

E-Government Technologies on Citizen Engagement and Service Delivery in the Local Government Unit of Santiago City

Hannah Mae B. Domingo¹, Edczelle P. Panganiban¹, Zelyn Marie M. Pasion¹,

Marjorie S. Magbitang, MPA¹, Aimee P. Calingasan, MAEd¹,

Queenne Kimverlee C. Landingin, MAN, MSN, MAEd^{2*}

¹College of Arts and Sciences, University of La Salette, Inc., Santiago City, Isabela, Philippines

²Quality Assurance, University of La Salette, Inc., Santiago City, Isabela, Philippines

*kim01079157@gmail.com

Date Submitted:

August 30, 2026

Date Accepted:

September 25, 2026

Date Published:

October 17, 2026

DOI:

10.5281/zenodo.23433593

ABSTRACT

This study examined the impact of e-government technologies on citizen engagement and service delivery in Santiago City, Isabela, focusing on residents' interaction with digital platform. A quantitative research design was employed, using a structured questionnaire that was administered to 383 respondents selected through convenience sampling. Results showed that respondents' interaction with digital platforms was "Not Experienced" in terms of difficulty, apart from limited awareness of platform features; the impact of limited e-government adoption on service delivery and satisfaction was "Very High Impact"; and the benefits of improved digital interaction were "Very Highly Beneficial." Significant differences in interaction were found across age, educational

attainment, and religion, while significant differences in impact were found across sex, educational attainment, and religion. These results indicate that Santiago City's e-government platforms are functionally sound and well-received, but that engagement is not uniform across demographic groups. The study recommends that the LGU sustain and expand its digital platforms, strengthen awareness and onboarding efforts, and adopt demographic-responsive engagement strategies to ensure equitable access to e-government benefits.

Keywords: *E-government, citizen engagement, service delivery, digital governance, local government units*

INTRODUCTION

The rapid advancement of Information and Communication Technologies (ICTs) has transformed governance globally, making digital government systems and initiatives increasingly integral to public administration. E-government refers to the use of ICTs by the government to enhance access to and delivery of government services to the citizens for an efficient, responsive, ethical, accountable, and transparent government (Republic Act No. 12254, 2025). Recognizing the importance of digital governance, the United Nations (UN) regularly assesses the e-government development status of its Member States through the United Nations E-Government Survey. The survey serves as a global benchmark for evaluating countries' progress in digital governance, enabling governments to identify strengths and challenges in e-government and to shape their policies and strategies for future improvement. (United Nations Department of Economic and Social Affairs [UN DESA], 2024).

At the regional level, the Association of Southeast Asian Nations (ASEAN) has strengthened digital cooperation through the ASEAN Digital Masterplan 2030 (ADM 2030). The master plan offers a strategic framework that respects different levels of readiness, national priorities, and development pathways, while fostering voluntary and mutually beneficial cooperation across the region. It aims to help ASEAN member states advance their digital development efforts, strengthen regional connectivity and interoperability, and promote a trusted and inclusive digital environment in a manner that is practical and responsive to national needs. (The ASEAN Secretariat News, 2026)

Aligned with these global and regional developments, the Philippine government has intensified its digital transformation agenda through the enactment of the E-Governance Act of 2025, or RA 12254. The law institutionalizes e-governance across national government agencies and the Local Government Units (LGUs), designating the Department of Information and Communications Technology (DICT) serving as the lead implementing body and administrator. DICT is responsible for ensuring that all ICT projects in the Philippines shall be done in accordance with the National ICT Development Agenda and E-Government Master Plan to promote an integrated, efficient, and citizen-centered digital government.

To strengthen digital governance at the local level, the Act also mandates LGUs to establish their own digital government portals or adopt the Electronic Local Government Unit (eLGU) System that was developed by the DICT. According to Bejer (2026), during the 2026 GovMedia Summit in the Philippines, DICT Secretary Henry Aguda announced that the government is targeting full LGU integration into the platform within the next two years. As reported by the Department of the Interior and Local Government (2025), more than 942 local government units, including 41 cities and 901 municipalities, have adopted the Electronic Local Government Unit (eLGU) system.

Among these cities is the LGU of Santiago City, which launched its KaisaKa app. Through this digital platform, the LGU of Santiago City aims to provide a faster process of services, including financial assistance (Dela Cruz, 2026). It also aims to strengthen citizen engagement, promote transparency, and provide a more accessible, efficient, and responsive public service. Despite these increasing developments of e-government, there are limited empirical studies that have examined their overall impact on citizen engagement and public service delivery. As the E-Governance Act was also recently implemented, there is still limited evidence on how LGUs are adopting the e-government technologies and how these initiatives are impacting the citizens' participation and experiences. While these studies are only focusing on examining the implementation of digital government initiatives in specific local government units, they provide limited empirical evidence on how e-government technologies influence both citizen engagement and public service delivery within individual local government units. This gap emphasizes the need for an empirical assessment of how the city's digital government initiatives contribute to citizen participation and the quality of public service delivery.

