Exploring the Impact of Digital Technology on Public Service Delivery and Citizen Engagement

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Abstract— This study aimed to investigate the impact of digital technology on public service delivery and citizen engagement using a survey questionnaire administered to 251 residents of Isabela City, Basilan through Google Forms with snowball sampling technique. The main findings of the study demonstrate the significance of digital technology in improving the accessibility, efficiency, and overall experience of public services for citizens. Results reveal that digital technology has become an indispensable tool for accessing public services, and there is a need to ensure that it is accessible and user-friendly to all citizens. This also highlights the necessity for governments and public service providers to prioritize the development of digital tools and platforms that are responsive to citizens' needs and expectations. Furthermore, the study underscores the importance of continuing efforts to improve the accessibility and usability of digital services in public service delivery and citizen engagement. Governments and public service providers need to invest in robust digital infrastructure, prioritize data protection and security, and promote digital literacy initiatives to foster digital inclusion and empower citizens to engage fully in the digital age. The potential of social media platforms, online forums and chatbots, and mobile apps may also be explored to improve citizen engagement with public services. Governments and public service providers need to continue investing in these digital technologies and address any barriers that hinder citizens from engaging fully with public services in the digital age. Valuable recommendations for public service providers to enhance their digital service delivery and citizen engagement form the highlight of this study. By encouraging user feedback, providing training and support, and investing in digital infrastructure and technology, public service providers can promote citizen engagement with public services, build trust and confidence in these services, and advance inclusive and equitable access to public services. In conclusion, the study provides a roadmap for governments and public service providers to leverage the power of digital technology to improve public service delivery and citizen engagement. Implementing the recommendations outlined in this study can create a more inclusive and responsive public service delivery system that meets the needs and expectations of citizens in the digital age.

Keywords— Citizen engagement, digital technology, public service

I. INTRODUCTION

Digital technology has significantly transformed the way public services are delivered and citizen engagement is facilitated. The potential benefits of digital technology in the public sector have been widely acknowledged by governments and policymakers around the world. However, there is a lack of empirical evidence on the impact of digital technology on public service delivery and citizen engagement, and the factors that influence its effectiveness.

Digital technology has had a significant impact on public service delivery. It has enabled governments to streamline their services and make them more accessible to citizens. According to Lee and Kwak (2017), digital technology has the potential to improve the efficiency, effectiveness, and responsiveness of public service delivery. For example, digital technology can enable governments to provide real-time information and services to citizens, reducing waiting times and increasing convenience. It can also enable governments to automate routine tasks, freeing up resources to focus on more complex issues and enabled governments to personalize their services to meet the unique needs of citizens. According to Bertot et al. (2015), digital technology has the potential to enable governments to tailor their services to individual citizens based on their preferences and needs. This can lead to higher levels of citizen satisfaction and engagement.

Digital technology also has a significant impact on citizen engagement. It has enabled citizens to participate more actively in the decision-making process, and to hold governments more accountable. According to Kornberger et al. (2017), digital technology has the potential to facilitate greater citizen participation and co-creation of public services. For example, it can enable governments to solicit feedback and ideas from citizens, and to involve citizens in the design and delivery of public services. A relevant study by Grimmelikhuijsen and Porumbescu (2017) argued that digital technology has the potential to increase transparency and accountability in the public sector by enabling citizens to access information about government activities and spending, and to monitor government performance.

However, while digital technology has the potential to transform public service delivery and citizen engagement, its effectiveness depends on a number of factors. One key factor is the quality of the digital infrastructure and services provided by governments. According to Lee and Kwak (2017), the success of digital technology initiatives depends on the quality of the digital infrastructure and services provided by governments. Poor quality infrastructure and services can lead to low adoption rates and citizen dissatisfaction.

Another key factor is the level of citizen trust in government. According to Grimmelikhuijsen and Porumbescu (2017), citizen trust in government is a key driver of citizen engagement. If citizens do not trust the government, they are unlikely to engage with digital technology initiatives. Therefore, building trust between citizens and government is essential for the success of digital technology initiatives.

The existing literature provides valuable insights into the potential benefits and challenges of digital technology in the public sector, and the factors that contribute to its effectiveness. Further research is needed to examine the impact of digital technology on public service delivery and citizen engagement in different contexts, and to identify best practices for leveraging digital technology to improve public services and citizen engagement.

