Research Article

Analysis on political, Social, and technical characteristics of e-governance in Eastern Visayas, Philippines

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ABSTRACT

E-government is an essential component in modernizing public administration and advancing the delivery of government services. The adoption of e-government systems encourages streamlined workflows, reducing procedural delays and mitigating human error, which in turn accelerates the processing of citizen requests and government transactions. As such, the integration of e-government in local government serves not only to enhance administrative performance but also to build public trust, strengthen institutional accountability, and support the long-term goals of social and economic development at the local level. This descriptive study gathered preliminary data regarding the implementation of e-governance in Eastern Visayas, Philippines based on three characteristics: political, social, and technical. Government office heads (n=70) and residents (n=285) were purposively sampled to participate in online survey. The findings revealed that the implementation of e-governance in Eastern Visayas was generally regarded as successful, based on political, social, and technical characteristics. Political factors, particularly strong leadership, were identified as essential for establishing trust in digital systems. However, challenges related to unclear strategic planning and resistance to change indicated that clearer communication and well-defined strategies were necessary to mitigate uncertainty and strengthen stakeholder support. Social factors demonstrated that, while stakeholders acknowledged the value of e-governance and its integration into daily life, concerns regarding data security remained prevalent. Addressing these concerns through the implementation of robust security measures and transparent data management practices was deemed crucial for enhancing trust. Technical factors revealed positive perceptions of the availability of integrated systems yet concerns regarding the adequacy of skilled human resources and security vulnerabilities pointed to the need for continued training and technical support to further improve user confidence and encourage the broader acceptance of e-governance systems. Future directions for e-governance in Eastern Visayas should prioritize developing transparent strategic plans, engaging stakeholders early to mitigate resistance, strengthening data security and management systems, expanding ongoing technical training to address skill shortages, and encourage a culture of continuous improvement through feedback and evaluation to adapt systems to evolving public needs and ensure sustained success

Keywords: e-government; local government; technology acceptance

1. Introduction

The application of digital technologies in public administration has significantly transformed the interactions between governments and their citizens, offering enhanced efficiency and improved transparency. E-governance involves the steps governments take to develop, administer, and ensure the effective delivery of digital services to citizens. The adoption of such systems redefines public service delivery, fostering accountability and trust, yet its implementation in regions like Eastern Visayas faces distinct challenges tied to political, social, and technical dynamics.

The use of information and communication technologies in governance can bridge significant gaps, transforming how governments deliver services to their citizens[1]. Similarly, Suresh[2] emphasized the importance of e-governance in promoting inclusivity, reducing corruption, and enhancing public administration. The Philippine government has actively safeguarded, recognized, and promoted the rights of its citizens by initiating policies that aim to strengthen public trust and streamline service delivery[3,4]. For instance, initiatives like the National Computer Center and policies such as the E-Governance Act aim to streamline services and address bureaucratic inefficiencies[5,6].

Despite its advantages, the shift to digital governance exposes limitations within existing political frameworks, societal norms, and technological infrastructure. Both citizens and government employees encounter stress while adapting to these systems, compounded by anxieties about data privacy and security[7]. Stress, particularly in professional environments, often arises from exposure to work-related pressures and difficulties in managing associated responsibilities, leading to strain, anxiety, or worry[8,9]. Addressing these psychological barriers is essential for ensuring the success of e-governance initiatives.

This study aims to explore the challenges and various factors affecting the adoption of e-governance in Eastern Visayas, focusing on political, social, and technical dimensions. Singh[1] highlighted that technological innovations can bridge the gap between government services and citizens, particularly in regions with growing digital needs. This research also examines psychological aspects such as stress and coping, social influence, and security concerns to identify barriers that impede progress. These insights will help provide actionable strategies to reduce resistance, build trust, and encourage inclusivity, facilitating a more citizen-oriented governance framework.

The findings are expected to have significant implications for policymakers, government officials, and stakeholders in both the public and private sectors. By identifying psychological and systemic barriers to e-governance, the research aims to highlight areas for improvement and recommend strategies to accelerate digital transformation. As Eastern Visayas progresses on its path toward modernization, understanding the interplay between technology, governance, and human behavior will be crucial in building an inclusive, efficient, and resilient digital future.

