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Business Penetration in the Development of e-Government Concepts: Challenges of Managing Cloud-Based Website Computing Systems

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Abstract

In the digital era, e-government initiatives have revolutionised how governments interact with businesses and citizens. This study aims to explore the integration of business processes into e-government models through the implementation of cloud computing-based systems, with a specific focus on the tourism sector in Ponorogo Regency. Using a qualitative methodology that includes documentation review, in-depth interviews, and Focus Group Discussions (FGD), the study identifies key challenges in managing the *dolanngebel.com* website. The findings highlight significant issues in transparency, participation, and collaboration among government entities, business stakeholders, and the public. These challenges are attributed to organisational inefficiencies, limited human resources, financial constraints, and regulatory hurdles. The study concludes that addressing these issues could improve administrative efficiency, stakeholder engagement, and public trust in e-government services. This research offers original insights into the practical challenges and opportunities of integrating e-government and business models, particularly in the tourism industry, and provides actionable recommendations for policymakers and practitioners.

Keywords: e-government to business, G2B, challenges, website, cloud computing system.

Abstrak

Di era digital, inisiatif e-government telah merevolusi cara pemerintah berinteraksi dengan bisnis dan warga negara. Penelitian ini bertujuan untuk mengeksplorasi integrasi proses bisnis ke dalam model e-government melalui implementasi sistem berbasis komputasi awan, dengan fokus khusus pada sektor pariwisata di Kabupaten Ponorogo. Menggunakan metodologi kualitatif yang mencakup tinjauan dokumentasi, wawancara mendalam, dan Focus Group Discussion (FGD), penelitian ini mengidentifikasi tantangan utama dalam pengelolaan situs web *dolanngebel.com*. Temuan menunjukkan adanya masalah signifikan terkait transparansi, partisipasi, dan kolaborasi antara entitas pemerintah, pemangku kepentingan bisnis, dan masyarakat. Tantangan ini disebabkan oleh ketidakefisienan organisasi, keterbatasan sumber daya manusia, kendala finansial, dan hambatan regulasi. Penelitian ini menyimpulkan bahwa penyelesaian masalah tersebut dapat meningkatkan efisiensi administrasi, keterlibatan pemangku kepentingan, dan kepercayaan publik terhadap layanan e-government. Penelitian ini menawarkan wawasan orisinal tentang tantangan dan peluang praktis dalam mengintegrasikan model e-government dan bisnis, khususnya di industri pariwisata, serta memberikan rekomendasi yang dapat diterapkan bagi pembuat kebijakan dan praktisi.

Kata Kunci: e-government to business, G2B, tantangan, website, sistem komputasi awan.

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INTRODUCTION

The idea of e-government has gained considerable attention in recent decades. E-government refers to using information and communication technologies and innovations to "provide citizens and associations with increasingly easier access to government information and services; and to provide delivery of government services to citizens, business partners and providers, and those employed in the government sector." (Vashkevich et al., 2024). E-government should serve the general public and help people from all walks of life. E-government can transform government to provide better services and foster greater public trust (Liu et al., 2024). E-government offers public services that generate financial benefits and increased convenience. E-government improves the effectiveness of public delivery through increased transparency, accountability, and citizen engagement. It also makes government services more accessible and responsive to citizen needs, improving citizen-government relations while fostering a more inclusive society (Aswar et al., 2024).

The development of e-government has increased significantly during the Covid-19 outbreak. The restrictions and regulations imposed in many countries to deal with COVID-19 have had a major impact on many aspects of daily life and have also had a major impact on long-term socio-economic development (Roztocki et al., 2024). In particular, extensive and prolonged lockdowns in many communities have created an increased need for and expanded the role of digital technologies. COVID-19 and government-imposed lockdowns have made everyday life increasingly dependent on the internet. Wireless connectivity, cloud computing, email, online video conferencing, distance learning tools, and online public services have become essential tools for working (Nadhira et al., 2024). E-government plays a role in utilising information and communication technology (ICT), especially the internet, by central, regional and local governments to provide information and various services to the public. Although e-government is focused primarily on the provision of government services to the public, it can also have important implications for the quality of democracy by enabling better public involvement in community decision-making (Alofaysan, 2024).

In today's digital age, where e-government initiatives seek to streamline public services and promote transparency in government, the concept of public trust has become increasingly important. Public trust serves as the foundation of public trust in government, setting expectations for public institutions to prioritise the common good (Shevyakova et al., 2024). The importance of public service as a standard function for governments seeking to enhance public trust. Highlights the effectiveness of well-planned and implemented public services, especially those that leverage information technology (IT) platforms, in strengthening public trust. Public services rooted in e-government principles effectively address issues of mismanagement, fraud, and modernisation in the business sector (Fadrial et al., 2024). Businesses are an important group of users of e-government services. They have many legal obligations to fulfil as part of their operations. In addition to incidental or routine tasks that can be performed using online self-service applications, they must also provide large amounts of data to the government. Providing this information may not always be in the interests of the business but may be mandated by the government because of its interests (Fadrial et al., 2024).