Therefore, this study examines the Impact of E-Government Technologies on Citizen Engagement and Service Delivery in Local Government Unit of Santiago City, Isabela. Specifically, it evaluates how citizens perceive the impact and benefits of digital government technologies in enhancing public participation and improving the accessibility, efficiency, and quality of government services. The findings are expected to provide evidence-based recommendations that will support the continuous improvement of local digital governance and contribute to the growing body of literature on e-government implementation in the Philippines.

Research Questions

1. What is the profile of the respondents in terms of:
 - 1.1. Age
 - 1.2. Sex
 - 1.3 Highest Education Attainment
 - 1.4 Religion

2. What is the interaction of the respondents with the local government through Digital Platforms?
3. What is the impact of limited adoption of e-government initiatives on service delivery and citizen satisfaction?
4. What are the benefits of improved digital interaction between citizens and the local government?
5. Is there a significant difference in interaction with the local government through digital platforms when grouped according to their demographic profile?
6. Is there a significant difference in the impact of limited adoption of e-government initiatives on service delivery and citizen satisfaction when grouped according to their demographic profile?
7. Is there a significant difference in the benefits of improved digital interaction when grouped according to their demographic profile?

Literature Review

E-Government and Improved Service Delivery

Several studies affirm that e-government technologies enhance the efficiency and quality of public service delivery. Locally, Dela Peña (2025) found that Paracale's e-governance system demonstrated robust functionality and significantly enhanced service delivery, transparency, and citizen engagement, offering a model for other LGUs. Similarly, Asadon et al. (2024) reported that e-governance reduces costs, errors, and delays in service delivery among Laguna residents, while Pabatang-Hussien (2023) observed that LGUs in Mindanao successfully implemented e-governance across administrative, economic, health, infrastructure, and welfare services. Faller (2024) reinforces this, noting that e-government streamlines workflows, reduces procedural delays, and accelerates the processing of citizen transactions. Foreign studies echo these findings, Afiyah (2024) found that e-government services contribute significantly to efficiency and accessibility, while AlShdaifat (2024) reported high service delivery efficiency scores, and Mascara (2024) emphasized reduced travel expenses, shorter wait times, and lower service costs as key benefits.

The concerns the broader policy and institutional context needed to sustain e-government initiatives. Roxas (2025) calls for Asian governments to strengthen formal institutions and enact policies supporting digital innovation to advance sustainable human development. Balinang et al. (2026) note that while highly urbanized Philippine cities like Quezon City, Cebu City, and Davao City have implemented notable digital initiatives, many LGU particularly smaller or less-resourced ones continue to struggle, revealing a gap in literature specific to LGU-level implementation strategies. Bayona-Oré and Morales Lozada (2021) similarly emphasize that city-level governments are directly connected to citizens through e-services, yet this level of governance is often underestimated in national digital policy discussions.

Trust, Security, and Privacy Concerns

A recurring theme across both local and foreign literature is the tension between digital convenience and citizens' concerns over data security. Valle et al. (2024) found that while 73% of Caloocan respondents were satisfied with the platform's interface, only 58% trusted its security measures, and 10% expressed outright distrust. AlShdaifat (2024) similarly found that, despite high overall satisfaction, it indicated persistent skepticism toward data protection. Maurya and Suri (2026) emphasize that strong data governance is essential to mitigate risks of data breaches and build public trust, while Roxas (2025) argues that data privacy and platform reliability must be embedded into integrated policy frameworks for sustainable digital governance. Djatmiko et al. (2025) further stress that cybersecurity and user trust are prerequisites for inclusive, long-term e-government adoption.

Citizen Engagement and Participation

E-government's role in fostering active citizen participation is another central theme. Asadon et al. (2024) found that social media enhances public participation with greater trust and satisfaction compared

to traditional media. Nomzaza (2025) similarly found that e-participation platforms improve transparency and municipal responsiveness in South Africa. Afiyah (2024) adds that active citizen participation combined with transparent governance boosts perceived accountability and public confidence, while Iyoha et al. (2025) highlight the positive impact of e-government on citizen satisfaction and service responsiveness.

Barriers and Challenges to Adoption

Despite these benefits, multiple studies identify persistent obstacles to full e-government adoption. Mora and Mendoza (2025) reveal municipal e-government usage in Mexico averaging just 0.007 on a 0–1 scale, showing minimal citizen adoption. Latupeirissa et al. (2024) and Djatmiko et al. (2025) both warn that rapid digitalization risks marginalizing populations without digital access, potentially widening the digital divide, particularly among low-income, elderly, or rural citizens a concern also raised by Nomzaza (2025).

