Service delivery in the digital age: Challenges and opportunities from Bindura Municipality's Mobile Application system.

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Abstract

In the face of increasing digitalization, local governments in Zimbabwe, such as Bindura Municipality, embarked on mobile application initiatives to enhance service delivery. This study sought to investigate the challenges and opportunities presented by Bindura Municipality's mobile application initiative, with a focus on service delivery in the digital age. The study was qualitatively conducted among 30 participants who were purposively sampled. It was guided by the Unified Theory of Acceptance and Use of Technology (UTAUT). Data collection was conducted through key informant interviews, in-depth interviews and focus group discussions as methods. Secondary data sources, including official documents and literature, were also analyzed to compare and validate findings. Data analysis was performed using interpretive thematic analysis and content analysis. The study found that the adoption and utilization of the Bindura Municipality mobile application system was significantly hindered by a lack of citizen awareness, a pervasive lack of trust among residents and financial constraints. Lack of ownership the absence of a monitoring and evaluation system also significantly undermined the success of the mobile application system. The study recommends a comprehensive awareness campaign to educate Bindura residents and a robust monitoring and evaluation system to track the uptake and usage of the mobile application. Moreso, fostering a sense of ownership among both residents and municipal staff is critical.

1. Introduction

In an era where digital transformation is reshaping public service landscapes globally, Bindura Municipality embarked on an ambitious mobile application initiative to enhance service delivery. This study delves into the dynamic interplay between technology adoption and local governance. Despite the potential for increased efficiency, transparency, and citizen engagement that mobile applications promise, Bindura's experience reveals a complex web of challenges that impede these benefits. Through a comprehensive analysis, this study explores the multifaceted opportunities presented by the mobile application system while critically examining the obstacles that hinder its full implementation and adoption. By shedding light on these issues, the article aims to contribute valuable insights into the broader discourse on digital governance in developing contexts.

2. Background

The digitalization of public services has become a pivotal trend globally in recent years. Advancement of digital technologies continue to revolutionize service delivery mechanisms in diverse sectors worldwide. Among these is the implementation of mobile application systems by local authorities. The advent of mobile technologies has particularly revolutionized how local governments engage with their communities and deliver essential services (OECD, 2011). Mobile applications have inherent capabilities for instant communication, accessibility, and user convenience, significantly presenting opportunities for local authorities to improve service delivery and enhance citizen engagement (Frohlich, Nieminen, & Pinomaa 2019). Like many developing countries, Zimbabwean local authorities face significant challenges in delivering efficient and effective services to their residents. It is in this regard that local authorities such as Bindura Municipality, recognized the potential of implementing mobile applications in addressing longstanding service delivery challenges. Such initiatives are part of broader efforts to modernize public administration and respond to the growing citizens' expectations for timely and efficient public services (Ishengoma, Mselle, & Mongi, 2019). However, despite the potential benefits, the implementation and adoption of digital platforms for service delivery in developing countries face various challenges.

For Bindura Municipality, the anticipated improvements in communication and service delivery have were not fully realized. The persistence of service delivery issues, such as delayed refuse collection, road maintenance, and repairing of burst sewer and water pipes, indicated a significant gap between the potential benefits of mobile applications and their actual impact. The time taken by the local authority to respond to the public complaints and reports remained relatively long despite the time efficiency of mobile applications in relaying information.

As such, the municipality's mobile application system did not fully bridge the communication gap between the local authority and citizens. Moreover, the manual meter readings and paper statement delivery persisted, causing inconvenience to residents. Residents continued to travel from locations like Clusters, Woodbrook, Cleverhill, Chiwaridzo, Chipadze, Chipidura, Shashi and queue to inquire or pay bills. Moreso, the implementation of a mobile application system by Bindura Municipality did not create an enabling local authority space that promotes public participation. This study aims to investigate the challenges and opportunities presented by Bindura Municipality's mobile application initiative, with a focus on service delivery in the digital age.

