

Enhancing Transparency and Accountability in Public Services Through Information Technology: A Case Study of Timor-Leste's Ministry of Justice

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Keywords

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ABSTRACT

This study explores the novel application of the *Ajendamento* online scheduling system in Timor-Leste's passport services, addressing gaps in prior research by focusing on its dual role in enhancing transparency and accountability while confronting unique local challenges. Unlike broader e-government studies, this research provides empirical evidence from a least-developed country (LDC) context, where infrastructural and literacy barriers significantly impact digital adoption—a dimension underexplored in existing literature. Using a qualitative case study design, the study analyzes interviews with 12 stakeholders, document reviews, and observational data from Timor-Leste's Ministry of Justice. Findings reveal that the *Ajendamento* system reduces broker interference, improves service efficiency, and fosters procedural transparency. However, persistent issues such as uneven internet access (54.2% penetration), low digital literacy (especially among rural and elderly populations), and institutional capacity gaps (e.g., 26% contracted staff, limited training) hinder equitable implementation. These challenges contrast with studies in more advanced digital economies, highlighting the critical need for context-specific solutions. The study contributes to e-government theory by emphasizing the interplay between technological systems and socio-institutional readiness in LDCs, a nuance absent in Heeks' (2002) generalized frameworks. Practical implications include targeted investments in infrastructure, literacy campaigns, and inter-agency collaboration to ensure inclusive digital transformation. By bridging the gap between policy aspirations and grassroots realities, this research offers a model for similar settings globally.

Keywords: Information Technology, Public Services, Transparency, Accountability, Timor-Leste

INTRODUCTION

In the era of digitalization, the application of information technology in public services is one of the main instruments to increase transparency and accountability. With the rapid development and use of information technology in various fields, it can be said that information technology has become a main pillar that provides added value to society in the development process towards a more

advanced nation (Asiana, 2020; Astika & Dwirandra, 2020; Razak et al., 2021; Suryanto, 2016; Zarkasi et al., 2023). The use of information technology now covers all sectors, including data processing, data storage, and processing of text, numeric, image, animation and multimedia data. According to Richard Weiner in Webster's New World Dictionary and Communication, information technology is defined as the process of processing, processing, and distributing data by combining computers and telecommunications (Purba et al., 2020). Meanwhile, Information Systems Theory emphasizes that information systems do not only focus on technological aspects, but also include human involvement and organizational processes to support effective decision making (Sanchez-Stern et al., 2023).

However, behind its great benefits, digitalization also presents new challenges related to social surveillance and control. Michel Foucault in the concept of Panopticon explains how invisible surveillance can create social discipline without direct coercion (Topolsky et al., 2023). In the digital age, this concept is increasingly relevant as governments and tech companies now use big data and algorithms to monitor individual behavior. This form of surveillance is much more subtle than traditional methods, but has a much stronger impact in guiding people's behavior without them realizing it.

Thus, the integration of digital tools not only simplifies processes but also facilitates better access to information, allowing citizens to hold public officials accountable for their actions and decisions. Therefore, governments in various countries are increasingly adopting innovative technologies to improve governance and enhance service delivery, as well as ensuring that public resources are managed effectively and responsibly. The Government of Timor-Leste through Government Resolution No. 9/2017 established the National Policy on Information and Communication Technologies which emphasizes the provision of digital- based government services (e-government) and the creation of a secure and quality ICT ecosystem. This digital approach allows public administration to be carried out electronically through three main media: computers/web, smartphones, and social media (Alcaide Muñoz & Rodríguez Bolívar, 2017). This policy aims to build an effective government with integrity, transparency and accountability, and is oriented towards a digital society.

The principles of integrity, transparency, and accountability have been recognized by the member states of the United Nations, both collectively and individually, as integral components of the foundational tenets of public administration. Consequently, it is imperative that these principles are not only embraced but also visibly enacted by the leadership within the UN System and across all member states. Within the realm of public administration, integrity is defined as “honesty” or “trustworthiness” in the execution of official responsibilities, serving as a counterpoint to “corruption” or “the misuse of authority.” Transparency is characterized by unobstructed access for the public to timely and credible information regarding decisions and performance within the public sector. Accountability encompasses the duty of public officials to disclose the utilization of public resources and to provide justification for any shortcomings in achieving established performance targets.

One of the institutions that plays an important role in public services in Timor-Leste is the Ministry of Justice – Directorate-General of Registry and Notary Services, which is responsible for issuing passports, identity cards (BI), certificates of good conduct, and RDTL documents. Unfortunately, this service is still marked by complicated bureaucratic problems, lack of transparency, and low accountability, which leads to public dissatisfaction.