Despite the widespread adoption of digital technology in public service delivery and citizen engagement, there is a lack of empirical evidence on its impact on the quality of services, citizen satisfaction, and participation. And while there is a growing body of literature on the potential benefits of digital technology, there is still a need to examine its impact in different contexts, and to identify the factors that influence its effectiveness. Therefore, this study seeks to investigate the impact of digital technology on public service delivery and citizen engagement, and to identify the key factors that contribute to its success or failure.

The research questions that guide this study are:

1. What is the impact of digital technology on public service delivery and citizen engagement?
2. What are the key factors that influence the effectiveness of digital technology in public service delivery and citizen engagement?
3. How can digital technology be leveraged to improve public service delivery and citizen engagement?

This study is significant because it will provide empirical evidence on the impact of digital technology on public service delivery and citizen engagement, and identify the key factors that contribute to its effectiveness. The findings of this study will be relevant to policymakers, government officials, and practitioners in the field of public administration, as well as researchers and scholars interested in the intersection of digital technology and public service delivery. The study will also contribute to the broader discourse on digital transformation in the public sector and its implications for governance and democracy.

The scope of this study is limited to the impact of digital technology on public service delivery and citizen engagement. The study will focus on the use of digital technology in the context of government services, and will not examine its impact on other sectors. The study will be conducted in Isabela City, Basilan and its findings may not be generalizable to other contexts.

II. METHODS

This study aims to investigate the impact of digital technology on public service delivery and citizen engagement. To achieve this objective, an online survey questionnaire will be administered to 251 residents of Isabela City, Basilan. The survey questionnaire will consist of questions related to the use of digital technology in public service delivery and citizen engagement, as well as the impact of such technology on the quality of services provided by the government.

The sampling technique used in this study will be snowball sampling. The initial set of respondents will be selected randomly, and they will be asked to refer other individuals who may be interested in participating in the study. This method is useful in situations where the population of interest is difficult to reach or identify, and it allows for the selection of respondents who may not be easily accessible through traditional sampling methods. Data will be collected through a survey questionnaire. The questionnaire will consist of close-ended questions, with options given on a Likert scale. The questionnaire will be distributed electronically to the selected participants via email and other social media platforms. They will be given a week to complete the questionnaire. To ensure a high response rate, follow-up reminders will be sent to non-responders after three and five days. The data collected will be analyzed using descriptive statistics such as frequency and percentage. The results will be presented in graphs and charts to facilitate easy interpretation.

The research will be conducted in accordance with existing ethical principles. Respondents will be informed about the purpose of the study, and their consent will be obtained before their participation. All data collected will be kept confidential and anonymous, and the results of the study will be used for research purposes only.
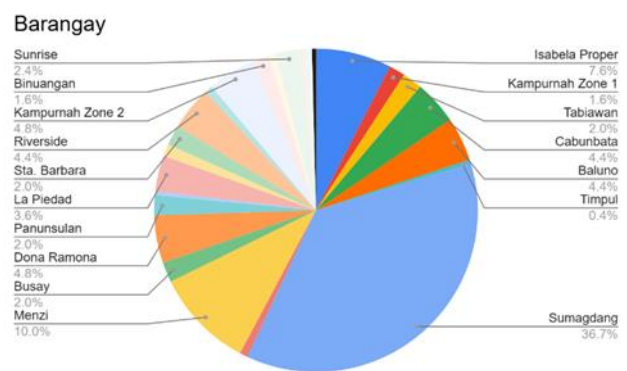
III. RESULTS AND DISCUSSION
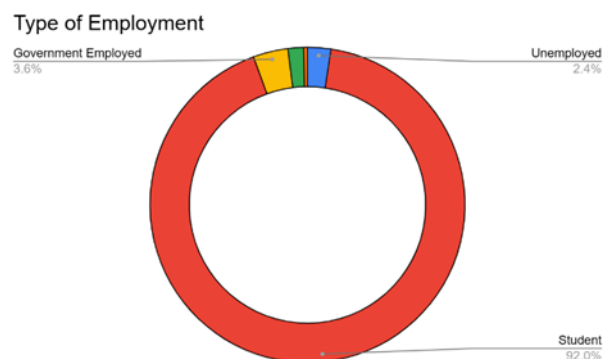

