

THE PLEDGE OF SMART CITY DEVELOPMENT: THE E-GOVERNANCE (UNDER) DEVELOPMENT IN THE PHILIPPINES

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ABSTRACT

This study examines how aspiring smart cities in the Philippines utilize their E-governance programs to shape the development of public service delivery and democratic participation. The study employed qualitative analysis and a review of the City's E-governance services, mobile application, and web portal as methodological approaches. The research drew upon the foundational works of Bertot, Jaeger, McClure (2008), and Yildiz (2012) to guide the analysis of the findings. A qualitative analysis and iterative approach were adopted that involved gathering data from various sources, such as official documents, reports, and websites with key stakeholders involved in implementing E-governance initiatives in the selected smart cities. Additionally, a review was conducted on the City's E-governance services, mobile application, and web portal. The findings infer an apparent fragmented, inconsistent, and inefficient utilization of E-governance initiatives in the Philippine cities. The lack of standardization and coordination among different cities' E-governance programs hinders their effectiveness in improving public service delivery and promoting democratic participation. Consequently, this study emphasizes the need for standard policies and active collaboration among stakeholders, particularly national government agencies, to address the challenges. This study contributes to the literature on smart cities and E-governance, particularly in developing countries like the Philippines. It sheds light on the complexities and potential solutions in implementing effective E-governance strategies, highlighting the importance of standard policies and collaboration among stakeholders to unlock the full potential of E-governance initiatives.

Keywords: E-governance, Smart City, Government-to-citizen services, Citizen-centered governance, Digital Governance

INTRODUCTION

Development is a broad concept with many factors that affect urbanized areas across the world (Xu & Spatolisano, 2021). Despite the efforts of all sectors of society to promote development, urban challenges continue to pose a significant threat, such as overpopulation, natural disasters, transportation problems, pollution, health issues, rising unemployment, and limited access to

necessities. These challenges lead to a decrease in the quality of life for people living in these highly urbanized areas. As a solution to these problems, the Smart City concept is being explored in many cities around the world (Pratama & Imawan, 2019; Ramos et al., 2022). The Smart City concept has a significant potential to enhance the livability and sustainability of urban areas. By utilizing innovative technologies and data-driven solutions, cities can improve urban life in transportation, energy,

healthcare, governance, and public services. However, it is crucial to involve the public in designing and implementing Smart City initiatives to ensure their effectiveness.

In the Philippines, the Department of Science and Technology Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) developed a Smart Sustainable city framework that addresses a variety of present and future urban challenges while incorporating the United Nations Sustainable Development Goals (SDGs) 2030 (Department of Science and Technology, n.d.). It defines a Smart city as “a complex ecosystem that involves people, organizations, businesses, policies, laws, and processes that are integrated to achieve desired outcomes. The city is adaptive, responsive, and relevant, and it leverages technology to accelerate, facilitate, and transform this ecosystem”. Further, the Bureau of Philippine Standards (BPS) has adopted the International Organization for Standardization (ISO) definition of a Smart City that has the “capability to promote social, economic, and environmental sustainability, while effectively addressing challenges such as climate change, population growth, and political and economic instability. This is accomplished by enhancing societal engagement, implementing collaborative leadership methods, fostering interdisciplinary collaboration, and leveraging data, information, and advanced technologies. The primary objective is to ensure excellent services and a high standard of living for all individuals in the city, including residents, businesses, and visitors, both today and in the future. These advancements are pursued in a manner that avoids unfair disadvantages to any specific group and minimizes harm to the natural environment.” (Philippine National Standard (PNS) ISO 37122:2020).

Various studies and literature on "smart cities" unanimously agree that these cities utilize

advanced technology to enhance the quality of life for their constituents and increase their opportunities (Ramos et al., 2022; Setijadi et al., 2019; McKinsey, 2018; Ruhlandt, 2018). Therefore, the main subject of Smart City is the public, to be more precise, the development of their overall quality of life.

