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Working Paper

How Ready Are LGUs for AI Adoption?

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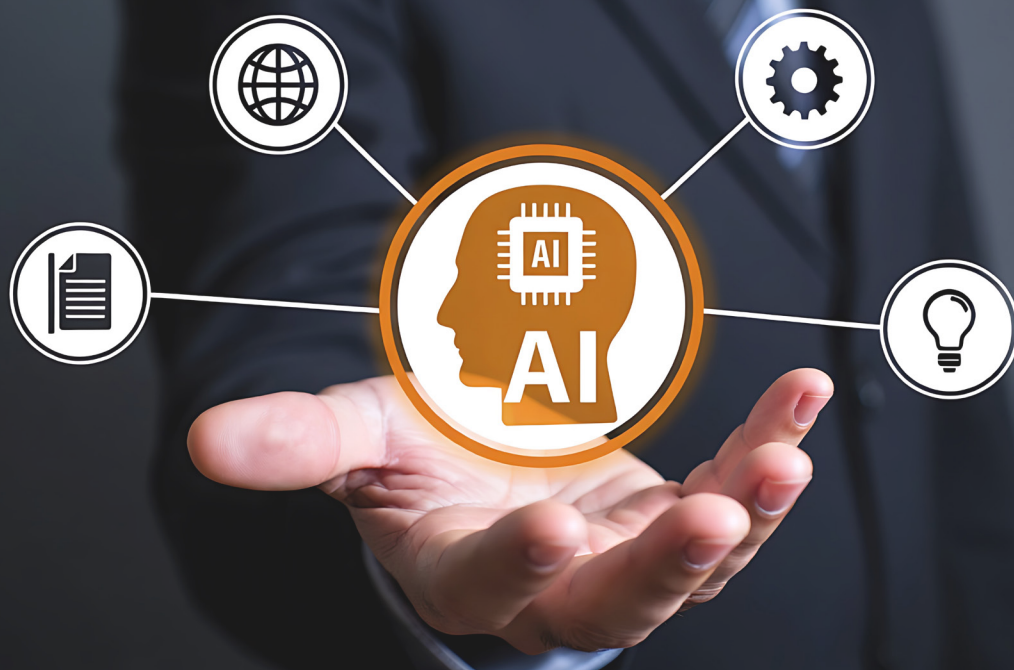
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*Francis Mark A. Quimba, Christopher Ed C. Caboverde,
and Alliah Mae C. Salazar*

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How Ready are LGUs for AI Adoption: Issues, Challenges and Policy Implications

Francis Mark A. Quimba, Christopher Ed C. Caboverde, Alliah Mae C. Salazar

Abstract

Artificial intelligence (AI) is expected to provide substantial contributions to Philippine growth and productivity in the coming years. Local government units (LGUs) may leverage on this new technology in providing enhanced public service delivery to their respective constituencies. The question now is how ready they are in adopting AI. This study assesses the preparedness of Philippine LGUs for AI adoption, identifies key barriers to implementation, and derives policy-relevant insights to support inclusive and sustainable AI adoption. Using an AI Readiness Index complemented by qualitative interviews with LGU officials, the study finds that, among other things, LGUs exhibit generally low to moderate readiness to AI adoption, with critical bottlenecks including shortages of ICT and AI-related skills, limited last-mile internet connectivity, and minimal budget allocations for digital initiatives. LGUs also face the challenge of balancing between providing essential public services that have immediate political dividends with the longer-term process of implementing and adopting AI for local governance. Policy implications point to the need for coordinated, multi-level interventions that align infrastructure investment, skills development, governance reforms, and resource allocation.

1. Introduction

Artificial intelligence (AI) has particularly emerged as one of the most important technologies in recent years. The International Trade Administration (ITA) reports that the AI sector in the Philippines is anticipated to expand from the projected value of \$772.1 million in 2024 to about \$3.5 billion by 2030, which corresponds to have an annual growth of nearly 29 percent (ITA, 2024). According to the Department of Trade and Industry, AI could potentially contribute 12 percent of the country's gross domestic product by 2030 (Manila Standard, 2023). However, this expansion necessitates robust digital infrastructure and regulatory frameworks to ensure sustainable development (ITA, 2024).

As AI integrates into economies and sectors, governments and AI actors worldwide are developing policies to manage its impact on the economy, society, and ethical standards. Since 2016, there has been a notable increase in the number of AI-related policies across the world, particularly among the countries in the Organisation for Economic Co-operation and Development (OECD). In contrast, the number of AI-related policies in the Association of Southeast Asian Nations (ASEAN) has exhibited sluggish growth. This suggests the existence of newer forms of digital divide, which developing countries like the Philippines need to address. Digital technologies have not been widely accessible across the country; for instance, internet use has mostly been concentrated in Luzon, with a few areas in Visayas and Mindanao exhibiting considerable internet usage rates. This could pose challenges in facilitating digital technology and AI adoption by various entities, such as businesses and local government units (LGUs).

Generative AI (genAI) is set to transform local government operations by improving efficiency and productivity. It is categorized into three tiers based on complexity and impact. Currently, most applications are in Tier 1, where genAI functions as a digital assistant, automating tasks like meeting summaries, drafting job description, supporting research, and generating reports. Given staffing shortages, these applications reduce administrative burdens and enable government employees to focus on more complex tasks. In Tier 2, genAI enhances communication with residents through automatic translations, AI-driven chatbots, and improved access to public services. At the highest level, Tier 3, genAI addresses large-scale challenges such as processing public benefits applications, supporting urban planning, and ensuring regulatory compliance (Stern et al., 2025).

Given this context, we would like to answer the following questions:

1. What is the current state of digital infrastructure, technical capacity, and human resources in LGUs that would support AI adoption?
2. What are the key barriers and challenges that LGUs face in implementing AI solutions for public service delivery and operations?
3. How do organizational, institutional, and regulatory frameworks at the local level enable or constrain AI adoption by LGUs?

Relevance of the research questions to policy makers & implementing agencies.

Assessing the readiness of LGUs for AI adoption is aligned with the Philippine government's development agenda. In the Philippine Development Plan 2023-2028, local governments are considered equal partners in facilitating the country's socioeconomic development, being the Philippine government's frontline service providers. The Mandanas-Garcia ruling of the Supreme Court in 2018 provides opportunities for local government units (LGUs) to enhance their capacity and resources needed for delivering public services and raising local revenues. The LGUs and the national government will foster collaboration through capacity-building programs and mentoring activities (NEDA, 2023).

It would be important for LGUs to leverage these developments to become better equipped for adopting digital technologies. A key strategy in the PDP 2023-2028 is accelerating digital transformation in government at all levels to improve its services. Local governments are tasked to utilize the national digitalization platform, align digitalization programs of national government agencies, and adopt digital governance. The digital adoption of LGUs is crucial for improving information dissemination and service delivery, and transparency in local government processes. Moreover, LGUs play a vital role in strengthening the digital literacy and skills of their respective constituents (NEDA, 2023).

Potential policy impact of the study

The study intends to analyze the challenges and barriers to AI adoption by LGUs. This could be beneficial in identifying specific local governments that need increased attention in terms of capacity building efforts.

For LGUs that are already utilizing digital technology and have the foundations for the adoption and use of AI, this study would be able to provide an assessment of the key features needed by such LGU to adopt and use AI to improve their services. It also increases awareness of the possible use cases that may be adopted by LGUs in order for them to benefit from the available AI technology.

Meanwhile, for LGUs classified as located in geographically isolated and disadvantaged areas (GIDA) sites, this study would be able to work towards the push for improved digital access and increase adoption and use of digital technology, possibly even pushing these LGUs to leapfrog to utilizing AI.

Objectives

This study aims to assess the readiness of LGUs in the Philippines for AI adoption, identify the benefits of AI implementation in local governance, examine the barriers encountered by LGUs, and develop policy recommendations and guidelines. The specific objectives of this study are to:

- Assess the extent of digital technology adoption by LGUs in the Philippines, as well as the readiness of LGUs to utilize AI systems in their processes;
- Identify the main challenges and barriers faced by LGUs in adopting AI such as but not limited to technical challenges, financial constraints, regulatory issues, and cultural barriers;
- Evaluate the existing policy and regulatory frameworks at the local level, and their significance in the readiness of LGUs for AI implementation; and
- Provide and proposed recommendations for effective AI implementation for local governance, and other policy enhancements where necessary.

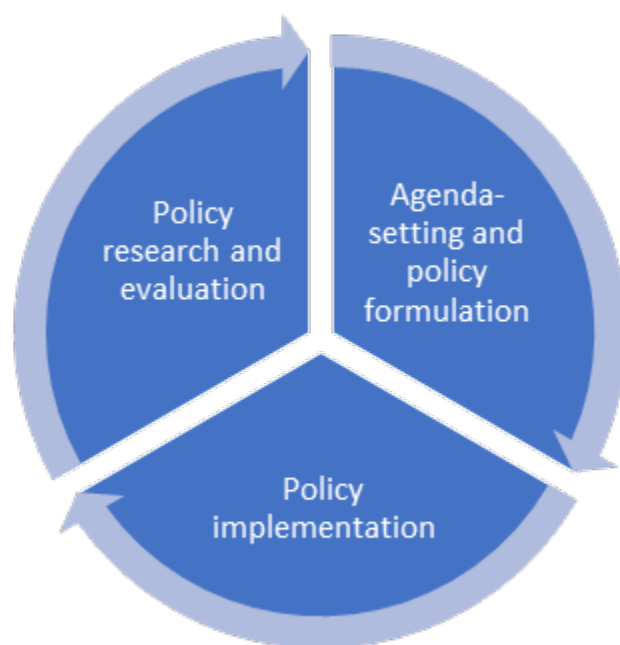
2. Literature Review

2.1 Government services and AI

As technologies such as AI advance and improve, governments worldwide are becoming cognizant of their role as users and developers of AI in different areas of governance (OECD, 2025b). AI-augmenting governance can be viewed through the lens of implementing AI throughout

the policy cycle, which comprises three stages, namely: (1) agenda setting and policy formulation, (2) policy implementation, and (3) policy research and evaluation (Figure 1) (OECD, 2025b; Pencheva et al., 2018). During the agenda setting and policy formulation stage of the policy cycle, policymakers can use AI for data analysis and forecasting to craft policy recommendations. During the policy implementation stage, governments can provide personalized services to the public and can automate repetitive tasks. Lastly, during the policy research and evaluation stage, AI can be used for, among other things, seeing all effects of certain policies (including unintended consequences) as well as even aiding policymakers and civil servants in detecting fraud in government transactions.

Figure 1. Policy cycle



Source: Authors' own illustration based on OECD (2025) & Pencheva et al. (2018)

Governments are now looking into ways in, among others, increasing civil service productivity, streamlining intra-department workflows and providing better service to the public while also uphold accountability the rights of citizens (OECD, 2025b). One of the AI tools used increasingly by governments is chatbots, which allows citizens to interact with government institutions and can

provide them with personalized and curated answers based on their needs, language and other personal characteristics (Vassilakopoulou et al., 2022). In addition, governments have also been increasingly using AI because of its potential to help policymakers craft better policies backed by AI-assisted analysis and forecasting, and help prevent financial fraud and corruption in government (OECD, 2025b). In the context of disaster risk management, for example, AI can not only predict areas where disasters such as typhoons and earthquake usually occur but can also assist policymakers and public officials on the implementation of relief operations post-disaster (Ghaffarian et al., 2023). In the context of prevent corruption, on the other hand, AI can be used to detect issues such as bid rigging in government procurement and other forms of corruption (OECD, 2019). Lastly, governments can share and provide AI to the citizens to allow them to meet their personal or commercial needs. For example, the national government of India has been providing AI tools to farmers to help them monitor crop health and soil quality (Jeevanandam, 2024).

The Philippine government, given this context, has also recognized the need to adapt to changes due to the advent of technologies such as artificial intelligence (AI). One such instance is proposing legislation related to AI. One example is Senate Bill (SB) No. 25 or the Artificial Intelligence Regulation Bill (2025). The aim of SB 25 is to regulate the usage of AI in the Philippines as well as the institution of the National AI Commission that will be higher policy-making and regulatory body for AI in the Philippines. Another bill is House Bill (HB) No. 243 or the Philippine Future Skills Bill (2025), whose objectives include the mainstreaming of AI training and education, and of lifelong learning for workers. This bill also aims to strengthen the multistakeholder collaboration between government, education sector and industry as well as prioritizing the inclusion of marginalized groups. Another House Bill is House Bill 1899, which amends the Labor Code of the Philippines to explicitly mention protections for employees laid off due to AI such as guaranteed separation pay and provide reskilling opportunities for employees. Lastly, another bill, this time SB 79 or the Artificial Intelligence (AI) Training for Government Workforce Bill (2025) aims to leverage AI in the civil service by training government employees on its potential uses in providing efficient and transparent public service.

On the side of the Department of Economy, Planning, and Development (DepDev), it has identified challenges on the adoption of AI in the context of the Philippine government (DepDev, 2024). One such challenge is regulatory gaps, in which insufficient and overlapping regulations and government agencies prevent the government from properly regulating the technology as well as protecting data privacy and sensitive information. There are also data challenges, in which there

are ethical and data privacy concerns on the usage of data, and in which data are scattered across different agencies and are at risk of being collected haphazardly. Digital infrastructure challenges also exist, in which internet infrastructures are inaccessible to those located outside of major urban areas. There are also human capital gaps, which includes challenges such as the lack of skilled professionals and the lack of general AI skilled among the general population. Other gaps on AI adoption in Philippine government include energy gaps and environmental concerns. Given the high amounts of electricity consumption, AI not only has high monetary costs but also high environmental costs in terms of greenhouse gas emissions (DepDev, 2024).

DepDev (2024) has put forward recommendations to address the said concerns. One such recommendation is the development of a regulatory environment where ethical standards are upheld, that imposes data collection quality standards, and which assigns different functions and mandates to the different government agencies. Another recommendation is the inclusion of AI in the curriculum to train the future workers as well as the retraining of the current labor force, in partnership with the private sector, through certification courses.

2.2. Use cases of AI in cities across the world

Aside from national governments, local governments across the world have also recognized the importance of incorporating AI in their public service delivery to help increase their productivity in terms of, among other things, policymaking and public service delivery (OECD, 2024).

2.2.1. Singapore

One such context is its use in customer service, in which people interact with AI whenever they need to access needed government services or want to provide their feedback on such services. An example of this is the OneService Chatbot of the city-state of Singapore. The said chatbot allows Singaporeans to more easily provide feedback or report incidents through messaging applications such as Whatsapp and Telegram aside from the OneService application. The chatbot's Virtual Intelligent Chat Assistant (VICA) platform then classifies the report or feedback (including their attachments such as photos or videos and sorts them by the government agencies that are responsible in addressing them (GovTech Singapore, 2025; MDDI, 2021; Miller & Miller, 2023). This is in contrast to the traditional chatbot that provides people with "pre-defined categories" of their feedback or report--this may be difficult for citizens with feedback or reports

that are beyond these pre-defined categories. Singaporeans have can more easily provide feedback or report as they can use existing messaging applications and AI can easily sort their feedback and address them to the appropriate government agency without needing to download a separate application (GovTech Singapore, 2025; MDDI, 2021; Miller & Miller, 2023).

2.2.2. Buenos Aires

Another example of AI usage in customer service is the Boti chatbot that was launched by the city government of Buenos Aires in 2019. This chatbot aims to assist Buenos Aires residents on their inquiries and feedback on city services (Ferreyra, 2024; Microsoft, 2025a). This chatbot was embedded in Whatsapp, which is the most used messaging application in Argentina. AI was also incorporated in Boti, allowing it to provide more conversational and individualized responses to people based on their messages. Other uses of Boti include the processing of government paperworks such as requesting national identification cards and driver's licenses (Ferreyra, 2024; Microsoft, 2025a). Boti became especially instrumental in helping Buenos Aires during the COVID-19 pandemic. During this time, the city government incorporated health advisories in Boti such as symptoms of COVID-19 and vaccination schedules (Ferreyra, 2024; Microsoft, 2025a). Also, Boti was used during the pandemic to detect the presence of COVID-19 in a person through using that person's coughing audio clips uploaded on Whatsapp, with an 86 percent COVID-19 detection accuracy rate (Ferreyra, 2024; Microsoft, 2025a). However, Boti and Whatsapp also experienced breakdowns due to high volumes of people using Boti, especially during instances such as the start of COVID-19 vaccination appointments (Ferreyra, 2024; Microsoft, 2025a).

2.2.3. Shenzhen

The city of Shenzhen in China took a step further when 70 AI 'government employees' went online in the city's Futian district. The purpose of these AI employees, which are powered by Deepseek, is to assist the human civil servants in creating and reviewing documents and making decisions, and help prevent stacked-up paperwork (Wang, 2025). Among the tangible examples of improved government efficiencies in the usage of these AI employees include the issuance of government circulars, with the said documents are now issued within minutes compared to the almost one-week interval that was the case before the introduction of this system (Wang, 2025).