2. Literature review

The implementation of e-governance has transformed public service delivery by enhancing efficiency, transparency, and inclusivity through the application of digital technologies[10]. E-governance allows governments to streamline operations, minimize corruption, and strengthen trust between institutions and citizens[11,12]. However, successful implementation requires addressing multifaceted challenges, including political, social, and technical factors, as well as psychological considerations such as stress, social influence, and security concerns. This literature review examines these elements and provides insights into the dynamics of e-governance within the context of Eastern Visayas.

2.1. Stress and coping in e-governance implementation

The transition to e-governance can generate significant stress for stakeholders, driven by changes in workflows and the need to adapt to new technologies. Stephen et al.[13] identify resistance to change as a common obstacle in adopting e-governance, often stemming from the perceived complexity of digital systems. Similarly, Thangaraj and Anand[14] emphasize the importance of building capacity through training programs that equip employees and citizens with the necessary skills to navigate these changes. Ongoing training and support systems are vital for mitigating resistance and facilitating a smoother transition[15]. Instead of focusing solely on reducing stress, Liu and Boyatzis[16] argue for prioritizing resilience and renewal as key strategies for overcoming the effects of chronic stress. Resilience involves the capacity to recover from stress and transition toward thriving and flourishing, underscoring its relevance in the context of e-governance[17].

2.2. Social influence and norms in technology adoption

Social dynamics play a critical role in determining the acceptance of e-governance systems. Susanto et al.[18] identify trust and social influence as significant factors influencing individuals' decisions to adopt e-governance services. Public trust and collective attitudes are essential for the success of such initiatives[19]. When citizens view e-governance as transparent, efficient, and inclusive, their willingness to engage increases. Lundvall and Johnson[20] stress the importance of fostering trust through community engagement and education to bridge the gap between technological innovation and societal acceptance. Addressing the digital divide in Eastern Visayas is particularly important to ensure marginalized groups are included, as social cohesion and inclusivity are fundamental to the long-term success of e-governance.

2.3. Security and privacy concerns in digital governance

Data security and privacy remain significant barriers to the adoption of e-governance[21]. Trust in the integrity of digital platforms is essential to encourage citizen participation[22]. Anxiety over potential data breaches or misuse of personal information can deter individuals from engaging with e-governance systems. There is a need for robust cybersecurity measures and transparent communication to alleviate these concerns[23]. In Eastern Visayas, the implementation of secure and user-friendly systems is crucial to building trust and addressing privacy concerns, thereby fostering greater adoption of e-governance.

Political leadership holds significant influence in driving the progress of e-governance by addressing psychological barriers and cultivating trust. Jopang et al.[24] suggest that e-governance initiatives should promote openness by improving access to information and services, reducing opportunities for corruption, and enhancing accountability. According to the Five Categories Classification Model[25], awareness campaigns targeting political and social factors can increase perceived transparency and legitimacy. Furthermore, technical innovations, such as intuitive digital platforms and enhanced cybersecurity measures, directly address security concerns while alleviating stress for users. Aligning these political, social, and technical dimensions with psychological aspects—such as stress, social influence, and security concerns—can ensure the effective and inclusive implementation of e-governance initiatives.

This literature review highlights the interconnections between psychological aspects and the challenges of implementing e-governance. Overcoming these barriers by addressing stress, fostering trust, and mitigating security concerns is crucial to achieving digital transformation in Eastern Visayas. Through collaborative efforts and targeted strategies, the region has the potential to fully realize the benefits of e-governance for its citizens.

3. Methods

3.1. Research design

This paper was a descriptive study that examined the political, social, and technical characteristics of e-governance in Eastern Visayas, Philippines. Descriptive study systematically and accurately describes a phenomenon, population, or specific variable without manipulating or altering the subject under investigation[26,27]. A defining characteristic of descriptive study designs is the reliance on a single sample, with no inclusion of a comparison group[28]. This paper gathered responses from heads of government offices and the residents regarding their experiences in e-governance within their city. They were asked to rate the quality of political, social and technical value it gives to them using a Likert-scale. Their responses were interpreted using descriptive metric[27] which provided preliminary data about the quality of e-governance processes in Eastern Visayas. This preliminary data is often being used in a more in-depth analysis about the implementation of e-governance in local governments. Such understanding will illuminate how these digital initiatives influence administrative efficiency, transparency, and citizen engagement, ultimately contributing to the broader discourse on modernizing public sector governance.