Since the development of the World Wide Web, much attention has been focused on adapting web-based technologies to the business environment, particularly in the business-to-business (B2B) and business-to-consumer (B2C) sectors (Akman & Mishra, 2017). The e-government to Business (G2B) concept is an e-commerce model where the government as an institution purchases or sells services from/to legal entities (Abbas, 2018). The G2B concept uses information technology to facilitate public-private interactions, such as acquiring goods and services, selling excess government goods, and

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coordinating transactions with private companies. G2B includes the sale of surplus government goods to the public, as well as the procurement of goods and services. Although not all directly rely on information technology, several different procurement methods are used in the G2B sector (Mallick, 2021). Two main forces are driving the G2B sector. The first is the business community. In many industries, using electronic means to conduct procurement, sales, and recruitment activities is commonplace. The second main force motivating interest in the G2B sector is the growing demand by policymakers for cost-cutting and more efficient procurement (Seifert, 2003).

Tourism is considered as one of the leading industries that has a significant impact on socio-economic development globally (Alamoodi et al., 2022). Information technology is one of the important drivers of social progress. The role of technology is increasingly in demand in trade, services, service distribution, online information provision, the tourism industry, and the creation of new business environments. Technology is also important in other professions, such as weather forecasting, travel, and altitude. The dissemination of information is very important in the development and growth of the tourism business. This shows the need for fast and accurate information delivery between customers and service providers who are tasked with fulfilling the desires of tourists (Dewi et al., 2022). E-tourism is considered one of the most modern concepts in tourism science that greatly overlaps with e-commerce. One of the most important things in this concept is the use of electronic means in the field of travel and tourism and the use of internet technology to enable tourism service providers to provide more effective access for tourism consumers (Saeda. & Afaneh, 2021).

E-government tourism services have the potential to provide better government tourism services to citizens and foreign tourists, improve the quality of services offered, and improve access to information (24 hours a day, seven days a week). Currently, e-government tourism services mainly present tourism in an online format but are not personalised; for example, everyone who uses the system will be exposed to the same set of information (Al-Hassan et al., 2010). The dolanngebel.com website is a breakthrough innovation for tourism development in the Ngebel District. The idea behind creating this website is to increase the area's attractiveness and make it easier for the public to find all its tourist attractions. This website provides information about various tourist attractions to the public anytime and anywhere. Thus, its existence will foster public interest in visiting the region, which will ultimately have an impact on improving the economy in the long term. The "Dolan Ngebel" website benefits the community, local entrepreneurs, and the government. By accessing this website via www.dolanngebel.com, visitors can obtain complete information. Therefore, it is important to know how the public responds (Dewi et al., 2022).

This research study explores the technological and administrative challenges governments face in implementing e-government services tailored for businesses, focusing on the tourism sector using the dolanngebel.com website as a case study. This research is significant because it contributes to developing governance, tourism, and technology. This research also encourages rapid growth of knowledge, especially in the field of e-government, thus providing an opportunity for many people to learn more about e-government and various things related to this topic. This research encourages other researchers to learn new things related to e-government. Using e-government to business and e-government to citizen concepts in developing tourism areas can accelerate communication patterns and interactions between parties and increase public trust in the government. Providing website-based information in tourism areas encourages tourists to easily access various information in the form of electronic information. However, implementing e-government through a dolanngebel website to promote tourism in the Ngebel area has

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not been successful due to several obstacles. Therefore, this study determined the obstacles in managing a website based on a cloud computing system.

E-tourism, part of e-government, is widely used as a medium for tourism promotion. The government uses websites for tourism marketing in the Ngebel area, Ponorogo Regency, East Java, to increase local and international tourism, the local economy, and social welfare (Dewi et al., 2022). Then, the Bali Provincial Government also utilises e-government in the tourism sector, which is carried out in various ways, including by providing digital tourism information, the Bali Tourism One Stop Portal, which facilitates accommodation reservations, e-tickets, tourist destinations, online and offline transportation, Bali tourism product marketplace, cashless payment integration, and other areas related to Bali tourism (Mandra et al., 2023). In addition, the Department of Culture and Tourism of Padang City, West Sumatra Province, also utilises the website to develop e-government as a promotional tool. However, research findings show that the content of the Padang.go.id tourism website is often not current. The information provided is outdated and has never been changed. This is due to several challenges, including the lack of staff to advertise on the website and the limited budget to run and develop the website. In addition, the Department of Culture and Tourism of Padang City still has a less than favourable attitude towards using sites to promote tourism (Rizky et al., 2019). From the above research, several researchers studied egovernment through websites and the obstacles faced by the government in utilising the website. However, no research has examined the barriers to using sites in the tourism sector. The Ponorogo Regency Government has not provided an e-government platform in the Ngebel Lake tourist destination, which does not accelerate the tourist area's development because tourists have limited access to tourist locations.

This study aims to identify and analyse the key challenges in implementing cloud-based e-government systems, specifically focusing on the *dolanngebel.com* website. The research seeks to address gaps in the literature by providing insights into the technical, organisational, and regulatory hurdles faced in integrating e-government services for the tourism sector. Furthermore, it highlights potential strategies to enhance stakeholder engagement and improve public trust in digital governance.

This research hypothesises that effective e-government implementation in the tourism sector depends on three critical factors: transparency, collaboration, and participation. These factors influence the adoption and success of platforms like *dolanngebel.com*, which aim to integrate business and government services. By addressing challenges in these areas, the study proposes that cloud-based systems can significantly improve local tourism promotion and stakeholder collaboration, ultimately benefiting regional economic development.

