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Article

Leveraging Digitalization in Mitigating Bureaucratic Red Tape and Enhancing Service Delivery among Tourism-Oriented SMEs

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Abstract: The operational sustainability of tourism-oriented Small and Medium Enterprises (SMEs) relies heavily on efficient regulatory public services. To meet this demand, local governments have adopted digitalization as a strategic tool for reducing bureaucratic red tape. However, the extent to which digital transformation genuinely streamlines frontline governance processes for these tourism stakeholders remains underexplored. Anchored on the Technology Acceptance Model, this study investigates the practices and challenges of digitalization in public customer service delivery. An exploratory qualitative design was employed, involving one-on-one interviews with 20 government employees from Zamboanga City, Philippines, who directly engage in customer service operations such as processing business permits and compliance documents. Data were analyzed using reflexive thematic analysis to capture employees' lived experiences with digital governance tools. Findings reveal that while digitalization simplifies bureaucratic procedures and enhances operational efficiency for tourism SMEs, challenges such as inadequate infrastructure, network instability, and the limited digital literacy of clients severely hinder optimal implementation. This study fills the empirical gap in understanding how frontline employees perceive and navigate digital governance reforms. The insights provided offer practical strategies for improving the resilience of digital platforms, ultimately arguing that robust, user-friendly e-governance is a prerequisite for a competitive, citizen-centered local tourism economy.
Keywords: unsupervised learning; Multimodal fusions of features; Vision Transformer; Plant diseases; Tomato leaf diseases; Domain adaptation; Few-shot learning; Precision agriculture

1. Introduction

While numerous studies have explored e-governance, a noticeable research gap exists concerning how digitalization reduces governance red tape specifically from the perspective of frontline government employees facilitating services for tourism-oriented Small and Medium Enterprises (SMEs). Most existing research has focused on end-user satisfaction, overlooking the experiences of the very actors responsible for implementing these systems. The tourism industry serves as a major catalyst for economic development, yet the operational sustainability of tourism SMEs—such as local accommodations, restaurants, and tour operators—is often hindered by institutional constraints and bureaucratic inefficiencies (Tashakkori et al., 2026). For local tourism ecosystems to thrive, public institutions must actively navigate bureaucratic changes to provide responsive, citizen-centric regulatory services (Supriyanto et al., 2025).

In recent years, digitalization has emerged as a transformative force in public administration, reshaping how governments deliver critical services and manage administrative processes (Ali & Ghoneim, 2020; Mergel et al., 2019). The adoption of digital tools such as e-government platforms helps minimize manual paperwork and reduce the bureaucratic bottlenecks that stall business operations (Chen et al., 2021; Gupta et al., 2020). Supporting digital transformation for tourism SMEs has become a strategic imperative, allowing local ecosystems to remain competitive and agile (Succurro, 2026). Establishing a strong linkage between digital transformation and local tourism development policies is essential for long-term industry sustainability (Nanda, Widianingsih, & Miftah, 2023; Ndou,

2020). Furthermore, government-initiated digital support programs, enhanced by communication technologies, ensure operational continuity for local businesses during times of crisis or economic shift (Heeks, 2018).

Efficient e-governance in tourism heavily relies on public service innovation and leadership adaptability. Public leaders who adopt innovative and responsive digital practices significantly improve their engagement with community needs, fostering an environment where tourism SMEs can flourish. This innovation-driven governance improves accessibility and compliance, thereby enhancing the brand of customer service within the local accommodation sector (Mendoza, 2023). Digital communication channels and compliance monitoring platforms strengthen policy awareness and transparency, ensuring that tourism businesses maintain credibility and operational efficiency (Chavez & Vicente, 2024). These practices collectively frame the critical relationship between technological innovation and public sector performance in a tourism-oriented economy.

However, the global momentum toward digital governance is not without challenges. Many public institutions face barriers related to infrastructure, digital capacity, and data ethics (Bertot et al., 2019; Janssen & van den Hoven, 2020). The successful implementation of digital tools often depends on employee training and change management within public organizations (Kettunen & Kallio, 2021). The Technology Acceptance Model (TAM) provides a useful theoretical lens for understanding these dynamics (Davis, 1989). According to TAM, an individual's acceptance of technology depends on perceived usefulness (PU) and perceived ease of use (PEOU). In the context of tourism governance, when frontline employees perceive digital systems as useful and easy to navigate (Deswara, 2019; Bradley, 2022), they adopt them effectively, streamlining procedures like licensing and online payments for SMEs. If these perceptions are weak due to technical or communicative challenges, digitalization may reinforce inefficiencies rather than reduce them.