3. Theoretical explanation and application

The study was guided by the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh, Morris, Davis, and Davis (2003). It provides a robust framework to understand the factors influencing the acceptance and use of technology. Applying UTAUT to Bindura Municipality's mobile application initiative reveals key insights into the challenges and opportunities in enhancing service delivery. The theory identifies four primary constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions, which together influence the behavioral intention to use technology and actual usage behavior. Performance expectancy, or the belief that using the mobile application will improve job performance, is critical for both citizens and municipal officials. For instance, if residents believe that the application will make their interactions with the municipality more efficient, such as by reducing the time required to report issues or pay bills, they are more likely to adopt the technology. Similarly, municipal officials who perceive that the application will streamline their workflows and improve their service delivery outcomes will be more inclined to use it (Venkatesh et al., 2003).

Effort expectancy, or the perceived ease of using the mobile application, also significantly impacts adoption. If the application is user-friendly and requires minimal effort to navigate, it will likely see higher usage rates among residents and officials. Social influence, which refers to the degree to which individuals perceive that important others believe they should use the technology, is another critical factor. In the context of Bindura Municipality, if influential community members or leaders endorse the application, this could positively affect its adoption. Finally, facilitating conditions, such as the availability of technical support and infrastructure, play a crucial role. Ensuring that residents have access to smartphones and reliable internet, and that municipal staff are adequately trained, can enhance the effective use of the mobile application. By applying UTAUT, this study aims to provide a comprehensive understanding of the factors that drive or hinder the adoption and utilization of mobile applications in local government contexts, thereby offering valuable insights for improving digital service delivery in Bindura Municipality and similar settings (Venkatesh et al., 2003; Venkatesh, Thong, & Xu, 2012).

4. Methodology

The study was qualitatively conducted using a case study design, chosen to explore the opportunities and challenges from Bindura Municipality's mobile application initiative. This design allowed for an in-depth investigation of the utilization of mobile application systems in a real-life setting, providing a comprehensive understanding of the phenomenon. The research utilized various data collection methods. Key informant interviews were conducted with Bindura Municipality management and employees to gather detailed information about the implementation and usage of mobile technology in service delivery. In-depth interviews were also conducted with officials from the Ministry of Local Government and Public Works, academics, and representatives from residents' associations to obtain diverse perspectives on digital service delivery innovation. Additionally, focus group discussions with residents in Bindura Clusters provided a platform to explore collective attitudes, perceptions, and experiences regarding the mobile application system. This method facilitated a richer understanding of the residents' engagement with the digital service. Secondary data sources, including official documents and literature, were analyzed to compare and validate findings, enhancing the study's credibility. Data analysis was performed using interpretive thematic analysis and content analysis, enabling the identification of key themes and patterns related to the mobile application's effectiveness. To ensure trustworthiness, the study employed strategies such as data triangulation, member checking, and peer debriefing. Ethical considerations were meticulously observed, ensuring informed consent, confidentiality, and the voluntary participation of all respondents.

5. Literature review

The adoption of mobile application systems in public service delivery has been widely analyzed by scholars for

its potential to enhance efficiency, transparency, and citizen engagement. Mobile technologies offer significant opportunities for governments to provide services in a more accessible and convenient manner. Ganapati (2015) highlights that mobile applications facilitate real-time interaction between citizens and government agencies, which can significantly improve the responsiveness of public services. For instance, citizens can report issues such as potholes, broken streetlights, or sanitation problems directly through mobile apps, enabling prompt action from municipal authorities (Ganapati 2015). Furthermore, mobile applications can serve as platforms for disseminating important public information and updates, reducing the reliance on traditional, slower communication methods. This immediacy and accessibility make mobile applications a powerful tool for improving service delivery and fostering greater civic participation (OECD 2011).