2.2.4. Incheon

Another usage of AI in local governance is in the transport sector, specifically on matters such as traffic regulation and public transport security. An example of the former is the city of Incheon in South Korea, which has incorporated AI in its traffic signals, specifically on adjustments to the

traffic lights based on factors such as vehicle volumes and actual road situation (Smart City Korea, 2025). The AI in this case is trained based on day-to-day traffic conditions of particular intersections. The data is then used to adjust the traffic signals on what the AI reckons is the most ideal signal length of time for that section of the road. This system allowed Incheon to help increase traffic speeds by about 4.4 percent while helping decrease traffic delays by about 8.0 percent (Smart City Korea, 2025). Moreover, Incheon realized KRW 98.9 billion in estimated economic benefits due to improved traffic conditions in the city (Smart City Korea, 2025).

2.2.5. Mandaue

Another example of AI usage in traffic regulation is in Mandaue City, which plans to utilize AI in managing its traffic by place radar sensors on intersections located within its jurisdiction (Virador, 2025a). Among the possible uses of this AI in managing traffic include the tallying of the number of vehicles plying the roads in real time. This data, in turn, can be used by the AI to adjust traffic lights based on actual traffic demand. This is in contrast to the traditional traffic signalling, in which lights change on a fixed time interval (Virador, 2025a). As of March 2025, the system is still pending to be officially implemented subject to the installment of the said sensors (Virador, 2025b).

2.2.6. London

An example of AI usage in public transport security is in London, in which the Transport for London (TfL), the government agency in charge of public transport in the city, did trial runs of AI surveillance from October 2022 to September 2023 in Willesden Green underground station (Burgess, 2024). This machine-learning-aided AI surveillance system was launched to check for major incidents such as criminal behaviors as well as incidents of fare evasion. This system was also introduced to detect instances of people standing near the platforms' edges or on the train tracks. The system will alert station staff if it detects problematic or criminal incidents within the station (Burgess, 2024). During the initial trial runs, there were instances where the AI detected non-criminal behavior but tagged it as criminal behavior or an untoward incident. In certain instances, the system detected small children with accompanying parents as potential fare evaders (Burgess, 2024). Some also raised concerns about AI surveillance and its impact on privacy. Despite concerns on the accuracy of the detection system and on privacy, TfL has decided to expand the trial by adding other stations in the system beginning early 2025 given the system's potential of mitigating passenger accidents or injury in train platforms. (Vickers, 2025).

2.2.7. Surat

Aside from being used to regulate traffic and ensure public safety in public transport, AI is also said to be used to monitor the quality of roads. For instance, the city of Surat in India experiences constant road damage due to the country's annual monsoon season. Hence, the city has decided to use close-circuit televisions (CCTVs) and AI to help identify potholes in the city's roads (Desi Metros, 2025; The Times of India, 2025). Once the AI system detects any potholes on roads, the appropriate agencies or offices will receive notification from the system. These agencies will, in turn, proceed to the potholes for fixing (The Times of India, 2025). Potential impacts of this one include quicker response in fixing Surat's roads (The Times of India, 2025). This is part of Surat's Integrated Command and Control Center (ICCC), which also monitors other urban issues in the city such as traffic congestion and flooding around the clock (Desi Metros, 2025; The Times of India, 2025).

2.2.8. Bangkok

There are cities across the world that also use AI for urban planning and environmental purposes. One such example is the Smart Tree Inventory system in Bangkok. This system involves the usage of laser to scan Bangkok's trees and forest to tag every tree in the city. This technology speeds up the process of tagging the trees. AI and LiDAR (light detection and ranging) are then used to capture images to assess on which trees need special attention and care (Bangkok Post, 2025). This recent program's introduction may have a long-term impact on Bangkok's fight against air pollution as it would allow the city to better take care of trees identified needing extra attention. This, in turn, strengthens the role of trees in Bangkok and make them a critical part of Bangkok's fight against air pollution (Bangkok Post, 2025).

2.2.9. Helsinki

Another example of a city using AI for urban planning is Helsinki, which has begun using the platform called 'UrbanistAI'. This platform allows the citizens of Helsinki to participate in city planning (European Commission, 2023; OECD, 2025b). Citizens can help plan the city by using the AI-powered tools in this platform to add objects such as trees and benches on the photos of their neighborhood or of any part of the city, making city planning more responsive to the wants and needs of citizens and helping visualize the proposed designs for all stakeholders to see. For example, Damiano Cerrone, the co-founder of this platform, shared that in one of the workshops in Helsinki, the participants preferred the creation of bicycle lanes across the city while maintaining

the cobblestone roads instead of covering these roads with concrete like those done in other bicycle lane projects (Group NAO, 2024). Also, UrbanistAI can inform the users of the legal limitations and regulations that their suggestions face, making city planning more efficient and ensure that the proposed improvements to the city are legally above board (European Commission, 2023). One impact of this platform is it encourages people to actively participate in city planning, making the latter more inclusive and responsive to citizens' needs. Another impact or potential impact of the UrbanistAI platform is bridging the digital divide by making AI tools more accessible to the people (European Commission, 2023).

2.2.10. Rio de Janeiro

Another usage of AI in urban planning is in terms of mapping marginalized areas to allow policymakers to create policies and regulations on uplifting the residents in these areas. An example of this is in Rio de Janeiro in Brazil, which is harnessing AI to improve the lives of its citizen through its partnership with the Massachusetts Institute of Technology (MIT) in establishing the Senseable Rio Lab (SRL) to be located in the COPPE Laboratory of Computational Methods and Engineering at the Universidade Federal do Rio de Janeiro (COPPE UFRJ, 2024). The objectives of this laboratory include the usage of artificial intelligence in analyzing the photographs of the city's favelas or informal settling communities (Prefeitura de Rio de Janeiro, 2024; Senseable City Rio, 2025). The establishment of this laboratory can be considered a product of the previous project by MIT called Favelas 4D, in which the said institute created a 3D model of Rio de Janeiro's largest favela, Rocinha to analyze the living conditions of the residents there and to create possible interventions to improve their standards of living (Masterson, 2022; Prefeitura de Rio de Janeiro, 2024; Senseable City Rio, 2025). The findings from the projects and experiments under this newly-established laboratory will be used to provide solutions and policies to improve the lives of the residents living in the city's favelas through improvements in health and other social services (COPPE UFRJ, 2024; Prefeitura de Rio de Janeiro, 2024; Senseable City Rio, 2025).

2.2.11. eThekwini

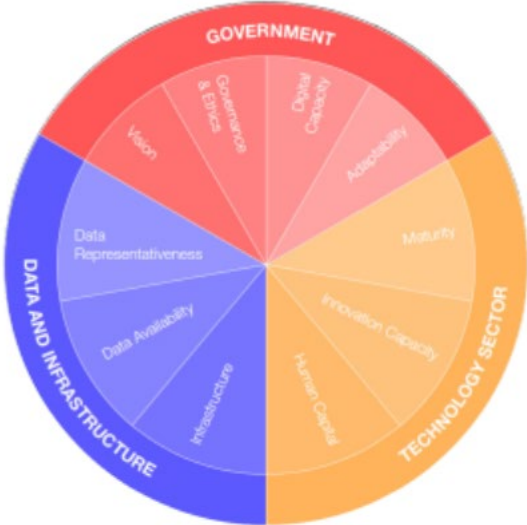
Aside from Rio de Janeiro, another city doing such initiative is the city of eThekwini, the third largest city in South Africa. eThekwini is partnering with the United Nations Innovation Technology Accelerator for Cities (UNITAC) in developing a machine learning AI tool called BEAM to help in spatially recognizing informal settlements through the usage of aerial photographs of these settlements as inputs to this tool (UNITAC Hamburg, 2025a; 2025b). This, in turn, will help eThekwini more quickly identify the challenges (e.g. floods) of the more than 300,000 households

living in these settlements, and create policies to assist them and upgrade their standards of living (UNITAC Hamburg, 2025a; 2025b). The project is still currently ongoing, with the city and UNITAC conducting workshops on the usage of and improvements to this AI tool. Nevertheless, local experts who are privy to the project mentioned that this tool allowed the city to catch up with the ever-changing and rapidly urbanizing city through quicker and more efficient spatial recognition of eThekweni (Tonnarelli & Mora, 2025). In other words, this move to AI usage can help the city in monitoring the growth of the city in general and the informal settlements in particular as this makes the city less reliant on traditional mapping processes (UNITAC Hamburg, 2025a; 2025b).

2.3. How can we measure AI readiness?

Nettel et al. (2024) put forward a framework on how countries can become AI-ready through the Government Readiness Index of Oxford Insights (Figure 2). The three pillars of this index are government, technology sector, and data and infrastructure. The data and infrastructure pillar refers to the extent of the availability and accessibility of quality data and infrastructure. Meanwhile, the technology sector pillar refers to, among other things, the availability of skilled labor, the size of the ICT sector’s contribution to GDP, and the size of the funding for AI research and development. The government pillar refers to the capability of the government to enforce data privacy laws and regulations, as well as the extent of the government’s political will and vision to adopt and implement AI strategies.

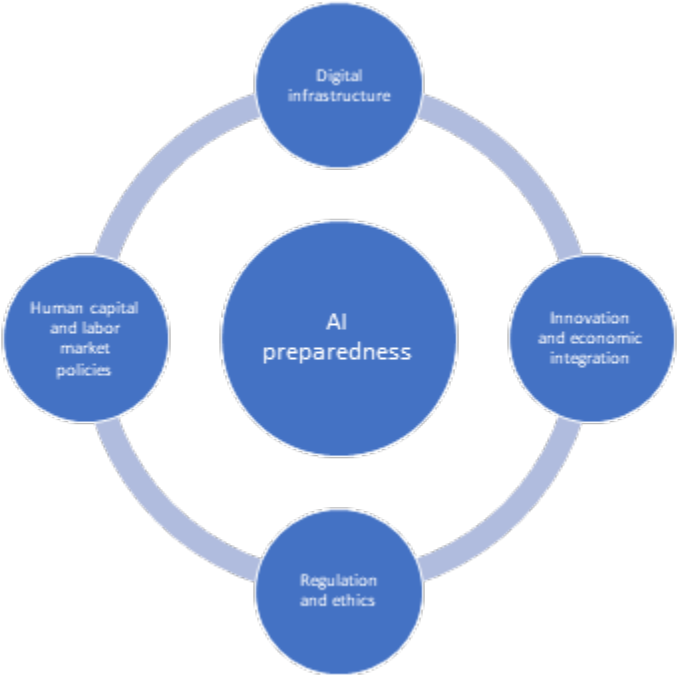
Figure 2. Pillars and subpillars of the Oxford Insights’ Government Readiness Index



Source: Screenshot from Nettel et al. (2024)

Readiness to adopt AI is also captured by the AI Preparedness Index (API) of the International Monetary Fund (IMF), which looks at the extent to which an economy balances its capability to fully take advantage of AI and its capability of managing risks associated with AI (Figure 3) (Cazzaniga et al., 2024). There are four categories under API, namely: (1) digital infrastructure, (2) innovation and economic integration, (3) human capital and labor market policies, and (4) regulation and ethics. Digital infrastructure refers to how accessible internet infrastructure is to the public as well as the extent to which e-commerce is used. Human capital and labor market policies refers to the availability of skilled labor in an economy. This also includes the extent of funding towards creating such skilled labor, and the protection of vulnerable workers from displacements due to changes in the labor market. Innovation and economic integration refer to the extent of funding and expenditure towards AI research and development (R&D), as well as the extent of tariff and non-tariff barriers to trade. Lastly, regulation and ethics refers to the preparedness of the legal system amidst the changes in the economy due to AI.

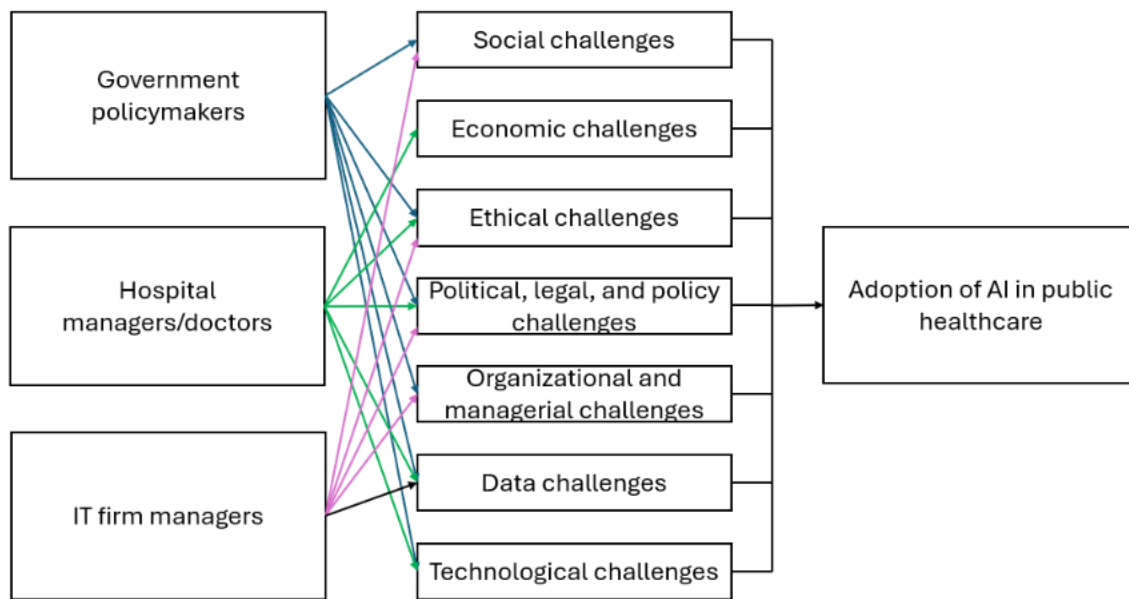
Figure 3. AI preparedness index



Source: Authors' own illustration based on Cazzaniga et al. (2024)

The use of indices to derive a single indicator for AI readiness is understandable as the adoption of artificial intelligence (AI) by governments is influenced by a complex set of factors. Indeed, adoption of artificial intelligence is not without its challenges, with these challenges differing among the different stakeholders. For instance, Sun and Medaglia (2019) mentioned that, in the context of the Chinese healthcare system, management and staff are concerned with economic challenges, including the perceived increased cost for patients when adopting AI. For those working for IT companies providing AI to the public sector, among their concerns or the challenges that they foresee include social challenges such as the mismatch between the expectations of healthcare professionals and the actual capabilities of AI technologies. Meanwhile, government policymakers raised, among others, organizational and managerial challenges such as the difficulty of sharing patient data between hospitals and private IT firms (Figure 4) (Sun & Medaglia 2019).

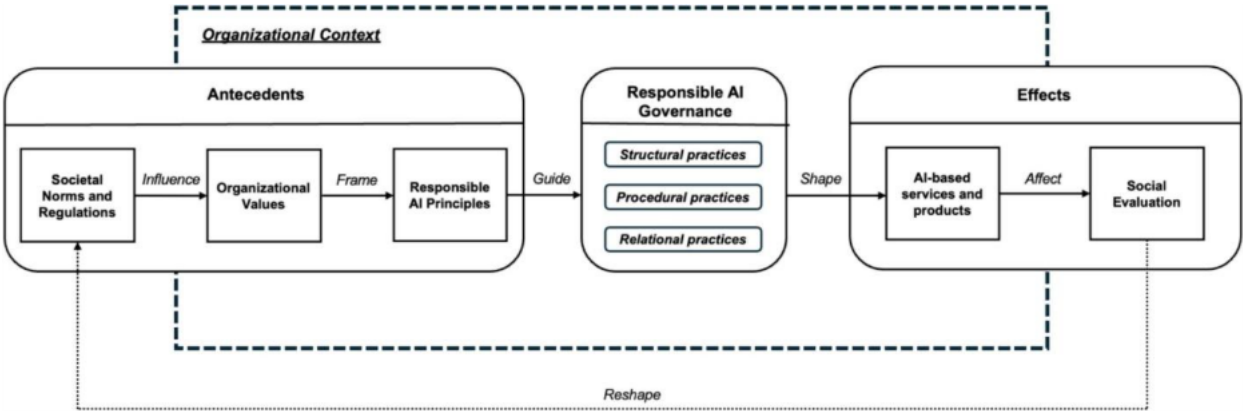
Figure 4. Challenges in the adoption of AI in the Chinese public health system



Source: Authors' illustration based on Sun & Medaglia (2019)

Amidst these challenges, there is also the emphasis on the responsible usage of AI. Papagiannidis et al. (2025) wrote that societies' views on the ethical usage of AI have an impact on organizations' views on AI, which, in turn, affect on how organizations define responsible AI principles. Once responsible AI principles are defined, these principles guide responsible AI governance, which includes the naming of stakeholders and offices within organizations responsible for implementing the different rules and regulations (i.e. structural practices), the balancing of interests between stakeholders through feedback (i.e. relational practices), and the way these rules and regulations should be implemented (i.e. procedural practices). These, in turn, affect the AI products and services, as well as how external stakeholders use them and provide feedback on them (Figure 5) (Papagiannidis et al., 2025).