Smart City key indicators are all-encompassing and integrate the elements of development, starting from popular participation to social capital (Department of Science and Technology, n.d.; Ramos et al., 2022). Hence, taking advantage of the power of technology to collaborate and replicate various developments through innovative technology with open, transparent, and secured data. The beneficiaries (citizens) must be part of the decision process and have access to these data to make any Smart City initiative efficient and effective (Das & Misra, 2017). One way to realize this is to adopt the critical indicator of Smart City's infrastructure coupled with democratic governance – E-governance.

E-governance as the Foundation of Smart City Development

E-Governance, as defined by the United Nations Division for Public Economics and Public Administration (UNDPEPA), encompasses the utilization of Information and Communication Technologies (ICTs) by public organizations to enhance service delivery, provide reliable information and knowledge accessibility, and promote citizen participation in governance (UNDESA, 2001). This transformative approach to governance necessitates collaboration between the public and private sectors, as well as active involvement from community members, to foster efficiency and inclusivity (Bertot et al., 2012). The UNDPEPA emphasizes the importance of several key aspects for efficient E-Governance, including establishing feedback mechanisms for public

officials, creating support portals, ensuring transparency in government transactions, addressing digital divides, posting ordinances, and soliciting public opinions to encourage citizen participation (UNDESA, 2001).

In recent years, the Department of Information and Communication Technology (DICT) and various government agencies have embarked on integrating ICT-based applications and networks into their services and programs (Magno, 2018). Noteworthy initiatives in this regard include the National Retail Payment System (NRPS) implemented by the Bangko Sentral ng Pilipinas (BSP), the "eGov Pay" online payment platform for government transactions, the Department of Trade and Industry's (DTI) e-commerce roadmap aimed at maximizing digital transactions for micro, small, and medium enterprises (MSMEs) by 2022, and the E-PESO program, funded by USAID and in partnership with the BSP, which focuses on promoting digital literacy among Filipinos to facilitate secure digital payments and financial transactions (World Bank, 2020).

The lack of digitalization of government services has been identified as a barrier to citizen engagement in the Philippines, as highlighted in the Philippine Digital Economic Report (World Bank, 2020). The report emphasizes the need for the Philippine government to adopt and implement policies that promote the development and strengthening of digital infrastructures. It concludes that effective e-governance measures are vital for delivering quality public services, promoting digital competitiveness, and facilitating the country's economic recovery from the pandemic.

There is substantial support from both the state and private sectors to harness the ICT-based capabilities of the government, especially with the establishment of the Department of Information and Communication Technology (DICT) and the implementation of the "National ICT Development" program (Magno, 2018). Consequently, numerous

E-Governance projects have been adopted and implemented by national and local government units (LGUs). In fact, several cities and municipalities in the country have been recognized and awarded for their ICT-based initiatives in recent years (NICP, 2012). The Digital Governance Awards (DGA), organized by the National ICT Confederation of the Philippines (NICP), the Department of the Interior and Local Government (DILG), the Department of Information and Communication Technology (DICT), and Cyber City Teleservices Inc., serve as a platform to promote and commend the use of ICT networks and infrastructures in governance. This annual event highlights and rewards LGUs that have demonstrated best practices in leveraging digital infrastructure to improve public service delivery (Zurbano, 2019).

Evaluation of the E-Governance entries in the Digital Governance Awards (DGA) focuses on several criteria, including the innovative management of ICT-based services, the impact of projects on stakeholders, particularly the public, the alignment of initiatives with the LGU's objectives, the sustainability of the projects, and the potential for other LGUs to replicate the eGovernment initiatives (NICP, 2012). These assessments aim to identify and promote successful e-governance practices that can be adopted and implemented by other local government units, thereby fostering widespread digital transformation in governance.