RESEARCH METHOD

This study focuses on a deeper analysis of the challenges of business penetration in managing the dolanngebel website and the challenges faced by the government. Field research was conducted in Ponorogo Regency, especially the Ngebel Lake area. This location was chosen because research objects and tourist attractions are being studied. The approach used in this study is qualitative to understand business penetration and management of the dolanngebel website because by using qualitative, researchers can dig deep into data with research informants. Primary data were collected through interviews and Focus Group Discussions (FGD). Secondary data were obtained from articles published in reputable international and accredited national journals. In-depth interviews were conducted with business actors around Ngebel Lake and FGDs on website managers, business actors and tourism managers in Ngebel Lake. The determination of informants in this study was based on their involvement

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in the tourism ecosystem of the Ngebel Lake area. As a policy maker and stakeholder responsible for developing this tourism area, the government is identified as the main informant.

Researchers chose the Ngebel Lake area as the location studied because this tourist area is one of the favourite natural tourist attractions visited by the people of Ponorogo. Still, this tourist attraction has not been digitally integrated into its promotion and management, so business actors in this tourist area have not had a maximum positive impact. The presence of the dolanngebel website as an alternative for business actors in promoting their businesses that are directly integrated with the government. This study is a typical case involving the government as a policy maker in developing a tourist area comprising the business ecosystem. This study uses a semi-structured interview approach using three indicators of questions: "collaboration, participation, and transparency". These questions develop from surface questions to deeper questions. Researchers have prepared a recording device, paper-based interview questions, and pens. The interview duration varies individually, usually lasting between half an hour and an hour.

In this study, 22 people were used as informants: the Department of Culture, Tourism, Youth and Sports, the Ecosystem of Ponorogo Regency, the Ngebel District Government, and business actors in the Ngebel Lake area. These informants are the parties who will help manage the *dolanngebel* website later.

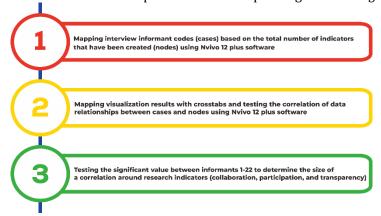


Figure 1. Diagram of data analysis techniques

Source: Created by the author

Meanwhile, interview and FGD data from informants were analysed using Nvivo 12 Plus software. In addition, this software helps visualise existing data and code it effectively. NVivo helps researchers store, organise, and explore data easily and reduces the risk of raw data damage. The stages of data processing using NVivo 12 plus software are as follows: First, data import: Qualitative data in the form of media article text, audio, or video is imported into the NVivo platform. Second, Data Coding: Data is coded based on certain themes, patterns, or categories relevant to the research objectives. Third, exploration and organisation: Data is explored to identify patterns and relationships between themes and organised in matrices or diagrams to facilitate understanding. Fourth, in-depth analysis: Through the crosstab feature, researchers can conduct in-depth analysis to identify large or small data from the results of the predetermined coding. Fifth, data visualisation: NVivo allows data visualisation through diagrams, graphs, conceptual models, and value tables to clarify the analysis findings. Sixth, concluding: Researchers can conclude based on the analysis results relevant to the research objectives. These steps are summarised in Figure 1, which illustrates the sequential process of analysing data using Nvivo 12 Plus software.

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RESULT AND DISCUSSION

Organisational Challenges in Implementing e-Government Websites

In Ponorogo Regency, one area, namely Ngebel District, has abundant natural potential as a tourist destination. Ngebel District is located at the foot of Mount Wilis, about 30 KM from the city centre of Ponorogo. In the Ngebel District, there are many tourist attractions, including Ngebel Lake, Mloko Sewu, Tirto Husodo Hot Springs, Widodaren Waterfall, Ngebel Adventure Park (NAP), Durian Village, and many more. Tourism in Ngebel District also has accommodation facilities and several places to eat around Ngebel Lake (Handayani, 2018). To develop the tourism potential, a digitalisation strategy is needed to facilitate access in introducing tourism. In the digitalisation era, product and service innovation is required. There needs to be skill development from human resources, technology development, and expansion of marketing areas, especially by government policymakers.

Considering the condition of the potential of Ngebel District, which is already very adequate, with support from the Ngebel government and the use of existing information technology, the author was moved to create a website with the hope of meeting the needs of the community and providing benefits to all parties, namely a dynamic website, which is used to empower the government and explore the potential in Ngebel District. Community empowerment, especially for business actors around Ngebel Lake, must be carried out so the wider community knows Ngebel better. This empowerment is part of the promotion and form of attention to all aspects, starting from the intellectual aspect (Human Resources), material and physical aspects, to managerial aspects (Sriyati & Satria, 2017a). However, various dynamics still occur between business actors and the bureaucracy when implementing this website. The bureaucracy has not managed it optimally, so business actors still have difficulty updating data in their business; in addition, business actors also experience problems if consumers want to make reservations or visit their business. Such as data submitted by hotel business managers in the Ngebel Lake area (Private):

"There was a miscommunication between the team (bureaucracy and academics) and business actors, so both created accounts on the website, resulting in double accounts. In addition, because there was a pandemic, it also became an obstacle"