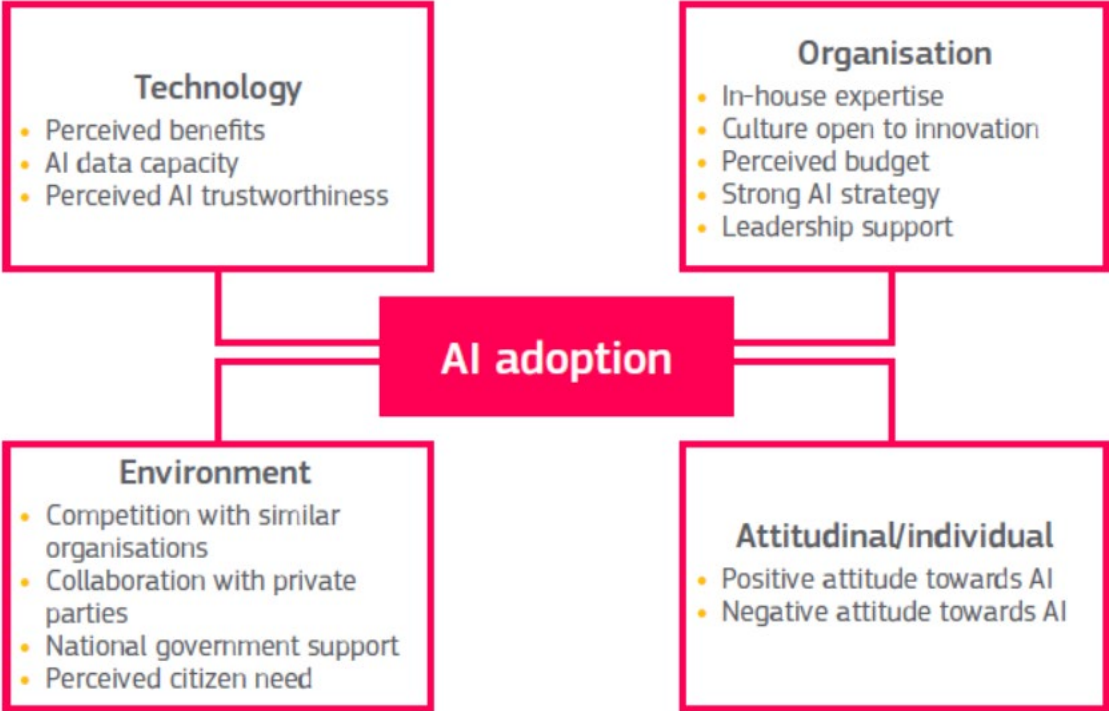
Figure 5. Framework on responsible AI governance



Source: Screenshot from Papagiannidis et al. (2025)

Grimmelikhuijsen and Tangi (2024) wrote about the possible factors that affect the adoption of AI among government managers (Figure 6). These factors include but are not limited to the manager’s attitude and perceptions on AI (i.e. attitudinal), the political will of leaders within government organizations (i.e. organization), the demand from citizens for such AI services (i.e. environment), and the extent of the perceived benefits of AI to society (i.e. technology).

Figure 6. Factors affecting AI adoption among public managers

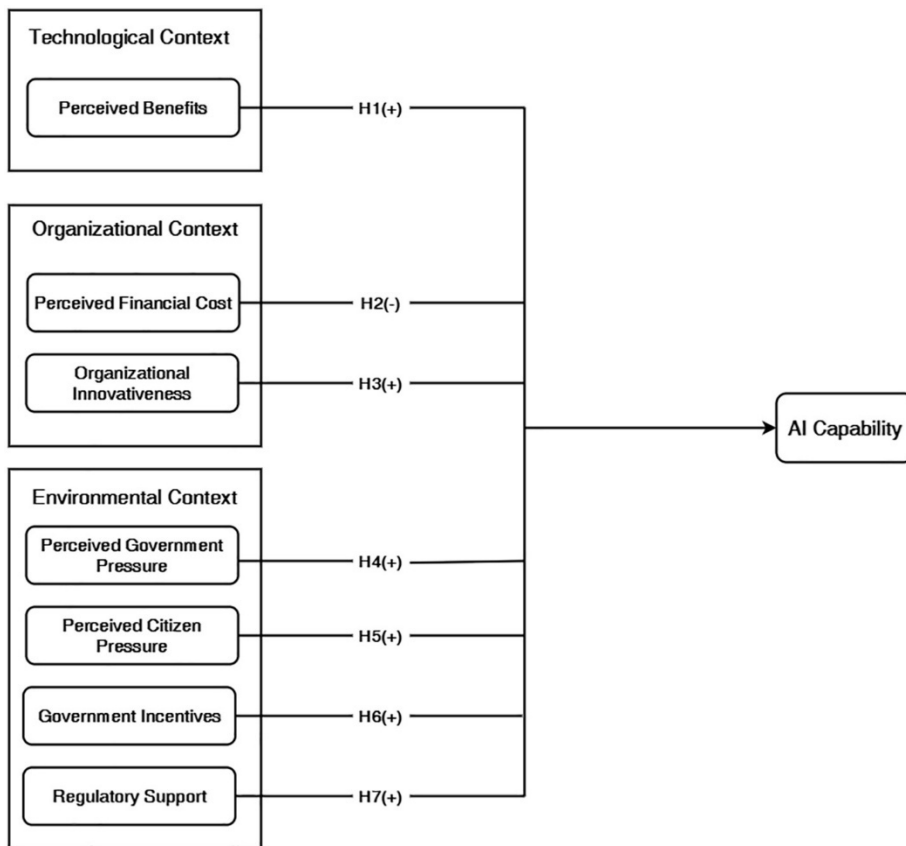


Source: Screenshot from Grimmelikhuijsen & Tangi (2024)

At the local government level, Mikalef et al. (2022) also used the technology-organization-environment (TOE) framework to theorize how local governments behave based on contexts such as, but not limited to existing organizational bureaucracies, local culture, and legal environments, with the goal of local governments becoming capable of using new technologies. Mikalef et al.

(2022) further used the TOE framework when putting forward their hypotheses, specifically on the local governments' propensity of becoming capable of using artificial intelligence (AI). The factors affecting AI capability that they mentioned include "perceived benefits" (under technological); "perceived financial cost" and "organizational innovativeness" (both under organizational); and "perceived government pressure", "perceived citizen pressure", "government incentives", and "regulatory support" (all of which are under environmental) (Figure 7) (Mikalef et al., 2022).

Figure 7. Hypotheses of Mikalef et al. (2022) using the Technology-Organization-Environment (TOE) Framework



Source: Screenshot from Mikalef et al. (2022)

2.4. LGU Performance in using ICT

The measurement of Local Government Unit (LGU) performance in the Philippines has evolved through various frameworks designed to assess competitiveness, governance quality, fiscal capacity, and technological readiness. The most comprehensive framework is the Cities and Municipalities Competitiveness Index (CMCI), established by the National Competitiveness Council in 2013 with USAID support (DTI & NCC, n.d.). The CMCI employs a five-pillar structure—Economic Dynamism, Government Efficiency, Infrastructure, Resilience, and Innovation—drawing from global competitiveness surveys including the World Economic Forum's Global Competitiveness Index and the Asian Institute of Management's Philippine Cities Competitiveness Ranking Project.

Complementing the CMCI, the Philippine Institute for Development Studies (PIDS) has contributed significantly to LGU performance measurement across multiple dimensions. Manasan et al. (1999) developed a pioneering governance quality index based on three strategic objectives: optimized resource support for human development, enhanced effectiveness in service delivery, and accountability systems. Their framework measured performance through revenue generation indices, per capita social service expenditures, and both macro-level and micro-level accountability mechanisms.

More recently, PIDS has examined LGU readiness for smart city development which is the foundation for utilization of AI in governance. Ramos et al. (2021) assessed Philippine cities' preparedness for smart city initiatives. They find that while the Philippines has begun implementing smart city technologies, significant challenges remain including operational costs, lack of data interoperability, and funding constraints for ICT infrastructure. Their study also revealed that LGUs are motivated by expected outcomes such as improved quality of life, competitive economy, and sustainable environment, though implementation varies significantly across income classifications. Studies by Maddawin et al. (2020a; 2020b) on the Performance Challenge Fund and Seal of Good Local Governance revealed persistent challenges in performance-based systems, noting that wealthier municipalities disproportionately benefit from such programs. These multi-dimensional measurement frameworks enable comparative analysis while highlighting persistent disparities in governance capacity, fiscal autonomy, and technological readiness across Philippine LGUs (Maddawin et al., 2020a; Maddawin et al., 2020b; Manasan et al., 1999; Ramos et al., 2021).

3. Conceptual Framework, Methodology and Data

3.1. Conceptual Framework

AI readiness for governments encompasses the capacity to effectively adopt, implement, and benefit from artificial intelligence technologies. Based on literature, AI readiness requires:

1. Robust digital infrastructure to support computational demands
2. Skilled workforce capable of developing and managing AI systems
3. Innovation ecosystem fostering technological advancement
4. Governance frameworks ensuring responsible AI deployment
5. Data capabilities for training and operating AI systems
6. Economic resources to invest in and sustain AI initiatives

Digital infrastructure represents the foundational physical and technological capabilities required for AI deployment, including internet connectivity, network quality, and ICT equipment availability. The importance of digital infrastructure is included in several indices such as the IMF's AI Preparedness Index (APII) developed by Cazzaniga et al. (2024); and the Oxford Insights Government Readiness Index (Nettel et al., 2024). The APII identifies 'digital infrastructure' as one of four core categories essential for AI readiness, specifically measuring internet accessibility to the public and the extent of e-commerce adoption. According to the APII framework, digital infrastructure represents not merely the availability of technology but the degree to which it enables seamless digital interactions and commerce, which are prerequisites for AI deployment.

Similarly, the Oxford Insights Government Readiness Index (Nettel et al., 2024) positions 'data and infrastructure' as one of three fundamental pillars for government AI readiness. This pillar specifically refers to the availability and accessibility of quality data and robust infrastructure. The emphasis on both data availability and infrastructure quality underscores the dual nature of this requirement: governments need both the physical infrastructure to process and transmit data and the data ecosystem to feed AI systems. This pillar also considers the Philippine context which is documented by Ramos et al. (2021). In their study, they found that ICT infrastructure as a critical challenge for smart city adoption.

Human capital measures workforce readiness and digital literacy necessary for developing, implementing, and managing AI systems. This pillar recognizes that technological infrastructure

alone is insufficient without the human expertise to leverage it. Similar to the Infrastructure Pillar, the Human Capital pillar is supported by the AIPI (Cazzaniga et al., 2024) and the by the Oxford Insights Government Readiness Index (Nettel et al., 2024). The AIPI, which dedicates an entire category to 'human capital and labor market policies,' views the availability of skilled labor and the extent of investment in developing such expertise as important components of AI readiness. In addition, the AIPI also considers worker protection mechanisms to address potential labor market displacement resulting from AI adoption. Similarly, the Oxford Insights Government Readiness Index (Nettel et al., 2024) incorporates skilled labor availability within its 'technology sector' pillar, which also includes the size of ICT sector contribution to GDP. This positioning suggests that human capital development is intrinsically linked to broader technology sector maturity.

From a behavioral perspective, Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT) provides insights into how individual capabilities influence technology adoption. The theory identifies self-efficacy, the belief in one's ability to use new technology, as a key driver of adoption. Venkatesh (2021) further asserted that technology adoption is enhanced among risk-takers and those with a desire to learn, highlighting the importance of both technical skills and adaptive mindsets. Additionally, Grimmelikhuisen and Tangi's (2024) framework on AI adoption among government managers emphasizes attitudinal factors, including managers' perceptions and attitudes toward AI. This underscores that AI readiness depends not only on technical skills but also on leadership capacity and willingness to champion AI initiatives.

Innovation ecosystem measures the LGU's capacity and commitment to adopting emerging technologies and fostering innovation. This component of AI readiness is supported by Mikalef et al.'s (2022) Technology-Organization-Environment (TOE) framework applied to local government AI capability. The framework identifies 'organizational innovativeness' as a key determinant of AI adoption capacity. This factor reflects an organization's culture of experimentation, openness to new ideas, and willingness to invest in emerging technologies, characteristics that align with a supportive innovation ecosystem. For the Philippine context, the Cities and Municipalities Competitiveness Index (CMCI) developed by the National Competitiveness Council (DTI-NCC, n.d.) includes 'Innovation' as one of five pillars for assessing local government competitiveness.

Governance and policy readiness encompasses strategic planning, regulatory frameworks, and institutional capacity to guide responsible AI deployment. This component is aligned with the IMF's AIPI (Cazzaniga et al., 2024) which includes measuring the legal system's preparedness to address AI-driven economic changes. In addition, this pillar is aligned with the Oxford Insights

Government Readiness Index (Nettel et al., 2024) which addresses governance through its 'government' pillar. This pillar evaluates the government's capability to enforce data privacy laws and regulations, as well as the extent of political will and strategic vision for AI adoption. Finally, the Technology-Organization-Environment (TOE) framework applied by Mikalef et al. (2022) identifies environmental factors including 'perceived government pressure,' 'government incentives,' and 'regulatory support' as determinants of local government AI capability. This suggests that governance operates not only through direct regulation but also through incentive structures and enabling policies. Similarly, Grimmelikhuijsen and Tangi (2024) identify organizational political will as a key factor in AI adoption among government managers, underscoring that governance frameworks require leadership commitment to be effective.

Data readiness measures capacity to generate, manage, and utilize data for AI applications through digital services and data management systems. This pillar recognizes that AI systems are fundamentally data-driven, and their effectiveness depends critically on data quality, availability, and governance. As mentioned in the Digital Infrastructure pillar, the Oxford Insights Government Readiness Index (Nettel et al., 2024) explicitly identifies 'data and infrastructure' as one of three fundamental pillars, emphasizing the importance of availability and accessibility of quality data. This is because AI readiness depends on data ecosystems that provide sufficient, high-quality information for algorithm training and operation. Incorporating the factors affecting Smart City adoption (Ramos et al., 2021), this pillar expands data capabilities to extend beyond mere data collection but to include standardization, integration, and seamless sharing across systems and jurisdictions. The ability to combine and analyze data from multiple sources is essential for comprehensive AI applications in government.

Economic foundation measures the LGU's financial capacity to invest in and sustain AI initiatives through revenue, expenditures, and overall fiscal health. This pillar recognizes that AI adoption requires substantial upfront investment and ongoing operational funding, making fiscal capacity a fundamental determinant of AI readiness. Mikalef et al.'s (2022) Technology-Organization-Environment (TOE) framework explicitly identifies 'perceived financial cost' as an organizational factor affecting AI capability development in local governments. This acknowledgment highlights that cost considerations extend beyond simple budget availability to include perceptions of affordability and return on investment. Organizations must not only have access to resources but must also view AI investments as financially viable and sustainable. This pillar also incorporates Ramos et al.'s (2021) assessment of smart city readiness in Philippine cities which identified funding constraints for ICT infrastructure as a significant challenge. This finding underscores that

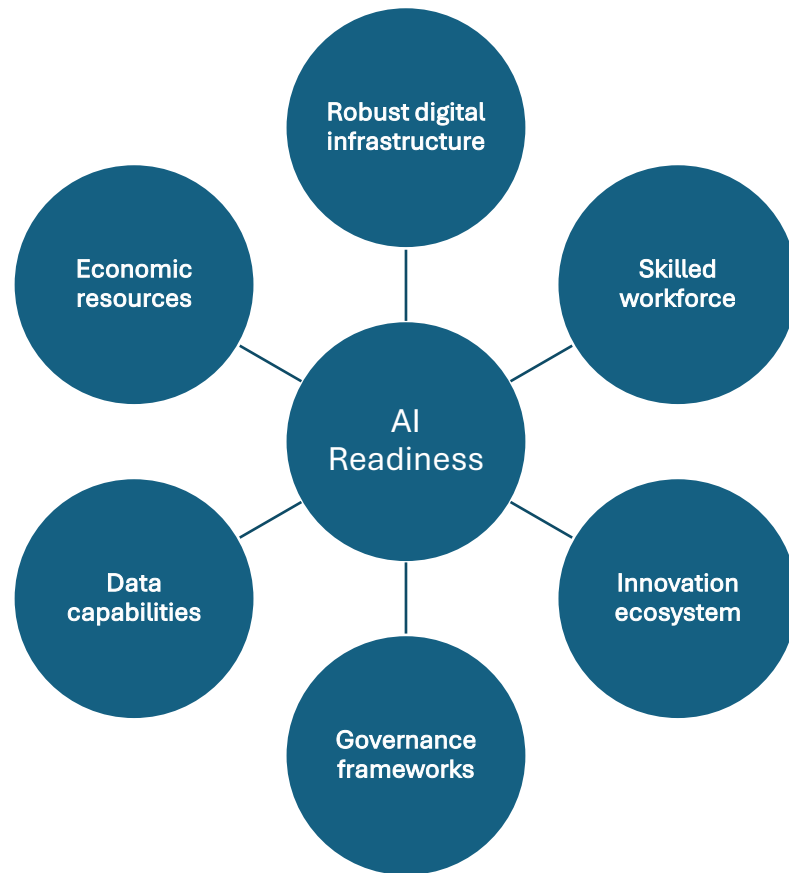
economic readiness encompasses not only initial investment capacity but also the ability to sustain ongoing operational expenses, maintenance, and upgrades.