OBJECTIVES OF THE STUDY

The core objective of this research is to evaluate the influence of E-Governance initiatives on enhancing the quality delivery of public services, with a specific focus on smart city development within the country. The study meticulously explores the distinctive features of E-Governance projects, specifically delving into the Government-to-Citizen (G2C) services



acknowledged by the Digital Governance Awards (DGA) for the years 2019, 2020, and 2021. Noteworthy components of examination include the G2C initiatives undertaken by the City government, encompassing mechanisms such as feedback channels for public officials, support portals, transparency in government transactions, initiatives addressing digital divides, dissemination of ordinances, and public opinion platforms.

This research adopts a Citizen-centered governance approach facilitated by ICT-based infrastructure to comprehensively investigate the narratives of services integrated into the City's G2C projects. Unlike quantitative assessments, this study does not seek to measure the efficiency of the city government's ICT-based initiatives numerically. Instead, it aims to draw inferences from the key elements and features embedded within its G2C services, assessing the extent to which these initiatives embody the major components of effective E-Governance and contribute to the enhancement of public services.

The study posits that cities recognized by the DGA serve as models for other Philippine Local Government Units (LGUs), offering exemplary best practices. The research, therefore, aims to proactively propel the Smart city framework and the national government's agenda forward by encouraging the replication of successful models through devolved and local participation. By fostering the involvement of citizens in their respective localities, the study seeks to advance the overall Smart city agenda on a broader scale.

METHODOLOGY

This study aims to create a comprehensive framework that integrates Smart City E-Governance and Development, with a specific focus on enhancing public service quality and democratic participation. The primary objective is to address this by examining the Citizen to Government (C2G) category of electronic

governance, which aims to make government services more accessible and convenient through round-the-clock access.

E-Governance plays a crucial role in empowering citizens and fostering their active participation in the democratic process. Citizens considered vital contributors to policy formulation and implementation for the common good (Brown, 2005), are provided with self-service tools to strengthen their role in the state-citizen relationship. Focusing on the government-to-citizen (G2C) category, the study delves into its key features identified by Yildiz (2007): (a) Communication, (b) Productivity, (c) Effectiveness and Efficiency, (d) Standardization of information and services, and (e) Transparency and Accountability.

According to the United Nations Development Programme's e-Governance and Public Administration (UNDPEPA), e-Governance involves the use of ICT-based infrastructures by public organizations to enhance services, promote access to governance, and encourage citizen participation. Table 1, developed by UNDPEPA, illustrates this framework. for e-Governance that delineates the usage and purpose of ICT in governance (UNDESA, 2001).

Table 1
UNDPEPA e-Governance Framework (UNDESA, 2001)

Electronic Government (eGovernment)	Interorganizational relationships <ul style="list-style-type: none"> • Public service delivery • Policy Coordination • Policy implementation
Electronic Administration (e-Administration)	Intra-organizational relationships <ul style="list-style-type: none"> • Policy development • Knowledge management • Organizational activities
Electronic Governance (eGovernance)	Facilitating communication among citizens, government organizations, and elected officials <ul style="list-style-type: none"> • Transparent decision-making • Democratic process • Open Government

This study utilizes the third component of the framework, which involves the interaction between citizens or the "public" and city officials in the realm of E-Governance. Collaborative machinery, policies, programs, and systems that enable the direct participation of all stakeholders using ICT-based networks are integral to the functioning of E-Governance and its ultimate objectives (Alshehri & Drew, 2010; Backus, 2001; Bertot et al., 2012; Le Blanc, 2020; Yildiz, 2007). The G2C initiatives identified in this study will be described in accordance with the aforementioned qualities, focusing on the two key objectives of E-Governance: the delivery of high-quality public services and democratic participation. Figure 2 below illustrates the main framework of the study, serving as a guide for understanding how E-Governance has been employed to shape public services and promote citizen participation through electronic means, particularly within the G2C domain.