Figure 1. Barangay

Figure 2. Type of Employment

Figure 2 shows that the majority of the respondents are students, comprising 92% of the total sample. This is not surprising, as the study focuses on the impact of digital technology on public service delivery and citizen engagement, which is a topic that may be of particular interest to students who are often tech-savvy and reliant on technology in their

daily lives. It is noteworthy that only a small percentage of the participants are government employees (3.6%) and unemployed (2.4%). This may suggest that the study may have limited generalizability to these populations, as their perspectives on the impact of digital technology on public service delivery and citizen engagement may be different from those of students. However, the high percentage of student respondents provides valuable insights into the attitudes and experiences of this demographic regarding the use of digital technology in public service delivery and citizen engagement. The study can provide valuable information for policymakers and government agencies in designing and implementing effective digital strategies to enhance public service delivery and citizen engagement, particularly among the younger population.
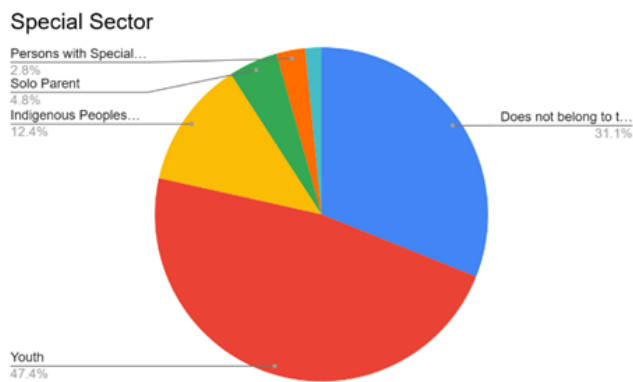

Figure 3. Special Sector

Figure 3 reveals a diverse range of respondents from various special sectors. The study found that 2.8% of the respondents identified as Persons with Special Needs, 4.8% as Solo Parent, 12.4% as Indigenous People, 31.1% did not belong to any special sector, and 47.4% identified as Youths. The presence of these diverse groups is significant as it highlights the importance of ensuring that public services and citizen engagement initiatives are inclusive and accessible to all members of the community, including those who may be marginalized or underrepresented. For instance, digital technology can provide new opportunities for Persons with Special Needs and Solo Parents to access public services and participate in citizen engagement activities that they may have otherwise found challenging due to their specific circumstances. It is also noteworthy that nearly half of the respondents identified as youths, which indicates the importance of considering their perspectives and needs when designing and implementing digital strategies for public service delivery and citizen engagement. Young people are often early adopters of new technologies and may have unique insights into how digital tools can be used effectively to enhance public service delivery and engagement. The diverse range of respondents in this study provides valuable insights into the impact of digital technology on public service delivery and citizen engagement across different sectors of the community. These findings can inform the development of more inclusive and effective digital strategies for public

services and citizen engagement initiatives that prioritize the needs of all members of the community.
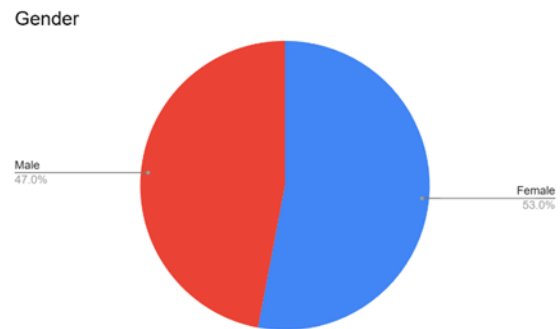

Figure 4. Gender

Figure 4 indicates a near-equal gender distribution among the respondents, with 47% identifying as male and 53% identifying as female. This gender balance is significant as it highlights the importance of considering gender perspectives when designing and implementing digital strategies for public service delivery and citizen engagement.
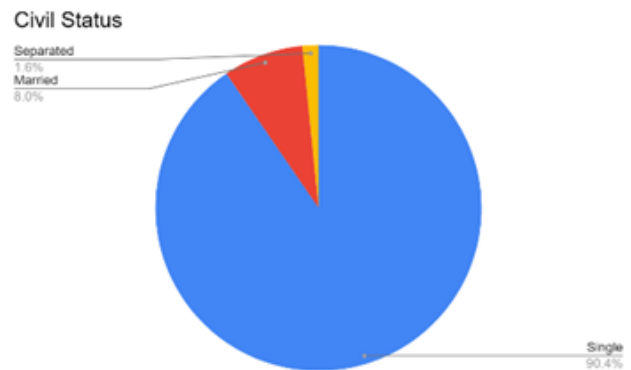

Figure 5. Civil Status

Figure 5 shows that the majority of respondents (90.4%) identified themselves as single, while 8% were married and 1.6% were separated. These findings indicate that a large portion of the respondents are likely to be students or young professionals who have not yet entered into a long-term commitment such as marriage or a domestic partnership. This demographic breakdown is important to consider when designing digital strategies for public service delivery and citizen engagement, as it suggests that a significant portion of the target audience for such initiatives may be younger individuals who are more likely to be comfortable with and reliant upon digital technologies. Therefore, policymakers and service providers should prioritize the development of digital tools that are user-friendly and accessible to this demographic, in order to maximize the effectiveness of such initiatives.