This is a challenge faced by government institutions when managing cloud-based e-government systems. The government and business actors must coordinate well so that the adaptation process with this website can run smoothly and that rejections of the implementation of cloud-based e-government can be overcome. Similar things are also challenges for government organisations in the process of integrating business with e-government models, such as interview data (FGD) submitted by business actors (private) as below:

"On this website, it is stated that payments can be made via transfer, which is a fear that if the customer suddenly cancels, the business actor will be harmed"

In the process of implementation of the Dolanngebel website, government organisations had difficulty socialising with business actors. There is something contrary to the government's goals towards the desires of business actors, so this causes inefficiency in implementing cloud-based solutions. In this case, the government wants payment efficiency through online transactions (transfers) listed on the dolanngebel website. However, business actors have fears because they do not wish to experience losses if a sudden booking is cancelled. So, further study and socialisation are still needed to implement cloudbased e-government optimally.

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The utilisation of the Dolanngebel website as an innovation to develop tourism in the Ngebel District. This website was created to increase public interest in Ngebel tourism and make it easier for people to find everything. In Ponorogo Regency, one area, namely Ngebel District, has abundant natural potential as a tourist spot. Ngebel District is located at the foot of Mount Wilis, about 30 KM from the centre of Ponorogo City. In Ngebel District, there are many tourist attractions, including Ngebel Lake, Mloko Sewu, Tirto Husodo Hot Springs, Widodaren Waterfall, Ngebel Adventure Park (NAP), Kampung Durian, and many more. Tourism in Ngebel District also has accommodation facilities and several places to eat around Ngebel Lake(Handayani, 2018). To develop the tourism potential, a digitalisation strategy is needed to facilitate access in introducing tourism. In the digitalisation era, product and service innovation is required. There needs to be skill development from human resources, technology development, and expansion of marketing areas (Yamani, Muhammad, & Faiz, 2019).

Based on this, considering the potential conditions of Ngebel District, which are already very adequate, support from the Ngebel government, and the use of existing information technology, the author was moved to create a website with the hope of meeting the needs of the community and providing benefits to all parties, namely a dynamic website, which is used to empower the government and explore the potential in Ngebel District. Community empowerment, especially for business actors around Ngebel Lake, must be carried out so the wider community knows Ngebel Lake better. This empowerment is part of the promotion and form of attention to all aspects, starting from the intellectual aspect (Human Resources), material and physical aspects, to managerial elements. The utilisation of the dolanngebel website as an innovation to develop tourism in the Ngebel District. This website was created to increase public interest in Ngebel tourism and make it easier for the public to find all the information. However, in its implementation, human resources are still needed to master the fields of technology and information, especially from the government, so that government institutions can maximise the increase in responsiveness and flexibility in cloud-based service administration. Therefore, a transformation or reform is needed in the structure of government resources to maximise the potential to adapt to e-government information and communication technology.

Human Resources and Financial Constraints

The development of Ngebel tourism with this website implements the e-government principle, namely government to citizens (G2C) and government to business (G2B). The dolanngebel.com website is a building of communication and interaction between the government and the community. The community can access government information regarding tourist locations, culture, events, maps, and hotel and restaurant reservations. In carrying out its role, the dolanngebel.com website also builds good interaction between the government and business actors (Sriyati & Satria, 2017b). However, this must be balanced with government human resources and the skills to manage this new technology and information. The lack of skills from government staff can reduce and provide limitations in maximising the use of the website in the future. Thus, to optimise the website's application, government staff who can manage this website so that the website has qualified visualisation can be maximised to be more attractive to visitors and efficient in communication with business actors.

As an illustration of the development of the dolanngebel.com website, the researcher conveyed the response from the Head of Ngebel District, Dwi Cahyanto, regarding the cooperation built by the government with the community and business actors (private sector):

"We manage it well, and we will continue it because it is very helpful for promoting *Telaga* Ngebel (Ngebel Lake) tourist attractions, including accommodation; there are also restaurants and so on,

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so we can promote it via the web. I feel proud to work together and collaborate with brothers and sisters who have hotel and restaurant businesses (Cahyanto, 2023)."

A similar response was conveyed by the Head of the Ponorogo Regency Tourism Ecosystem Movement regarding the development of dolanngebel, Mr Nanang Nasriyanto, M.Si said that (Nasriyanto, 2023):

"This website is very good. I hope it can be developed into an application that minimises technical and internet constraints. Communication is good"

Tourism has paved the way for a rapidly growing sector by exploring relationships with business actors and developing sustainable development goals. The increasing availability of information accessed through the network has changed the visitor's approach to the experience from a structured and well-planned tourism offering to a more dynamic and tailored one. However, this must be balanced with the availability of government human resources ready to manage this information system so that the public can get the best service with the website. The lack of trained personnel to operate the website can affect the maintenance and updating of the cloud system because the lack of trained personnel who understand the cloud infrastructure and website system management can disrupt routine maintenance that may be overlooked, this can cause some damage (downtime) and reduce the accessibility of services to the public. On the other hand, in the absence of experts, updating or updating software and its features cannot be done properly, so the cloud system cannot meet the ever-growing information or user updates, leading to user dissatisfaction and causing trust in government services to decrease.