The IMF's AIPI (Cazzaniga et al., 2024) captures economic capacity indirectly through its 'innovation and economic integration' category, which measures R&D funding and expenditure. This positioning suggests that economic resources for AI are best understood not merely as budget line items but as investments in innovation capacity that reflect broader economic health and priorities.

All in all, this conceptual framework provides a comprehensive lens for understanding and assessing government AI readiness through six interdependent pillars grounded in established theoretical models and empirical research. By synthesizing insights from international indices (IMF's AIPI, Oxford Insights' Government Readiness Index), adoption frameworks (TOE, UTAUT), governance models (Papagiannidis et al.'s (2025) responsible AI governance framework), and context-specific studies from the Philippines and other countries, this framework offers both theoretical rigor and practical applicability.

The framework's value lies in its holistic perspective, recognizing that AI readiness cannot be reduced to any single dimension but emerges from the interplay of technical infrastructure, human capabilities, innovation capacity, governance structures, data resources, and economic means. This multidimensional approach aligns with the complexity of AI implementation in government contexts, where success depends on addressing technical, organizational, regulatory, and socioeconomic factors simultaneously.

Figure 8. AI Readiness and its pillars



Source: Author's representation

3.2. Methodology and Operationalization of the Conceptual Framework

This section describes the construction of an AI Readiness Index for Philippine Local Government Units (LGUs) using the updated 2023 DICT Satellite Survey dataset (DICT, 2023). The index synthesizes six key dimensions of AI readiness into a comprehensive score ranging from 0-100, enabling comparisons across LGUs and identification of priority areas for development.

Equation 1 presents the overall index formula which is a weighted average of all the six pillars, P1 to P6, with all components being scaled from 0 to 100.

$$\text{AI Readiness Index} = (P1 \times 0.20) + (P2 \times 0.20) + (P3 \times 0.20) + (P4 \times 0.15) + (P5 \times 0.10) + (P6 \times 0.15)$$

Where:

- **P1** = Pillar 1: Digital Infrastructure (20%)
- **P2** = Pillar 2: Human Capital & Skills (20%)
- **P3** = Pillar 3: Innovation Ecosystem (20%)
- **P4** = Pillar 4: Governance & Policy (15%)
- **P5** = Pillar 5: Data Readiness (10%)
- **P6** = Pillar 6: Economic Foundation (15%)

PILLAR 1: DIGITAL INFRASTRUCTURE (Weight: 20%)

Digital infrastructure represents the foundational physical and technological capabilities required for AI deployment, including internet connectivity, network quality, and ICT equipment availability. It includes indicators on the internet coverage of barangays, the type of networks available at the LGU, internet sufficiency, internet speed and ICT equipment density.

Internet coverage (*infra_coverage*) measures the geographic reach of digital connectivity across the LGUs jurisdiction. This is calculated as a percentage of all the barangays in the LGU that have internet connection as a proportion of the total number of barangays. Network infrastructure (*infra_network*) considers the availability wired LAN, wireless LAN and Wide Area Network in the LGU. Having these multiple network types ensures redundancy and flexibility for the use of AI applications. Internet sufficiency (*infra_sufficient*) is a binary indicator that measures the subjective assessment of whether existing connectivity meets operational needs while connection speed (*infra_speed*) incorporates the subscribed internet speed in MBPS of the LGU. Having sufficient internet speed enables more sophisticated AI applications to be used and ensures that data is processed speedily. Finally, Pillar 1 also incorporates equipment per capita in the LGU or ICT Equipment Density. This is calculated as the total number of desktops, laptops, servers, smartphones, routers and access points that the LGU possesses. This is then divided by the total number of employees at the LGU. This indicator provides a measure of the presence of physical capital for digital work and AI tool usage at the LGU. The scores for Pillar 1 are calculated as a straight-line average of the component indicators: *infra_coverage*, *infra_network*, *infra_sufficient*, *infra_speed* and *infra_equipment*.

PILLAR 2: HUMAN CAPITAL & SKILLS (Weight: 20%)

Pillar 2 measures workforce readiness and digital literacy necessary for developing, implementing, and managing AI systems. This pillar has the following components: ICT staff availability, computer literacy rate of the LGU, presence of ICT specialists, and having an ICT skills plan for the LGU. ICT Staff Availability (*skills_staff*) looks at the presence of an ICT office in the LGU that houses dedicated ICT personnel essential for AI system management and support. Computer Literacy Rate (*skills_computer*) measures the percentage of the LGU employees that have basic computer skills. This is important as basic computer skills are prerequisites for using AI-powered tools and applications. Another component of Pillar 2 is related to Internet Literacy (*skills_internet*) which is measured by the proportion of employees that are proficient with utilizing the internet. This is important as internet proficiency is needed for cloud-based AI services and online collaboration. Another measure of workforce readiness is having ICT specialists (*skills_specialist*) who can develop, customize and maintain AI solutions. This is proxied by the presence of employees in the ICT unit as a proportion of the total number of employees. Finally, as a measure of the government's prioritization of digital skills, a binary indicator on digital skills is included. This indicator gets the value of 100 if the local government has digital skills in its Local Government plan or agenda.

The scores for pillar 2 are obtained as a straight-line average of the components. Higher scores indicate stronger workforce capabilities and readiness for AI adoption.

PILLAR 3: INNOVATION ECOSYSTEM (Weight: 20%)

Innovation ecosystem pillar measures the LGU's capacity and commitment to adopting emerging technologies and fostering innovation. This pillar has the following components: readiness to adopt emerging technologies (*innov_emerging*), availability of ICT development plan (*innov_strategy*), self-assessment of support for innovation (*innov_score*), and the progress in terms of digitalization (*innov_digitalization*). Taken as the straight-line average of having plans to adopt blockchain, IOT and 5G technology, *innov_emerging* is included because the strategic adoption of complementary technologies indicates readiness for AI integration. Meanwhile, having an overall technology strategy (*innov_strategy*) is a binary indicator of the organization's readiness for innovation and adoption of new processes. To incorporate an indicator on whether the LGU has an innovation agenda, Innovation Score (*innov_score*) is a self-assessment of the innovation prioritization and culture of the LGU. Finally, Digitalization Progress

(innov_digitalization) is an indicator of whether the LGU has initiated digitalization of its services. It demonstrates the LGUs commitment to digital transformation. Similar to the earlier pillars, Pillar 3's score is obtained as a straight-line average of the component indicators.

PILLAR 4: GOVERNANCE & POLICY (Weight: 15%)

Pillar 4 (Governance and policy readiness) encompasses strategic planning, regulatory frameworks, and institutional capacity to guide responsible AI deployment. The existence of an E-Government Strategy (gov_egov) indicates that the LGU through the presence of an E-government framework has the foundation for digital service delivery including AI. Meanwhile, the presence of a Medium-term ICT planning document (gov_medium_plan) provides an indication that the LGU is engaging in a multi-year ICT planning strategy, and it has taken into consideration the sustained technology investments involved with AI. Another indicator of LGU policy on ICT is the allocated of budget for ICT. This is an indicator of the LGU's commitment to ICT and other AI initiatives. This indicator is measured as a normalized amount, i.e. (LGU budget / maximum_budget among all LGUs) × 100. The last indicator is a binary indicator for the presence of plan to use big data: (gov_bigdata) which indicates data-driven orientation necessary for AI. The score for Pillar_4 is calculated as the mean of gov_egov, gov_medium_plan, gov_budget_norm, gov_bigdata).

PILLAR 5: DATA READINESS (Weight: 10%)

The Data readiness pillar measures capacity to generate, manage, and utilize data for AI applications through digital services and data management systems. The components of this pillar include the following:

- E-Services Availability (data_eservices) (Binary indicator) as E-services generate structured transaction data
- E-Participation (data_eparticipation) (Binary indicator) that looks into the availability of one or more E-participation platform URLs to incorporate the generation of data from citizen engagement platforms which generate useful feedback and sentiment data.
- Government Data (data_opengov) (Binary indicator) which checks the availability of Open government data URL to provide an indicator of an open data culture which facilitates AI development and transparency.

- Public Procurement Systems (data_procurement) (Binary indicator) indicating the presence of a digitalized procurement system with available URL. This provides the generation of procurement data and enables AI to be utilized for procurement optimization and fraud detection.
- Applications Used (data_apps) is a binary variable that indicates whether the LGU is utilizing digital applications such as those used on smart phones. This indicator provides a measure of digital maturity and data generation.
- Security Measures (data_security) is an indicator on the implementation of security measures which is crucial for the use of AI. Cybersecurity is essential for protecting AI systems and data.

The scores for the components of Pillar_5 are then averaged to create an aggregate score for the pillar.

PILLAR 6: ECONOMIC FOUNDATION (Weight: 15%)

Economic foundation measures the LGU's financial capacity to invest in and sustain AI initiatives through revenue, expenditures, and overall fiscal health. Local Revenue (econ_local_norm), which is the locally-generated income, is an indicator of fiscal autonomy and capability to sustain investments in technology. It is calculated as a log transformation of the data from the Bureau of Local Government Finance (BLGF) (BLGF, 2025) and then normalized using the min-max normalization technique. Total Income (econ_total_norm) is an indicator of the total pool of funds available for operations and AI investments. This is calculated as the log transform of total income which is the sum of locally-generated income and external income. Similar to econ_local_norm, this indicator is normalized using the min-max normalization technique. Another component is related to services expenditure (econ_services_norm) which looks at the LGU's expenditure in social and economic services. This is an indicator of the size of LGU expenditure that could benefit from AI adoption. Similar to the previous components, this is normalized using min-max normalization techniques. Pillar_6 aggregates the indicators as the average of econ_local_norm, econ_total_norm, and econ_services_norm.

Table 1 provides an intuitive way of understanding the values of the index. It divides the scores from 0 to 100 into 5 different categories with specific descriptions and characteristics for each category. Meanwhile, for Pillar-Specific Interpretation including their subcomponents, the following has been identified as descriptive characterization of the scores:

- High pillar score (>60): Strength to leverage for AI adoption
- Moderate pillar score (40-60): Area requiring targeted improvement
- Low pillar score (<40): Critical bottleneck needing urgent attention

These categorizations would help in the discussion of the results and in describing the readiness of the LGU respondents in terms of AI adoption.

Table 1. Overall Index Interpretation

Score Range	Level	Description
0-19.99	Very Low	Minimal readiness; requires fundamental development across all dimensions
20-39.99	Low	Basic capabilities present; needs significant investment in multiple areas
40-59.99	Moderate	Moderate readiness; some strengths but targeted improvements needed
60-79.99	High	Good readiness; capable of AI adoption with focused enhancements
80-100	Very High	Excellent readiness; prepared for advanced AI deployment

3.3. Data

In 2023, the Department of Information and Communications Technology (DICT) conducted the 2023 Satellite Services Survey to determine the national demand or requirements in the public sector for satellite services as an alternative platform to achieve digitalization (DICT, 2023). The data collected aims to aid policy and planning of the DICT to promote the development and expansion of internet services in the Philippines and assess the potential use of digital

technologies (e.g. data analytics, artificial intelligence) including satellite connectivity for operations and delivery of public services in the national and local governments.

The survey for the demand study on satellite services aims to collect data from all NGAs, including their attached agencies, and key government-owned and controlled corporations (GOCCs) on their current internet connectivity. It also aims to collect information on the potential use of satellite connectivity for NGAs' and LGUs' operations and delivery of public services; and determine the types of activities, aspects of NGAs' and LGUs' operations, or services will use satellite connectivity; and, to estimate current and future internet demand of NGAs and LGUs in the next 2, 5, and 10 years.

Two sample surveys were conducted: (i) one for local government units (LGUs) and (ii) another for national government entities consisting of National Government Agencies (NGAs); Government Owned and Controlled Corporation (GOCCs); State Universities and Colleges (SUCs); Local Water Districts (LWDs); and, Ministries¹ of the Bangsamoro Government. For the purposes of this study, only the Local Government module is used. The LGU questionnaires were pretested to 2 LGUs, with some follow-up questions on what part of the draft questionnaires were difficult to answer.

The population of interest for the LGU survey consists of local governments at the province, city and municipal level. A listing of 1,695 LGUs (consisting of 82 provinces, 148 cities, 1,465 municipalities) was classified by income class. The LGU survey used stratified random sampling. The strata of LGUs were based on income and type of LGU (i.e., province, municipality, city). Further, LGUs with more than 50 percent of their barangays classified as Geographically Isolated and Disadvantaged Areas (GIDA) formed an additional stratum. A sample of 314 LGUs was targeted for interview. Assuming a 10% non-response rate, 348 LGUs were targeted for interview based on the following distribution, which involves fully enumerating all sixth class LGUs, and proportionally allocating the samples across the strata (Table 2).

All figures and tables under '3.3. Data' and '3.4. Initial Statistics from Data' are from this survey.

¹ The 14 BARMM government ministries and the Office of the Chief Minister are treated in this study as part of the National Government Entities, since the Bangsamoro government is autonomous.

Table 2. Distribution of targeted sample LGUs by income class

Income Class	POPULATION OF INTEREST				SAMPLE			
	Cities	Municipalities*	Provinces	Total Number of LGUs	Cities	Municipalities	Provinces	Total Sample LGUs
1 st	58	326	45	429	11	63	9	83
2 nd	16	184	16	216	3	34	3	40
3 rd	32	268	12	312	6	50	2	58
4 th	27	392	6	425	6	75	2	83
5 th	10	273	3	286	3	52	1	55
6 th	5	22	..	27	6	22	0	28
TOTAL	148	1,465	82	1,695	35	296	17	347

*Note: There are 21 municipalities in BARMM with unidentified income class and were excluded from the population of interest due to lack of information on their income classification.

3.4. Initial Statistics from Data

3.4.1. E-Government Strategy

Figure 9 shows that only 31.92% report having an e-government strategy. When we break down the results by LGU level or type, the results show that e-government strategy adoption is highest among cities (58.82%) and lowest among municipalities (27.69%) (Figure 10).