Moreover, mobile applications can enhance citizen engagement by providing a platform for two-way communication between the government and the public. Scholars such as Bwalya, Du Plessis, and Rensleigh (2012) argue that mobile technologies empower citizens by giving them a voice in the governance process and enabling them to participate more actively in community affairs. Mobile applications can also facilitate public consultations and feedback, which are crucial for inclusive and participatory governance (OECD, 2019). In the context of developing countries, where access to traditional e-government platforms may be limited due to infrastructural constraints, mobile applications offer a cost-effective alternative for extending government services to underserved populations (Bwalya et al., 2012). The high penetration rate of mobile phones, even in remote areas, makes them an ideal medium for expanding the reach of public services and enhancing citizen engagement (Mengistu, Zo, & Rho 2009). Therefore, mobile application systems present a transformative opportunity for governments to improve service delivery and strengthen democratic governance by bridging the communication gap between the authorities and the citizens.

Despite the recognized benefits of mobile application systems in enhancing service delivery and citizen engagement, their implementation and adoption in local governments, particularly in developing countries, face several challenges. One major issue is the digital divide, characterized by unequal access to technology and the internet. According to Ntaliani, Costopoulou, and Karetsos (2008), a significant portion of the population in developing countries lacks the necessary infrastructure, such as reliable internet connectivity and smartphones, to utilize these digital platforms effectively. This divide not only limits the reach of mobile applications but also exacerbates existing inequalities in access to public services. Additionally, many citizens in these regions may have low digital literacy, hindering their ability to navigate and benefit from mobile applications (Mawela, Ochara, & Twinomurinzi 2017).

Furthermore, institutional challenges within local governments can impede the successful deployment of mobile application systems. These challenges include inadequate financial resources, lack of technical expertise, and resistance to change among municipal staff. For instance, Heeks (2005) highlights that local governments in developing countries often struggle with limited budgets, making it difficult to invest in and maintain digital infrastructure. Moreover, the lack of skilled personnel to manage and support these technologies can lead to ineffective implementation and underutilization. Resistance to change is another significant barrier, as public sector employees may be hesitant to adopt new technologies due to fear of job displacement or additional workload (Madon 2004). Consequently, overcoming these challenges requires a comprehensive approach that addresses both technological and human factors to ensure the successful adoption and utilization of mobile application systems in local government service delivery.

To address the unique contextual factors and barriers faced in the implementation and adoption of mobile application systems by local authorities in developing countries, scholars have suggested several sustainable strategies. One key approach is to enhance digital literacy among citizens and municipal staff through targeted training programs and awareness campaigns (Mawela, Ochara, & Twinomurinzi 2017). This can help bridge the digital divide and ensure broader utilization of mobile applications. Additionally, Madon (2004) emphasizes the importance of securing adequate funding and resources, which can be achieved through public-private partnerships and international donor support. Strengthening institutional capacity by investing in the necessary infrastructure and developing technical expertise within local governments is also critical (Heeks 2005). Furthermore, fostering a culture of innovation and adaptability within public sector organizations can mitigate resistance to change. This involves engaging stakeholders at all levels, including government officials, community leaders, and citizens, to ensure buy-in and support for digital initiatives (Bwalya, 2009). Lastly, adopting a user-centered design approach that considers the specific needs and preferences of the local population can enhance the relevance and effectiveness of mobile application systems (Janssen, Charalabidis, & Zuiderwijk 2012). By implementing these strategies, local authorities in developing countries like Zimbabwe can

overcome barriers and achieve sustainable improvements in service delivery through mobile technologies.

6. Findings

6.1 Lack of awareness of the Bindura Municipality mobile application.

The adoption and utilization of the Bindura Municipality mobile application system have been significantly hindered by a lack of citizen awareness. In-depth interviews revealed that the municipality did not implement an effective awareness campaign among Bindura residents. Consequently, residents were insufficiently encouraged to adopt and utilize the mobile application, remaining unaware of the benefits associated with digital service delivery systems. This lack of awareness fostered mistrust and the perception that the local authority is not always accountable to its residents. Many participants noted the absence of official communication and the formal launch of the mobile application system. Only a few technologically curious residents discovered the application independently, often through informal discussions rather than direct promotion by the local authority. This inadequate marketing effort meant that increasing awareness among Bindura citizens was not prioritized, despite the potential benefits for enhancing service delivery. The municipality's efforts were limited to a notice on their website, insufficient given that not many citizens actively seek such information online. The underutilization of this digital service delivery channel indicates that the community was not well informed about its existence.