Adequate or sophisticated cloud technology often requires higher costs for superior infrastructure. Budget constraints can hinder the ability of developers or managers to choose service providers with features such as security, transaction tools, and better performance. From another perspective, the available infrastructure may not perform optimally if the government does not have enough data to update the hardware needed to support cloud system optimisation. It can slow work (Klumpner, Wijekoon, & Wheeler, 2006). Thus, barriers such as lack of trained staff, financial constraints, internal bureaucracy, and lack of long-term strategy can significantly hamper the government's ability to effectively manage egovernment websites. To improve the effectiveness of these services, there needs to be a focus on training, increased budget allocation, streamlining bureaucratic processes, and developing a clear strategy for the future. Meanwhile, budget constraints significantly impact the government's ability to adopt advanced cloud technologies. To overcome these challenges, the government needs to develop a more flexible budget strategy and support the allocation of funds for information technology and infrastructure required to improve public services (Nam, Nam, & Kim, 2024).



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Figure 2. Home page of the dolanngebel.com website

Source: dolanngebel.com (2021)

The cloud dolanngebel website system is designed to provide a different experience to the public in digital tourism. This website is intended for the public to communicate directly in two directions with tourism managers or business actors in the area. The optimisation of all components must accompany this to support the use of this website as a new alternative in modernising the tourism area, where the public or visitors can access information remotely to see information on tourist destinations. Support from all parties is needed to accelerate the improvement of the cloud system so that when used, it does not present obstacles in service. As with this cloud system, the government needs to optimise various aspects such as human resources, hardware, and budget to support the development of this website.

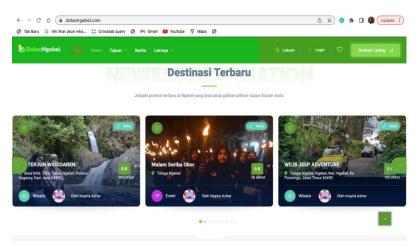


Figure 3. Tourist Attractions Based on Village

Source: dolanngebel.com (2021)

The lack of maximum development of the Dolanngebel cloud website system can present various obstacles that become a new challenge for the government and developers in maximising the upgrade of the website. If left unchecked, this obstacle can cause failure on the e-government website, reducing user confidence in terms of service and business integration goals. Furthermore, in this case, the lack of updates and maintenance of the e-government website due to limited budget and trained personnel can cause the maintenance and updates required by the website to not be carried out; this can cause delays in response or technical problems, of course, this can cause disappointment for users who expect fast access and reliable service. As with the challenge of inadequate features, a poorly managed website (lacks features that suit user needs) can reduce user satisfaction.

In this case, the government can solve existing challenges by improving staff training programs and reallocating the budget. With a good and massive training program, government staff can get reliable and necessary skills to manage and maintain a sophisticated cloud system. This will assure the website that the e-government website is always updated and can provide high-quality services. In addition, improving the training program can boost innovation for government staff. This training can include developing skills

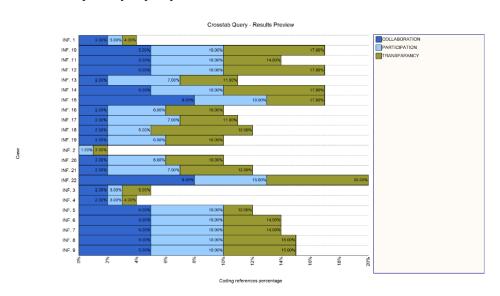
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to encourage innovation in using technology so that the government can be more responsive to changing community needs and changes to digitalisation. In budget reallocation, the government can reallocate the budget for information technology priorities and cloud infrastructure to help the government provide better services to the public, reducing the risk of service failure caused by a lack of human resources. In addition, with a sufficient budget, the government can develop a more integrated system so that users can access all the services they need in one easy-to-use platform. In overcoming these challenges through improving training programs and budget reallocation, the government can reduce the risk of failure of the e-government website in meeting user expectations and business integration goals. This approach will improve the quality of service and build user trust and satisfaction, which are critical to the future success of e-government.

Regulatory and Stakeholder Collaboration Challenges

The organisational challenges and issues in e-government stakeholder collaboration are complex and interconnected. Complex legal frameworks related to data security, difficulties in aligning interests, and communication and infrastructure barriers are key issues that must be addressed. Increasing cooperation and dialogue between stakeholders and simplifying regulations can help create a more conducive environment for effective and sustainable collaboration (Chen & Li, 2024). Based on Law Number 27 of 2022 concerning personal data protection, it is explained that all efforts to protect personal data in the series of personal data processing guarantee the constitutional rights of personal data subjects (President of the Republic of Indonesia, 2022). With the regulation, e-government web managers must be able to ensure that user data security will not be leaked and that it is guaranteed, so a multi-layered security system is needed to prevent personal data leaks. Thus, stakeholder collaboration is required to obtain maximum assurance of regulatory issues against a complex legal framework.

Interview and FGD data were analysed using the Nvivo 12 plus application. The analysis results show that business actors and tourism managers as informants welcomed the government's policy in developing tourism promotion and socialisation through the dolanngebel website. Tourism development using the Internet prioritises collaboration and community participation. The use of the website also shows transparency to prospective tourists who attend.