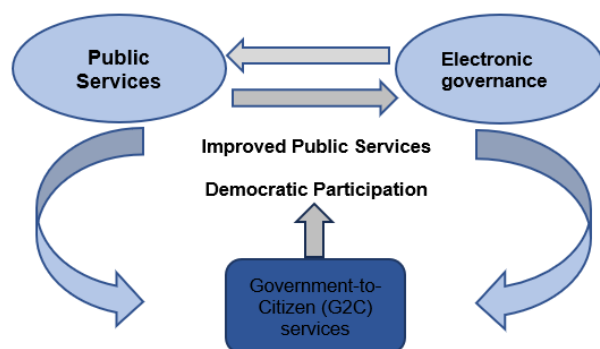


Figure. 1. The Framework of E-Governance vis-à-vis development as adopted by the author from the combination of work of Bertot, Jaeger, and McClure (2008), and Yildiz (2007).

This research employs an iterative strategy method to analyze and evaluate the E-Governance efforts of various cities. The following approaches, based on the research method suggestions from

Yildiz (2007) and Bertot et al. (2012), have been utilized:

Literature review. This method enabled the author to establish a comprehensive understanding of the exemplary qualities of E-Governance, mainly focusing on the G2C services.

Content Analysis. Building upon the findings of the literature review, the author identified and analyzed a diverse range of G2C efforts implemented by the cities under study. The author carefully assessed documents available on official websites and social media accounts of the cities, including Executive orders, Resolutions, Ordinances, official reports, and other materials or recognitions representing their G2C initiatives.

Portal or Website review. This approach facilitated the identification of various mechanisms and provisions within the portals or websites of the cities. Specifically, the research examined the presence and effectiveness of feedback mechanisms from the public, support portals, initiatives aimed at enhancing transparency in government transactions, efforts to address digital divides and promote inclusivity, the posting of ordinances, and the incorporation of public opinions.

By employing these iterative research methods, the study aims to provide a comprehensive analysis of the cities' E-Governance initiatives, focusing on the identified G2C services.

RESULTS AND DISCUSSIONS

1. The E-governance Excellence Awards: The selection process

The Digital Governance Awards (DGA), formerly known as the eGov Awards, is an annual search for exceptional digital governance efforts by Local Government Units (LGUs) that effectively and efficiently deliver public services to constituents and stakeholders through Information

and Communication Technologies (ICTs). This collaborative endeavor was initiated in 2019 by the Department of Information and Communications Technology (DICT), the National ICT Confederation of the Philippines (NICP), the Department of the Interior and Local Government (DILG), and Cybercity Teleservices (NICP, 2012).

The DGA recognizes outstanding LGUs at various levels, including cities, municipalities, and provinces, across six categories: "Best in Customer Empowerment (G2C) Award," "Best in Business Empowerment (G2B) Award," "Best in Inter-Operability (G2G) Award," "Best in Government Internal Operations (G2I) Award," "Best in COVID-19 Pandemic Response," and "Best in Government Internal Operations (G2P) Award." The evaluation and awarding of the DGA 2022 occurred from January 16 to February 24, 2023.

For this study, the focus will be on the list of winners from 2019 to 2021, particularly the first runner-up or champions at the city level for their G2C projects. The champions in the G2C or Customer Empowerment Award category from 2019 to 2021 are as follows:

1. Makatizen Card project of Makati City (2019)
2. Education in the Time of COVID-19 in San Juan City (2020)
3. Connection for Inclusion of the City of Manila (2021)

The DGA awardees are selected through a rigorous process. Nominations are submitted through the designated portal available on the DICT, DILG, and NICP websites, as well as their social media pages and annual memorandums from the DILG. Projects that have previously won a DGA cannot be considered for the current award. However, LGUs that achieved second or third place in the previous DGA can compete again in the current year. Projects must have been

operational for at least a year to be eligible, and LGUs can only submit one entry per main category.