Furthermore, key informant interviews highlighted that the expected uptake and utilization of the Bindura Municipality application did not materialize due to a lack of deliberate publicity efforts, both among residents and local authority employees. Bureaucratic processes also posed challenges in raising awareness. The absence of a concerted marketing drive meant that various stakeholders remained largely unaware of the platform. Post-development, there was a need to publicize, socialize, and make the application known within the Bindura community, which was not adequately pursued. Efforts to promote mobile technology in service delivery were primarily limited to paperwork. Additionally, the local authority delayed disbursing funds and resources necessary for outreach programs to market the application, citing logistical challenges such as funding, vehicles, and fuel. This lack of commitment resulted in a decline in the enthusiasm to raise awareness about the mobile application. The research also found that some Bindura Municipality employees lacked sufficient knowledge of the mobile application, which was designed for virtual access to public services. When the application was launched in 2018, resource constraints allowed for training only a few personnel from different departments, who were then expected to conduct in-house training sessions for other employees. However, this did not occur, and some of the trained personnel subsequently left the municipality for better opportunities. This staff turnover further impeded the dissemination of information about the digital platform to residents. Consequently, the diffusion and uptake of the mobile service delivery channel remained relatively low, if not nil for several years. These findings suggest that without adequate awareness among Bindura residents regarding the advantages of using mobile application systems, the utilization and uptake will remain low, ultimately undermining the entire initiative.

6.2 Failure to build trust in the Bindura Municipality mobile application system

Focus group discussions revealed that a significant barrier to the adoption and utilization of the Bindura Municipality mobile application system was a pervasive lack of trust among residents. This mistrust was partially attributed to insufficient awareness of the benefits of digital service delivery channels, which were inadequately marketed, leaving misconceptions unaddressed. Participants expressed a preconceived mistrust towards Bindura Municipality's technological advancements, influenced by past malpractices in areas such as billing. Residents were hesitant to embrace the mobile application services due to a lack of clear and thorough explanations. This mistrust extended beyond technology to the organization itself; for instance, the municipality's website was noted for inconsistent updates, leading to concerns that the mobile service delivery channel would similarly fail to provide timely information. Many participants indicated a preference for accessing municipal services in person, where they could seek immediate clarification and resolution. This preference underscores residents' comfort with face-to-face interactions over new technological solutions.

Some residents specifically distrusted mobile transactions, fearing issues with billing and payment acknowledgment, as they had experienced problems with previous mobile payment options like Ecocash, Telecash, and Onemoney. These issues fueled skepticism about the reliability of integrating such systems into a single service delivery channel. Additionally, doubts about the competence of municipality employees in delivering secure and reliable mobile services further eroded trust in the mobile application. Concerns were raised about the potential risks associated with the BM mobile application, including cyber-crime, fraud, and

identity theft. Participants also expressed uncertainty about how their personal information would be used by the local authority. These findings suggest that the Bindura Municipality failed to build trust in the mobile application system due to an inability to guarantee ease of use, clear advantages, and robust security and privacy measures, thereby discouraging residents from adopting and utilizing the system for mobile payments and other functions.

6.3 Lack of ownership

The lack of ownership emerged as a significant impediment to the success of the Bindura Municipality mobile application in enhancing service delivery. The municipality wielded limited control over the application, a situation rooted in the outsourcing of its development. According to minutes reports and key informant interviews, the Bindura Municipality contracted the Centre for Innovation in Technology (CIT) Zimbabwe to develop the mobile application system. However, since 2018, the terms of the contract with CIT Zimbabwe did not grant the municipality full utilization rights, resulting in a constrained sense of ownership. The subcontracted developer retained substantial control over the system, limiting the municipality's ability to fully manage and operate it, despite its mandate to serve the Bindura citizens directly. Initially, the agreement envisaged that the Bindura Municipality would control the application while CIT Zimbabwe would maintain the system and renew the license annually. In practice, however, maintenance and system management remained largely in the hands of the developer. This arrangement meant that client queries submitted through the mobile application were first handled by a third party, complicating and lengthening the response process.