Figure 9. E-Government Strategy Adoption among LGUs (%)

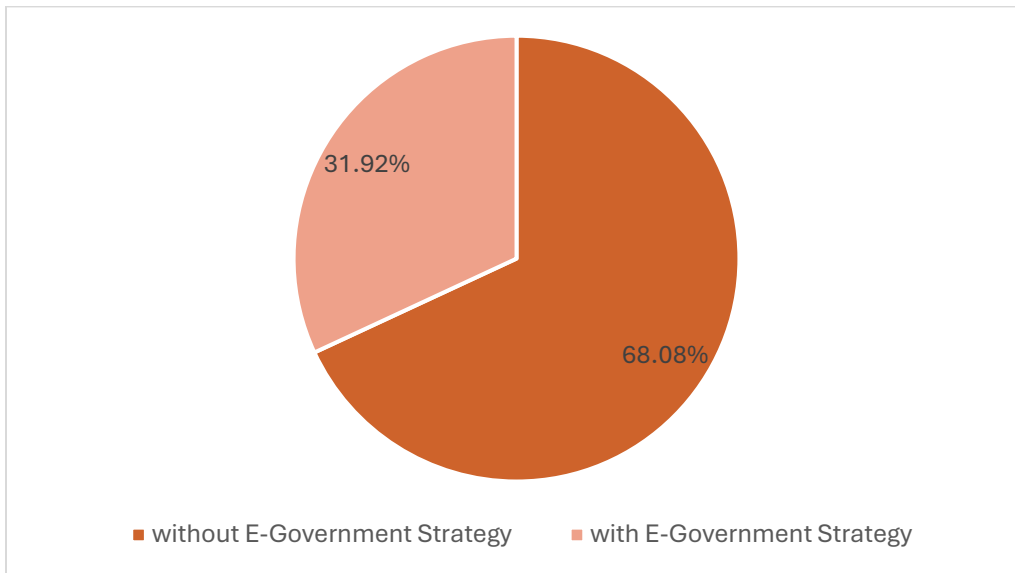
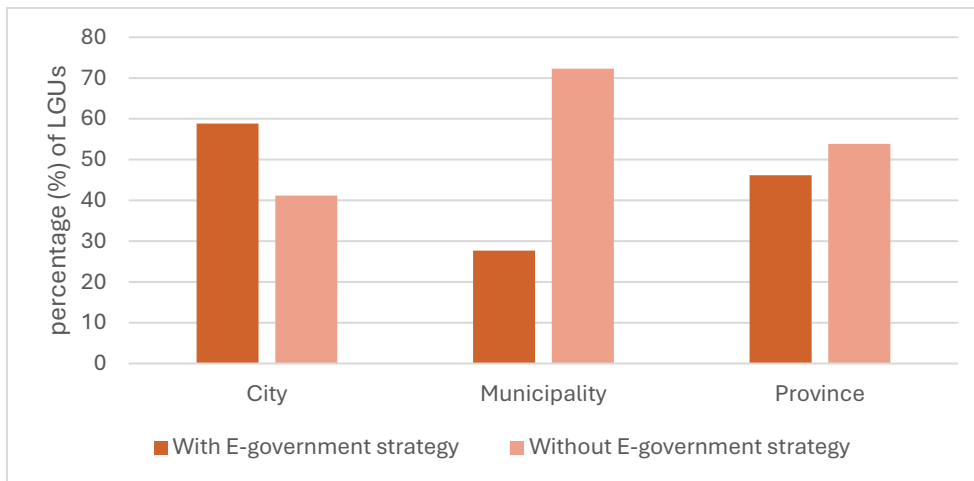


Figure 10. Share of LGUs with E-Government Strategy (%)



A breakdown by island group (Figure 11) shows Luzon leads in count but still leaves two-thirds without strategies, while Visayas and Mindanao display even lower E-government strategy adoption shares (17.73% and 17.02%). Figure 12 further highlights that city adoption is comparatively strong across regions (e.g., Luzon 75%, Mindanao 55%), whereas municipalities lag (Luzon 30%; Mindanao 28%).

Figure 11. Share of LGUs with E-Government Strategy by Island Group

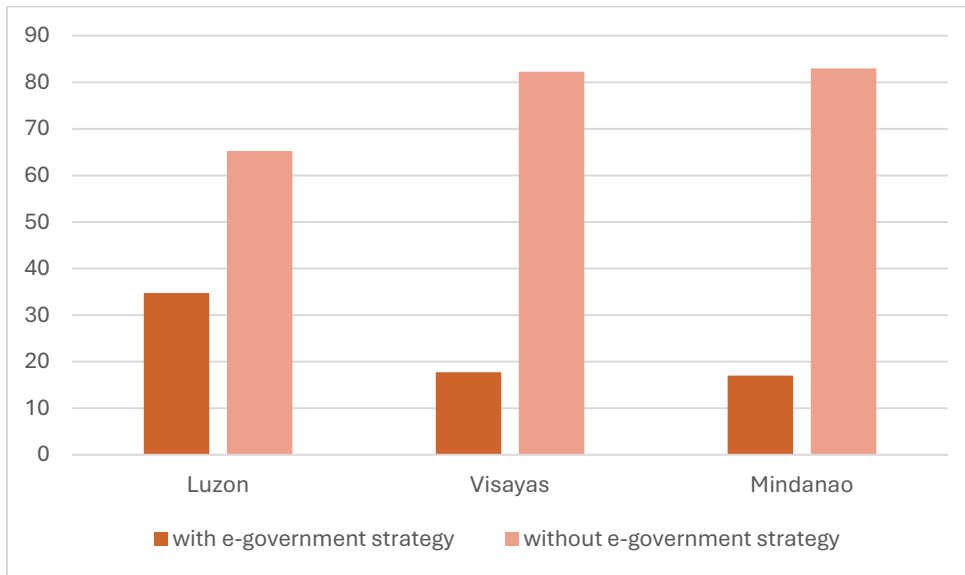
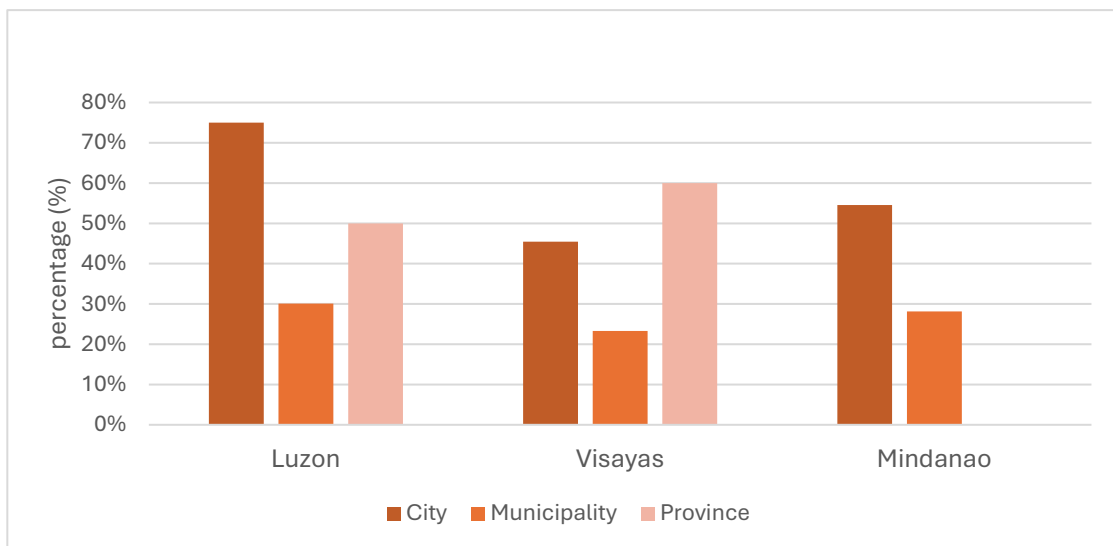
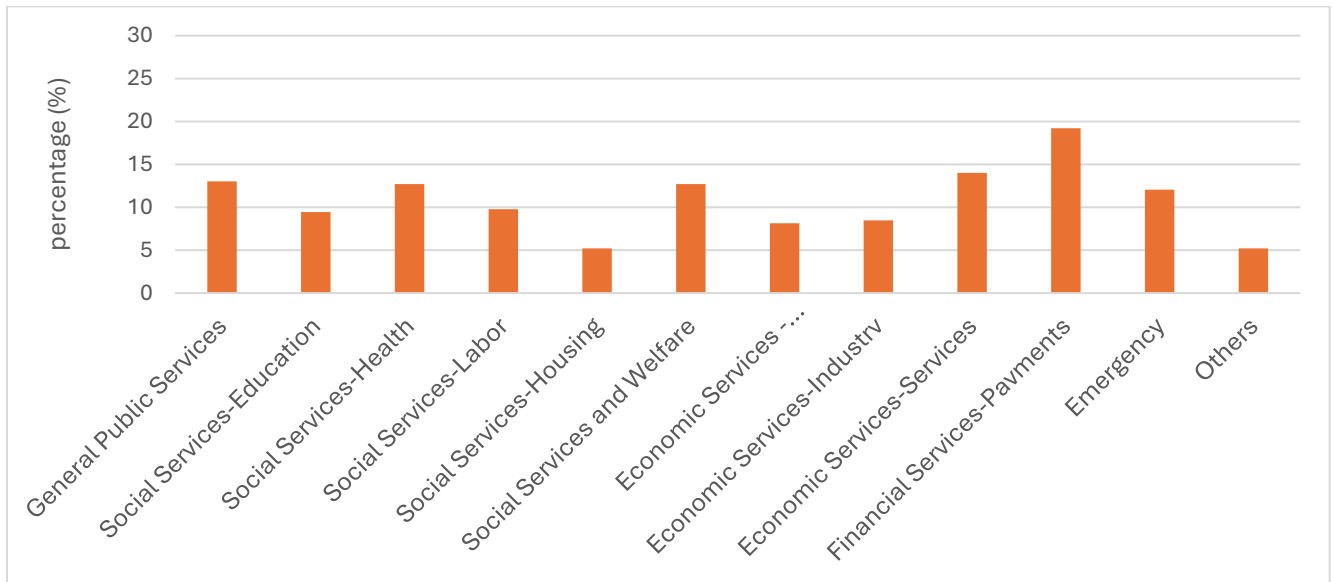


Figure 12. LGUs with E-government Strategy by Island Group and Level (%)



Turning to breadth of online service delivery, Figure 13 indicates financial services/payments score the highest national coverage (19.22%) and are particularly prominent among cities (50%). This is an indication that digital payments serve as an early “entry point” for e-government services.

Figure 13. E-Government Service Coverage Across Policy Areas in LGUs



A detailed discussion of adoption of e-government services across policy areas (Table 3) shows that Luzon demonstrates the most balanced and moderately high e-government coverage across policy areas. The service areas with the highest percentages appear in Financial Services–Payments (20.57%), Economic Services–Services (14.89%), and Social Services–Health (13.48%) which indicates relatively advanced digitalization in financial transactions and citizen-facing services, possibly reflecting stronger ICT infrastructure and fiscal capacity among Luzon LGUs. Meanwhile, sectors like Housing (6.38%) and Agriculture (8.51%) are relatively weaker, which may point to an unbalanced e-government services penetration in labor-intensive sectors.

The LGUs in the Visayas lags behind Luzon and Mindanao in most categories, showing lower e-service adoption rates, particularly in Education (3.37%), Housing (3.37%), and Industry (5.62%). Bright spots for the Visayas region are the slightly better performance in Social Welfare (13.48%) and Financial Services (19.10%), indicating prioritization of citizen welfare and payment digitalization.

Surprisingly, LGU respondents from Mindanao have collectively shown that the region performs comparatively higher in overall service adoption relative to Visayas and even surpasses Luzon in certain sectors such as General Public Services (16.88%), Health (15.58%), and Economic Services–Services (15.58%). This may be attributed to targeted digital governance initiatives and donor-assisted ICT projects in selected Mindanao LGUs (citation). However, coverage in Housing

(5.19%) and Labor (7.79%) remains low, indicating persistent structural constraints despite progressive areas of improvement.

Looking at the results by LGU type, Cities exhibit the highest overall e-government adoption rates across nearly all policy areas. The most notable are Financial Services–Payments (50.00%), Health (38.24%), and General Public Services (41.18%). This is consistent with the observation that cities have better digital infrastructure, fiscal resources, and technical capacity (Citation). Urban LGUs clearly dominate in enabling online payment systems, public information platforms, and health services.

In contrast, Municipalities show low and uneven e-government penetration, with most government services areas reflecting percentages typically below 10%. The most prominent e-government services areas are in Financial Services (15.00%) and Economic Services–Services (11.15%), while low rates are observed for social services in Housing (3.46%), Education (6.54%), and Labor (7.69%) which have implications on a widening digital divide.

Finally, Provinces show moderate digitalization levels. Strong points include Education (23.08%), and Social Welfare (30.77%), possibly influenced by the provinces’ coordination roles in regional service delivery. However, their lower figures in Economic services for Industry (7.69%) and Agriculture (15.38%) imply limited integration of economic governance systems.

The average e-government service coverage across all policy areas remains modest, typically ranging from 5–15%, except in Financial Services–Payments (19.22%) and Economic Services–Services (14.01%), which show higher uptake. The country’s most digitized domains are financial transactions, general administration, and health services, while housing and labor services remain the least digitized (around 5–10%).

Table 3. E-Government Service Coverage Across Policy Areas in LGUs

		Percentage (%) of LGUs						
		Luzon	Visayas	Mindanao	City	Municipality	Province	Philippines
General	Public	12.77	10.11	16.88	41.18	9.23	15.38	13.03
Services								
Social	Services-	12.77	3.37	10.39	26.47	6.54	23.08	9.45
Education								
Social	Services-	13.48	8.99	15.58	38.24	9.23	15.38	12.70
Health								

Social Services- Labor	12.77	6.74	7.79	23.53	7.69	15.38	9.77
Social Services- Housing	6.38	3.37	5.19	17.65	3.46	7.69	5.21
Social Services and Welfare	12.77	13.48	11.69	32.35	9.23	30.77	12.70
Economic Services - Agriculture	8.51	6.74	9.09	23.53	5.77	15.38	8.14
Economic Services- Industrv	9.93	5.62	9.09	20.59	6.92	7.69	8.47
Economic Services- Services	14.89	11.24	15.58	35.29	11.15	15.38	14.01
Financial Services- Pavments	20.57	19.10	16.88	50.00	15.00	23.08	19.22
Emergency	13.48	11.24	10.39	29.41	9.62	15.38	12.05
Others	4.26	7.87	3.90	5.88	5.00	7.69	5.21

These figures suggest that Philippine e-governance is still at an emerging stage, characterized by:

- Concentration of digital services in financially viable and urbanized LGUs.
- Limited digital penetration in social and developmental sectors (education, housing, labor).
- Increasing integration of payment systems and information portals, driven by national digital transformation initiatives such as DICT's e-Government Masterplan and PhilSys integration.

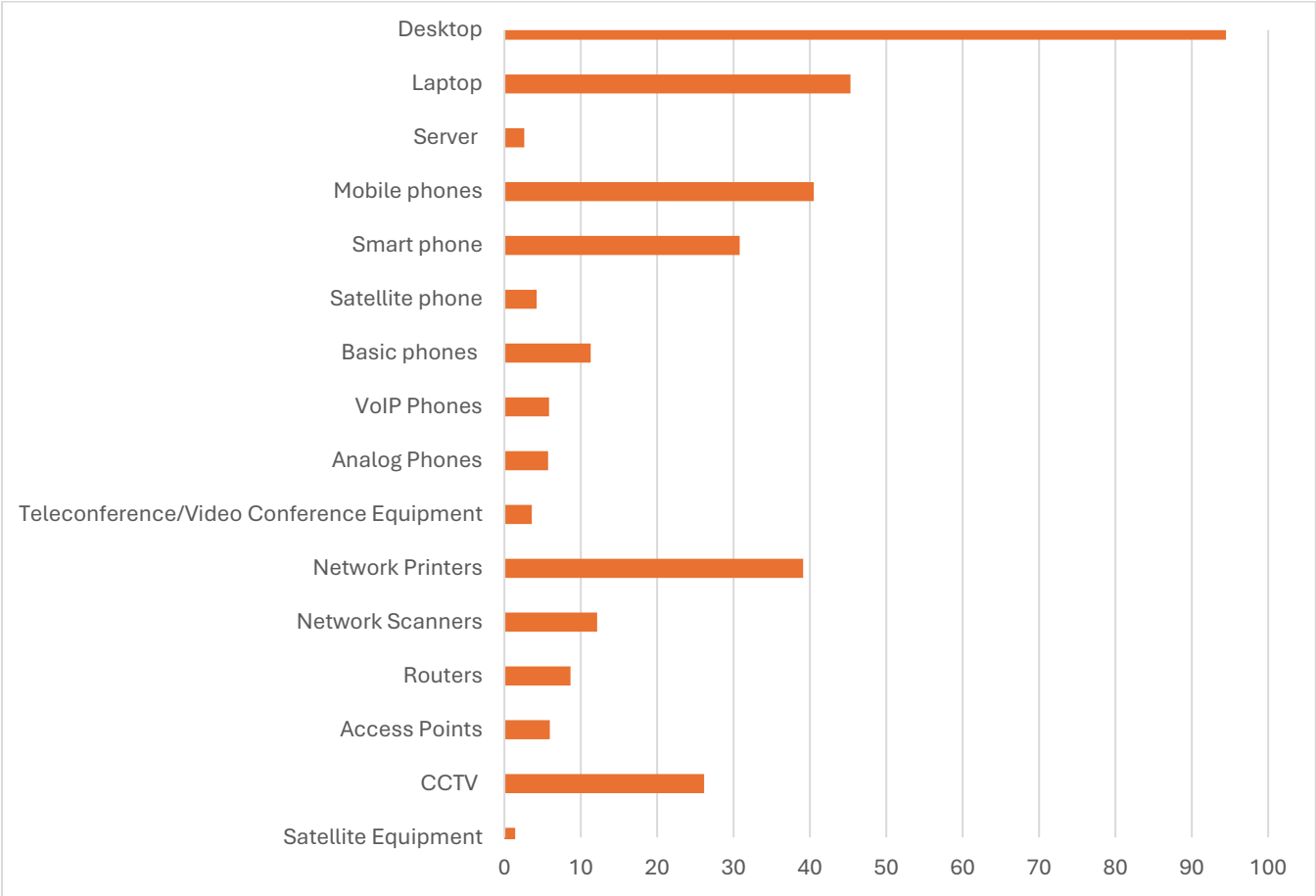
3.4.2. ICT Equipment and Infrastructure

Examining the ICT equipment profile of LGUs is essential in assessing LGU readiness for artificial intelligence (AI) adoption because AI systems require reliable computing power, data storage, connectivity, and digital interfaces, which all depends on the availability and quality of ICT infrastructure. This section presents the availability of key ICT equipment necessary for AI adoption of LGUs. By understanding the state of these hardware foundations, policymakers are

able to identify where infrastructure investments are most needed to enable inclusive, scalable, and sustainable AI adoption at the local level.