Passports are essential documents for citizens to travel internationally, whether for work, study or leisure. To improve security and ease of travel, the Government of Timor-Leste introduced an

electronic passport on May 5, 2017, which uses biometric technology and integrates facial images and digital identification in accordance with the International Civil Aviation Organization (ICAO) standards (Journal da Republica, 2017). Passport holder data is stored in a microchip, increasing protection against identity theft and document forgery. Although e-passports offer a sophisticated technological solution, the process of obtaining them remains challenging. Since the independence of the Republic of Democratic Timor-Leste in 2002, passport processing has been carried out manually, with obstacles such as a shortage of forms, inefficient bureaucracy, long queues, and the potential for abuse of authority. In fact, there is often a limited availability of passports, which causes inconvenience to the public and reduces the efficiency of the Ministry of Justice.

To address this issue, the government launched the strategic plan "Digital Timor 2032" on June 2, 2023, as a step to encourage national digital and technological development (Jornal da Republica, 2023). This step was then strengthened by the introduction of the online passport service system "Ajendamento /scheduling" on January 18, 2024, the result of cooperation between the Ministry of Justice and the information technology sector. This system aims to reduce long queues, speed up service times, and increase transparency in the processing of citizenship documents. In this context, information technology can play an important role in accelerating the passport service process, providing a transparent tracking system, and increasing accountability at every stage (Gatchin et al., 2021). In addition, digitalization can improve operational efficiency and reduce the burden of manual administration. Ndou emphasized that one of the main benefits of e-government is its ability to improve coordination between agencies and provide better information to the public.

However, challenges in implementing digital systems remain, especially in terms of technological infrastructure, internet access, and digital literacy of the community. According to Reportal data (2024), the number of mobile phone connections in Timor-Leste reached 1.67 million, exceeding the population of only 1.3 million, with a mobile device penetration rate of 122.1%. Although this figure shows the high use of mobile devices, internet penetration is still limited to 54.2%, with around 742.4 thousand internet users, while around 627.8 thousand people (45.8%) still do not have internet access, reflecting the existence of a digital divide that needs to be addressed so that digital transformation can be inclusive and equitable (Simon Kemp, 2024). In addition, the implementation of e-government in Timor-Leste still faces various challenges, such as limited ICT infrastructure, low digital literacy in society, and cybersecurity issues that have not been addressed comprehensively (Tatoli, 2025).

Although many studies show that implementing e-government can increase efficiency and transparency, many developing countries have yet to fully exploit its potential (Pasenko, 2022). This gap indicates the need for further exploration of the application of information technology in passport services. A study by Orazgaliyeva et al. (2023) revealed that digitalization of public administration can increase transparency and efficiency. Similarly Estevez & Janowski highlighted that e-government can reduce administrative costs and increase accessibility of services, especially in remote areas.

However, the success of e-government implementation does not only depend on technology, but also on institutional readiness and the quality of human resources. Heeks emphasized that many e-government projects in developing countries have failed due to limited infrastructure, lack of employee skills, and regulations that are not yet supportive. Therefore, intensive training is needed for state officials and active participation from various stakeholders, including the government, private sector, and civil society.

This study aims to explore how the application of information technology can improve transparency and accountability in public services at the Ministry of Justice of Timor-Leste. In addition, this study will also assess the effectiveness of the online passport service system. Unlike prior studies, this research contextualizes e-government challenges in Timor-Leste's unique socio-technical landscape, combining empirical fieldwork with critical analysis of infrastructural and literacy barriers—offering a granular perspective absent in broader comparative studies (Pasenko, 2022; Shcherba, 2020). Citations are retained as per request.

METHODS

This research is designed to address how the application of information technology can enhance transparency and accountability in public services at the Ministry of Justice of Timor-Leste. Specifically, it evaluates the effectiveness of the online passport service system known as “Ajendamento/ Scheduling”, in response to the urgent need to improve the quality of public services and strengthen public trust in government institutions. The study adopts a qualitative research approach with a case study design focused on the Directorate General of Public Services and Notary under the Ministry of Justice. A qualitative method was chosen as it is capable of uncovering individual meanings and experiences that cannot be accessed through quantitative approaches (Creswell & Creswell, 2017). In addition, qualitative methods produce descriptive data in the form of written or spoken words from people, as well as observed behavior (Ercan & Marsh, 2016; Heglar & Cuevas, 2017; Radovic-Markovic, 2023).