Figure 6 suggests that the vast majority of respondents were aged 14-30 (95.6%), with only a small percentage falling into the 31-40 age bracket (4%) and an even smaller percentage falling into the 41-50 age bracket (0.4%).
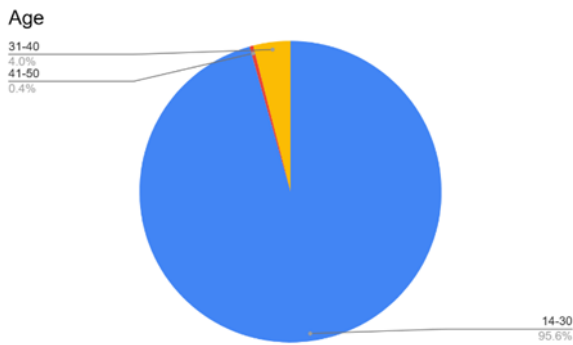
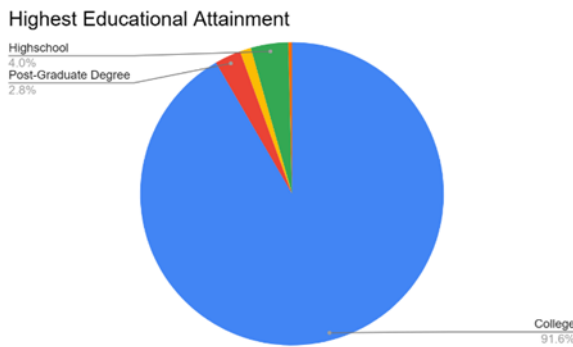Figure 6. Age Distribution

Figure 7. Highest Educational Attainment

Figure 7 suggests that the vast majority of respondents were college degree holders (91.6%), high school graduate with 4% and an even smaller percentage for those with post-graduate degrees (2.8%).
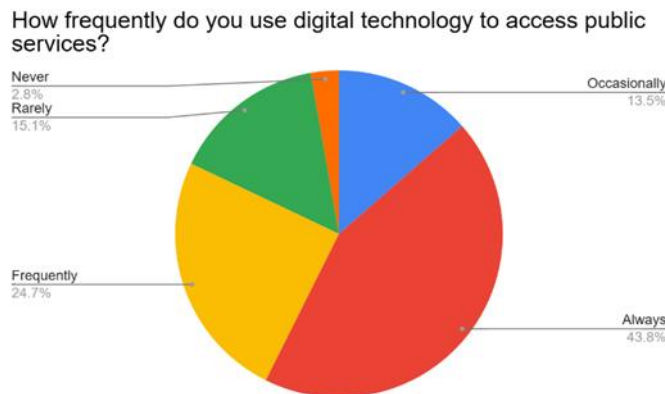

Figure 8. Survey Q1

Figure 8 shows that among the 251 respondents, majority of them (43.8%) always use digital technology to access public services. This indicates that digital technology has become an integral part of their daily lives, and they rely heavily on it to access public services. On the other hand, 24.7% of the respondents frequently use digital technology to access public services, which means that they use it quite often but not as frequently as those who always use it. This implies that digital technology is still essential to them but not as

