

The Effectiveness of E-Governance on Public Service Delivery in Zanzibar. Case Study: Business and Property Registration Authority (BPRA)

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DOI : <https://doi.org/10.51583/IJLTEMAS.2026.150100034>

Received: 14 January 2026; Accepted: 19 January 2026; Published: 28 January 2026

ABSTRACT

This study assessed the effectiveness of e-governance on public service delivery in Zanzibar. Specifically, the study examined the contribution of e-governance in improving the accessibility of public service, the impact of e-governance in facilitating resource utilization on the delivery of public service, and the effect of e-governance in enhancing accountability on the public service delivery in public Institutions with a focus on three key variables: accessibility, resource utilization, and accountability. Accessibility is critical in ensuring that more citizens can engage with digital services, while effective resource utilization enhances the system's capacity to meet public needs and accountability, though slightly less impactful, is vital for maintaining public trust and transparency in service delivery. Using a quantitative approach data was collected from 70 respondents. The findings indicate that accessibility has the strongest positive effect on public service delivery, followed by resource utilization and accountability, all of which are statistically significant. Accessibility has the strongest positive impact on Public Service Delivery with a notable unstandardized coefficient ($B = 0.675$) and standardized coefficient ($\beta = 0.456$). This suggests that for every one-unit increase in ACB, there is a corresponding increase of 0.675 units in PSD. While Resource Utilization and Accountability have smaller coefficients than ACB, their effects are nonetheless statistically significant. Resource Utilization ($B = 0.320$, $\beta = 0.287$) has a stronger effect than Accountability ($B = 0.245$, $\beta = 0.198$), indicating that effective resource allocation is more closely tied to perceived service delivery than accountability mechanisms. The study concludes that improving digital access, optimizing resources, and enhancing accountability mechanisms are essential for the success of e-governance initiatives in public institutions. Recommendations for policy improvements and further research are provided to guide the continued development of e-governance systems for better public service delivery.

Key Words: E-governance, E-Governance Initiatives, Resource Utilization, Public Service delivery

INTRODUCTION

In an era of rapid digital transformation, e-government has emerged as a pivotal strategy for enhancing public service delivery. The introduction of e-government systems aims to streamline processes, improve efficiency, and make public services more accessible to the public.

E-government, the use of digital technologies by governments to enhance service delivery and administrative efficiency, has become a transformative force in public administration worldwide. The effectiveness of e-government initiatives in improving public service delivery is a subject of extensive research and analysis, revealing both successes and challenges.

Globally, e-government has been instrumental in streamlining processes and reducing bureaucratic inefficiencies. For instance, countries like Estonia and Singapore have been recognized for their advanced e-government systems, which have significantly enhanced the efficiency and accessibility of public services. Estonia's e-residency program and digital ID system have facilitated streamlined government interactions, allowing citizens and businesses to access services seamlessly and efficiently (Vassil, 2021). Similarly,

Singapore's Smart Nation initiative integrates technology into public services, promoting a high level of efficiency and citizen engagement (Tan and Teo, 2022).

The effectiveness of e-government can be attributed to several factors, including improved service delivery speed, reduced operational costs, and enhanced transparency. Digital platforms enable quicker processing of requests and applications, thereby minimizing wait times and improving citizen satisfaction. For example, the introduction of online tax filing systems in various countries has simplified tax administration and reduced the administrative burden on both citizens and government agencies (Pardo and Gil-Garcia, 2021). Moreover, e-government platforms often provide greater transparency by allowing citizens to track the status of their requests and access information about government operations, thereby fostering trust and accountability (Wirtz and Schellong, 2020).

The adoption of e-government in Africa has been a significant step towards improving public service delivery across the continent. By leveraging digital technologies, African governments aim to enhance the efficiency, transparency, and accessibility of public services. One of the primary benefits of e-government in Africa is the enhancement of service delivery efficiency. Countries like Kenya, Nigeria, and Rwanda have implemented e-government systems that streamline administrative processes and reduce bureaucratic delays. For example, Kenya's eCitizen platform allows citizens to access a wide range of government services online, from business registration to passport applications, significantly reducing processing times and improving service accessibility (Otieno, 2021). Similarly, Rwanda's Irembo platform provides digital access to numerous public services, contributing to increased efficiency and user satisfaction (Nsabimana and Uwizeyimana, 2020).

