enhanced transparency in public services.
- Features for citizen complaints and real-time tracking encourage public participation.
- Equitable service delivery fosters inclusivity.
- The inclusion of public deliberation features reinforces collaboration in local policymaking.

Weaknesses:

- Limited internet access in remote and underserved areas.
- Low levels of digital literacy among the general population.
- Inadequate and incomplete public outreach or educational initiatives.
- Absence of robust data protection guarantees from the government.

Opportunities:

- Increased public involvement in decision-making processes.
- Enhanced public trust in government institutions.
- Emerging opportunities for synergy with private sector actors.
- Strengthening digital literacy through public education initiatives.

Threats:

- Risks related to data security and user privacy.
- Public resistance to digital transitions and technological change.
- Dependence on technology, which is vulnerable to system disruptions.
- Social and digital inequality that may exacerbate disparities in access to public services.

Subsequent steps involve developing SWOT-based interpretations for the "SanguPalu" application, along with the creation of IFAS (Internal Factor Analysis Summary) and EFAS (External Factor Analysis Summary) tables. The procedures outlined below describe how to construct these tables based on the findings of the SWOT analysis for the "SanguPalu" application.

1. Identify Internal Factors (IFAS)

- Strengths: Record all strengths that have been identified, such as features available within the application.

- Weaknesses: Record all existing weaknesses, such as low levels of digital literacy or limitations in government infrastructure.
- 2. Identify External Factors (EFAS)
 - Opportunities: Identify external opportunities that can be leveraged, such as initiatives to strengthen digital literacy or increased public participation in service delivery.
 - Threats: Note potential threats that need attention, such as societal resistance to digital change or issues related to data security.
- 3. Assigning Weights to Each Factor
 - Assign a weight to each factor ranging from 0.0 to 1.0, depending on its relative importance. The total weight for all internal factors (IFAS) must sum up to 1.0, and similarly, the total weight for all external factors (EFAS) must also equal 1.0.
- 4. Scoring Each Factor (Rating)
 - Provide a rating from 1 to 4 for each factor:
 - 1: Very Weak.
 - 2: Weak.
 - 3: Strong.
 - 4: Very Strong.
 - For weaknesses and threats, the rating scale is reversed:
 - 1: Very Strong (major threat or severe weakness).
 - 4: Very Weak (minor threat or mild weakness).
- 5. Calculating the Weighted Score
 - Multiply each factor's weight by its rating to generate the weighted score for each factor.
- 6. Analyzing the results
 - Sum the weighted scores of internal factors (IFAS) and external factors (EFAS). Use these scores to determine the organization's strategic position and inform appropriate strategy formulation.

Table 1 presents a summary of the Internal Strategic Factor Analysis (IFAS), which highlights the strengths and weaknesses of the "SanguPalu" application. The table indicates that the main strengths of the application lie in its ease of access and transparency, while its primary weaknesses are low levels of digital literacy and limited infrastructure. The following table illustrates:

Table 1. Internal strategic factor analysis summary (IFAS).

No.	Strength factor	Weight (W)	Rating(R)	Total (WXR)
1	Easy and transparent access	0.2	4	0.8
2	Real-time complaint feature	0.15	3	0.45
3	Equality in public services	0.1	3	0.3
4	Active citizen participation	0.1	3	1.3
	Total strength			2.85
No.	Weakness factors	Weight(W)	Rating(R ₂)	Total (WXR)
1	Low digital literacy	0.2	2	0.4
2	Infrastructure limitations	0.15	2	0.3
3	Low public awareness	0.1	2	0.2
	Total weakness			0.9
	Total (S-W)			2.75

To calculate the total score of strengths and weaknesses related to the structuring and institutional strengthening of the village, the following formula can be applied:

Formula: $S - W = X$

- Total Strengths (S) = 2.85.

- Total Weaknesses (W) = 0.9.
- $X = S - W = 2.85 - 0.9 = 1.95$.