critical as it is for those who always use it. Furthermore, 15.1% of the respondents rarely use digital technology to access public services, suggesting that they prefer other means of accessing public services. This could be due to various reasons, including lack of access to digital technology or lack of trust in its use. In addition, 13.5% of the respondents occasionally use digital technology to access public services, which means that they use it infrequently. This could be due to their preference for traditional methods of accessing public services or lack of knowledge on how to use digital technology. Lastly, 2.8% of the respondents never use digital technology to access public services, which indicates that they do not rely on digital technology to access public services at all. This could be due to various reasons, including lack of access to digital technology or preference for traditional methods of accessing public services. The results show that digital technology is widely used to access public services among the respondents, with a significant proportion always using it. This suggests that digital technology has become an essential tool for accessing public services and that efforts should be made to ensure that it is accessible and user-friendly to all citizens.
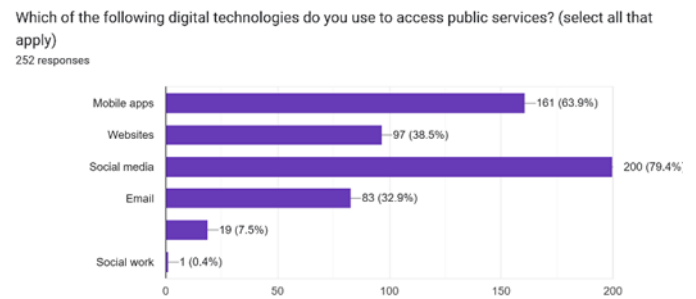

Figure 9. Survey Q2

Figure 9 indicates that a majority of the respondents, 79.4%, used social media to access public services, followed by mobile applications at 63.9%. The use of websites and email to access public services was reported by 38.5% and 32.9% of the respondents, respectively. These results are not surprising, as social media and mobile applications have become increasingly popular in recent years and are widely accessible through smartphones and other mobile devices. The high use of social media to access public services suggests that government agencies and public service providers should consider expanding their presence on social media platforms to better engage with citizens and provide timely and relevant information. It also highlights the importance of ensuring that digital services are mobile-friendly and accessible to users who may not have access to traditional computers. The lower use of websites and email to access public services may indicate that these channels are not meeting the needs and expectations of citizens. Government agencies and public service providers should take this feedback into account and invest in improving their digital offerings to better meet the needs of citizens. The findings of this study suggest that digital technology plays a significant role in how citizens

access public services. As such, government agencies and public service providers must prioritize the development of digital tools and platforms that are user-friendly, accessible, and responsive to the needs and expectations of citizens.
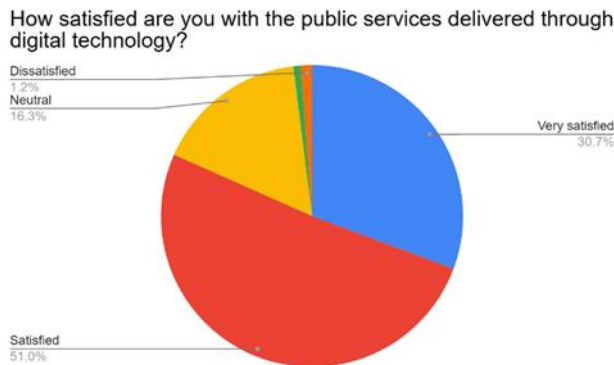

Figure 10. Survey Q3

Figure 10 reveals that the majority of the respondents, 81.7%, were either very satisfied or satisfied with the public services delivered through digital technology. Only 1.2% of the respondents expressed dissatisfaction with the services provided. This indicates that digital technology has a positive impact on public service delivery, leading to increased citizen satisfaction. The findings of this study suggest that the use of digital technology has a significant impact on citizen engagement and satisfaction with public service delivery. As such, governments and public service providers should continue to invest in digital technology to improve the accessibility and quality of public services.

Figure 11. Survey Q4

Figure 11 reveals that the majority of the respondents believed that accessing public services through digital technology provides numerous benefits. The benefits of convenience and accessibility were reported by 66.1% of the respondents, while 69.7% stated that digital technology has improved the efficiency and faster delivery of public services. Furthermore, 27.1% of the respondents believed that using digital technology reduces costs for both citizens and service providers. The finding that the use of digital technology provides convenience and accessibility aligns with previous research on the subject. For instance, Tadesse and Baheta