The national picture depicted by Figure 14 shows that on average, LGUs have 94 desktop computers and 45 laptops, indicating that computing hardware as the foundation of local digital infrastructure is already available in LGUs. However, other foundational equipment and technologies such as servers (average of 3) and networking equipment like routers (9) and access points (6) remain limited. Communication tools, including mobile phones (41) and smartphones (31), are gaining importance, though large standard deviations indicate wide disparities among LGUs. Meanwhile, other equipment such as CCTV (26 units on average) and network printers (39) demonstrate that LGUs are also adopting monitoring and administrative technologies in some areas.

Figure 14. Average Number of ICT Equipment Available among LGUs



Delving deeper into the patterns of ICT equipment availability, Table 4 reveals clear differences in terms of regional performance. Luzon leads with on average about 96 desktops, 50 laptops, and 54 network printers per LGU. It also records six satellite phones and thirty CCTV units on average, demonstrating stronger preparedness and digital security systems. The Visayas lags slightly, with 92 desktops, 41 laptops, and only 27 printers, while servers and routers average just two and seven, respectively. Mindanao presents a mixed profile because even though it reports 94 desktops and 42 laptops, it also reports an exceptional average number of mobile device ownership with 92 mobile phones and 36 smartphones per LGU. This pattern may suggest that Mindanao LGUs rely more on mobile platforms and mobile data to overcome infrastructure limitations. Taken together, these figures highlight Luzon’s institutionalized ICT advantage, Visayas’ modest but functional adoption, and Mindanao’s adaptive, mobile-oriented approach.

Table 4. Average Number of ICT Equipment Available in LGUs by Island Group

ICT equipment	Luzon	Visayas	Mindanao
Desktop	96	92	94
Laptop	50	41	42
Server	3	2	3
Mobile phones	26	16	92
Smart phone	33	22	36
Satellite phone	6	4	2
Basic phones	13	11	9
VoIP Phones	4	9	5
Analog Phones	5	5	7
Teleconference/Video Conference Equipment	3	3	5
Network Printers	54	27	26
Network Scanners	15	10	10
Routers	9	7	10
Access Points	7	5	6
CCTV	30	24	22
Satellite Equipment	1	1	1

Disaggregated data in Tables 5 to 7 demonstrate that cities possess the most extensive ICT infrastructure across all island groups. In Luzon, cities average 463 desktops, 112 laptops, and 133 network printers, while municipalities average only 48 desktops and 34 laptops. Provincial governments fall in between, with 252 desktops and 211 laptops. Similar trends are found in the Visayas and Mindanao, where cities lead by wide margins. Mindanao's cities are notable for their strong mobile adoption, averaging 567 mobile phones and 49 smartphones. These results underscore the digital divide across LGU types: cities exhibit mature ICT environments, municipalities remain under-equipped, and provinces display intermediate capabilities depending on local resources.

Table 5. Descriptive statistics of ICT Equipment Available in Luzon LGUs

ICT equipment	City				Municipality				Province			
	Mea n	Mi n	Max	SD	Mea n	Mi n	Ma x	S D	Mea n	Mi n	Max	SD
Desktop	463	2	1254	473	48	0	200	43	252	5	600	222
Laptop	112	1	393	117	34	0	139	30	211	5	613	215
Server	11	0	30	12	1	0	15	2	13	1	41	14
Mobile phones	2	0	8	3	27	0	400	75	48	0	100	44
Smart phone	11	0	49	18	33	0	384	61	69	0	200	72
Satellite phone	58	0	631	190	1	0	36	4	1	0	5	2
Basic phones	1	0	5	2	13	0	240	38	35	0	199	80
VoIP Phones	21	0	166	50	2	0	50	8	1	0	5	2
Analog Phones	30	0	200	57	2	0	80	10	2	0	5	2
Teleconference/Video Conference Equipment	6	0	55	16	3	0	50	8	3	0	5	3
Network Printers	133	0	637	236	23	0	178	35	439	2	220	870
Network Scanners	38	0	259	75	12	0	40	14	13	0	50	19

Routers	19	0	128	36	10	1	21	6	39	10	100	27
Access Points	13	0	41	13	12	0	35	12	30	5	107	35
CCTV	130	0	800	25	66	10	180	58	97	4	250	87
				1								
Satellite Equipment	3	0	26	8	1	0	10	3	3	0	20	8

Table 6. Descriptive statistics of ICT Equipment Available in Visayas LGUs

ICT equipment	City				Municipality				Province			
	Mea n	Mi n	Ma x	SD	Mea n	Mi n	Ma x	S D	Mea n	Mi n	Ma x	SD
Desktop	253	60	600	180	46	0	250	43	481	280	744	228
Laptop	69	25	205	53	33	0	182	31	115	15	313	137
Server	5	1	17	5	2	0	20	4	6	2	10	3
Mobile phones	95	1	500	166	7	0	90	15	8	0	15	11
Smart phone	119	0	500	168	10	0	90	17	15	15	15	.
Satellite phone	7	0	50	17	3	0	108	14	0	0	0	.
Basic phones	7	0	50	18	9	0	100	18	27	4	50	33
VoIP Phones	26	0	84	31	2	0	40	6	176	100	251	107
Analog Phones	12	0	50	19	4	0	30	8	10	10	10	0
Teleconference/Video Conference Equipment	11	0	50	22	1	0	25	4	5	5	5	.
Network Printers	72	1	400	131	18	0	148	30	87	10	200	100
Network Scanners	12	0	160	25	7	0	105	15	7	0	106	19
Routers	7	0	40	8	7	0	28	7	6	0	29	7
Access Points	5	0	67	10	3	0	30	6	3	0	35	6

CCTV	17	0	151	27	17	0	98	23	12	0	66	16
Satellite Equipment	1	0	20	3	1	0	30	4	1	0	13	2

Table 7. Descriptive statistics of ICT Equipment Available in Mindanao LGUs

ICT equipment	City				Municipality				Province			
	Mea n	Mi n	Ma x	SD	Mea n	Mi n	Ma x	SD	Mea n	Mi n	Ma x	SD
Desktop	389	128	791	269	45	0	398	61	263	125	400	194
Laptop	113	44	335	86	29	0	131	28	121	95	147	37
Server	10	1	21	7	2	0	20	3	5	1	8	5
Mobile phones	567	0	500	166	18	0	200	36	120	45	195	106
Smart phone	49	0	500	101	26	0	800	69	102	0	290	103
Satellite phone	0	0	2	1	1	0	25	5	18	0	35	25
Basic phones	7	0	65	16	10	0	240	29	43	0	199	72
VoIP Phones	23	0	114	41	2	0	65	10	3	0	5	4
Analog Phones	14	0	50	20	5	0	50	11	52	34	70	25
Teleconference/Vi deo Conference Equipment	12	0	82	28	4	0	65	13	3	0	5	4
Network Printers	111	0	223	82	12	0	150	27	105	95	114	13
Network Scanners	11	0	49	19	101	1	200	141	72	64	80	11
Routers	17	3	50	17	2	1	2	1	32	25	39	10
Access Points	29	1	100	39	34	20	47	19	10	10	10	0
CCTV	63	0	300	118	71	30	112	58	33	26	40	10
Satellite Equipment	4	0	16	6	0	0	0	.	2	0	4	3

As shown in Table 8, most LGUs (around 46 percent) possess between seven and ten types of ICT equipment. Luzon LGUs show the widest range, with some owning up to sixteen types, while

Visayas LGUs cluster around eight to ten. Mindanao LGUs exhibit a polarized distribution, where a few advanced localities are well-equipped and others lack even basic tools. Other LGUs even identified specialized technologies such as network switches, firewalls, and radio communication systems, which are found mainly in more progressive LGUs. These patterns once again support the observation that while a technological base exists nationwide, its breadth and complexity are unevenly distributed.

Table 8. Share of LGUs by Number of Types of ICT Equipment Available

Number of types of ICT equipment	Frequency	Percentage
0	4	1.37
1	4	1.37
2	6	2.06
3	10	3.44
4	13	4.47
5	21	7.22
6	22	7.56
7	40	13.75
8	35	12.03
9	33	11.34
10	25	8.59
11	24	8.25
12	19	6.53
13	15	5.15
14	9	3.09
15	6	2.06
16	5	1.72
Total	291	

Figure 15. Share of Luzon LGUs by Number of Types of ICT Equipment Available

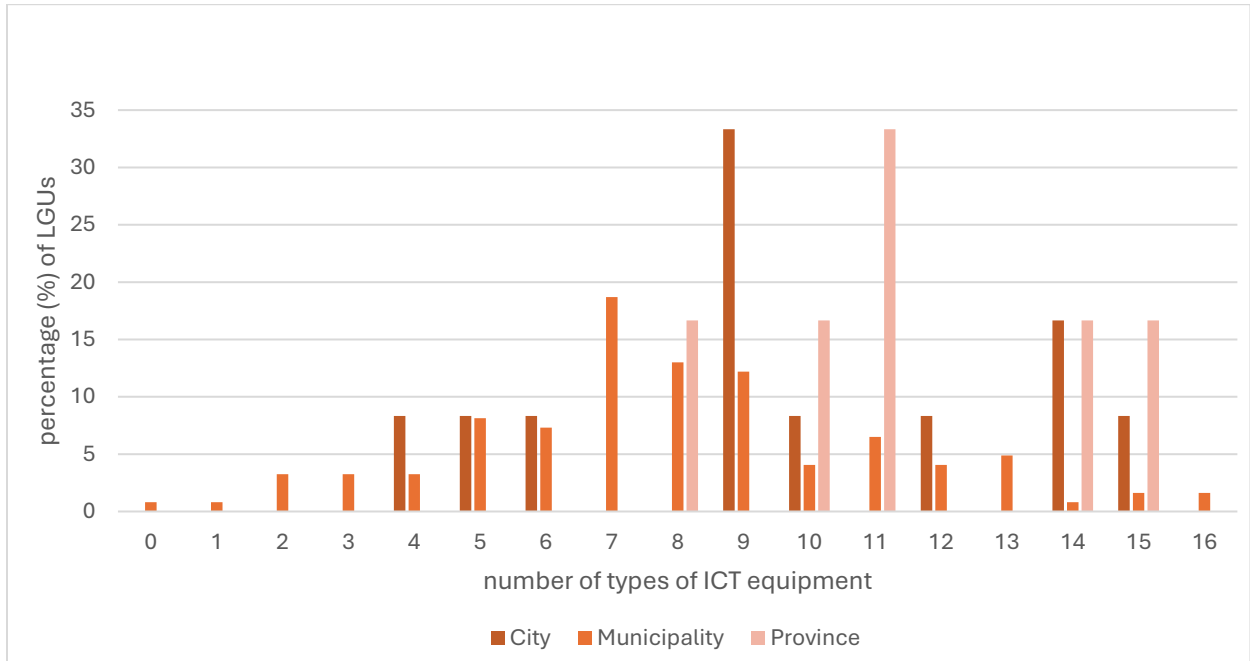


Figure 16. Share of Visayas LGUs by Number of Types of ICT Equipment Available

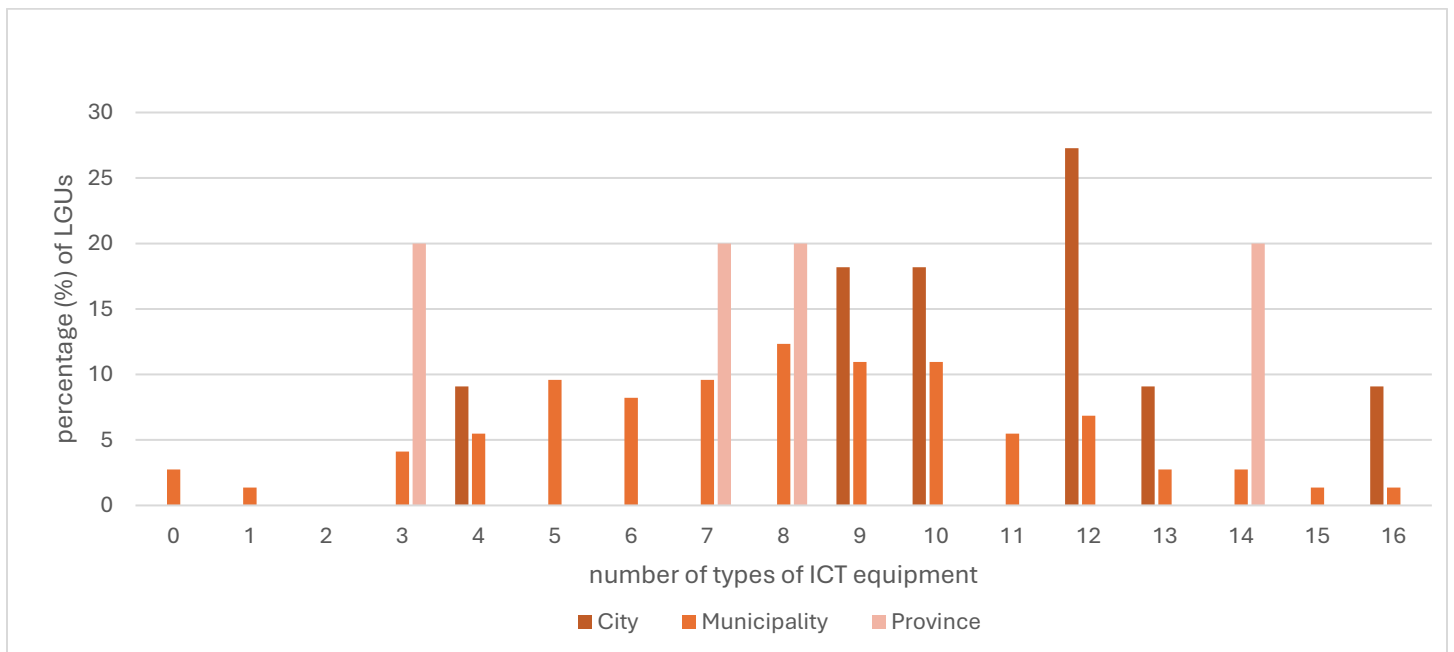
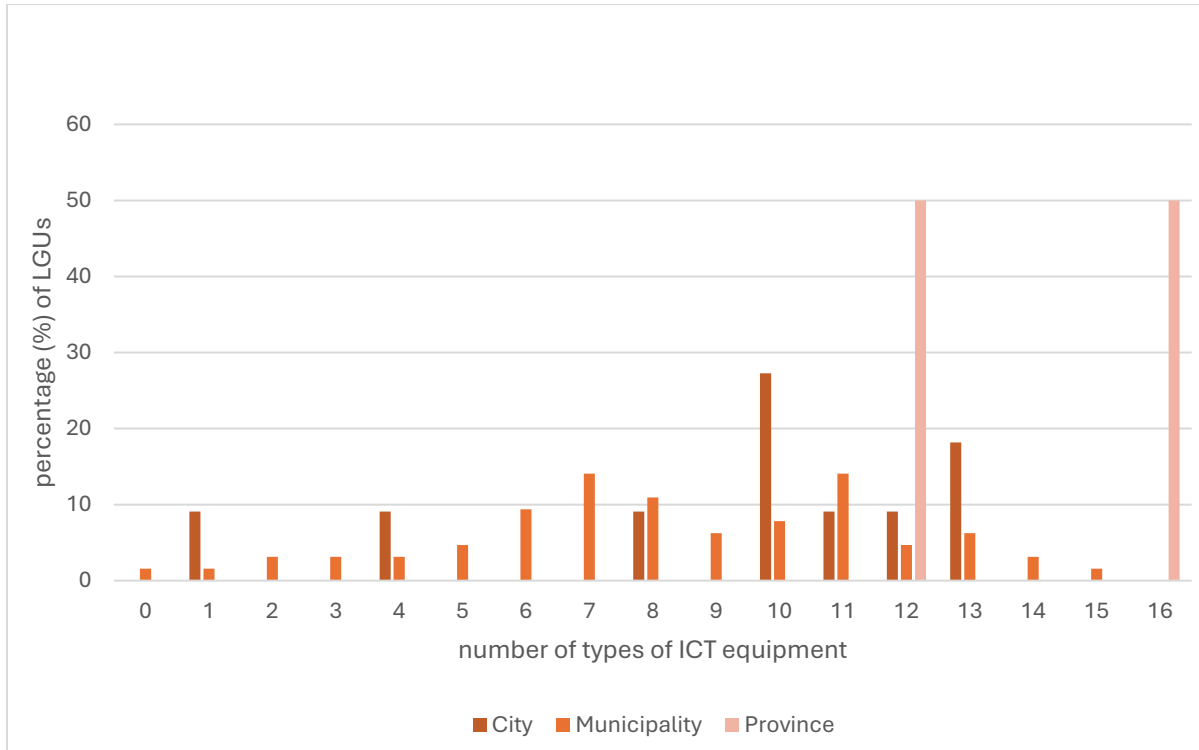


Figure 17. Share of Mindanao LGUs by Number of Types of ICT Equipment Available



Procurement patterns in (Figure 18) reveal that 58.63 percent of LGUs acquire ICT equipment annually, while smaller shares purchase every two to three years or every five years. Roughly 9 percent procure equipment only when necessary. Figure 19 shows that annual purchases are most common in Luzon (81.0 percent) and least common in Mindanao (44.0 percent). Figure 20 highlights that cities are the most proactive in equipment renewal, with 76.5 percent reporting annual procurement, compared with 56.5 percent of municipalities and 53.8 percent of provinces. Table 11 confirms that provincial procurement is often irregular and dependent on external funding. When asked about the other factors that determine the frequency of ICT equipment procurement, LGU respondents mentioned that purchases are made based on fund availability or equipment failure, underscoring the reactive nature of ICT planning in many areas.