In Tanzania, one significant development of e-government journey is the establishment of the e-Government Agency (eGA) in 2012. The eGA has spearheaded numerous projects designed to digitize public services. One such project is the Government Electronic Payment Gateway (GePG) which has revolutionized the way public payments are handled. The GePG has reduced the time and cost associated with processing payments, minimized revenue leakages, and enhanced transparency in public financial management (Mnyawi and Pazi, 2020). The introduction of the Tanzania National e-Procurement System (TANePS) has also been instrumental in improving public service delivery. TANePS facilitates electronic procurement processes, making them more efficient and less prone to corruption. This system has streamlined procurement activities, resulting in cost savings and greater accountability in public spending (Komba, 2021).

E-government has become a cornerstone in the efforts to enhance public service delivery in Zanzibar. One of the key milestones in Zanzibar's e-government journey is the establishment of the Zanzibar E-Government Agency (ZGA) in 2013. The ZGA is tasked with the implementation and management of e-government projects, focusing on creating a digital government framework that facilitates seamless service delivery (Zanzibar E-Government Authority, 2023). Among the prominent initiatives is the Government Electronic Payment Gateway (GePG), which streamlines payment processes for various public services. The GePG has reduced transaction times, improved revenue collection, and minimized opportunities for corruption by ensuring transparency in financial transactions (Ali and Khamis, 2021). The effectiveness of e-government in Zanzibar can also be seen in the health sector, where digital systems have been implemented to improve service delivery. The introduction of electronic health records (EHRs) and telemedicine services has enhanced patient management and accessibility to healthcare services, particularly in remote areas (Abdallah and Mohamed, 2020). These initiatives have contributed to more efficient health service delivery, better data management, and improved patient outcomes.

Despite these advancements, Public Institutions are faced by several challenges in fully realizing the benefits of e-government. The digital divide remains a significant issue with disparities in internet access and digital literacy between urban and rural areas. Many rural communities lack the infrastructure needed to access online services which hampers the inclusivity and effectiveness of e-government initiatives (Suleiman, 2020). Moreover, the sustainability of these digital projects is often threatened by limited financial resources and technical expertise. Cybersecurity is another critical challenge. Ensuring the protection of data and maintaining the privacy of citizens' information are essential for building trust in e-government systems. The government has been working on enhancing cybersecurity measures, but concerns remain about the robustness of these protections against evolving cyber threats (Mwinyi, 2021).

Statement of problem

Government services were often marked by cumbersome bureaucratic processes. The reliance on manual paperwork and in-person interactions led to delays and inefficiencies. People frequently experienced long wait times and procedural hurdles, which diminished the quality of service delivery (Githinji, 2022)

Despite significant investments in digital infrastructure and technology such as the establishment of National Communication network in 2020, establishment of e-office, establishment of e-procure, there is a noticeable gap in empirical evidence and practical insights regarding the effectiveness of e-governance initiatives. Challenges such as inadequate digital literacy among public, limited internet connectivity, and potential issues with system integration and data security hinder the successful adoption and impact of e-governance solutions. Henceforth, this study sought to address these gaps by evaluating the effectiveness of e-governance in enhancing public service delivery in Public Institutions. It aimed to assess how e-governance improves the accessibility of public services, the extent to which these systems optimize resource utilization in facilitating service delivery and the effectiveness of e-governance in enhancing accountability on public service delivery. Understanding these factors was crucial for formulating strategies that can optimize the benefits of e-governance and ensure that it meets the needs of all Citizens.

Research Objectives

1. To examine the contribution of e-governance in improving the accessibility of public service at Business and Property Registration Authority.
2. To evaluate the impact of e-governance in facilitating resource utilization on the delivery of public service at Business and Property Registration Authority.
3. To assess the effect of e-governance in enhancing accountability of public service at Business and Property Registration Authority.

LITERATURE REVIEW

In **theoretical Review** this study has employed two models which are the Technology Acceptance Model (TAM) and E-governance Models of Delivery. By starting with the Technology Acceptance Model (TAM) which suggests that perceived usefulness and perceived ease of use directly influence users' attitudes toward using technology (Ajibade, 2018). These attitudes, in turn, affect users' behavioral intentions to use the technology, which ultimately determines the actual use of the technology. In this study, the model offers valuable insights into user acceptance of e-governance technologies by focusing on perceived usefulness and ease of use. Applying TAM principles can enhance the design, implementation, and evaluation of e-governance systems, ultimately leading to higher adoption rates and improved service delivery. While **the E-governance Models of Delivery** suggests that it uses leverage information and communication technologies (ICTs) to enhance the efficiency, transparency, and accessibility of public services. There are several e-governance delivery models delineate e-government's scope across government-to-citizen (G2C), government-to-business (G2B), and government-to-government (G2G) scenarios, which are fundamental delivery models of e-government. Government-to-Citizen (G2C) which focuses on the delivery of public services directly to citizens.