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Figure 4. Crosstab Query Analysis

Source: Data processed by the author

Based on the data on collaboration, participation, and transparency, indicators show fluctuating data regarding documentation data: business actors and tourism managers with cooperation, participation, and transparency indicators. The data consists of 22 informants with different data results. These data found that the collaboration indicator tends to get a low rating from informants. The second indicator, participation, tends to get stable data with a dominant percentage of 10.00%. In comparison, the transparency indicator gets data that tends towards the highest value with the largest percentage of 20.00%. This shows that as many as 22 informants want a transparent process in the collaboration so that business actors can maximise their participation in developing e-government websites. In this case, stakeholders, such as government agencies, the private sector, and civil society, often have different interests and priorities. For example, the private sector may focus more on efficiency and innovation, while the government may be more concerned with security and compliance.

Complex and frequently changing legal frameworks can slow the development and implementation of e-government systems. Legal uncertainty often discourages stakeholders from investing in new technologies or innovations, thus hindering progress. Limited understanding of regulations can reduce the government's ability to communicate information clearly to the public. This can lead to a lack of clarity regarding the procedures required to obtain services, ultimately harming transparency. In this case, the Dolanngebel website encourages local governments and residents around Ngebel tourism to manage digital-based tourism information systems. The communication system and the availability of technology allow for optimal communication between tourism managers and visitors to provide true transparency of information for both parties. With optimal communication between the two parties, managers and visitors understand their rights and obligations (Arkorful et al., 2021). In addition, developing the dolanngebel website encourages the government to be more transparent to the public and stakeholders by providing wider access to government information (Anthopoulos et al., 2016). Furthermore, transparency becomes a means of optimising public supervision of implementing e-tourism and everything that impacts public interest. This will encourage public participation in policymaking regarding e-tourism and increase the active role of the public in making e-tourism policies (Hung et al., 2013). However, transparency of communication in applying e-tourism in developing the dolanngebel website still requires maximum effort in four aspects: adaptability, involvement, mission, and consistency of understanding organisational culture (Dewi et al., 2022). This is because website development is new for the government and stakeholders in the Ngebel area, so it still requires a process to adapt, engage, commit, and be consistent with changes in the digital environment. In this case, public trust in government institutions can decrease when the public feels that the government cannot manage its data safely or is not transparent in its operations. This decline can weaken public participation in government programs. Issues of uncertainty and security can make companies and the public reluctant to use e-government services so that they can create a negative stigma towards this system. Meanwhile, poor collaboration and regulatory barriers can slow the development and implementation of e-government services, resulting in a time-consuming process for users. The inability to collaborate effectively can limit creativity in service delivery, limiting the government's ability to adapt to changing community needs and technology.

Regulatory and collaboration barriers significantly impact the implementation and operation of e-government systems, with far-reaching implications for transparency, trust and efficiency of services. Governments must simplify regulations and encourage greater stakeholder collaboration to improve

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these systems. By addressing these challenges, governments can improve the services provided to businesses and citizens and rebuild public trust in e-government. The relationship between an effective regulatory framework and successful stakeholder engagement is strong, especially in the context of egovernment initiatives. Both influence each other and can contribute to the performance and acceptance of digital government services. A good regulatory framework provides clear guidance to stakeholders on their rights and obligations (Susanto & Makmur, 2024). This legal certainty is important to reduce legal risks and ensure that all parties understand their expectations. With clear and transparent regulations, stakeholders will have more confidence in the e-Government system. This trust is important to encourage active participation and collaboration. The relationship between an effective regulatory framework and successful stakeholder engagement is critical to improving the performance and acceptance of egovernment initiatives. Improving the legal structure and fostering a collaborative environment facilitates constructive dialogue and creates a strong foundation for developing and implementing better digital services. By doing so, governments can build trust, increase transparency, and provide more efficient and responsive services to businesses and citizens (Prihatmanto et al., 2024).

DISCUSSION

This study identified several key challenges in managing cloud e-Government systems, including organisational, human resource, financial, and managerial aspects. Complex bureaucracy and slow decision-making often hamper the implementation and maintenance of e-Government systems. Limited communication between departments also causes inefficiencies. Difficulty reconciling the interests of various stakeholders leads to a lack of project integration, which is detrimental to end users. Furthermore, the limited skilled workforce and experience with cloud technologies also hamper system maintenance and service innovation. Lack of employee training programs leads to a lack of knowledge on optimal management and use of cloud systems. Furthermore, inadequate budgets to invest in new infrastructure and technologies limit the ability to adopt secure and high-quality cloud tools. Many e-government initiatives result in budget cuts, delays, and lower service quality. Likewise, complex and frequently changing regulations make it difficult for stakeholders to comply with legal requirements, hampering innovation and data security. Legal uncertainty can create distrust among users, reducing participation in e-government services. Thus, the above challenges cause operations to become slower and less responsive, making interactions between government, business actors, and the community ineffective. Users may experience longer waiting times and difficulty accessing the services they need. The inability to provide integrated and innovative services reduces the effectiveness of e-government transactions. The community and the business world may lose trust in digital services, resulting in a decline in the adoption of e-government technology. Overall, these challenges provide significant obstacles to achieving egovernment goals, especially in providing efficient, transparent, and responsive public services to the community and business world.