METHODS

Research Design

This study will employ a quantitative research design. Hence, a quantitative research design is appropriate for evaluating the impact of e-government on citizen engagement and service delivery. This approach is chosen for its effectiveness in providing measurable and comparable results that can be statistically analyzed (AlShdaifat, 2024). Moreover, quantitative research centers on numerical data collection and analysis to answer the research question or hypothesis. This is achieved through the application of objective, systematic, and thorough processes to generate knowledge (Slater & Hasson, 2025).

Study Site and Participants

The study was conducted in Santiago City, Isabela. The city was chosen because of its active digital governance initiatives, including the KaisaKa app and other government websites. Participants were residents who met three inclusion criteria: (1) at least 18 years old, (2) bona fide residents of Santiago City, and (3) prior experience using e-government platforms such as the KaisaKa app or official government websites.

Populations, Sample Size, and Sampling Methods

From a population of 95,641 residents of Santiago City, a sample of 383 respondents was computed using the Raosoft sample size calculator at a 95% confidence level and a 5% margin of error. Respondents were selected through convenience sampling, chosen for its practicality given time and resource constraints. The questionnaire was distributed online through Google Forms to residents who were available and willing to participate.

Research Instrument

The primary research instrument will be a structured survey questionnaire, adopted from the research of Valle et al. (2024), titled “Impact of E-Government Technologies on Citizen Engagement and Service Delivery: A Case Study of Local Government Units in Caloocan.” The survey questionnaire is divided into 4 sections covering demographics, and 40 items questions from the adopted study such as interaction with Local Government through Digital Platforms (10 items), the impact of limited adoption of e-government initiatives on service delivery and citizen satisfaction (10 items) and benefits of improved digital interaction between citizens and the local government (20 items).

The questionnaire was designed using a 4-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree) providing structured data for analysis. Each section aimed to address a specific research question, ensuring comprehensive coverage of the study’s objectives.

Data Analysis

The demographic profile of the respondents was summarized using frequency and percentage distribution. Weighted means were used to assess respondents' interaction with the local government through digital platforms, the impact of limited e-government adoption on service delivery and citizen satisfaction, and the benefits of improved digital interaction, based on a four-point Likert scale. To test for significant differences across demographic groups, an independent samples t-test was used for variables with two groups (sex), and one-way analysis of variance (ANOVA) was used for variables with three or more groups (age, highest educational attainment, and religion).

Scale	Range	Interpretation	Interaction/Experience	Impact	Benefit
4	3.26–4.00	Strongly Agree	Greatly Experienced	Very High Impact	Very Highly Beneficial
3	2.51–3.25	Agree	Moderately Experienced	High Impact	Highly Beneficial
2	1.76–2.50	Disagree	Slightly Experienced	Low Impact	Moderately Beneficial
1	1.00–1.75	Strongly Disagree	Not Experienced	Not Impact	Not Beneficial

Ethical Considerations

The study followed ethical standards for research involving human participants. Approval to conduct the study was obtained from the university president and, where applicable, the institution's research ethics committee. An informed consent form at the beginning of the Google Forms survey explained the study's purpose and the respondents' right to participate voluntarily or withdraw at any time without penalty. Consent was required before answering the questionnaire. No incentives or coercion were used, and only consenting individuals who met the inclusion criteria were included. No personally identifiable information was collected, and responses were reported only in aggregate form, in accordance with Republic Act No. 10173 (Data Privacy Act of 2012). Data were stored securely, accessed only by the researchers, used solely for academic purposes, and will be disposed of or archived according to institutional data retention policies.

RESULTS AND DISCUSSION

Demographic Profile

Table 1. *Demographic profile of the Respondents*

Profile	<i>f</i>	%
Age		
18-28	361	94.3
29-38	17	4.5
39-48	2	0.5
49-58	2	0.5
59 and above	1	0.3
Sex		
Female	219	57.2
Male	164	42.8
Highest Educational Attainment		
Elementary Graduate	2	0.5
Junior HS Graduate	9	2.3

Profile	<i>f</i>	%
Senior HS Graduate	40	10.4
Vocational/Technical	8	2.1
College Undergraduate	294	76.8
Bachelor's Degree/Graduate	26	6.8
Master's Degree/Graduate	3	0.8
Doctorate Degree	1	0.3
Religion		
Roman Catholic	217	56.7
Iglesia ni Cristo	146	38.1
Others (Jehova Witness, Protestant, etc.)	20	5.2
Total	383	100.0

Table 1 shows the demographic profile of the respondents. Nearly all respondents (94.3%) are 18–28 years old. Females make up 57.2%. Education skews heavily toward the tertiary level: college undergraduates and Bachelor's Degree/Graduate holders, with smaller shares across the other levels. Religiously, the sample is mostly Roman Catholic (56.7%). This indicates that the sample is concentrated among young, tertiary-educated respondents; the study's findings most directly reflect the perceptions of digitally active young adults in Santiago City.