Therefore, to build a resilient and competitive tourism sector, it is crucial to address the obstacles faced by the government employees using these digital systems. This study addresses the aforementioned gap by examining how digitalization practices are applied to simplify bureaucratic procedures and enhance service delivery for tourism-oriented SMEs, while identifying the technological, ethical, and organizational challenges employees encounter in the process.

2. Methods

This study employed a qualitative exploratory research design to investigate how digital governance reduces bureaucratic red tape and improves service delivery for tourism-oriented Small and Medium Enterprises (SMEs). The participants comprised 20 government employees from Zamboanga City, Philippines, purposively selected from administrative, frontline, and technical units. These individuals were chosen because they possess firsthand experience with the digital platforms used to process the business permits, health clearances, and compliance documents essential for local tourism operations. Participation was strictly voluntary, with all participants informed of the study's purpose and assured of confidentiality. The demographic profile of the participants is presented in Table 1.

Table 1. Demographic profile

Demographic Characteristic	Frequency (n)	Percentage (%)
Gender		
Male	8	40%
Female	12	60%
Age Group		
21–30 years	5	25%
31–40 years	9	45%
41–50 years	4	20%

51 years and above	2	10%
Department / Assigned Unit		
Frontline / Public Assistance Desk	10	50%
Licensing and Permits (Administrative)	6	30%
Technical Support / IT Operations	4	20%
Years in Government Service		
1–5 years	7	35%
6–10 years	8	40%
11 years and above	5	25%
Highest Educational Attainment		
Bachelor's Degree	15	75%
Master's Degree (or with Master's units)	5	25%

Data were collected through one-on-one, semi-structured interviews lasting approximately 30–45 minutes, conducted either in-person or via online platforms in accordance with institutional protocols. Prior to data collection, ethical clearance was obtained, and all sessions were audio-recorded with informed consent to ensure transcription accuracy. To guide the discussion, a researcher-developed, expert-validated interview instrument was utilized. The inquiries focused on two primary domains: (1) the specific digitalization practices applied to simplify governance processes and expedite SME transactions, and (2) the technological, communicative, and infrastructural challenges encountered when utilizing these digital platforms for customer service.

Table 2. Interview guide questions

Objectives	Interview question
1. To examine digitalization practices in reducing governance red tape.	1. How is digitalization applied in governance processes? 2. What specific procedures have been simplified through digital tools? 3. How do digitalization practices influence the efficiency of governance transactions?

2. To identify challenges in using digitalization for customer services.	What difficulties have you encountered when using digital platforms for customer services? How do digital platform difficulties affect customer service experiences? What measures could address digital platform challenges in customer services?

The transcribed data were analyzed using Reflexive Thematic Analysis (RTA) as outlined by Braun and Clarke (2019). To generate the themes accurately, the researcher executed a systematic, iterative process: (1) familiarization with the data through repeated reading of the transcripts; (2) manual coding to identify recurring patterns related to digital governance and service delivery; (3) theme development by grouping initial codes into broader categories reflecting practices, benefits, and barriers; (4) reviewing the themes against the original dataset to ensure alignment; (5) defining and naming the final themes; and (6) writing up the findings. Reflexivity was maintained throughout the process by acknowledging the researcher's interpretive lens, and direct participant quotations were integrated to preserve the authenticity of their lived experiences.

3. Results

Research Objective 1: To examine digitalization practices in reducing governance red tape.

3.1. Streamlining Documentation and Registration Procedures

The shift from manual paperwork to digital databases has fundamentally reorganized how government applications and permits are handled. Participants highlighted that utilizing online registration forms and electronic document verification with partner institutions significantly reduces the need for clients to submit physical copies. This digitization minimizes human error, solves physical storage issues, and allows government staff to pre-screen applications and verify authenticity instantly. Consequently, this drastically reduces redundant paperwork and administrative workloads, giving frontline workers more time to address complex client concerns.

"One of the biggest impacts is on documentation. We used to handle tons of paper records, but now most permits are stored digitally."

"Online registration forms have greatly streamlined government procedures by allowing citizens to fill out and submit documents from home, reducing the need to line up and complete paperwork on-site."

"We can now verify documents electronically with partner institutions like hospitals, schools, and banks, removing the need to hand-carry or mail physical papers."

"Digitalization reduces our paperwork. We no longer need to print, photocopy, or file as many documents manually."