3.2. Sample of the study

Participants were selected through online purposive sampling[29], with a questionnaire distributed via Google Forms to facilitate data collection. The flexibility of this method enables researchers to redefine the sampling criteria as new insights emerge, making it particularly effective for identifying participants and developing innovative concepts[30-32]. A filter questionnaire was used to assess participants' experiences with e-governance. Those who met the criteria were subsequently directed to the survey section for further data collection. The participants were sampled based on three major characteristics: (1) must be a resident of the city (>5 years), (2) exposed to any form of e-government services/system (online tracking, online application, payments, interviews, etc.), and (3) must possess sufficient familiarity with e-governance processes. There were 375 respondents, including 70 heads of government offices (19.72%) and 285 residents (80.28%).

Table 1. Summary of sampled participants.

Respondents	Frequency	Percent
Heads of Offices	70	19.72
Residents	285	80.28
Total	355	100.00

3.3. Instrumentation

A Likert-scale was developed to gather the responses from the participants. A Likert scale is a widely used psychometric tool designed to measure attitudes, opinions, or perceptions on a continuous scale[33]. It consists of a series of statements to which respondents indicate their level of agreement or disagreement, typically using a fixed range of options[34]. Reliability is a critical factor to consider in the development of questionnaires. Reliability refers to the degree to which a questionnaire, test, observation, or any measurement procedure yields consistent and stable results across repeated trials[35]. In essence, it reflects the extent to which scores remain consistent over time or across different evaluators. Cronbach's alpha (α) is the most widely used metric for assessing the internal consistency reliability of a measurement instrument[36]. Analysis indicated generally acceptable reliability for political factors (r=0.743), social factors (r=0.671), and technical factors (r=0.853). Further, validity refers to the extent to which a measurement accurately assesses what it is intended to

measure[35]. (Bolarinwa, 2015). Although reliability is an important contributor to the validity of a questionnaire, it is not a sufficient condition for ensuring its validity[37]. In validity assessment, a panel of experts was assigned to examine the theoretical construct the questionnaire aims to measure.

Table 2. Reliability coefficients.

Constructs	No of Items	Reliability Coefficients	Interpretation
Political factors	7	0.743	Acceptable
Social factors	5	0.839	Good
Technical factors	9	0.853	Good

3.4. Procedures

The research instruments were initially drafted in English but were translated into Filipino or local dialects as needed to ensure clarity and accuracy of responses. Preliminary surveys and consultations were conducted to refine ambiguous questions based on feedback from the research adviser and statistician. After obtaining approval from the panel members, the final version of the instrument was validated through an online survey in Imus City, Cavite. The questionnaires were then distributed electronically to the heads of government offices and residents in Eastern Visayas. Data collection began after obtaining the necessary permissions and coordinating with the participants. Once the data were gathered, they were tabulated according to the established categorization and quantification procedures. The data gathering process started in September 2024 and ended in November 2024. After gathering the data, the responses were exported through an Excel spreadsheet and stored for further analysis.

3.5. Data processing

Descriptive statistics was carried out to analyze the responses from the participants. Descriptive statistics involves summarizing and organizing data to provide a clear and concise overview of its main characteristics[27,38]. In this study, weighted mean was used to analyze the average, accounting for the varying importance or frequency of different data points. Weighted mean yields a mean value which then being interpreted using the descriptors in **Table 3**. The analysis was conducted using a free statistical software Jeffreys's Amazing Statistics Program (JASP) version 0.19.0.0.

Table 3. Mean descriptors.

Scale	Mean Value	Description	Interpretation
4	3.26-4.00	Highly Implemented	The e-governance initiative is effectively and thoroughly implemented, with widespread adoption and consistent execution across relevant areas.
3	2.51-3.25	Implemented	The e-governance initiative has been put into practice but may not be fully integrated or optimized, with some areas potentially requiring improvement or further development.
2	1.76-2.50	Poorly Implemented	The e-governance initiative has been minimally implemented, with significant gaps in its execution and effectiveness, requiring attention and improvement.
1	1.00-1.75	Not Implemented	The e-governance initiative has not been implemented or has only been superficially introduced, lacking substantial execution or integration.