Moreover, internal factors within the municipality exacerbated the lack of ownership. Poor remuneration and low morale among employees led to a lack of initiative in seeking control over the system. Many employees, not well-informed or consulted during the development process, assumed that the external developers were better equipped to manage service delivery applications. This assumption further diminished their sense of ownership. The study also revealed that the mobile application initiative was not community-driven, leading to a lack of resident engagement and ownership. Residents felt excluded from the decision-making process, as consultations were overlooked, and their contributions undervalued. This perception reduced support from various stakeholders, ultimately affecting the success and sustainability of the Bindura Municipality mobile application system.

6.4 Financial constraints

The findings from in-depth and key informant interviews revealed that financial constraints significantly hindered the effectiveness of the Bindura Municipality mobile application in enhancing service delivery. Zimbabwe's ongoing economic challenges, characterized by inflation and foreign currency shortages, have severely impacted the local authority's revenue inflows. The reluctance of Bindura residents to pay rates, due to the perceived poor quality of services delivered, has exacerbated this issue. Furthermore, the local authorities have been underfunded, and grants from the central government have proven unreliable. These economic conditions have adversely affected the performance of e-governance initiatives in Zimbabwe, particularly mobile government projects at the local level. Against this backdrop, Bindura Municipality has struggled to pay annual license fees to CIT Zimbabwe for maintaining the mobile application system. This financial strain partly explains the municipality's failure to market and publicize the mobile application adequately. Additionally, the local authority has been unable to improve its ICT infrastructure or employ more skilled ICT personnel.

The financial constraints faced by Bindura Municipality have also led to difficulties in utilizing and accessing the mobile application system. The contracted company, CIT Zimbabwe, withheld the functionality and accessibility of key features of the mobile application due to non-payment, resulting in the system's failure. The municipality had only managed to pay for the mobile application services for a less than two years. Consistent payment to CIT Zimbabwe might have altered the trajectory of the mobile application's success. Moreover, the financial limitations hindered the local authority's ability to properly equip the ICT department with the necessary infrastructure and human resources. The department was often reliant on graduate interns from various universities. Adequate resourcing might have enabled staff to recognize the value and opportunities of utilizing mobile application systems for service delivery. However, ongoing financial challenges persisted, leaving local funding for ICT infrastructure insufficient to sustain mobile government initiatives. Consequently, when faced with financial constraints, the local authorities prioritized basic, urgent services such as safe drinking water and sanitation over mobile government projects like the Bindura Municipality mobile application. This struggle to allocate funds among competing priorities contributed to the failure of the mobile application system.

6.5 Lack of a monitoring and evaluation system

The study findings revealed that the absence of a monitoring and evaluation system significantly undermined the success of the Bindura Municipality mobile application system. Effective initiatives within organizations or local authorities necessitate robust monitoring and evaluation mechanisms to track and assess progress. However, in the case of Bindura Municipality, there was no deliberate effort to establish or utilize existing systems to monitor and evaluate the uptake and utilization of the mobile application system since its introduction. Continuous monitoring could have enabled Bindura Municipality managers to identify and address bottlenecks and unintended effects during implementation, which commenced in 2018. Unfortunately, the managers did not treat the mobile application system as a project requiring diligent management and oversight.