Weighted Mean Distributions on interaction, impact, and benefits with E-government Digital Platform

Table 2. *Weighted Mean Distribution of Respondents' Interaction with Local Government through Digital Platforms*

No.	Item	Mean	Interpretation
1	I find the e-government platform difficult to navigate.	1.53	Not Experienced
2	I lack adequate technical skills to effectively use the e-government platform.	1.5	Not Experienced
3	I experience difficulties in accessing the e-government platform due to internet connectivity issues.	1.59	Not Experienced
4	I find it difficult to resolve issues or get help when I encounter problems with the e-government platform.	1.61	Not Experienced
5	The process for submitting requests or applications online is too complex.	1.62	Not Experienced
6	I am concerned about the security and privacy of my personal information on the e-government platform.	1.78	Not Experienced
7	I find the language or terminology used on the e-government platform to be too technical.	1.63	Not Experienced
8	There is a lack of awareness or knowledge about how to use the e-government platform effectively.	1.77	Slightly Experienced
9	The e-government platform does not support my preferred language or dialect.	1.55	Not Experienced
10	There is insufficient feedback or confirmation provided after I complete a transaction on the platform.	1.71	Not Experienced
Overall Mean		1.63	Not Experienced

Table 2 presents the weighted mean scores describing the extent to which respondents experienced difficulty interacting with the local government's digital platforms. Results reveal an overall weighted mean of 1.63, verbally interpreted as "Not Experienced," indicating that respondents, as a collective group, do not perceive significant barriers when engaging with e-government platforms such as the KaisaKa application.

Nine of the ten indicators fell within the "Not Experienced" range, suggesting that navigation, technical skill requirements, internet connectivity, issue resolution, procedural complexity, technical language, dialect support, and post-transaction feedback are not meaningful sources of difficulty for the sampled population. The only item that registered a "Slightly Experienced" interpretation was Item 8, concerning a lack of awareness or knowledge about how to use the platform effectively ($M = 1.77$). Although this value remains at the lower end of the scale, its relative elevation compared to the other nine indicators suggests that citizen orientation and digital literacy rather than platform design or infrastructure represent the more prominent, if still modest, area of concern.

This finding implies that the LGU's digital platforms are functionally accessible to their current user base, but that targeted information campaigns or user guidance may further reduce the residual awareness gap.

Table 3. Weighted Mean Distribution of the Impact of Limited Adoption of E-Government Initiatives on Service Delivery and Citizen Satisfaction

No.	Item	Mean	Interpretation
1	Use of digital platforms reduces overall satisfaction with local government services.	1.56	No Impact
2	The lack of widespread adoption of e-government initiatives leads to inefficiencies in service delivery.	3.5	Very High Impact
3	Limited access to e-government platforms negatively impacts the accessibility of services for citizens.	3.56	Very High Impact
4	The limited use of e-government platforms results in longer wait times for service completion.	3.5	Very High Impact
5	Limited e-government adoption affects the ease of communication between citizens and local government.	3.54	Very High Impact
6	Citizen satisfaction is adversely affected by the limited availability of e-government services.	3.54	Very High Impact
7	Limited engagement with e-government services creates barriers to accessing government resources and information.	3.54	Very High Impact
8	Limited use of e-government platforms results in a lack of innovation in service delivery methods.	3.49	Very High Impact
9	The lack of widespread e-government usage contributes to an increase in paper-based transactions.	3.5	Very High Impact
10	The limited adoption of e-government services affects the overall modernization of local government operations.	3.47	Very High Impact
Overall Mean		3.32	Very High Impact

Table 3 reflects respondents' perceptions of the consequences of limited e-government adoption. With an overall weighted mean of 3.32, interpreted as "Very High Impact," the data indicate a strong and consistent belief among respondents that insufficient adoption of digital government platforms produces

tangible negative effects on service delivery and citizen satisfaction. Nine of the ten items excluding the reverse-worded Item 1 registered means between 3.47 and 3.56, all falling within the "Very High Impact" category. The highest-rated item, Item 3 ($M = 3.56$), concerning the negative impact of limited access on service accessibility, suggests that accessibility is the dimension of service delivery respondents consider most vulnerable to underutilized digital infrastructure.