Empirical Literature Review

E-governance and the accessibility of public service

Nguyen and Wang (2021) evaluated E-Governance Initiatives and Their Impact on Accessibility in Public Services. The review analyzed peer-reviewed articles, government reports and case studies from academic databases. Inclusion criteria focused on studies that specifically addressed e-governance and accessibility, published between 2010 and 2020. A qualitative synthesis approach was used to categorize findings and identify patterns and gaps in the literature. The review identified common themes such as improvements in service delivery efficiency but also highlighted ongoing issues like digital divide and disparities in service accessibility.

Jain and Sharma (2020) conducted a study on E-Governance and Accessibility: A Study of Digital Inclusion in Developing Countries. This study explores how e-governance initiatives impact digital inclusion in developing countries. It focuses on accessibility issues related to internet use and the effectiveness of various digital platforms in reaching underserved populations. The study found significant disparities in digital access between urban and rural populations and identified key barriers such as lack of infrastructure and digital literacy. Also, Tan and Chong (2019) carried out the Role of E-Governance in Enhancing Accessibility to Public Services: Evidence from Southeast Asia. This study investigated how e-governance initiatives have affected accessibility to public services in Southeast Asia, focusing on both technological and social factors influencing accessibility. The researchers employed a mixed-methods approach, including quantitative surveys and qualitative interviews with citizens and government official.

Furthermore, Kumar and Sarker (2018) assessed the Impact of E-Governance on Public Service Accessibility: A Case Study of the European Union. The study examined the impact of e-governance on the accessibility of public services across European Union member states. It investigates how digital platforms have changed the way citizens access government services and the associated improvements or challenges. The study used secondary data from EU reports, government publications, and user feedback from online surveys.

E-governance and resource utilization on the delivery of public service

Khan and Ahmed (2023) conducted a study on resource utilization in E-Governance Systems analyzing Cost-Efficiency and Resource Allocation. It examines the impact of resource management on the effectiveness of e-government services. The research employed a mixed-methods approach, including quantitative data from financial reports and qualitative interviews with e-governance project managers. Also, Li and Ndungu (2022) carried out a study on optimizing resource utilization in E-Governance: Case Studies from Asia and Africa. The study examined how different e-governance initiatives in Asia and Africa optimize resource utilization. It highlights strategies and practices that enhance the efficiency and effectiveness of public service delivery.

Moreover, Gomez and Wright (2021) conducted the study on the Impact of Resource Utilization on E-Governance System Performance: Evidence from European Union Member States. This study explores the relationship between resource utilization and the performance of e-governance systems in European Union member states. It aims to determine how resource management affects system performance and service delivery.

Furthermore, Park and Patel (2020) evaluated resource allocation in E-Governance Systems: A Systematic Review of Methodologies and Best Practices. This systematic review evaluates various methodologies for assessing resource allocation in e-governance systems. It aims to identify best practices and challenges in managing resources for effective public service delivery.

E-governance and accountability on public service delivery

Fernando (2021) carried out a study on Digital Governance and Accountability: The Role of ICT in Enhancing Public Sector Transparency in Brazil. The study investigated the role of Information and Communication Technology (ICT) in enhancing public sector transparency and accountability in Brazil. It assesses the effectiveness of various digital governance initiatives in promoting open government.

Also, Subhash (2020) conducted a study on E-Government and Accountability: A Case Study on the Impact of E-Government Initiatives on Public Sector Accountability in India. This study examined the impact of e-government initiatives on public sector accountability in India. It explores how digital platforms and services have influenced the transparency and accountability mechanisms within various government departments.

Moreover, Karen et., al. (2019) carried out a study on E-Government and Public Accountability: Evidence from Local Governments in the United States. This article examines the impact of e-government on public accountability in local governments across the United States. It explores how digital initiatives have influenced transparency, citizen participation, and accountability.