This study is consistent with several issues in the e-government and cloud computing literature. Challenges such as human resources, organisation, finance, and organisation are common themes that indicate that these issues are universal. This study adds insight by focusing on specific aspects, such as the importance of coordination between stakeholders and the impact of regulation on public trust. In Tilka et al., (2024) Researching the development of e-government across the African Union member states, this study found that several African countries, including Ghana, have made rapid progress due to digital strategies aligned with national policies. In addition, technology integration is evident in the Ghanaian public sector and is reshaping public administration and governance. This provides a difference in this

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study with the research written by the author, where in this study, the researcher found that the limited trained human resources, especially in information technology and cloud computing, are a challenge for the government to develop e-government; this can be maximised again with a stronger training and development program in the public sector IT department so that the staff involved can master the given field.

The human resource challenge underscores the need to increase investment in training and development programs for government employees. Adopting new technologies, such as cloud systems, requires specialised skills that encompass not only technical aspects but also the ability to adapt to rapid changes in the technological environment (Alryalat, 2024). The regulatory complexity and compliance findings suggest that data security should be a top priority in any digital initiative. Governments must ensure their systems are effective and secure to build public trust and increase engagement in digital services. The study underlines the importance of developing more coherent and integrated policies. Complex and inconsistent regulatory frameworks can stifle innovation. Therefore, governments should simplify regulations and create an environment that supports the development of new technologies without compromising security and accountability. The study's findings underscore the need for reforms in training programs (Alghanayem, Lamberti, & López-Sintas, 2023). The program covers technical aspects, change management, and interpersonal skills development to ensure employees can collaborate effectively with other stakeholders. Stakeholder engagement is key to ensuring that e-government systems meet the community's needs. Governments must build platforms facilitating open dialogue with stakeholders, including the private sector, civil society, and end users. This participation will increase service accountability, transparency and relevance (Werthner, 2022). Thus, realising the full potential of digital government initiatives requires comprehensive reform. By focusing on coherent policies, enhanced training, and better stakeholder engagement, governments can create an enabling environment for broader and more effective technology adoption. This will improve public services and strengthen public trust in government, encouraging greater participation and collaboration in governance processes.

Collaboration in developing the dolanngebel Website is still weak on both sides, the government and stakeholders. On the government side, the focus is more on the organisation's character, human resource/technician capacity, financial capacity, and regulatory and legal issues. Lack of management and political support, availability of hardware and software, internet network, and ability to maintain security and privacy are also challenges in developing the dolanngebel website (Dewi et al., 2022). In creating an e-tourism-based webpage, there are three main components, namely 1) data collection, standardisation and consolidation; 2) management; and 3) implementation and marketing (Ali, et al., 2015). The three components are a collaboration between the government and tourism managers. In the first stage, data is collected from various tourism-supporting elements such as hotels, recreation areas, restaurants, and important events that consumers can access. Data collection and implementation of standardisation and collaboration are carried out so that they can be displayed on the website. In the second stage, namely management, the government designs a system that will be compiled based on the standardisation and consolidation sections at the first level. In the final stage, implementation and marketing are carried out by both parties, both the government and tourism managers, in implementing a system or application for marketing that is distributed to tourists (Hamid et al., 2021).

The dolanngebel website is designed digitally but requires support and participation from stakeholders in the Ngebel tourism area. The community around Ngebel tourism, especially stakeholders, must be able to adapt to existing technology. To adapt to technology, stakeholders directly related to tourists require skills in the technology field. Therefore, stakeholders must be actively involved in website

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usage training to improve the quality of their services. Being active in training will increase their work productivity and knowledge. In addition, stakeholders are required to at least master technology such as the internet and computer utilities (Aghust Kurniawan & Andiyan, 2021). Stakeholder participation in website development can also be realised in the form of motivation, for example, motivation in running a tourism business through a website or motivation in participating in digital-based tourism business training (Dewi et al., 2022). On the other hand, to attract tourists, tourism managers must not only pay attention to the aesthetic value of tourist objects and destinations but also require various efforts to support tourist comforts, such as accommodation, tour guides, transportation, tour operators, freight services, and many other business fields that can be developed. The form of these services is displayed on the website to increase tourist confidence in visiting.

By implementing more coherent policies and transparent reporting mechanisms, governments can increase accountability to the public. This is important to build trust and encourage public participation in government oversight. Providing clear and open information about e-government initiatives and decisionmaking processes will increase transparency. (Casillo et al., 2019). This allows citizens to understand how decisions are made, and public funds are spent. Increased stakeholder involvement in the planning and implementation of e-government projects will create a sense of ownership and increase participation. Open dialogue will allow for better adaptation to the needs and expectations of citizens. Collaboration between the public and private sectors can accelerate the process of developing innovative solutions and leverage the expertise and resources of different parties to create better services. By addressing regulatory challenges and ensuring adequate data protection, governments can build greater trust among citizens. This trust is essential to encourage citizens to use e-Government services. When citizens perceive that government is transparent and accountable, they are more likely to participate in the governance process, including providing input and participating in public initiatives (Hardy et al., 2023; Sabbioni et al., 2022). Thus, addressing the challenges identified in this study can yield significant benefits for digital government. Better management practices will improve the efficiency and effectiveness of public services and strengthen transparency, stakeholder collaboration, and public trust. With an integrated approach and a focus on training, coherent policies, and citizen engagement, governments can create a more responsive and sustainable e-government ecosystem (Mendieta-Aragón & Garín-Muñoz, 2023).