Data collection in this study was carried out through the analysis of annual reports from 2022, 2023, and 2024, and in-depth interviews with 12 informants comprising officials, stakeholders, and members of the community who use the “Ajendamento/Scheduling” application. This approach aims to gain a comprehensive understanding of how information technology is implemented in public service delivery. The study focuses on the information systems used, the supporting facilities, and the services provided to the public. The data analysis process follows a systematic series of steps, including data reduction, data organization, comparison, and interpretation. The research is guided by the theoretical frameworks of Sugiyono (2022), encompassing the formulation of research questions, literature review, development of research framework and design, field data collection, and analysis. The final results are presented as a basis for drawing conclusions and formulating recommendations to gain an in-depth understanding of the phenomenon under study.

RESULTS

To answer the objectives of this study, an analysis was conducted on the implementation of the online passport service system “Ajendamento/scheduling” at the Ministry of Justice of Timor-Leste, focusing on several main dimensions: transparency and accountability, Information technology, Service effectiveness, Implementation barriers, and physical infrastructure limitations. The analysis was conducted based on primary data from interviews and direct observations, as well as secondary data from related documents and regulations. The findings obtained are as follows.

Transparency

The results of interviews and observations show that the implementation of an online scheduling system helps reduce the practice of intermediaries (brokers) and makes it easier for the public to access information related to service schedules. The system also provides a user-friendly “Pedidu/Request” interface and clear requirements information, which supports procedural openness and equal access to service information. This finding is in line with a study by Orazgaliyeva et al.

(2023) which states that the digitalization of public administration can increase transparency and efficiency. Although the “*ajendamentu*”/scheduling system and digital applications have been implemented to increase transparency and inclusiveness, unofficial practices still occur in the field. The case of an elderly person (*avoz*) who handed over personal documents to someone who promised assistance, shows that there is still room for misuse by third parties (intermediaries/brokers). This weakens public trust in the digital system and shows that the implementation of the system has not been followed by effective supervision and enforcement of procedures, because even though there is an online system, the complaint or problem reporting mechanism is not available digitally or is not easily accessible. Impact: Cases such as those experienced by the elderly are not handled quickly or followed up systematically. The following is data on passport production from 2022 to 2024.

Table 1. Passport Production Population 2022, 2023, and 2024.

No	Year's	Sex	Total
1.	2022	Male Female	28.480 15.714
2.	2023	Male Female	13.246 9.507
3.	2024	Male Female	22.247 18.204

Based on the above table Trend and Pattern Analysis as follows:

There was a drop of almost 50% from the total number of passport applications in 2022 (44,194) to 2023 (22,753). This could indicate system constraints, a transition to a digital system, or external factors such as travel restrictions, less socialization, or economic factors. Rise Again in 2024: In 2024, the number of boards rose to 40,451, almost matching the figure of 2022. This indicates that the digital system may start to work better, or there is an increase in public awareness and access to passport services.

Gender Distribution: In all years, the number of males was always higher than females. However, the gap narrows in 2024 (22,247 vs. 18,204), suggesting increased access and participation of women in managing passports.

1. Accountability

The daily quota limit of 60 applicants reflects an effort to control the flow of services internally. However, there was no structured and transparent performance reporting system or user complaint mechanism. In addition, the absence of a panel or adequate digital monitoring system to monitor the queue process and distribution of *ajendamentu* coupons resulted in weak operational control and service accountability. This condition opens up opportunities for manipulation and injustice, and indicates gaps in public accountability, especially related to public feedback mechanisms and transparency of service performance results. This situation has the potential to erode public trust in the quality of public services provided. This finding is in line with Heeks' opinion, which states that the absence of a reporting and evaluation system is one of the main obstacles to the successful implementation of e-government in developing countries.

2. Role of Information Technology

Interviews with the Head of IT indicated that the system was developed locally by Timor's ICT team and has been integrated in a single public service portal that includes a range of important documents. The applied barcode verification reflects significant advances in digital innovation and e-

Government practices. The study by Estevez and Janowski stated that this kind of e-government system is able to trim administrative costs and increase access, especially in remote regions, which is also reflected in the context of Timor-Leste. However, based on data Key Findings Total Passport Applicants (All Types): 22,753 people comprising general, service, diplomatic, and foreign passports.

Distribution By Region:

1. Dili: 21,212 people (>93% of total management)
 2. Bobonaro district: 1,094 people
 3. Oe-cusse district: 447 people
- Distribution by Passport Type (Majority in Dili):
1. General Passport (General): 20,300 out of 21,835 applicants are from Dili
 2. Official & Diplomatic passports are almost entirely also processed in Dili

Based on the above findings the researcher concluded a). Regional Distribution Inequality: The data shows a large dominance of the Dili region in passport management. Regions such as Bobonaro and Oe-cusse still record very small numbers, despite the digitalization of management systems. b). Indications of Digital Access Limitations: These inequalities suggest that digital systems have not been able to optimally reach communities outside Dili, either due to limitations in infrastructure, internet access, digital skills, or socialization.