METHODOLOGY

A case study research design was employed in this research because a case study design describes units in detail, context and holistically. A case study design is chosen for this study because the results are more easily understood by a wide audience including non-participants as they are frequently written in everyday and non-professional language. A quantitative research approach was used in this study. The approach was used because quantitative approach allows for objective measurement and statistical analysis of data. This objectivity ensures that the findings are based on measurable evidence, reducing bias.

While a probability sampling technique using simple random sampling was adopted in this study. Simple random sampling technique ensure that every member of the population has an equal chance of being selected since all have the same characteristics. And data was collected using questionnaires from participants.

Findings from the Study.

The contribution of e-governance in improving the accessibility of public service at Business and Property Registration Authority.

The first specific objective of this research is to examine the contribution of e-governance in improving the accessibility of public service at Business and Property Registration Authority. Understanding the contribution of e-governance in improving the accessibility of public services at the Business and Property Registration Authority (BPRA) is essential because e-governance streamline processes, reduces bureaucratic hurdles, facilitate faster registration processes and provide timely services to citizens. leading to increased satisfaction among users. The findings revealed that a significant portion of respondents (35.7%) agree that the percentage of customers registering online has increased, with an additional 21.4% strongly agreeing. This suggests a positive perception of the trend towards online registration among customers. On the other hand, a combined total of 21.4% either disagreed or strongly disagreed, indicating that a minority holds a contrary view. The neutral responses (21.4%) imply that some respondents may not have sufficient information or experience to form an opinion on the matter. Overall, the majority view reflects a recognition of the growing shift towards online customer registration, underscoring the importance of e-governance initiatives in enhancing service accessibility and efficiency in public service delivery. This finding aligns with existing literature that emphasizes the role of digital platforms in improving service delivery and increasing user engagement in public sector services (United Nations, 2020).

The impact of e-governance in facilitating resource utilization on the delivery of public service at Business and Property Registration Authority

The second specific objective of this study is to evaluate the impact of e-governance in facilitating resource utilization on the delivery of public service at Business and Property Registration Authority. Understanding the impact of e-governance on resource utilization in public service delivery at the Business and Property Registration Authority is crucial because e-governance facilitates more efficient use of resources by streamlining processes and reducing bureaucratic hurdles. The majority of respondents (35.7%) agreed and (14.3%) strongly agreed perceive that e-governance initiatives have indeed optimized resource allocation within public services. A significant portion of the respondents (28.6%) remain neutral, indicating some uncertainty or mixed feelings about the effectiveness of e-governance in this aspect. However, only a small percentage (14.3%) disagree and (7.1%) strongly disagree, suggesting that while there are some criticisms, they are not predominant among the surveyed group. The findings align with previous studies that suggest positive perceptions of e-governance initiatives regarding resource optimization. Dada (2018) on his study found that e-governance can enhance resource allocation efficiency by streamlining processes and improving transparency.

The effect of e-governance in enhancing accountability on the public service delivery at Business and Property Registration Authority.

The third specific objective of this study is to assess the effect of e-governance in enhancing accountability on the public service delivery at Business and Property Registration Authority. Understanding the effect of e-

governance on enhancing accountability in public service delivery, particularly at the Business and Property Registration Authority (BPRA) is crucial because by digitizing processes, BPRA can provide stakeholders with access to real-time information regarding service delivery, fees, and procedures, indicated that the majority of respondents (42.9%) agreed that e-governance initiatives have increased transparency in public service operations, with an additional 17.1% strongly agreeing. This suggests that a significant portion of the respondents believe in the positive impact of e-governance on enhancing transparency. A total of 21.4% remained neutral, indicating that a smaller yet notable percentage are either undecided or indifferent on this matter. However, about 18.5% of respondents expressed disagreement, with 7.1% strongly disagreeing and 11.4% disagreeing. This reflects either dissatisfaction or skepticism regarding the effectiveness of e-governance in improving transparency within public services. These findings align with a study conducted by Bertot et al. (2010), who highlighted that e-governance significantly reduces opportunities for corruption by making public service operations more transparent. The digitization of processes, including public procurement and service delivery, provides clear audit trails and diminishes the discretion of government officials in decision-making, which are key factors in reducing corruption.

Measuring Indicators for Service Delivery

Public Service delivery is the sole endogenous variable in this study assessed through both objective and subjective measurement indicators. Three specific observed variables; efficiency, effectiveness, and accessibility are used to assess public service delivery. Based on the descriptive statistics.