3.2. Enhancing Transaction Speed and Transparent Tracking

Digital tools have directly influenced the speed and transparency of governance transactions. Employees noted that real-time databases enable them to confirm client information and provide accurate status updates without relying on physical document routing between departments. The ability to track transactions systematically—coupled with automated alerts for pending approvals—prevents delays and reduces client frustration. This operational speed allows staff to serve a higher volume of clients daily while fostering public trust through transparent, traceable service delivery.

"Digitalization has made our work faster and more organized. Before, most of the transactions were done manually, and it would take several days to process even simple requests."

"It's easier to assist people now because we can see the status of their requests instantly. Before, we had to pass documents from one office to another physically."

"Digital tools help us process transactions faster. This allows us to serve more clients in a day and focus more on resolving concerns rather than spending most of our time on repetitive paperwork."

"Everything is recorded in the system, so it's easier to track where a transaction is. Citizens can follow up online instead of going from one window to another."

3.3. Modernizing Financial Transactions and Remote Accessibility

A major component of reducing red tape involves minimizing the necessity for physical office visits. Respondents emphasized that the integration of online portals for government fees and records has profoundly improved service accessibility. This modernization reduces office foot traffic, mitigates the risks associated with handling cash, and automatically reconciles financial records to prevent discrepancies. By allowing clients to process payments and submit requirements remotely and outside standard office hours, government institutions have made regulatory compliance significantly more convenient.

"Payments for government fees can now be done online, minimizing errors in cash handling and reducing foot traffic in the office."

"It also lessens the risks of handling large amounts of cash and makes payment more convenient because people can pay anytime, even outside office hours."

"We no longer have to rewrite the same information on different forms because the system automatically stores and updates citizen records."

Research Objective 2: To identify challenges in using digitalization for customer services.

3.4. Technological and Infrastructural Barriers

The primary obstacles to seamless digital customer service stem from unreliable infrastructure and varying levels of user readiness. Participants frequently cited unstable internet connectivity and sudden platform downtimes as major disruptors that paralyze operations and force employees to revert to manual encoding. Compounding these technical failures is the digital divide; a significant demographic of clients lacks the necessary digital literacy or basic prerequisites (such as email accounts) to navigate online portals. Consequently, frontline staff must provide time-consuming, individualized technical assistance, which inadvertently slows down the overall flow of transactions.

"Sometimes the system itself becomes the main obstacle in providing smooth services. When it slows down or suddenly goes offline, our entire workflow is disrupted and transactions come to a halt."

"Unstable internet in the office is one of the biggest challenges we face in delivering digital services... Sometimes we have to resort to offline methods temporarily, which means more manual work and longer processing times."

"Many citizens, especially senior citizens or those from rural areas, are not very familiar with using digital platforms. In some cases, they don't even have email accounts, which are required for certain transactions. This means we have to assist them in creating accounts on the spot before proceeding."

3.5. Operational Bottlenecks and Frontline Strain

When digital platforms fail, the cascading effects on service delivery are severe and immediate. Minor technical glitches quickly translate into delayed response times and long physical queues across multiple departments. Because frontline employees serve as the visible face of the agency, they bear the brunt of public frustration. Managing the emotional weight of impatient, waiting clients while simultaneously executing manual workarounds creates significant mental exhaustion. This high-stress environment lowers staff morale and temporarily negates the efficiency that digitalization is supposed to provide.

"When the system lags or crashes, the entire service flow inside the office slows down, causing long lines and delays even for the simplest transactions."

"Most problems come from unstable internet connections or sudden platform downtimes that disrupt operations across multiple offices at once. Frontline staff are forced to pause their work, and citizens waiting for services become increasingly frustrated."

"Whenever the digital platform fails, we are forced to handle not just the technical disruption but also the emotional weight of the situation... We're trying to remain calm and professional even when we're equally stressed and frustrated about the system failure."

3.6. Strategic Imperatives for System Resilience

To mitigate technical disruptions and sustain the benefits of e-governance, participants identified critical interventions required at the institutional level. Prioritizing infrastructure upgrades, such as securing dedicated high-speed internet lines and investing in reliable backup power (UPS or generators), is essential for operational continuity. Furthermore, participants emphasized the need for proactive communication systems—like automated SMS alerts, real-time ticketing, or visible status boards—and offline data-syncing protocols. These measures would effectively manage client expectations, reduce confusion during unexpected outages, and alleviate the immediate pressure placed on frontline staff.

"To address this, there should be a reliable backup system that can automatically take over when the main platform fails, ensuring that transactions can continue without interruption."

"Clear and proactive communication, such as automated announcements or text alerts, can help manage client expectations and reduce confusion."