(2020) found that citizens in Ethiopia consider online public services to be more convenient and accessible than traditional in-person services. Additionally, the results of this study support the argument that digital technology can improve the efficiency of public service delivery. This finding is consistent with previous research by Gao et al. (2019), who found that digital technology can help to streamline the delivery of public services, leading to improved efficiency and faster response times. Moreover, the finding that digital technology can reduce costs for both citizens and service providers is consistent with the previous research. For example, a study by Lee and Hwang (2019) found that the implementation of online public services in South Korea led to significant cost savings for both citizens and government agencies. The results of this study suggest that digital technology has the potential to improve public service delivery and citizen engagement by providing convenient, accessible, efficient, and cost-effective services.
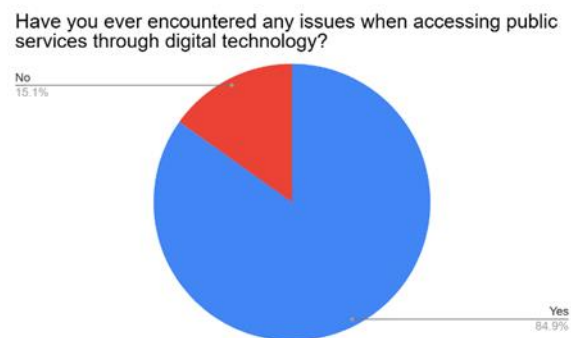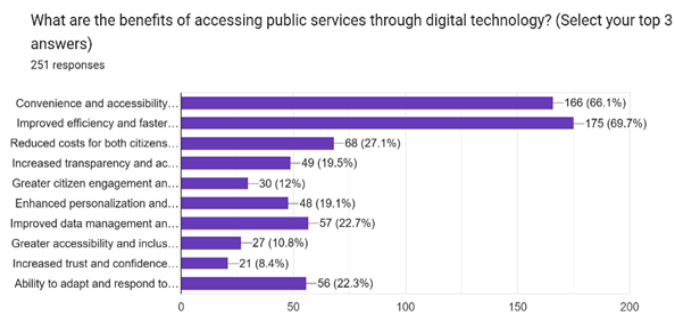

Figure 12. Survey Q5

Figure 12 shows that out of 251 respondents, 84.9% have encountered issues when accessing public services through digital technology, while 15.1% have not. This high percentage of respondents encountering issues with digital technology when accessing public services is concerning. It indicates that there are still significant challenges in making digital services accessible and user-friendly for all citizens. These challenges may include inadequate digital infrastructure, lack of digital literacy, and limited access to technology. The results also suggest that there is a need for further investment in digital technology to improve the delivery of public services and citizen engagement. By addressing the issues highlighted in the study, governments and public service providers can better serve citizens and promote inclusive and equitable access to public services. Furthermore, the study's findings highlight the importance of understanding citizens' experiences with digital technology when designing and implementing digital services. It is essential to take into account citizens' diverse needs, preferences, and abilities to ensure that digital services are accessible, usable, and useful for everyone. The study's results emphasize the need for continued efforts to improve the accessibility and usability of digital services in public service delivery and citizen engagement. By addressing these issues, governments and public service providers can promote digital

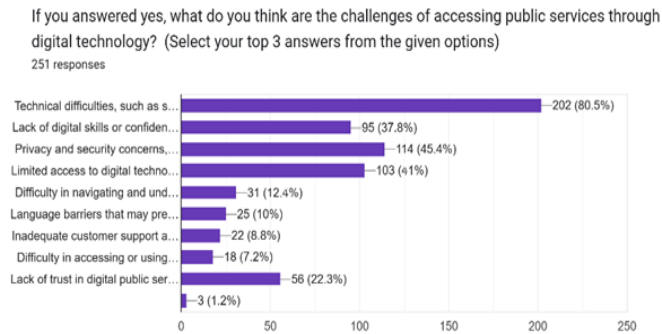inclusion and empower citizens to engage fully in the digital age.

Figure 13. Survey Q6

Figure 13 shows that out of 251 respondents, 80.6% believe that technical difficulties such as system errors, slow loading times, and connectivity issues are the biggest challenge in accessing public services through digital technology. 45.2% of the respondents also expressed privacy and security concerns such as data breaches or identity theft, while 37.7% cited a lack of digital skills or confidence in using digital technology to access public services as a significant challenge. The high percentage of respondents identifying technical difficulties as the primary challenge in accessing public services through digital technology is not surprising. System errors, slow loading times, and connectivity issues can significantly affect the usability and accessibility of digital services, leading to frustration and a lack of trust in the technology. Governments and public service providers need to invest in robust and reliable digital infrastructure to address these challenges and ensure that citizens can access public services seamlessly and efficiently. The study's results also highlight the importance of privacy and security in digital service delivery. Data breaches and identity theft can have severe consequences for citizens, leading to financial loss, reputational damage, and loss of trust in the public service providers. Governments and public service providers must prioritize data protection and implement robust security measures to safeguard citizens' personal information. Finally, the study's findings underscore the need for digital literacy initiatives to address the challenges of accessing public services through digital technology. A lack of digital skills or confidence can limit citizens' access to digital services and prevent them from realizing the benefits of digital technology. Governments and public service providers can promote digital literacy through training programs, educational resources, and outreach initiatives to ensure that all citizens can access public services through digital technology. The findings of this study highlight the challenges that citizens face when accessing public services through digital technology. Governments and public service providers must address these challenges by investing in robust digital infrastructure, prioritizing data protection and security, and promoting digital literacy