It is important to note that the DGA does not accept certain types of projects, including (NICP, 2012):

- a) Programs/services that utilize existing public-accessible software (e.g., Facebook Messenger, GSuite, Viber, and alike.)
- b) Initiatives implemented for less than a year (excluding the time spent on program conception and development)
- c) Programs/services with limited usage within the LGU
- d) Multiple entries from a single LGU in one category
- e) Programs/services related to contact tracing and vaccination efforts.

Among the awardees, two initiatives were implemented during the Covid-19 pandemic (Manila and San Juan), while the Makatizen Card project was a pre-pandemic initiative by the City Government of Makati. This study focuses on the relevant initiatives supporting the implementation of their G2C projects, such as their web and app portals. The following section provides a brief background and features of the G2C winners, along with content analysis and portal review based on the United Nations Development Programme - E-Government for People (UNDPEPA) recommendations.

2. G2C Background and Key Features

2.1. MakatiZen Card and "Proud MakatiZen" Web and App portals of Makati City

The MakatiZen Card is a pioneering initiative undertaken by the local government of Makati City, in partnership with Globe Telecom's subsidiary, G-Xchange Inc., and iBayad Online Ventures Inc. This government-issued photo ID with ATM capability, powered by Mastercard and



BancNet, aims to consolidate socioeconomic and financial services for the city’s residents. Launched on May 30, 2017, the MakatiZen Card embodies the Smart City agenda, utilizing a Public-Private Partnership (PPP) model to provide residents with enhanced access to a range of services. The MakatiZen Card serves as a multifunctional tool, offering residents an array of socioeconomic and financial services. Linked to a GCash wallet, a digital or mobile money service, the card enables residents to conveniently pay for city services, including taxes and cash allowances for government employees. By centralizing these transactions onto a single platform, the MakatiZen Card simplifies and streamlines the payment process, saving time and effort for residents.

One of the standout features of the MakatiZen Card is its integration with a "City-wide local merchant network." This network allows cardholders to make purchases, payments, and transactions with partnered merchants, sari-sari stores, and even ambulant vendors within Makati City. This wide range of participating merchants expands the convenience and accessibility of the card, empowering residents to transact seamlessly in their local community. Moreover, the financial burden of the project did not fall on the city government, as the launch of the MakatiZen Card was achieved at no cost to the government. This model highlights the potential for PPPs to facilitate the development of smart city initiatives without straining public finances.

According to the official website of the Makati City Government (makati.gov.ph/content/mayors-corner/speeches/881), the number of Makatizen Cardholders as of January 7, 2020, has surpassed 85,000, comprising both city government employees and residents. The E-Governance (G2C) project implemented by the local government of Makati has significantly enhanced the accessibility and convenience of various public services. These services include:

1. Blu Card - Senior Citizen financial assistance program (City Ordinance 2017-059):
Under this program, senior citizens and their families receive an annual cash gift through the Makatizen Card. The funds can be withdrawn using GCash e-wallet or BancNet Automated Teller Machines (ATMs).
2. Yellow Card - Makati Health Plus Program (MHP) (City Ordinance No. 2019-A-023):
The Makatizen Card acts as the identification card for health benefits under the Makati Health Plus Program. Eligible beneficiaries can avail themselves of Health Cash Allowances or medical subsidies without the need for additional documents (makati.gov.ph/content/news/4021).
3. Scholarship Grants (City Ordinance No. 2019-A-036):
Makati’s scholars at the college or university level can utilize the Makatizen Card to receive stipends and allowances as part of the City’s scholarship program, as stated in City Ordinance No. 2019-A-036 (makati.gov.ph/content/news/7021).

Additionally, the Makatizen Card played a vital role in the implementation of the "MAKA-tulong P5K for 500K+ Makatizens" program. This recent economic relief program was initiated by the city to assist residents affected by the COVID-19 pandemic. Individuals with a Makatizen Card and a valid Gcash account automatically received a P5,000 cash assistance through their e-wallet. The amount could be withdrawn from any bank ATM or Globe partner outlet, providing much-needed financial support (Manila Times, 2020).