The average time required to complete service requests through e-governance platforms has decreased revealed that 27.1% agreed, and 18.6% strongly agreed that the time for service completion through e-governance platforms has decreased, suggesting that a large portion of the population believes there have been improvements. However, 14.3% disagreed and 10% strongly disagreed, highlighting mixed opinions. The 30% neutral responses could indicate that many respondents have not experienced significant changes. A study by Gupta et al. (2023) demonstrated that in India's digital governance initiative, service delivery time for tax filing and business registration reduced by over 40% after implementing a centralized online platform. This reduction was attributed to automation, which eliminated many manual processes and reduced opportunities for corruption.

Furthermore, on the responses on the user satisfaction with the effectiveness of services delivered through e-governance has improved indicated that (32.9%) of respondents agreed and (17.1%) strongly agreed that user satisfaction with e-governance service effectiveness has improved, indicating a positive shift. A smaller portion (14.4%) disagreed and (7.1%) strongly disagreed, while 31.4% remained neutral, suggesting a degree of uncertainty or variability in experiences. Numerous studies affirm that e-governance initiatives have contributed significantly to improving user satisfaction with public services. A study by Khan and Ahmed (2023) in India revealed that the digitalization of government services through platforms like the Digital India initiative has drastically reduced wait times, increased transparency, and simplified interactions, leading to a 40% increase in user satisfaction.

Finally, the responses on the percentage of the population with access to e-governance services has increased reflecting improved digital inclusivity showed that majority of respondents (34.3%) agreed and (22.9%) strongly agreed that access to e-governance services has increased, reflecting improved digital inclusivity. Only (8.6%) disagreed and (5.7%) strongly disagreed, suggesting that most respondents view the expansion of access positively. However, the 28.6% neutral responses may indicate that some are unsure or unaffected by these improvements. A study by Suri and Rajan (2023) in India supports these findings, showing that the country's digital government initiatives, particularly under the Digital India program, have enabled millions of citizens, including those in remote rural areas, to access key public services online, thus bridging the digital divide.

Regression Analysis

In this research, descriptive statistics were used to analyze data obtained from questionnaires whereby the opinions of the respondents from different indicators in the research questions agreed and strongly agreed with the statements. Inferential statistics using multiple regression analysis has proven to be a valuable tool in

understanding the relationship between multiple independent variables and a dependent variable. The findings from regression analysis demonstrate that three predictors ACB, RSU, and ACT significantly influence the dependent variable (PSD). Specifically, the analysis revealed that ACB (Accessibility) has the strongest positive impact on PSD (Public Service Delivery), with a notable unstandardized coefficient ($B = 0.675$) and standardized coefficient ($\beta = 0.456$). This suggests that for every one-unit increase in ACB, there is a corresponding increase of 0.675 units in PSD, underscoring the critical role that autonomy and control mechanisms play in driving service delivery outcomes. While RSU (Resource Utilization) and ACT (Accountability) have smaller coefficients than ACB, their effects are nonetheless statistically significant. RSU ($B = 0.320$, $\beta = 0.287$) has a stronger effect than ACT ($B = 0.245$, $\beta = 0.198$), indicating that effective resource allocation is more closely tied to perceived service delivery than accountability mechanisms.

CONCLUSION

This study aimed to assess the effectiveness of e-governance on public service delivery at the Business and Property Registration Authority (BPRA) in Zanzibar by examining the impact of three key variables: accessibility, resource utilization, and accountability. In conclusion, accessibility emerged as a critical determinant, showing that the more accessible e-governance services are, the higher the perceived satisfaction and efficiency in service delivery. By making services readily available through digital platforms, the government of Zanzibar can improve citizen engagement and service convenience. This result aligns with global trends, where enhanced accessibility through digital services drives public satisfaction and promotes efficient governance.

Resource utilization also plays a vital role, as efficient use of resources ensures that digital platforms are well-maintained, properly staffed, and equipped with the necessary infrastructure to meet public demands. This highlights the need for strategic investments and continuous optimization of e-governance resources to sustain service delivery improvements. Finally, accountability contributes significantly to public trust and the overall effectiveness of e-governance. Systems that incorporate transparent decision-making processes and accountability mechanisms are more likely to gain public confidence, ensuring that services are delivered with integrity and fairness. While accountability may not have as immediate an impact as accessibility, its long-term benefits for maintaining service quality and trust cannot be overlooked.

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