initiatives. By doing so, they can improve the accessibility and usability of digital services and promote inclusive and equitable access to public services.
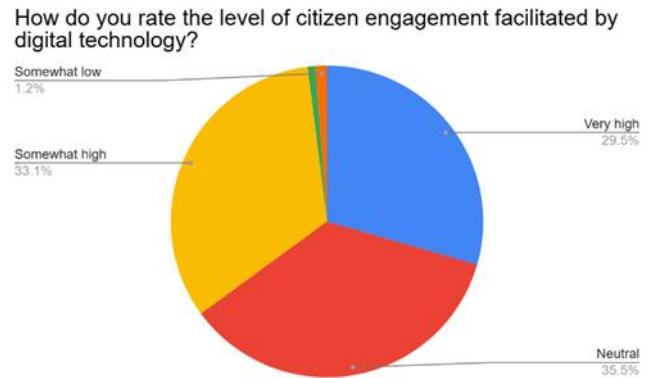

Figure 14. Survey Q7

Figure 14 shows that out of 251 respondents, 62.6% (29.5% + 33.1%) rate the level of citizen engagement facilitated by digital technology as high or very high, while only 1.2% rate it as somewhat low. The majority of the respondents (35.5%) remain neutral. The high percentage of respondents rating the level of citizen engagement facilitated by digital technology as high or very high is a positive indication of the potential of digital technology in promoting citizen engagement. Digital technology can provide citizens with new opportunities to engage with public service providers, participate in decision-making processes, and express their opinions on public policy issues. However, it is worth noting that a significant proportion of respondents (35.5%) remain neutral on this question, indicating that there is room for improvement in the level of citizen engagement facilitated by digital technology. It suggests that while digital technology has the potential to increase citizen engagement, there are still barriers to participation that need to be addressed. Furthermore, the study's findings also suggest that there is a need for further research and evaluation of the impact of digital technology on citizen engagement. While the results of this study are promising, more research is needed to assess the effectiveness of different digital engagement strategies and tools in promoting citizen engagement and participation. Overall, the study's results provide insight into the current state of citizen engagement facilitated by digital technology. While there is a significant proportion of respondents who rate the level of citizen engagement as high or very high, there is still room for improvement. Governments and public service providers need to continue to invest in digital technology to enhance citizen engagement and participation and work towards removing any barriers that prevent citizens from engaging fully in the digital age.

Figure 15 reveals that the majority believe that social media platforms (71.8%), online forums and chatbots (64.7%), and mobile apps (50%) have the potential to improve citizen engagement with public services. Social media platforms, such as Facebook, Twitter, and Instagram, are popular communication channels that allow citizens to share feedback

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and connect with other users and public service providers. Social media platforms can provide an easy and accessible way for citizens to engage with public service providers, express their opinions, and stay informed about public policy issues.
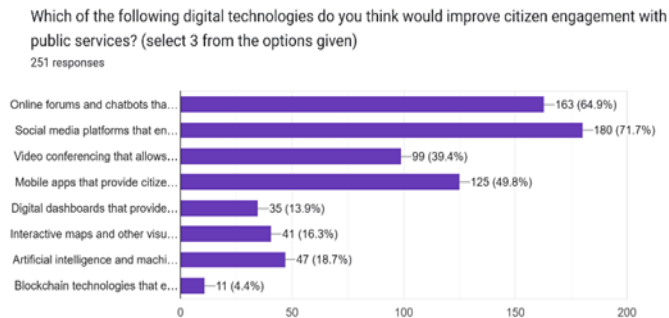

Figure 15. Survey Q8

Online forums and chatbots, on the other hand, offer citizens the opportunity to ask questions and receive real-time support from public service providers. These platforms can improve citizen engagement by providing citizens with personalized and efficient support, which can enhance their overall experience with public services. Mobile apps that provide citizens with access to information and services are also seen as a way to improve citizen engagement. Mobile apps can offer citizens a convenient and user-friendly way to access public services, which can improve their satisfaction and engagement with these services. However, it is important to note that while these digital technologies have the potential to improve citizen engagement with public services, there are still challenges that need to be addressed. For example, ensuring that citizens have access to these digital technologies, and that they are designed to be accessible and user-friendly, is crucial. Additionally, concerns around data privacy and security need to be addressed to ensure citizens can trust and use these digital technologies confidently. In conclusion, the study's results highlight the potential of social media platforms, online forums and chatbots, and mobile apps in improving citizen engagement with public services. Governments and public service providers need to continue to invest in these digital technologies and address any barriers that prevent citizens from engaging fully with public services in the digital age. By doing so, they can improve the accessibility, efficiency, and overall experience of public services for citizens.