Furthermore, the Makatizen App, a web and mobile application, was launched on June 1, 2017, during the 347th Founding Anniversary of the City. Developed through a public-private partnership (PPP) between the local government and Neo-

Converge ICT Solutions, Inc., it aims to provide immediate access to emergency hotlines and empower users to report crimes and related concerns within the city.

The Makatizen App offers the following services to registered users via the mobile app and Makati Web Portal:

1. Maka-SOS (Makati’s emergency SOS)

This feature enables both residents and non-residents to contact emergency hotlines with a single click. Users can also upload photos and videos as evidence. The mobile application automatically dispatches the necessary personnel, such as the police, fire trucks, and ambulances, to the dedicated "Command Center" of the city, including officers from the Makati Public Safety Department. Since its launch in 2017, the city government has observed a significant increase in incident reports, rising from 150 reports per day to 400.

2. Maka-Update (Makati Update)

This section provides round-the-clock information, news, and updates about the city.

3. Maka-Negosyo

This feature offers accessible information and downloadable forms for starting and operating a business in the city.

4. How Can We Help

Empowering end users, this section allows individuals to report concerns in their area, including traffic issues, illegal parking, stray animals, public disturbances, and construction or public utility-related problems.

These advancements in electronic governance through the Makatizen Card and the Makatizen App have significantly improved the delivery of

public services and strengthened citizen engagement in Makati City.

2.2. Educational Initiatives in the Time of Covid19 and “Makabagong San Juan” App and Web portals of San Juan City

The Local government of San Juan pledged to transform the city into a Smart City environment prioritizing quality education for all, particularly for public schools, teachers, and students. During the onslaught of the Pandemic, the city government initiated a partnership with DICT to pilot the latter’s program of Free WiFi for All. And partnered with Telecom giants, Globe and Smart Communications, to install WiFi hotspots in key areas of the city, particularly in all public schools (Sigue, 2021).

The program also included the procurement of school gadgets, laptops for teachers and tablets for students, in all public schools. This includes fast and reliable internet connection for the students to cope with the changing mode of delivery in all schools. The primary objective of the LGU is to provide school devices in a 1:1 ratio for both students and teachers including internet connections for the households of all public-school students.

The initiative was started in 2020 with more than 12,000 public school students or over 6, 000 households who initially received the free internet connection. In 2021, the LGU forged a partnership with Converge ICT Solutions Inc., to provide a Fiber optic internet and Learning Management System (LMS) (Garcia, 2022).

Recently, the said program further expanded by providing Fiber optic internet connection to all 13 public schools in the city and installing Smart TVs in every classroom (Alcober, 2022).

The “Makabagong San Juan” web and app portal, which could further support these initiatives by providing information and technical support to its beneficiaries, is in place and accessible 24/7.

This is the result of a Memorandum of Agreement between the LGU of San Juan and the MultiSys Technologies Corporation. The noticeable key features are the following;

1. **E-government** – government transactions and City information on the business permit licensing, real property tax, senior citizen management, motorized vehicle permit, civil registry information, and the Sanggunian management.
2. **E-Bills** would allow San Juan residents to pay their utility bills.
3. **E-Services** – where other programs of the LGU will be accessible such as Social Amelioration and Job Posting.
4. **E-Business** - an integrated platform for businesses around the city, where they can reach their San Juan residents and consumers. Like the E-services, however, it is not yet operational.

The City of San Juan gradually realizing its agenda to transform into a Smart City via quality access to education. However, there is no data showing whether those projects are supported by various ordinances or amendments passed by the LGU's legislative council.