Assigning employees to handle queries, share information, and monitor the number of residents engaging with the mobile application for tasks such as checking and paying utility bills could have facilitated benchmarking and continuous improvement. Regrettably, this process was overlooked by the local authority managers. Additionally, there was ambiguity regarding which department or personnel were responsible for monitoring and reporting on the progress of the mobile application initiative. Although Bindura Municipality successfully contracted CIT Zimbabwe for the development of the mobile application system, the monitoring of this contract was inadequately managed. The lack of a monitoring and evaluation system contributed to an implementation gap, adversely affecting the uptake and utilization of the Bindura Municipality mobile application system.

7. Discussion

The study's findings reveal significant challenges in the adoption and utilization of the Bindura Municipality mobile application system. One major impediment was the lack of citizen awareness regarding the application. Without an effective awareness campaign, many residents remained uninformed about the existence and benefits of the mobile application. This situation fostered mistrust and a perception that the local authority was not fully transparent or accountable. The limited efforts to publicize the mobile application, both among residents and municipal staff, significantly undermined its potential impact (Bertot, Jaeger, & Grimes 2010). The findings highlight the critical need for comprehensive awareness campaigns to promote digital service delivery channels effectively.

Trust emerged as another pivotal factor influencing the adoption of the mobile application system. Residents' mistrust stemmed from past negative experiences with municipal services and digital transactions. Concerns about the reliability and security of the mobile application deterred many from embracing it as a viable service delivery channel. This mistrust was exacerbated by inconsistent updates on the municipality's website and fears of cyber-crime and fraud. Building trust in digital platforms is crucial for successful technology adoption in public service delivery (Mofleh & Wanous 2008). The municipality needs to address these trust issues by ensuring the application is secure, reliable, and user-friendly.

The lack of ownership over the mobile application system further hampered its effectiveness. The outsourcing of the application's development to an external company, CIT Zimbabwe, limited the municipality's control and sense of ownership over the system. This arrangement resulted in a dependency on the external developer for maintenance and management, complicating the municipality's ability to respond promptly to residents' needs. Furthermore, the lack of engagement with residents and municipal staff during the development process led to a diminished sense of ownership and support for the initiative (Matimati & Rajah 2015). Fostering a sense of ownership among all stakeholders is essential for the sustainable success of digital service delivery initiatives.

Financial constraints also played a significant role in limiting the effectiveness of the Bindura Municipality mobile application. Economic challenges in Zimbabwe, such as inflation and foreign currency shortages, severely impacted the municipality's revenue and its ability to invest in and maintain digital infrastructure. The inability to consistently pay for the maintenance and functionality of the mobile application hindered its full utilization. These financial limitations also affected the municipality's capacity to improve its ICT infrastructure and employ skilled personnel. Securing adequate funding and resources is vital for the successful implementation and sustainability of e-governance initiatives (Heeks 2005).

Moreover, the absence of a robust monitoring and evaluation system has significantly hindered the project's success. Continuous monitoring and evaluation are essential for identifying and addressing issues in real-time, ensuring the initiative stays on track and meets its objectives. The lack of such a system in the Bindura Municipality meant that there was no structured way to assess the application's effectiveness or make necessary adjustments based on feedback and performance metrics. Implementing a thorough monitoring and evaluation

framework could help track progress, identify bottlenecks, and provide data-driven insights to guide future improvements and decision-making processes.

8. Conclusion

The study underscores the complex interplay of factors that influence the adoption and utilization of mobile application systems in local government service delivery. For Bindura Municipality, the lack of citizen awareness, trust issues, limited ownership, financial constraints, and the absence of a robust monitoring and evaluation system significantly hindered the success of its mobile application initiative. Addressing these challenges requires comprehensive awareness campaigns, robust trust-building measures, enhanced stakeholder engagement to foster ownership, and securing adequate financial resources. Additionally, implementing a thorough monitoring and evaluation framework is crucial for tracking progress and making data-driven improvements. By implementing these strategies, Bindura Municipality can overcome the barriers identified in this study and leverage digital technologies to enhance service delivery and citizen engagement effectively. The insights from this study provide valuable lessons for other local authorities in similar contexts seeking to implement mobile application systems for improved public service delivery.

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