Figure 16 founds that out of 251 respondents, the majority believe that public service providers should take certain steps to improve digital service delivery and citizen engagement. These steps include encouraging user feedback and seeking inputs from citizens (65.9%), providing training and support to citizens to help them develop digital skills (63.1%), and increasing investments in digital infrastructure and technology (42.9%). Encouraging user feedback and regularly seeking inputs from citizens is an important step for public service providers to improve their digital service delivery.
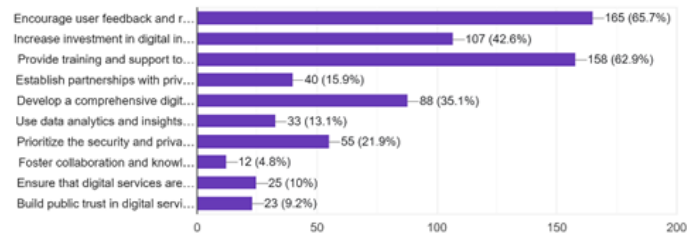

Figure 16. Survey Q9

By listening to citizens and understanding their needs and preferences, public service providers can tailor their digital services to better meet the needs of citizens. This can lead to more effective and efficient service delivery and can help build trust and confidence in public services. Providing training and support to citizens to help them develop digital skills and overcome barriers to accessing digital services is also crucial. Digital literacy is not evenly distributed among citizens, and many may face barriers to accessing and using digital services, such as lack of access to technology or limited digital skills. Public service providers can play a role in addressing these barriers by offering training and support to citizens to develop their digital skills, which can help them access and use digital services effectively. Increasing investments in digital infrastructure and technology is also seen as a way to improve digital service delivery and citizen engagement. Public service providers need to ensure that they have the necessary digital infrastructure and technology to support their digital services. This may require significant investments in areas such as broadband infrastructure, data security, and digital platforms, among others. Overall, the study's results highlight the importance of public service providers taking proactive steps to improve their digital service delivery and citizen engagement. By encouraging user feedback, providing training and support, and investing in digital infrastructure and technology, public service providers can improve the accessibility, efficiency, and overall quality of their digital services. This can help build trust and confidence in public services and enhance citizen engagement with these services.

IV. CONCLUSION AND RECOMMENDATION

The findings of this study provide valuable insights into the use and impact of digital technology on public service delivery and citizen engagement. It highlights the importance of digital technology in improving the accessibility, efficiency, and overall experience of public services for citizens. It also shows that digital technology has become an essential tool for accessing public services, and efforts should be made to ensure that it is accessible and user-friendly to all citizens. It is imperative that governments and public service providers prioritize the development of digital tools and platforms that are responsive to the needs and expectations of citizens. It emphasizes the need for continued efforts to improve the

accessibility and usability of digital services in public service delivery and citizen engagement. Governments and public service providers need to invest in robust digital infrastructure, prioritize data protection and security, and promote digital literacy initiatives to promote digital inclusion and empower citizens to engage fully in the digital age. The study's results highlight the potential of social media platforms, online forums and chatbots, and mobile apps in improving citizen engagement with public services. Governments and public service providers need to continue to invest in these digital technologies and address any barriers that prevent citizens from engaging fully with public services in the digital age. Overall, the study's results provide valuable recommendations for public service providers to improve their digital service delivery and citizen engagement. By encouraging user feedback, providing training and support, and investing in digital infrastructure and technology, public service providers can enhance citizen engagement with public services, build trust and confidence in these services, and promote inclusive and equitable access to public services. In conclusion, the study's findings provide a roadmap for governments and public service providers to leverage the power of digital technology to improve public service delivery and citizen engagement. By implementing the recommendations outlined in this study, public service providers can create a more inclusive and responsive public service delivery system that meets the needs and expectations of citizens in the digital age.

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