2.3. City of Manila Connection for Inclusion and Go Manila App

The Connection for Inclusion project, implemented by the City of Manila in 2020, aimed to provide timely and quality public services to its constituents, primarily in education, through an ICT-based solution. This initiative, introduced during the Covid-19 pandemic, was carried out in collaboration with the DepEd Division of City Schools of Manila, also known as the Learners Information for Education (LIFE) Connection for Inclusion 2.0 project (Aro, 2021; Sigue, 2021). The project involved the distribution of laptops, pocket Wi-Fi devices, and tablets to public school teachers and students. Additionally, the City of Manila launched the "Go! Manila" web portal and mobile app, which provide a comprehensive platform for

accessing various local government services online.

The initial implementation resulted in the distribution of 11,000 laptops, pocket Wi-Fi devices to public school teachers, and 136,950 tablets equipped with data SIM cards for students (Philstar, 2020). In the subsequent year, 60,820 tablets were procured for new students (Aro, 2021). These hardware provisions aimed to bridge the digital divide and facilitate remote learning for students and educators in the City of Manila.

Further, the City Web portal enables constituents to avail themselves of the following services: (1) online processing and payment of Real Property and Business Tax; (2) online application and assessment for the issuance of CEDULA and Birth Certificate; (3) an integrated system for the issuance of Occupancy Permit; and (4) Health Certificate with Laboratory Scheduling and Processing. On the other hand, the Go Manila Mobile App functions as a mobile wallet, allowing users to pay utility bills, send and receive money, transfer mobile loads, and access the City Web portal services. The app is backed by the City Council Resolutions nos. 149 and 209 which mandated the City through the LGU's Chief Executive in establishing a smart city platform and web service development for e-services.

3. The following are the G2C initiatives of the three LGUs vis-à-vis UNDPEPA's E-governance required functionality (Table 1)

The data presented above clearly shows that certain key elements need improvement to provide efficient and effective E-governance services to their constituents in their respective LGU projects. The three recipients of the Digital Governance Awards share common challenges, including the need for mechanisms to collect public opinions, such as polling or online discussions, feedback mechanisms, and transparency in government projects.



Table 2

The results of E-governance initiatives, Web and App portal review on the required functionality for an efficient and effective government to citizens or G2C services

E-governance Required Functionality (UNDESA, 2001)	City of Makati MakatiZen Card & Mobile App (2019)	City of San Juan Education In the Time of Covid19 and “Makabagong San Juan” App (2020)	City of Manila Connection for Inclusion and Go Manila App (2021)
Feedback Mechanism	The "Contact Us" section of the Web Portal can be optimized to gather feedback on the Card. Additionally, users can post their queries in the Q&A section, where constituents' inquiries are addressed. The "How Can We Help" section on the App is a valuable platform for providing feedback on the services. It also facilitates collaboration and keeps users updated on the latest city events and updates.	There is no clear feedback mechanism in place.	There is no clear feedback mechanism in place.
Support Portal	The Q&A section, available at makati.gov.ph/forums/services/4/thread/30366, now serves as the official support portal of the local government, as indicated on their web portal. The "How Can We Help" section on the App also functions as the dedicated support portal for end users. The web portal conveniently provides contact details of the City government.	The "How Can we Help" section in the Web portal can be utilized to received incident reports with a provision to upload photos or proof online.	The Web and App Portal provide contact details (email addresses, landline and mobile numbers) for the following concerns; eSOA Computation Concerns (CTO License Division) Business Concerns (Bureau of Permits) Go! Manila Portal Technical concerns. The contact numbers are operationalize, Mondays to Fridays 9AM to 6PM, except Holidays.
Transparency of Government Transactions	This G2C feature promotes transparency by providing information about the local government's socio-economic programs. The App offers a platform to report crime and other public service concerns. However, there is currently no data available regarding the resolution or response rate for those valid concerns by the city government.	The G2C project released media reports but the App and website lacks data of other program specifically on the Education in Time of Covid19 project.	There is no provision on these G2C initiatives for the government transaction merely media reports are being released or shared. The App has several services which until today has not yet launched or being offered, particularly the e-Services and E-Commerce.