Item 1, which was constructed in the opposite semantic direction from the remaining items, yielded a mean of 1.56 ("No Impact"). Rather than contradicting the broader pattern, this result is interpretively consistent with it: respondents disagree that digital platform use itself reduces satisfaction, which affirms from the opposite direction the same underlying belief expressed throughout the rest of the table, namely that digital platforms are perceived as beneficial rather than detrimental to citizen satisfaction. Taken together, these findings substantiate the premise that the *absence* or *underuse* of e-government services, rather than their presence, is what respondents identify as the source of service inefficiency.

Table 4. Weighted Mean Distribution of the Benefits of Improved Digital Interaction Between Citizens and the Local Government

No.	Item	Mean	Interpretation
1	Improved Access to Services	3.58	Very Highly Beneficial
2	Faster Response Times	3.39	Very Highly Beneficial
3	Enhanced Transparency in Government Processes	3.39	Very Highly Beneficial
4	Increased Convenience in Accessing Services	3.42	Very Highly Beneficial
5	Better Quality of Services Provided	3.39	Very Highly Beneficial
6	More Efficient Communication Channels	3.4	Very Highly Beneficial
7	Greater Opportunities for Public Feedback and Participation	3.45	Very Highly Beneficial
8	Improved Accuracy of Information Provided	3.38	Very Highly Beneficial
9	Enhanced Security of Personal Information	3.37	Very Highly Beneficial
10	More Timely Updates on Local Government Activities	3.46	Very Highly Beneficial
11	Increased Trust in Local Government Operations	3.37	Very Highly Beneficial
12	Better Integration of Services Across Departments	3.45	Very Highly Beneficial
13	Enhanced Ease of Access to Information	3.42	Very Highly Beneficial
14	Reduction in Administrative Burden for Citizens	3.45	Very Highly Beneficial
15	Streamlined Processes for Service Requests	3.4	Very Highly Beneficial
16	More Personalized Service Experiences	3.34	Very Highly Beneficial
17	Improved Public Engagement and Community Involvement	3.38	Very Highly Beneficial
18	Increased Efficiency in Local Government Operations	3.45	Very Highly Beneficial
19	Better Access to Local Government Updates and Notifications	3.42	Very Highly Beneficial
20	Enhanced Digital Literacy Among Citizens	3.44	Very Highly Beneficial
Overall Mean		3.42	Very Highly Beneficial

Table 4 demonstrates the most unequivocal finding in the study. All twenty items describing potential benefits of improved digital interaction obtained means ranging from 3.34 to 3.58, each falling within the "Very Highly Beneficial" category, and yielding an overall weighted mean of 3.42. This

uniformity across all twenty indicators suggests that respondents perceive digital government interaction as delivering broad-based value rather than isolated or narrow advantages.

The highest-rated benefit, Improved Access to Services ($M = 3.58$), corresponds directly with the accessibility concern identified as most critical in Table 3, forming a coherent interpretive link between the two constructs: citizens perceive accessibility as both the primary casualty of limited e-government adoption and the primary gain of its improvement.

The comparatively lowest-rated item, More Personalized Service Experiences ($M = 3.34$), while still classified as "Very Highly Beneficial," indicates that personalization is the dimension of digital government service that respondents perceive as least fully realized to date, and may represent a productive direction for future service enhancement.

Test of difference when grouped according to their demographic profile

Table 5. *Test of significance on the Interaction, Impact and Benefits based on Sex*

Construct	Male	Female	t	P	Decision
Interaction	1.59 (0.67)	1.66 (0.75)	-1.02	.306	Not significant
Impact	3.41 (0.36)	3.25 (0.38)	4.03	<.001	Significant
Benefit	3.48 (0.40)	3.37 (0.37)	2.75	0.006	Significant

Table 5 presents independent samples t-test results based on sex. No significant difference was found for Interaction ($t = -1.02$, $p = .306$), indicating comparable usability experiences between sexes. Significant differences were found for Impact ($t = 4.03$, $p < .001$) and Benefit ($t = 2.75$, $p = .006$), with male respondents ($M = 3.41$ and 3.48) scoring higher than female respondents ($M = 3.25$ and 3.37) on both. This suggests sex does not meaningfully affect perceived usability, but does influence how strongly respondents perceive the consequences and benefits of e-government adoption.

Table 6. *Test of significance on the Interaction, Impact and Benefits based on Age, Highest Educational Attainment and Religion*

Construct		Age	Highest Educational Attainment	Religion
Interaction	F-value	3.31	7.64	43.15
	p-value	.011	<.001	<.001
Impact	F-value	1.40	2.41	3.64
	p-value	.234	.015	.027
Benefit	F-value	1.46	0.93	26.32
	p-value	.212	.494	<.001

Table 6 presents one-way ANOVA results across three demographic variables with three or more comparison groups.