4.4. Interpretation of Internal Factor Analysis Results

The analysis results show that the value of $X = 1.95$ represents the dominance of internal strengths compared to weaknesses in the implementation of the "SanguPalu" application as a medium for digitalizing public services in Palu City. Despite challenges such as low digital literacy among the public and limited supporting infrastructure, the main advantages of this application, such as ease of access, increased transparency, and active citizen participation, make a positive contribution to increasing the efficiency of public services. With a strategic approach that is able to optimize strengths and simultaneously overcome existing weaknesses, the "SanguPalu" application has great potential to continue to be developed as an effective and sustainable digital transformation instrument in the provision of public services at the local level.

Table 2 presents a summary of the External Strategic Factor Analysis (EFAS), which identifies the opportunities and threats in the implementation of the "SanguPalu" application. The table indicates that the key opportunities include fostering greater public participation and improving digital literacy, while the main threats concern data security and societal resistance to digital transformation.

Table 2. External strategic factor analysis summary (EFAS).

No.	Opportunity factor	Weight(W)	Rating(R)	Total (WXR)
1	Increasing community participation	0.2	4	0.8
2	Strengthening digital literacy	0.2	4	0.8
3	Collaboration with the private sector	0.15	3	0.45
4	Digital education initiatives	0.15	3	0.45
	Total (Opportunity)			2.5
No.	Threat factors	Weight(W)	Rating(R)	Total (WXR)
1	Data security threats	0.2	1	0.2
2	Community resistance	0.1	2	0.2
	Total (Threat)			0.4
	TOTAL (O)+T	1		2.9

The Table 2 illustrates the values derived from the difference between opportunities and threats, resulting in the value T , calculated using the following formula:

Formula: $P-T=Y$

- Total Opportunities (P) = 2.5.
- Total Threats (T) = 0.4.
- $Y=P-T=2.5-0.4 = 1.10$.

4.5. Interpretation of External Factor Analysis Results

The calculation result of $Y = 1.10$ indicates that the opportunity factor in the process of digitalizing public services through the "SanguPalu" application has a stronger weight compared to the threat factor. This finding suggests that, although there are risks such as data security issues and resistance from some communities to technology-based changes, the positive potential of increased citizen participation, collaboration between the government and the private sector, and strengthening digital literacy create a solid foundation for the successful implementation of this application. By maximizing these opportunities and simultaneously responding to and mitigating various existing threats, the "SanguPalu" application has the prospect of developing sustainably and contributing significantly to improving the quality of public services in Palu City.

- Total Internal Score (IFAS) = 1.95.
- Total External Score (EFAS) = 1.10.

The "SanguPalu" application is positioned in a quadrant indicating that external opportunities outweigh dangers and internal strengths outweigh weaknesses, according to its IFAS score of 1.95 and EFAS score of 1.10. Given these findings, the aggressive strategy is the best course of action for implementing "SanguPalu".

Position:

The "SanguPalu" application is situated in a strong position, both in terms of internal strengths (2.85) and external opportunities (2.5). With values of $X = 1.95$ and $Y = 1.10$, the application demonstrates considerable potential to capitalize on existing opportunities while addressing internal weaknesses.

Strategy:

An aggressive strategy is the most appropriate approach to optimize the existing potential, both from internal strengths and external opportunities. This application can broaden its reach, enhance public adoption, foster collaboration with the private sector, and improve digital literacy. Focusing on expansion and innovation in public service delivery will support the continued growth and impact of the application. The following is the diagram:

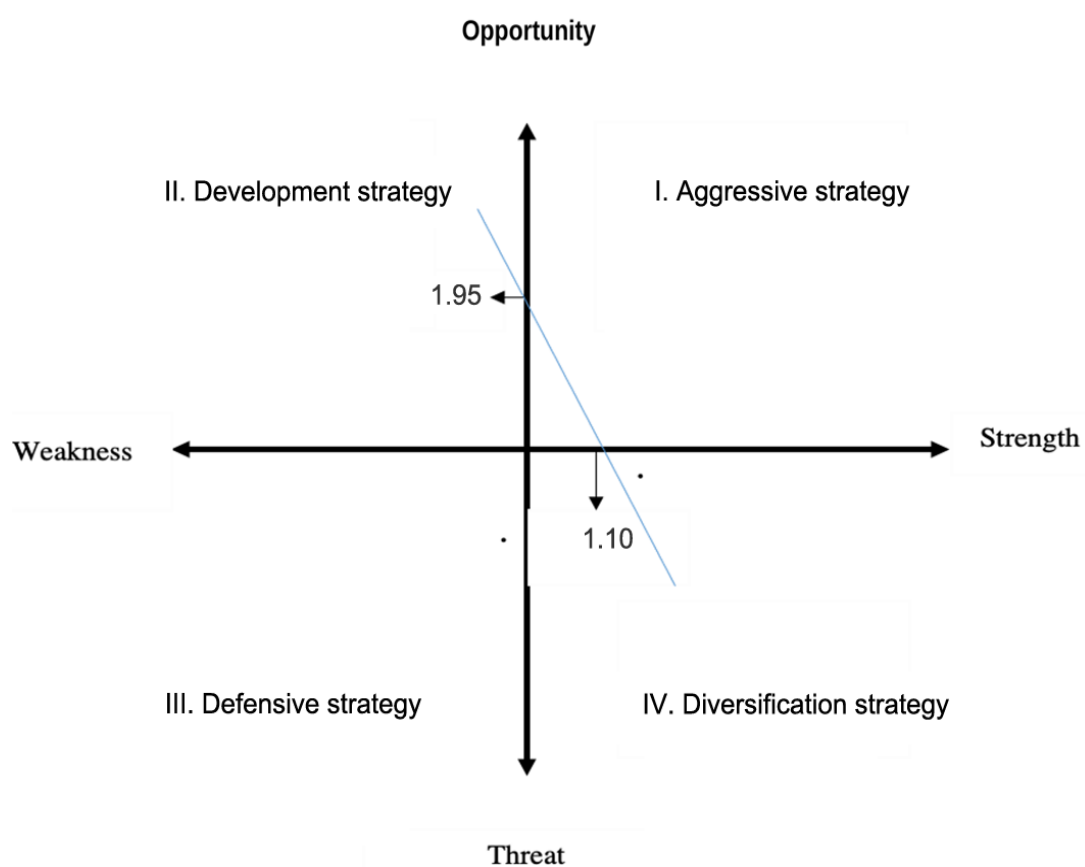


Figure 1. SWOT analysis diagram.

Figure 1. The researcher presents a SWOT analysis diagram that visualizes the strategy of the "SanguPalu" application based on the scores of internal and external position factors. The figure illustrates that the application is in a strong position, with external opportunities outweighing potential threats.

Table 3 presents the SWOT matrix, which integrates internal and external factors to formulate development strategies for the "SanguPalu" application. The matrix outlines strategies that leverage strengths and opportunities, as well as approaches designed to address existing weaknesses and threats. The following table illustrates:

Table 3. SWOT Matrix.