In this study, governments have limited budgets and must make difficult decisions about spending priorities. Often, other pressing needs, such as health, education and physical infrastructure, take priority over investments in information technology. This results in insufficient funds for the development and maintenance of IT systems. Many e-government initiatives are not long-term priorities, so the funds allocated are often temporary. Efforts to adopt new technologies are often hampered without a sustained financial commitment. Many e-government initiatives are not long-term priorities, so the funds allocated are often temporary. Efforts to adopt new technologies are often hampered without a sustained financial commitment. In addition, rigid organisational structures and traditional bureaucracies often resist change. Resistance to adopting new technologies may stem from fear of losing control or uncertainty about how the technology will impact current jobs and responsibilities. The challenges identified in this study stem from various interrelated root causes. Financial constraints, human resource challenges, regulatory bureaucracy and organisational complexity hamper e-government systems' effectiveness. Through comprehensive reforms and a collaboration-focused approach, governments can address these challenges and make the most of the potential of digital technologies.

The authors recommend specific steps for government agencies to address policy challenges for more flexible funding models, suggestions for IT training programs within government agencies, or

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frameworks to enhance collaboration between the government and the private sector. In this regard, the government can develop a funding model integrating the IT budget with other budgets. This will ensure that IT investments are not isolated and receive adequate attention. Implement a more flexible budget system that allows funds to be reallocated to IT projects based on urgent needs. This will facilitate a faster response to changing technology needs. The government can also incentivise partnerships with the private sector in financing and developing e-government initiatives. This can help leverage greater resources and expertise from the private sector. Then, the government can build training programs focusing on skills needed in cloud technology and e-government systems. These programs should cover technical aspects, project management and interpersonal skills. Implement ongoing training programs that provide initial training and regular updates to keep pace with technological developments and best practices. Next, a clear framework for cooperation between the government and the private sector in developing and maintaining e-government systems must be established. This should include mechanisms for sharing information and resources. Establish regular forums to discuss challenges and opportunities in technology adoption. These forums should involve many stakeholders, including business, academia, and civil society. Governments can also comprehensively assess the current regulatory framework to identify and remove unnecessary barriers to adopting new technologies. This includes updating regulations to reflect technological advances. In addition, governments can implement transparent reporting systems that allow citizens to access information on e-government initiatives, the use of funds, and the outcomes of projects implemented. Establish mechanisms to collect public feedback on egovernment services, which can be used for continuous improvement. By implementing these steps, government agencies can address the challenges identified in this study and harness the full potential of cloud-based e-government systems. Through policy reform, human resource development, and increased collaboration, governments can improve public services' efficiency, effectiveness, and transparency and build public trust in digital initiatives.

CONCLUSION

This study shows that transparency is important for government accountability and the improvement of the tourism industry. Transparency information regarding business permits, licensing procedures, and tourism data is essential for industry players in this sector. This study highlights the ability of cloud platforms to provide easy and open access to important information for stakeholders in the tourism sector, including entrepreneurs, local governments, and tourists. This can increase public trust and improve business decisions. In addition, this study provides new insights into how e-government systems can be implemented more effectively and shows great potential to improve the performance and sustainability of the tourism sector through better and more integrated digital technology. In developing the dolanngebel website, there are three challenges to implementing e-government. The three aspects are transparency, collaboration, and participation. The three aspects are crucial because they involve the government and stakeholders as tourism managers in the Ngebel area. Transparency, collaboration, and participation from both parties are still limited due to various things, such as organisational character, human resource/technician capacity, financial capacity, and regulatory and legal issues. In addition, the government and stakeholders still need a process to adapt, engage, commit, and consistently use the website because website development is new for them in the Ngebel area.

This study provides a new framework to evaluate the effectiveness of e-government platforms in fostering collaboration between the business and government sectors. The framework includes key elements such as transparency, collaboration, participation and business process integration, which

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allows for a more comprehensive assessment of e-government systems. By highlighting the tourism sector as the main context, this study provides new insights into how e-government can be improved to support the growth and sustainability of this industry. This opens up opportunities for further research in other sectors with similar characteristics. Furthermore, this study using FGD allows various stakeholders, including government, business actors, and civil society, to voice their views and concerns. This creates space for productive discussions and allows for identifying relevant challenges and solutions from the perspectives of various parties. Thus, this study makes significant contributions both conceptually and methodologically. By presenting a new framework and using qualitative methods such as focus groups, this study not only enriches the literature on e-government but also provides practical insights that can be applied to improve collaboration between the business world and the government sector, especially in the field of government. E-government sector. Government sector. Tourism sector context. This approach reinforces the importance of stakeholder engagement and local context in designing more effective policies and systems.

This study is geographically limited to the Ngebel Lake area. This area's social, economic, cultural, and infrastructural conditions may differ from other regions. Therefore, the findings may not be directly generalisable to regions with different backgrounds, such as large cities or other rural areas. This study has limitations, where the primary focus on the tourism sector means that the findings may not be fully relevant to other industries, such as health, education or transportation, which may face different challenges and dynamics in adopting cloud-based e-government. These limitations of the study provide important context for understanding the findings. This study can pave the way for more in-depth and comprehensive research on integrating e-government and digital technologies in the public sector by identifying areas for further research, including comparative analysis and exploring different cloud solutions.

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