For Age, a significant difference emerged only for Interaction ($F = 3.31$, $p = .011$); Impact ($F = 1.40$, $p = .234$) and Benefit ($F = 1.46$, $p = .212$) were not significant. This result should be treated with caution, since the age brackets beyond 29–38 had only one to two respondents each, meaning the Interaction result may reflect a few atypical responses rather than a genuine age-related pattern.

For Highest Educational Attainment, significant differences were found for Interaction ($F = 7.64$, $p < .001$) and Impact ($F = 2.41$, $p = .015$), but not Benefit ($F = 0.93$, $p = .494$) — suggesting education level shapes how much difficulty respondents experience and how strongly they perceive the effects of limited adoption, while perceived benefits remain fairly uniform across education levels.

For Religion, significant differences were found across all three constructs: Interaction ($F = 43.15$, $p < .001$), Impact ($F = 3.64$, $p = .027$), and Benefit ($F = 26.32$, $p < .001$) — the strongest and most consistent demographic effect in the study. This likely reflects underlying factors correlated with religious affiliation, such as community networks or geographic clustering, rather than religion itself as a direct cause, and warrants further qualitative investigation.

The respondents were mostly young (94.3% aged 18–28), female (57.2%), college undergraduates (76.8%), and Roman Catholic (56.7%). This matches e-government literature showing that users tend to be younger, more educated, and already familiar with online transactions (Valle et al., 2024; Oztaskin et al., 2024; Ilieva et al., 2024). Young women in particular have been found receptive to digital government platforms (Rodríguez-Correa et al., 2025). However, adoption in Philippine LGUs remains concentrated among citizens with technological access and literacy (De Castro & De Castro, 2022), so the findings best represent digitally active young residents rather than the whole population.

The low difficulty in using e-government platforms ($M = 1.63$) agrees with Valle et al. (2024), who also found high usability ratings in Caloocan City, with privacy and security as the main concern, which was also the highest-rated difficulty item in this study. This suggests that trust, rather than usability, is now the more pressing barrier. The "Very High Impact" of limited adoption is supported by Barrios and Moreno (2024), who found that e-government gains in Zamboanga City were weakened where adoption was incomplete, and by G.C. et al. (2024), who linked system and service quality to citizen satisfaction. The strong endorsement of all benefit items ($M = 3.42$) parallels Jou et al. (2024), who reported broad gains among eGov PH app users. The lower rating for personalized services ($M = 3.34$) may reflect the mostly informational and transactional nature of LGU platforms (De Castro & De Castro, 2022).

Sex had no effect on interaction but did affect perceived impact and benefits. This is consistent with Lai and Beh (2025), who found that gender differences appear more in attitudes than in actual use. The significant differences by educational attainment agree with Oztaskin et al. (2024) and G.C. et al. (2024), who identified education and the digital divide as key factors. However, they partly contrast with Ilieva et al. (2024), who found age, not education, to be significant, possibly because of differences between national and local platforms. Finally, the strong effect of religion across all three constructs has little precedent in the literature. It may reflect community networks and social trust tied to religious and barangay structures (De Castro & De Castro, 2022; G.C. et al., 2024), rather than religion itself, and warrants further study.

CONCLUSION AND RECOMMENDATION

Based on the findings, it is concluded that respondents' interaction with the local government through digital platforms is "Not Experienced" in terms of difficulty, with a lack of awareness or knowledge on how to use the platform effectively being the only item rated "Slightly Experienced", the impact of limited adoption of e-government initiatives on service delivery and citizen satisfaction is "Very High Impact", the benefits of improved digital interaction between citizens and the local government are "Very Highly Beneficial". Also, significant difference exists in respondents' interaction with the local government through digital platforms when grouped according to age, highest educational attainment, and religion, but not when grouped according to sex; and that a significant difference exists in the impact of limited adoption of e-government initiatives on service delivery and citizen satisfaction when grouped according to sex, highest educational attainment, and religion, but not when grouped according to age.

These findings imply that e-government technologies in Santiago City are functionally sound and well-received by citizens who use them, meaning the LGU's core investment in platforms like KaisaKa is justified and should be sustained and expanded rather than redesigned. At the same time, the presence of

significant demographic-based differences implies that citizen engagement with digital government is not uniform awareness campaigns, trust-building measures, and adoption strategies may need to be tailored across age, education, and community lines to ensure that the benefits of e-government are experienced equitably, rather than concentrating further among the digitally active young adults who already dominate the current user base.

Recommendation

The LGU of Santiago City should sustain and expand platforms such as the KaisaKa app while improving user awareness through digital literacy campaigns and clearer in-app guidance. To reduce the effects of limited adoption, the LGU should widen platform reach and keep strengthening the features citizens value most: access, transparency, and efficiency. The LGU and the DICT should also adopt demographic-responsive strategies instead of a one-size-fits-all approach, such as simplified onboarding for older or less-educated residents and information drives through religious and community networks. Future researchers may use qualitative or mixed-methods approaches to explain the demographic differences found here, particularly the role of religion and community affiliation.