Figure 18. Share of LGUs by their Frequency of ICT Equipment Purchase

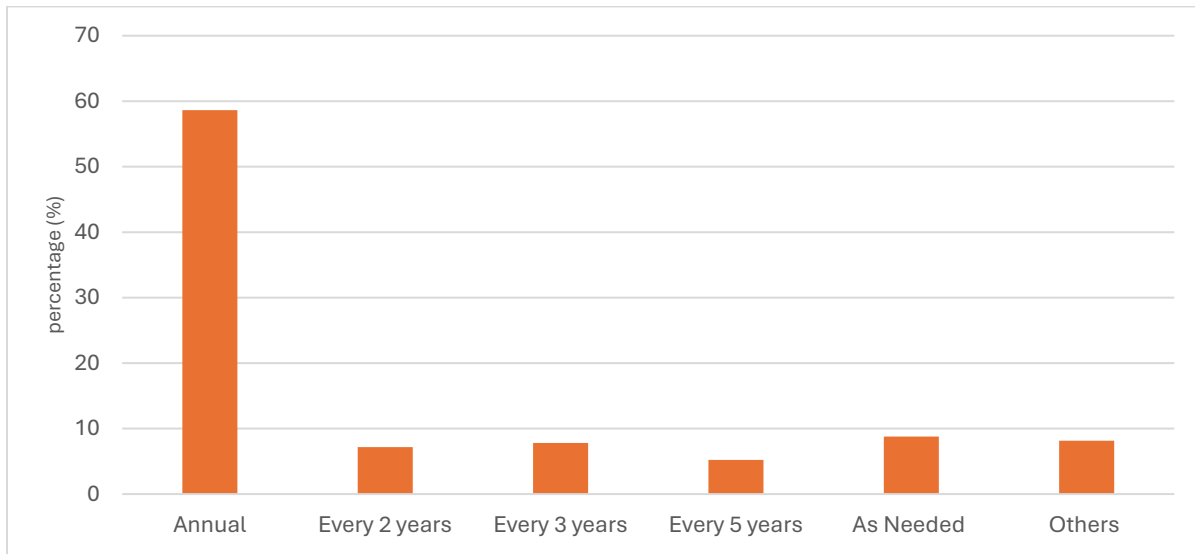


Figure 19. Share of LGUs by Island Group and their Frequency of ICT Equipment Purchase

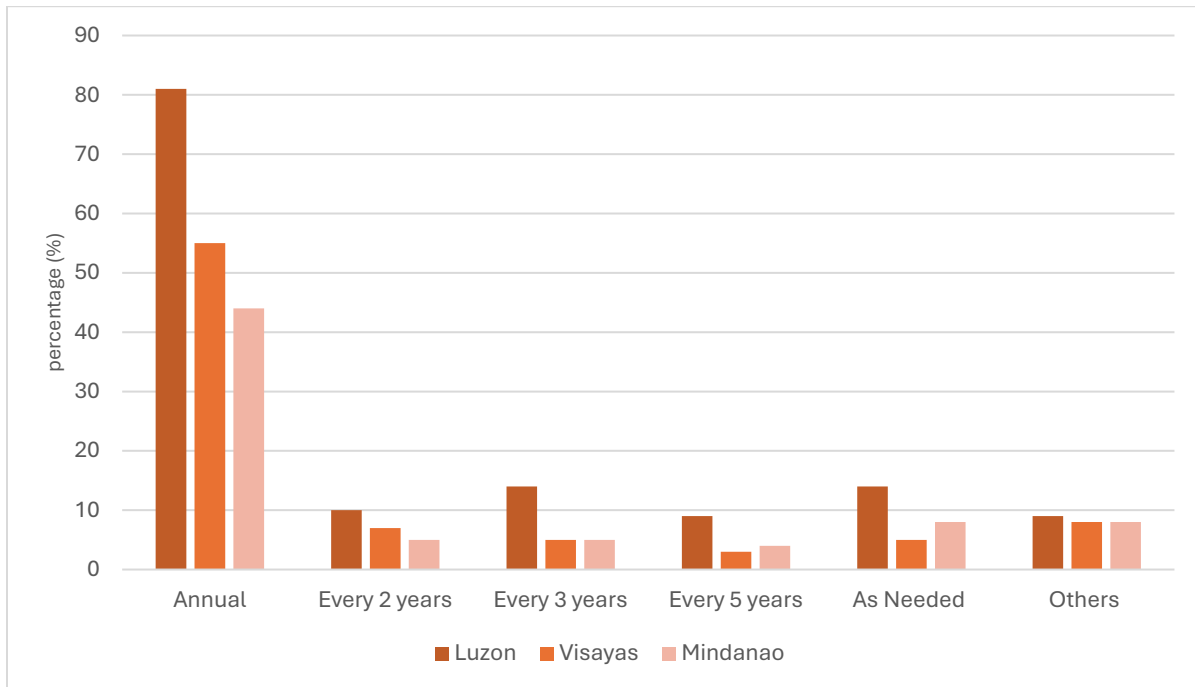
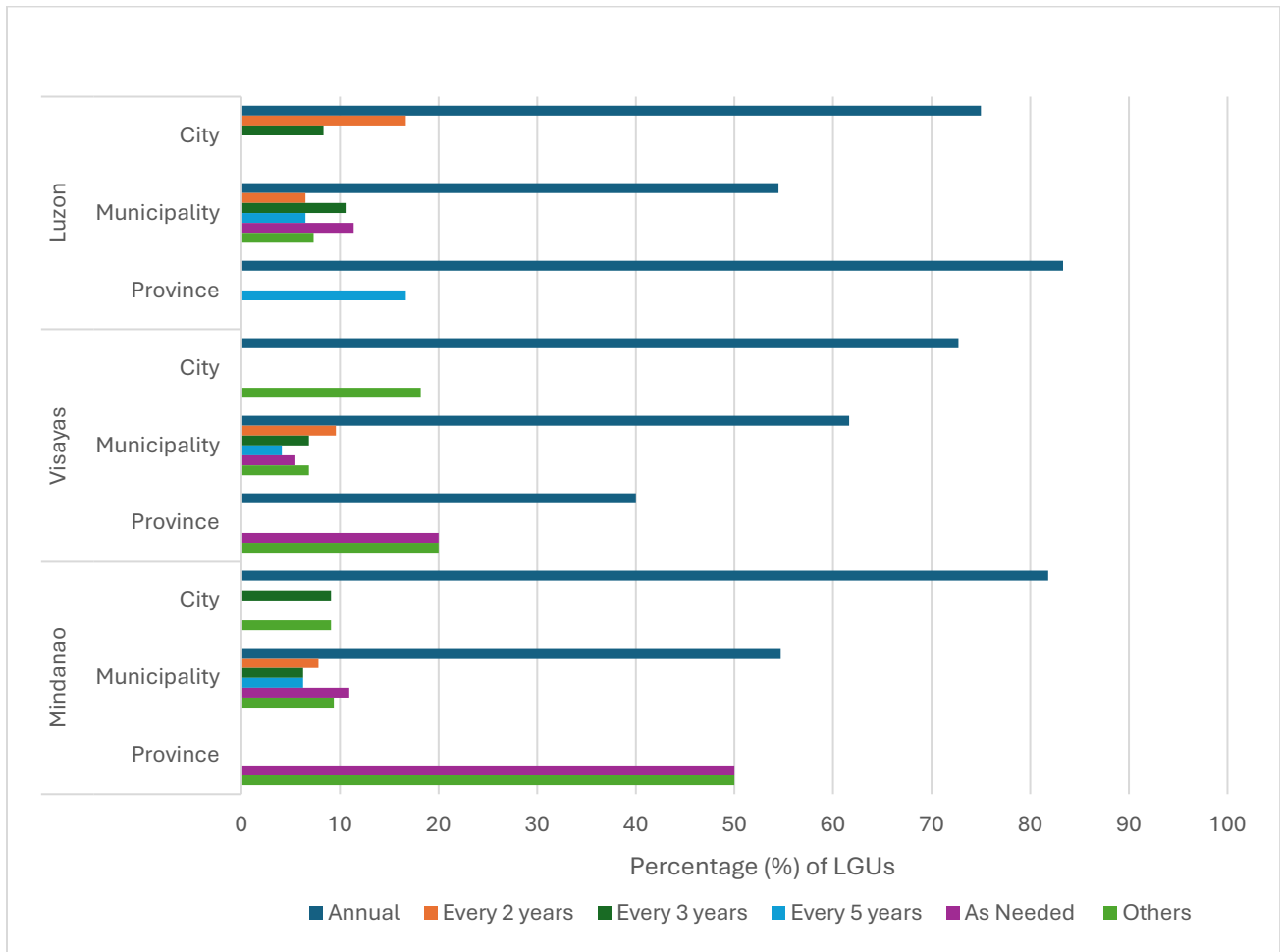


Figure 20. Frequency of ICT equipment purchase by LGU Level



Figure 21. Frequency of ICT Equipment Purchase by Island Group and LGU Level



In summary, the data reveal a national ICT landscape that is highly uneven and resource-dependent. Luzon LGUs benefit from stronger infrastructure and higher equipment diversity, Visayas LGUs demonstrate moderate adoption, and Mindanao LGUs rely heavily on mobile technologies. Cities consistently outperform municipalities and provinces, both in quantity and frequency of ICT acquisition. These findings point to a persistent urban-rural and regional digital divide. Policy implications include the need for targeted investment in municipal ICT capacity, expansion of broadband and server infrastructure, and institutionalization of ICT asset management and budgeting practices. Strengthening the Department of Information and Communications Technology's (DICT) regional programs and ensuring equitable support across LGUs will be essential to achieving inclusive digital transformation in the Philippines.

3.4.3. Resources for ICT and AI

The readiness of local government units (LGUs) for digital transformation and artificial intelligence (AI) adoption depends heavily on two key resource dimensions: financial resources and human capital for ICT. Financial resources affect the ability of LGUs to acquire infrastructure, software, and technical services, while human capital for ICT ensures effective implementation and maintenance of digital initiatives. The next set of data presents how ICT resources are distributed among LGUs across regions and types of LGU. The patterns that we can surmise are critical in identifying LGUs' readiness in AI adoption.

Table 9 presents the range of their ICT budgets by island group and LGU type. The data reveal large disparities in ICT budget allocations. Luzon cities report the highest maximum allocation at ₱110.8 million, far surpassing the Visayas' maximum of ₱10 million and Mindanao's ₱13 million. Luzon municipalities also show a higher ceiling (₱5.8 million) compared to those in Mindanao (₱368,505) but Visayas has reported the highest budget (₱15.66 million). The presence of a Luzon province allocating ₱1 million for ICT underscores that even provincial units vary widely in resources.

Table 9. Share of Island Group by Range of Average Budget for ICT and Digital Technology

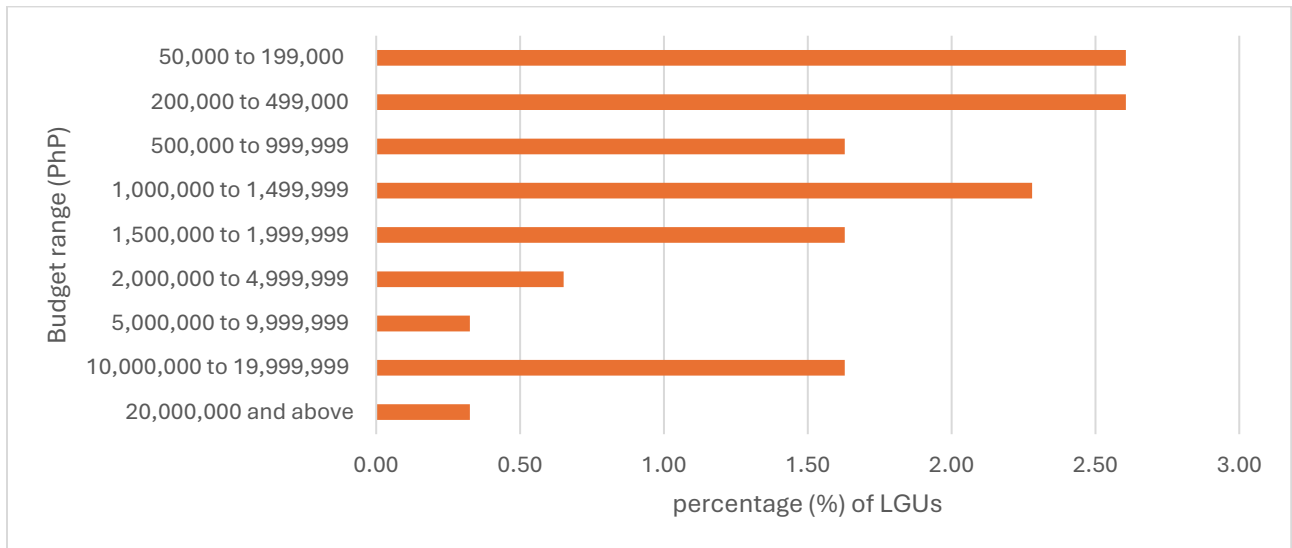
Island group	LGU level	n	Average	Min	Max
Luzon	City	5	24,682,528	100,000	110,812,640
	Municipality	13	1,258,535	100,000	5,800,000
	Total	18	7,765,199	100,000	110,812,640
Visayas	City	6	2,401,567	50,000	10,000,000
	Municipality	10	3,433,029	50,000	15,660,292
	Total	16	3,046,231	50,000	15,660,292

Mindanao	City	2	8,882,198	4,764,396	13,000,000
	Municipality	5	223,701	50,000	368,505
	Total		2,697,557		
		7		50,000	13,000,000
Philippines		42	5,058,444	50,000	
					110,812,640

These figures demonstrate that urban LGUs, particularly cities in Luzon, dominate in ICT budgeting, likely due to their higher revenue base and greater administrative responsibilities. By contrast, municipalities, especially in Mindanao, appear financially constrained in allocating resources for ICT, reflecting their reliance on national government transfers and smaller local tax collections. The wide range, from as low as ₱50,000 to over ₱110 million, may already be an indication that digital readiness of LGUs is uneven readiness across the Philippines.