4. Results and discussion

E-governance involves the use of technology to streamline government activities and deliver services in a convenient, transparent, and efficient manner[39]. With integrating information and communication

technology, e-governance simplifies processes for government agencies, businesses, and citizens, fostering greater accountability and transparency.

In **Table 4**, the findings suggest that, overall, political factors are perceived as having been implemented to a reasonable extent in the Eastern Visayas e-governance efforts. The high score for "Believing in Leadership in E-Governance" (Mean = 3.21) points to the significant impact that strong leadership has in building trust and confidence in digital systems. Studies[40,41] argued that effective political leadership helps overcome doubts and resistance, facilitating the adoption of new technologies. However, the lower scores for "Clear Strategy" (Mean = 2.72) and "Change Resistance" (Mean = 2.69) indicate challenges in the clarity and communication of strategic plans, which may lead to confusion or resistance among stakeholders. This suggested that more efforts are needed in providing transparent communication and clear, structured plans to reduce anxiety and uncertainty during the implementation process.

Table 4. Descriptive analysis of e-governance implementation in terms of political factors.

Aspects	Head of Office (N=70)			Residents (N=285)			Over-all (N=355)		
	$\bar{x}$	Desc	SD	$\bar{x}$	Desc	SD	$\bar{x}$	Desc	SD
Believing leadership in e-governance	3.43	I	0.53	2.99	1	0.73	3.21	I	0.63
Strong leadership	3.26	I	0.61	2.94	I	0.72	3.10	I	0.66
Top leadership involvement	3.14	I	0.62	2.84	I	0.70	2.99	I	0.66
Leadership variations in support	2.91	I	0.70	2.81	I	0.72	2.86	I	0.71
Clear strategy	2.77	I	0.62	2.67	I	0.67	2.72	I	0.64
Change resistance	2.67	I	0.68	2.71	I	0.67	2.69	I	0.67
Unsafe to politician's interest and influence	2.74	I	0.76	2.77	I	0.78	2.76	I	0.77
Average	2.99	I	0.40	2.82	I	0.55	2.90	I	0.47

Legend:

3.51 – 4.00	=	HI (Highly Implemented)
2.51 – 3.50	=	I (Implemented)
1.51 – 2.50	=	PI (Poorly Implemented)
1.00 – 1.50	=	NI (Not Implemented)

In **Table 5**, the findings on social factors indicates that e-governance systems are generally perceived as being implemented, with the highest ratings for "Perceived Awareness" and "Compatibility of Systems" (Mean = 2.83). Stakeholders acknowledge the importance of e-governance and understand how the systems can be integrated into their daily lives. However, the ongoing psychological concerns, particularly fears around data misuse, are reflected in the lower score for "Perceived Danger" (Mean = 2.63). This points to lingering uncertainty and hesitation about the risks associated with using these systems. To address these concerns, Iftikhar et al.[42] argue that it is essential to implement robust security measures and ensure transparency in data management, as these actions would likely boost user confidence and trust in the systems.

Table 5. Descriptive analysis of e-governance implementation in terms of social factors.

Aspects	Head of Office (N=70)			Residents (N=285)			Over-all (N=355)		
	$\bar{x}$	Desc	SD	$\bar{x}$	Desc	SD	$\bar{x}$	Desc	SD
Perceived awareness	2.83	I	0.72	2.83	I	0.72	2.83	I	0.72
Perceived danger	2.63	I	0.62	2.63	I	0.62	2.63	I	0.62
Perceived security	2.76	I	0.69	2.76	I	0.69	2.76	I	0.69
Perceived privacy	2.71	I	0.68	2.71	I	0.68	2.71	I	0.68
Satisfaction	2.77	I	0.71	2.77	I	0.71	2.77	I	0.71
Compatibility of systems (working together)	2.83	I	0.64	2.83	I	0.64	2.83	I	0.64
Average	2.75	I	0.51	2.75	I	0.51	2.75	I	0.51