REFERENCES

- Afiyah, S. (2024). The impact of e-government services, citizen participation, and transparency on public trust in government. *Global International Journal of Innovative Research*, 2(6).
<https://doi.org/10.59613/global.v2i6.200>
- AlShdaifat, A. I. (2024). Digital transformation and citizen engagement: Evaluating the impact of e-government on customer satisfaction in Manshiyat Bani Hasan Municipality. *Humanities & Natural Sciences Journal*, 5(2). <https://doi.org/10.53796/hnsj52/23>
- Asadon, M. F. A., Brucal, A. P., Claveria, P. S. L., Lacson, J. T. N., Malang, B., & Malang, J. D. (2024). Enhancing public service delivery and citizen participation: The synergistic effects of e-governance and social media. *International Journal of Multidisciplinary: Applied Business and Education Research*, 5(11).
<https://doi.org/10.11594/ijmaber.05.11.35>
- ASEAN Secretariat News. (2026). ASEAN digital masterplan 2030. <https://asean.org/book/asean-digital-masterplan-2030/>
- Balinang, H., Tucjayao, N. J. D., Fernando, K. H. R., & Lagura, G. B. (2026). Exploring the conceptual dimensions of proposed e-government innovation in the Philippine local government unit. *International Journal of Research and Innovation in Social Science*, 10(2), 5036–5051.
<https://doi.org/10.47772/ijriss.2026.10200373>
- Barrios, N. A., & Moreno, F. (2024). *Evaluating the efficacy of e-government initiatives in addressing local governance challenges in the City of Zamboanga, Philippines* (MPRA Paper No. 122792). University Library of Munich. <https://mpra.ub.uni-muenchen.de/122792/>
- Bayona-Oré, S., & Morales Lozada, V. (2021). E-government and e-services in local government: A case study. *WSEAS Transactions on Environment and Development*, 17, 732–739.
<https://doi.org/10.37394/232015.2021.17.70>
- Bejer, G. (2026, March 17). Philippines ramps up digitalisation with eGov, LGU integration push. *GovMedia*.
<https://govmedia.com/event-news/philippines-ramps-digitalisation-egov-lgu-integration-push>
- De Castro, C. A., & De Castro, E. G. (2022). E-government initiatives of local governments in the Philippines. *Journal of Community Development Research (Humanities and Social Sciences)*, 15(3), 55–70.
<https://doi.org/10.14456/jcdr-hs.2022.25>
- Dela Cruz, M. (2026, April 27). *Online application feature ng KaisaKa App para sa mas mabilis na financial assistance, inilunsad sa Santiago City*. Bombo Radyo Cauayan. <https://cauayan.bomboradyo.com/online-application-feature-ng-kaisaka-app-para-sa-mas-mabilis-na-financial-assistance-inilunsad-sa-santiago-city/>
- Dela Peña, M. A. (2025). E-governance in Paracale: A digital transformation for improved public service delivery and citizen engagement. *JPAIR Multidisciplinary Research*, 61(1). <https://doi.org/10.7719/jpair.v61i1.940>