"A real-time ticketing or queueing update system can help manage crowds by letting citizens know how long the wait is, giving them the option to return at a later time and easing the pressure on us."

"Upgrading network equipment such as routers and modems is equally crucial, as outdated hardware can contribute to slow connections."

4. Discussion

This study reveals a critical, yet often overlooked, dimension of tourism development: the operational efficiency of the local government employees who regulate it. While existing literature predominantly explores digital tourism from the perspective of traveler satisfaction or smart destination marketing, this research introduces a novel contribution by positioning frontline e-governance as the foundational backbone of tourism SME sustainability. As Tashakkori et al. (2026) noted, institutional constraints and red tape severely hinder heritage and tourism economies. The findings of this study demonstrate that when public institutions successfully navigate bureaucratic changes through digitalization, they provide the responsive, citizen-centric regulatory services necessary for local tourism to thrive (Supriyanto et al., 2025).

Interpreted through the lens of the Technology Acceptance Model (TAM) (Davis, 1989), the results indicate a high level of perceived usefulness among frontline employees regarding digital tools. The streamlining of documentation, rapid electronic verification, and remote payment portals directly eliminate the administrative bottlenecks that traditionally stall business operations (Chen et al., 2021; Gupta et al., 2020). For tourism-oriented SMEs—such as boutique accommodations and local tour operators—this public sector efficiency is a strategic imperative (Succurro, 2026). When government employees can process licenses, health clearances, and tax payments swiftly and transparently, it drastically reduces the "ease of doing business" friction. This digital compliance and transparency ultimately enhance the credibility and operational readiness of hospitality businesses, allowing them to focus on service quality rather than administrative delays (Mendoza, 2023; Chavez & Vicente, 2024).

However, the study also highlights severe vulnerabilities that threaten this digital ecosystem, specifically related to TAM's construct of perceived ease of use (Davis, 1989). Despite the recognized utility of e-governance, technological barriers such as unstable internet connectivity, platform downtimes, and a distinct lack of digital literacy among some clients drastically reduce system usability. When digital platforms fail or become too complex to navigate, frontline staff face immense operational strain and emotional exhaustion. In the context of tourism, these technical failures are not merely IT inconveniences; they represent critical supply chain disruptions. If a local resort owner cannot renew an operating permit due to a government system crash, the local economy suffers. When perceived ease of use drops, digitalization risks reinforcing the very inefficiencies it was designed to eliminate.

To sustain the benefits of digitalization and foster a competitive tourism environment, the systemic barriers identified must be addressed through comprehensive policy integration. Establishing a strong linkage between digital infrastructure investments and local tourism development policies is essential (Nanda, Widianingsih, & Miftah, 2023; Ndou, 2020). Overcoming these infrastructural and communicative barriers requires more than hardware upgrades; it demands robust employee training, change management (Kettunen & Kallio, 2021; Bertot et al., 2019), and public leadership that is adaptable to continuous technological innovation. Ultimately, for e-governance to act as a true

catalyst for tourism competitiveness, public institutions must ensure that their digital platforms are as reliable and accessible as the tourism destinations they seek to promote.

5. Conclusion

The transition toward digital governance has proven to be a vital mechanism for reducing bureaucratic red tape and streamlining the administrative processes that tourism-oriented Small and Medium Enterprises (SMEs) heavily rely upon. By transitioning to online registration, digital documentation, and electronic verification, frontline government employees can process essential business permits and transactions significantly faster, minimizing redundancy and enhancing institutional transparency. This operational shift not only reduces physical paperwork but also allows public servants to focus more effectively on the specific, complex needs of local tourism operators and service providers.

However, the realization of a truly seamless e-governance ecosystem is impeded by persistent technological and infrastructural challenges. Unstable internet connectivity, recurrent system downtimes, and varying levels of digital literacy among clients frequently disrupt service delivery. These technical failures cause administrative delays that can frustrate tourism business owners, hinder the ease of doing business, and ultimately erode public trust in government institutions.

To ensure the long-term sustainability and competitiveness of the local tourism sector, public institutions must prioritize strengthening system stability and expanding internet infrastructure. Furthermore, implementing reliable backup systems and clear communication protocols during outages is crucial for maintaining service continuity for SME clients. Equipping both government employees and local tourism stakeholders with adequate training will help bridge the digital literacy gap. Ultimately, digitalization remains a powerful catalyst for empowering tourism SMEs, provided that these infrastructural and user-readiness barriers are comprehensively addressed to foster a resilient, efficient, and sustainable local tourism economy.

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