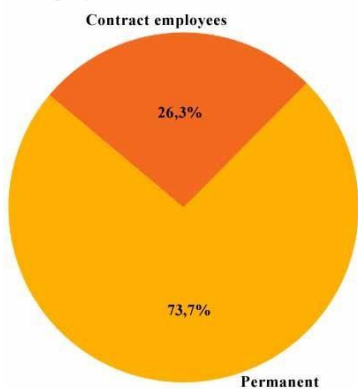
3. Service Effectiveness

The results of interviews with the Head of the Passport department and direct observation indicate that this online system has speeded up the service process and eliminated physical queues. The system was also judged to be flexible in responding to the pressing needs of the community. These efficiencies corroborate Pasenko (2022) claim that the application of technology can improve the quality of services, yet it also suggests that developing countries such as Timor-Leste are beginning to successfully harness the potential of e-government more effectively.

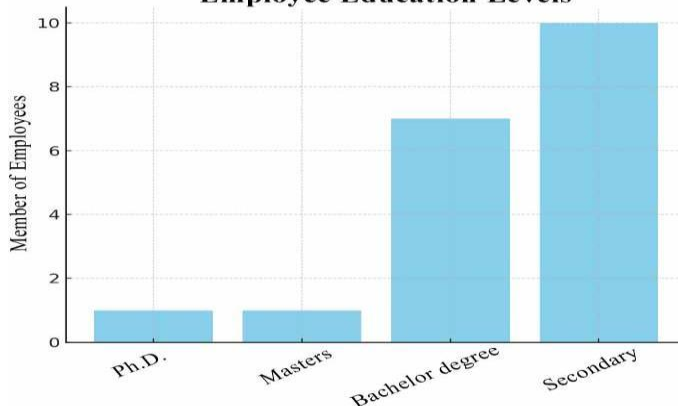
4. Implementation Barriers

However, a number of challenges were still encountered. Low digital literacy, especially among the elderly, as well as limited internet access and limited scheduled opening times are serious constraints. In addition, limitations in the number of permanent employees and dependence on apprenticeship staff (trainees) slow down the smooth running of services. In addition, the level of education of employees is still dominated by the level of high school and S1. These barriers are consistent with the findings of Heeks, who emphasized the importance of human and institutional resource readiness in e-government implementation. As found in this study as follows:

Employment Status Distribution



Employee Education Levels



Left Chart - Employment Status Distribution

- a) Shows that the majority of employees are Permanent (around 74%).
- b) As many as 26% are employees with Contracted status.

Right Chart - Employee Education Levels

The majority of employees (10 people) only completed their education up to Secondary School.

- a) There are 7 employees with Bachelor's degrees.
- b) 1 person has a Master's Degree, and only 1 person has a Doctorate degree.

Therefore, intensive training for the apparatus and increasing institutional capacity are very much needed.

5. Physical Infrastructure Limitations

Damage to passport printing machines and delays in importing passport books also slowed down services. Limited-service space also became an obstacle in handling the high volume of requests. This condition indicates that the success of e-government does not only depend on a good digital system, but is also greatly influenced by the readiness of the physical infrastructure and supporting logistics.

The findings of this study strengthen the argument in previous literature that the implementation of e-government has great potential to improve the efficiency and transparency of public services (Orazgaliyeva et al., 2023). However, the gap between potential and reality on the ground remains a major challenge, as stated by (Pasenko, 2022). This study provides empirical evidence that despite significant progress in the digitalization of services in Timor-Leste, the success of overall implementation still faces obstacles in terms of infrastructure, digital literacy, and institutional capacity.

CONCLUSION

The study concludes that Timor-Leste's *Ajendamento* system has significantly improved passport services by enhancing transparency, reducing queues, curbing broker interference, and increasing bureaucratic efficiency. However, challenges like uneven internet access, weak IT infrastructure, and low digital literacy hinder equitable adoption, necessitating government investment in digital expansion, training, and inter-institutional collaboration to ensure inclusive e-governance. Future research should evaluate the impact of digital literacy programs and infrastructure development on service inclusivity, compare Timor-Leste's progress with other nations, and propose policy measures to bridge urban-rural disparities—ultimately advancing equitable, transparent, and accountable public service delivery.

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