- Department of the Interior and Local Government. (2025, October 22). *More than 900 LGUs go digital: Faster, easier services within reach through eLGU system*. <https://dilg.gov.ph/news/More-Than-900-LGUs-Go-Digital-Faster-Easier-Services-Within-Reach-Through-eLGU-System/NC-2025-1247>
- Djatzmiko, G. H., Sinaga, O., & Pawirosumarto, S. (2025). Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance. *Sustainability*, 17(7), Article 2908. <https://doi.org/10.3390/su17072908>
- Faller, N. L. (2024). Analysis on political, social, and technical characteristics of e-governance in Eastern Visayas, Philippines. *Environment and Social Psychology*, 9(12). <https://doi.org/10.59429/esp.v9i12.3300>
- G.C., S. B., Gurung, S. K., Rana, S. B. J. B., & Dhungana, B. R. (2024). e-Governance, citizen satisfaction and net benefits: The moderating effect of digital divide. *Cogent Business & Management*, 11(1), Article 2402512. <https://doi.org/10.1080/23311975.2024.2402512>
- Ilieva, G., Yankova, T., Ruseva, M., Dzhavarova, Y., Zhekova, V., Klisarova-Belcheva, S., Mollova, T., & Dimitrov, A. (2024). Factors influencing user perception and adoption of e-government services. *Administrative Sciences*, 14(3), Article 54. <https://doi.org/10.3390/admsci14030054>
- Iyoha, A. E., Omozusi, I. B., & Chukwudi, O. A. (2025). E-government implementation and its impact on public service delivery: Challenges and opportunities. *International Journal of African Sustainable Development Research*, 8(2). <https://doi.org/10.70382/tijasdr.v08i2.052>
- Jou, Y.-T., Mariñas, K. A., Saflor, C. S., Baleña, A., Gutierrez, C. J., Dela Fuente, G., Manzano, H. M., Tanglao, M. S., Verde, N. A., Alvarado, P., & Young, M. N. (2024). Investigating various factors influencing the accessibility of digital government with eGov PH mobile application. *Sustainability*, 16(3), Article 992. <https://doi.org/10.3390/su16030992>
- Lai, R., & Beh, L.-S. (2025). The impact of political efficacy on citizens' e-participation in digital government. *Administrative Sciences*, 15(1), Article 17. <https://doi.org/10.3390/admsci15010017>
- Latupeirissa, J. J. P., Dewi, N. L. Y., Prayana, I. K. R., Srikanthi, M. B., Ramadiansyah, S. A., & Pramana, I. B. G. A. Y. (2024). Transforming public service delivery: A comprehensive review of digitization initiatives. *Sustainability*, 16(7), Article 2818. <https://doi.org/10.3390/su16072818>
- Mascara, A. C. (2024). *E-government service delivery in selected municipalities of Lanao del Sur, Philippines*. <https://doi.org/10.4108/eai.30-10-2024.2354817>
- Maurya, A. P., & Suri, P. K. (2026). Analysing the factors for effective data governance: Indian e-governance context. *IIM Ranchi Journal of Management Studies*, 5(1), 62–82. <https://doi.org/10.1108/IRJMS-10-2024-0132>
- Mora, O. Y. C., & Mendoza, S. R. (2025). Measuring the efficiency of e-government websites at the municipal level in Mexico. *Digital Transformation and Society*, 4(4). <https://doi.org/10.1108/DTS-01-2025-0023>
- Nomzaza, P. Z. (2025). Enhancing citizen engagement through e-participation platforms in local municipalities in South Africa. *International Journal of Applied Research in Business and Management*, 6(1). <https://doi.org/10.51137/wrp.ijarbm.2025.pnee.45786>
- Oztaskin, H. S., Iyit, N., & Alkan, O. (2024). Citizen attitudes towards e-government services during the COVID-19 pandemic: A case in Türkiye. *Heliyon*, 10(15), Article e35041. <https://doi.org/10.1016/j.heliyon.2024.e35041>
- Pabatang-Hussien, E. (2023). Service delivery through e-governance: The case of highly urbanized cities in northern Mindanao, Philippines. *E3S Web of Conferences*, 440, Article 01012. <https://doi.org/10.1051/e3sconf/202344001012>
- Republic Act No. 10173. (2012). *Data Privacy Act of 2012*. <https://privacy.gov.ph/data-privacy-act/>
- Republic Act No. 12254. (2025). *An act institutionalizing the transition of the government to e-governance, strengthening the ICT Academy, and appropriating funds therefor* [E-Governance Act]. <https://elibrary.judiciary.gov.ph/thebookshelf/showdocs/2/99787>
- Rodríguez-Correa, P. A., Méndez-Rivera, C. A., Patiño-Toro, O. N., Valencia-Arias, A., Gallegos Ruiz Conejo, A. L., Oré León, A., Cumpa Vásquez, J. T., & Alvites Adan, T. E. (2025). Factors influencing the adoption of e-government by female university students. *PLOS ONE*, 20(1), Article e0317685. <https://doi.org/10.1371/journal.pone.0317685>
- Roxas, B. (2025). E-governance and sustainable human development in Asia: A dynamic institutional path perspective. *Journal of Asian Business and Economic Studies*, 32(1), 15–27. <https://doi.org/10.1108/JABES-02-2024-0076>

- Slater, P., & Hasson, F. (2025). Quantitative research designs, hierarchy of evidence and validity. *Journal of Psychiatric and Mental Health Nursing*, 32(3), 656–660. <https://doi.org/10.1111/jpm.13135>
- United Nations Department of Economic and Social Affairs. (2024). *United Nations e-government survey 2024: Accelerating digital transformation for sustainable development – With the addendum on artificial intelligence*. United Nations. <https://desapublications.un.org/publications/un-e-government-survey-2024>
- Valle, J. S., Bugayao, Z. R., Gutierrez, C., Malang, B. P., & Malang, J. (2024). Impact of e-government technologies on citizen engagement and service delivery: A case study of local government units in Caloocan. *International Journal of Multidisciplinary: Applied Business and Education Research*, 5(11), 4577–4591. <https://doi.org/10.11594/ijmaber.05.11.24>