External /Internal	Strength	Weakness
	1. Easy access and transparency in public services.	1. Limited access to technology in remote areas.
	2. Real-time complaint and tracking features that encourage public participation.	2. Low digital literacy among the public.
	3. Equality in public services, fostering inclusivity.	3. Suboptimal outreach and communication strategies.
	4. Opportunities to participate in public deliberations, strengthening a sense of ownership over local policies.	4. Inadequate data security protocols.
Opportunity	Strategy S/O	Strategy W/O
1. Enhancing public participation in decision-making.	This strategy leverages internal strengths to seize external opportunities.	This strategy aims to overcome internal weaknesses by leveraging external opportunities.
2. Increasing public trust in the government.		
3. Expanding collaboration with the private sector.	Optimizing easy access and transparency in public services to increase public participation in decision-making: The application can further enhance citizens' access to information and involvement in public policy processes, potentially increasing public trust in the government.	Enhancing socialization and communication strategies to strengthen public participation and increase public trust in the government: Improving outreach through more effective campaigns by utilizing various digital and offline platforms, and broadly communicating the benefits of the application to the public to increase understanding and participation.
4. Strengthening digital literacy among citizens.	Enhancing complaint and real-time tracking features to expand collaboration with the private sector: Utilizing the complaint feature to collaborate with the private sector, for example, through joint initiatives aimed at improving digital-based public services.	Improving data security protocols through broader collaboration with the private sector: Establishing partnerships with technology companies or the private sector to enhance security protocols and ensure the protection of users' personal data.
	Integrating equality in public services with the strengthening of digital literacy among citizens: Providing training or digitalization modules to improve the digital literacy of the community, which in turn can accelerate adoption and expand the reach of services.	
Threats	Strategy S/T	Strategy W/T
1. Threats to data security and user privacy.	This strategy utilizes internal strengths to overcome external threats.	This strategy focuses on addressing internal weaknesses while avoiding external threats.
2. Public resistance to digital transformation.	Enhancing transparency and tracking features to address threats to data security and user privacy:	Overcoming limited technology access in remote areas through education programs and infrastructure provision:
3. Dependence on technology that is vulnerable to disruptions.	The application should optimize its tracking and monitoring systems to detect potential data breaches while maintaining transparency, thus alleviating user concerns about privacy threats.	The application can collaborate with local governments and the private sector to provide technological infrastructure in remote areas and implement educational programs to enhance technology access.
4. Social and digital divides that may widen inequality in access.	Strengthening citizen participation to address public resistance to digital transformation:	Improving digital literacy through training and public outreach to reduce social and digital inequality:

	By empowering the public to actively participate in public deliberations and decision-making, the application can reduce resistance to change by highlighting the benefits of active involvement in policy development.	Providing digital literacy programs targeted at communities unfamiliar with technology can help bridge social divides and accelerate the application's adoption.
	Optimizing public service equality to reduce dependence on technology vulnerable to disruption:	Strengthening data security protocols to address threats to data and user privacy:
	Improving the balance between digital and conventional services can reduce reliance on potentially fragile technologies and ensure that services remain accessible to all segments of society.	Conducting regular data security audits, collaborating with cybersecurity experts, and implementing stronger encryption systems are essential to safeguard users' personal data.

Based on the table, the explanation is as follows:

S/O (Strengths-Opportunities): Optimizing the application's strengths to capitalize on opportunities for increasing public participation, enhancing digital literacy, and fostering collaboration with the private sector.

W/O (Weaknesses-Opportunities): Addressing internal weaknesses by leveraging external opportunities through improved communication strategies, strengthening data security protocols, and advancing digital literacy.

S/T (Strengths-Threats): Utilizing internal strengths to mitigate external threats such as public resistance to digital transformation, data security risks, and reliance on potentially vulnerable technology.

W/T (Weaknesses-Threats): Combining efforts to address internal weaknesses and external threats through infrastructure development, digital education initiatives, and reinforcement of data security systems.

5. CONCLUSION

Based on the discussions and analysis presented above, it can be concluded that the aspects of Digital Competence Development, Rational Thinking and Ethics in Digital Usage, and Promoting Ethical Behavior to Foster National Insight in Digital Interactions have been well implemented. However, Data Protection and Security Awareness remain less effective. The application lacks strong encryption, clear privacy policies, and has not provided adequate education to users regarding the protection of personal data. Based on the results of the analysis, the most appropriate strategy for the "SanguPalu" application is an aggressive strategy.

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