Legend:

3.51 – 4.00	=	*HI (Highly Implemented)*
2.51 – 3.50	=	*I (Implemented)*
1.51 – 2.50	=	*PI (Poorly Implemented)*
1.00 – 1.50	=	*NI (Not Implemented)*

In **Table 6**, technical factors indicates that e-governance systems are generally perceived as being implemented, with the highest score for "Integrated System Availability" (Mean = 2.84). This suggests that progress has been made in ensuring the availability of accessible and functional platforms for users. However, the relatively lower scores for "Insufficient Skilled Human Resources" (Mean = 2.68) and "Uncertainty of Privacy and Security" (Mean = 2.70) reflect concerns about the lack of technical expertise and lingering apprehensions regarding the security and privacy of these systems. These issues can create barriers to user satisfaction and trust. To address these challenges, Chohan and Hu[43] emphasize the need for continuous training and robust technical support, which can help alleviate concerns and enhance user confidence in the system, ultimately fostering broader acceptance of e-governance.

Table 6. Descriptive analysis of e-governance implementation in terms of social factors.

Aspects	Head of Office (N=70)			Residents (N=285)			Over-all (N=355)		
	$\bar{x}$	Desc	SD	$\bar{x}$	Desc	SD	$\bar{x}$	Desc	SD
Integrated system availability	2.93	I	0.60	2.75	I	0.65	2.84	I	0.62
Adequate IT/ICT infrastructure	2.83	I	0.61	2.67	I	0.65	2.75	I	0.63
System design	2.84	I	0.61	2.65	I	0.65	2.74	I	0.63
Technical support	2.79	I	0.61	2.67	I	0.66	2.73	I	0.64
Unrealistic expectations	2.60	I	0.67	2.69	I	0.65	2.65	I	0.66
Availability of trusted secured medium	2.79	I	0.61	2.61	I	0.71	2.70	I	0.66
Quality of technology	2.84	I	0.58	2.64	I	0.68	2.74	I	0.63
Insufficient skilled human resources	2.69	I	0.71	2.68	I	0.67	2.68	I	0.69

Uncertainty of data privacy and data security	2.74	I	0.77	2.65	I	0.71	2.70	I	0.74
Average	2.78	I	0.43	2.67	I	0.51	2.72	I	0.47

Legend:

3.51 – 4.00	*=*	*HI (Highly Implemented)*
2.51 – 3.50	*=*	*I (Implemented)*
1.51 – 2.50	*=*	*PI (Poorly Implemented)*
1.00 – 1.50	*=*	*NI (Not Implemented)*

Table 6. *(Continued)*

5. Conclusion

The study revealed that the implementation of e-governance in the Eastern Visayas region was generally perceived positively by stakeholders across political, social, and technical factors. Political leadership was found to play a crucial role in building trust and confidence in the digital systems, although challenges in clear communication and resistance to change remain. Social factors showed that stakeholders recognize the benefits of e-governance but still harbor concerns about data privacy and security. Technically, while progress has been made in system availability, issues such as the lack of skilled human resources and concerns about privacy persist. These findings emphasized the importance of transparent communication, effective leadership, and ongoing support to encourage wider acceptance and trust in e-governance systems.

Local government units should continue to strengthen political leadership and communication strategies to address stakeholder resistance and confusion. Addressing psychological concerns related to data security and privacy through the implementation of robust security protocols and clear data management practices can enhance public trust. It is also important to invest in capacity-building initiatives, such as training programs for technical personnel, to overcome the shortage of skilled resources. These steps will likely improve the overall effectiveness and acceptance of e-governance systems and ensure their long-term sustainability.

This study has several limitations that must be considered. The sample size may not fully represent the entire population of Eastern Visayas, which could affect the generalizability of the findings. Furthermore, the use of an online survey may have excluded certain groups of stakeholders with limited access to technology, potentially skewing the results. The methods employed, including the reliance on self-reported data, may also be subject to bias. Future research could address these limitations by expanding the sample size, employing mixed methods approaches, and ensuring broader representation of stakeholders from diverse backgrounds.

Conflict of interest

The authors declare no conflict of interest.

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