Address Social Obstacles of Digital Divides	<p>The Makatizen Card initiative effectively addresses and mitigates digital divides by distributing Debit cards. These cards serve multiple purposes, such as functioning as an ID and enabling cardholders to access financial benefits and services allocated to them.</p> <p>However, the App has limitations as it requires internet access and a smartphone or compatible device, which may pose challenges for individuals needing internet connectivity or owning such devices.</p>	<p>The Education in the Time Covid 19 provides internet access aside from the gadgets for both teachers and students, however there is no data showing the number of recipients is benefitting from the said initiative in a weekly or monthly basis. There is no reporting mechanism in placed as to the quality of their net speed in a daily basis.</p>	<p>The G2C initiative provided physical access like the internet connectivity and gadgets in every barangay.</p> <p>However, the effectiveness of it is not being monitored or no data available, which is particularly problematic given that many G2C programs lack any kind of feedback mechanism.</p>
Posting Ordinances	<p>The App provides news and updates on new ordinances and resolutions of the City council.</p>	<p>The App provides news and updates on new ordinances and resolutions of the city council. However, there are only a handful of them are available.</p>	<p>The Portal failed to allocate a menu for ordinances and resolutions of the city government. But the news and updates regarding the City are accessible.</p>
Public Opinions	<p>There is no clear public opinion section for the constituents to share their sentiments on any projects, ordinances or issues in the City where the LGU officials can identify and address valid concerns.</p>	<p>There is no clear public opinion section for the constituents to share their sentiments on any projects, ordinances or issues in the City where the LGU officials can identify and address valid concerns.</p>	<p>There is no clear public opinion section for the constituents to share their sentiments on any projects, ordinances or issues in the City where the LGU officials can identify and address valid concerns.</p>

CONCLUSIONS

The G2C initiatives implemented in Manila, San Juan, and Makati have enhanced the accessibility of public services in their respective localities through the provision of relevant and innovative solutions. These initiatives have reduced the digital divide and facilitated the prompt delivery of fundamental public services, including healthcare, education, and social welfare programs. The web and app portals of the three cities have entered the transactional phase of e-governance development. However, there is a need to improve their capacity to consolidate all services and transactions into a unified portal. Several sections of the e-portals of the three cities are missing and insufficient to fully realize its main

purpose of creating a convenient delivery of services and more opportunities for its constituents. Democratic participation of people will not be viable with these portals in soliciting relevant and valid feedback directly from the “registered users”. The LGUs can leverage their official portals to support the seamless exchange of information and collaborative decision-making between the government and their constituents to deepen popular participation (Seifert, 2003). Although there is an obvious development in the Cities’ delivery of quality public services, it is insufficient to set a bar or standard for other LGUs and cities for an efficient and effective implementation of E-governance programs.



RECOMMENDATIONS

Stakeholder engagement plays a crucial role in the establishment of smart cities and the successful implementation of efficient e-governance by local governments. It requires active participation from government agencies, enterprises, civil society organizations, and development organizations. Collaborative efforts can provide financial support, capacity-building opportunities, and technological advancements to e-governance programs. National government agencies, particularly the Department of Information and Communications Technology (DICT) and the National Privacy Commission (NPC), should work together to formulate policies and standards to aid local government units (LGUs) in developing secure data repositories and application programming. Decision-making and program delivery can benefit greatly from putting an emphasis on data interoperability, trust, and collaboration among stakeholders. Moreover, the Department of Science and Technology (DOST) and the Public-Private Partnership Center of the Philippines (PPP Center) can facilitate stakeholder linkages in smart cities, implement support strategies, and attract potential investors (Ramos et al., 2008). Future studies should prioritize investigating different facets of e-governance implementation, including user needs assessments, engagement, and efficiency evaluations of G2C services, cybersecurity and privacy issues, digital inclusivity promotion, and targeted program best practices benchmarking. Research should prioritize citizen-centered e-governance by evaluating its usability, functionality, and accessibility.

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