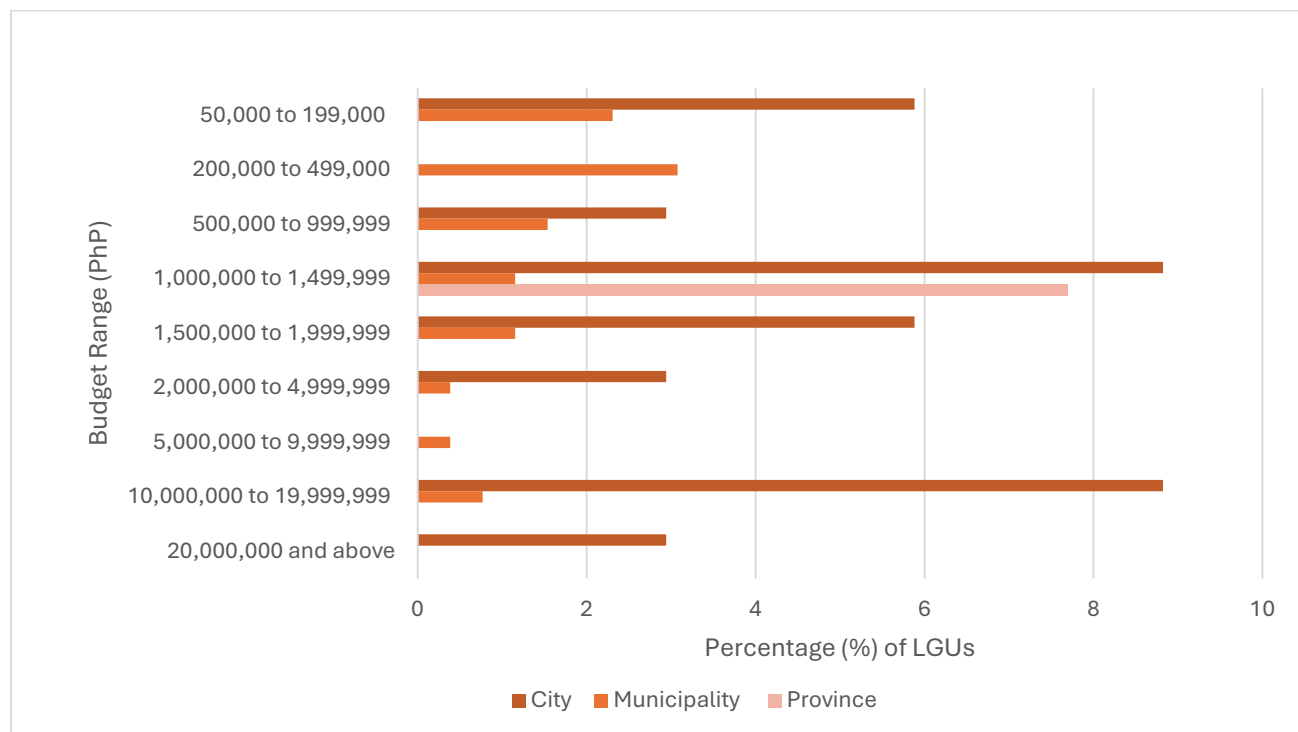
Figure 22 provides further granularity by showing the percentage distribution of LGUs according to ICT budget ranges. The majority of LGUs fall within low to moderate budget categories, typically below ₱2 million. Only a small fraction allocate above ₱10 million, primarily cities in Luzon and Visayas. High-end allocations above ₱20 million are exceedingly rare, accounting for just 0.33% nationally.

Figure 22. Average Budget for ICT and Digital Technology in LGUs



By LGU type, cities exhibit greater concentration in higher budget ranges—with some exceeding ₱10 million—while municipalities cluster within the ₱200,000 to ₱999,999 range, reflecting modest ICT investments (Figure 23). Provinces occupy intermediate positions, often allocating ₱1–2 million, which aligns with their broader coordination mandates.

Figure 23. Share of LGU Level by Range of Average Budget for ICT and Digital Technology



3.4.4. Existence of ICT Support Units in LGUs

Table 10 focuses on the presence of ICT support units or planning offices within LGUs. Out of 307 LGUs surveyed, 50.49% have established ICT units, while 49.51% operate without any dedicated ICT support. This balance suggests that half of local governments still lack institutionalized structures to manage ICT functions, despite national policies encouraging digital transformation. When disaggregated by LGU type, the data reveal that cities are the most organized, with 88.24% reporting dedicated ICT units (Table 11). Provinces follow with 76.92%, while municipalities lag behind at 44.23%.

Table 10. Number and percentage of LGUs with ICT Support Units

Existence of ICT Support Units in LGUs	Frequency	Percentage
Without ICT Support Units	152	49.51%
With ICT Support Units	155	50.49%
Total	307	100

Figure 24. Existence of ICT Support Units in LGUs

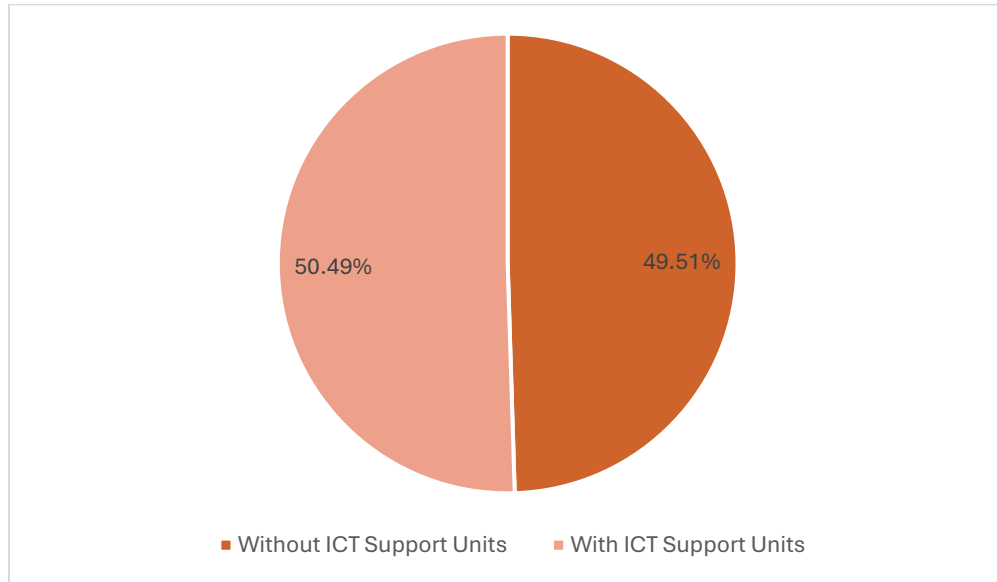
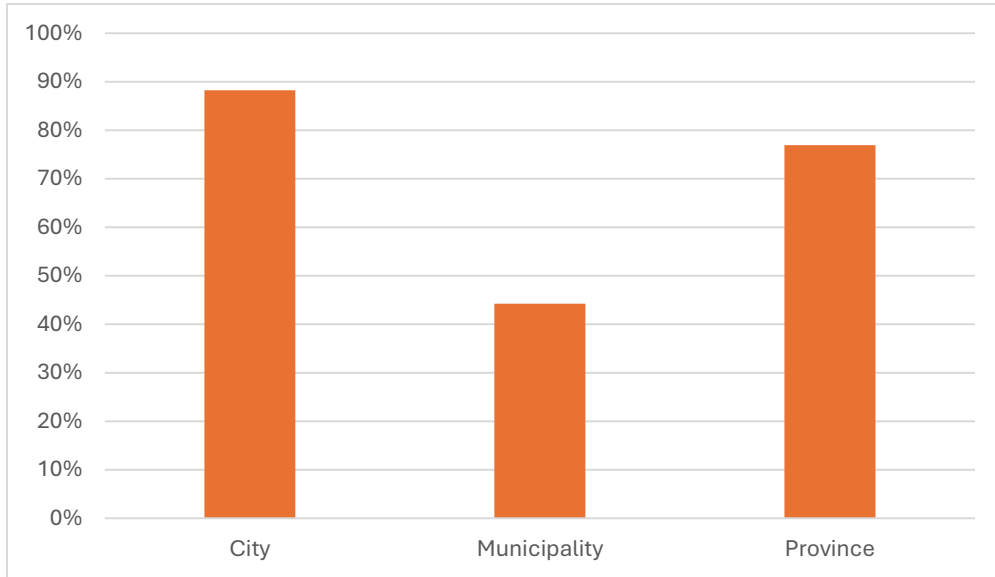


Table 11. Percentage of LGUs with ICT Support Units by LGU Level

LGU level	Percentage
City	88.24%
Municipality	44.23%
Province	76.92%

Figure 25. LGUs with ICT Support Units by Level



By island group, the differences are less stark: Visayas leads slightly (55%), followed by Luzon (50%) and Mindanao (47%) (Table 12). This indicates that while organizational readiness for ICT varies within regions, the more critical divide lies between urban and rural administrative levels. The data confirm that city governments serve as key digital enablers, while municipalities require greater institutional development to sustain ICT operations.

Table 12. Percentage of LGUs with ICT Support Units by Island Group

Island group	Percentage
Luzon	50%
Visayas	55%
Mindanao	47%

Figure 26. LGUs with ICT Support Units by Island Group

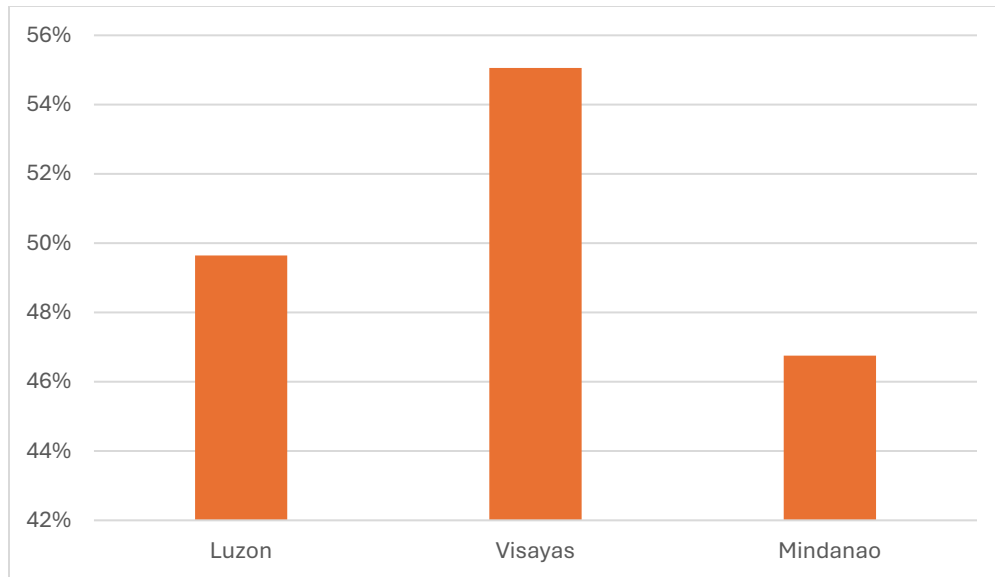


Table 13 cross-tabulates the presence of ICT support units by both LGU type and island group, providing deeper insights into spatial patterns. In Luzon, 92% of cities have ICT units, compared to 45% of municipalities and 67% of provinces. A similar pattern holds in the Visayas, where 91% of cities and 100% of provinces report ICT units, but only 47% of municipalities. Mindanao, however, exhibits weaker institutional presence: only 82% of cities, 41% of municipalities, and 50% of provinces have ICT offices.

This consistent trend underscores the urban-rural divide in ICT human resources. Cities, regardless of region, have institutionalized ICT management, while smaller municipalities lack personnel and organizational structures. The stronger performance of Visayan provinces compared to Luzon and Mindanao also suggests that regional coordination mechanisms (possibly through provincial ICT councils) may be more developed in the central islands.

Table 13. Percentage of LGUs with ICT Support Units by LGU Level and Island Group

Island group	City	Municipality	Province
Luzon	92%	45%	67%
Visayas	91%	47%	100%
Mindanao	82%	41%	50%

*Figures were divided by number of LGU in each island group

Figure 27. LGUs with ICT Support Units by Level and Island Group

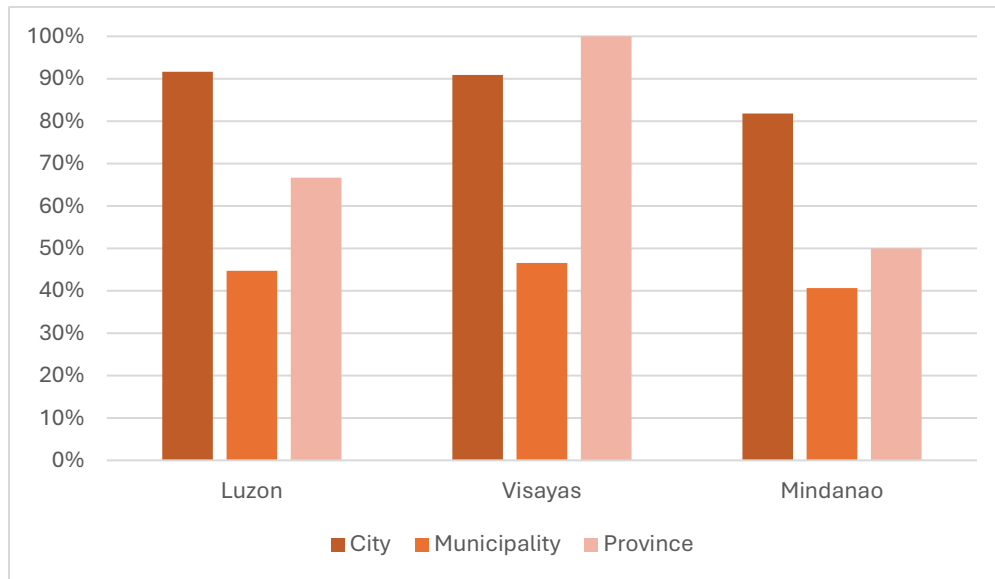


Table 14 categorizes ICT units according to their organizational structure. Of all LGUs, 28.34% maintain organic ICT units, meaning they are formally embedded in the LGU structure with dedicated positions, while 21.17% operate inorganic or ad hoc units, typically temporary or project-based. Nearly half of all LGUs (49.51%) report no ICT units, confirming limited institutionalization nationwide.

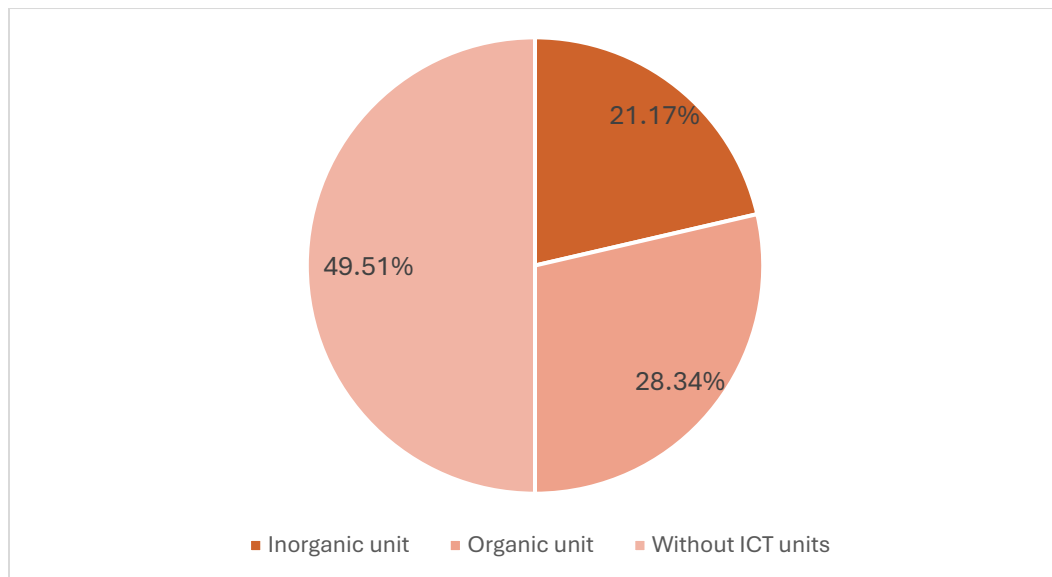
Table 14. Number and percentage of LGUs with different types organizational structures of ICT Units within LGUs

Organization structure	Frequency	Percentage
Inorganic unit	65	21.17%
Organic unit	87	28.34%
Without ICT units	152	49.51%

*Base: Total Number of LGUs

Note: Figures do not add up to 100 percent due to missing values

Figure 28. Organizational Structure of ICT Units in LGUs



Note: Figures do not add up to 100 percent due to missing values

These figures reveal a fragmented approach to ICT governance. The dominance of temporary or absent structures indicates that digital initiatives are often reactive and project-driven rather than integrated into long-term administrative systems. Without institutional permanence, ICT programs face sustainability challenges, particularly when leadership changes or project funding ends.

Table 15 highlights how the type of ICT unit varies across Luzon, Visayas, and Mindanao. The proportion of organic ICT units is highest in the Visayas (30.34%), followed by Luzon (29.79%) and Mindanao (23.38%). The prevalence of inorganic units is relatively similar across regions

(19–24%), but Mindanao shows the highest percentage of LGUs without ICT units (53.25%), compared to 44.94% in Visayas and 50.35% in Luzon.

These patterns indicate that institutionalization of ICT functions is advancing faster in the Visayas, where formal ICT offices are more common, possibly due to regional cooperation or donor-assisted projects. Conversely, Mindanao’s weaker structural foundation may reflect ongoing resource limitations and a higher dependence on external ICT support from national or development agencies.

Table 15. Percentage of LGUs with different types of organizational structures of ICT Units by Island Group

Island group	Percentage of LGUs		
	Inorganic unit	Organic unit	Without ICT units
Luzon	19.15	29.79	50.35
Visayas	23.60	30.34	44.94
Mindanao	22.08	23.38	53.25

*Base: Total Number of LGUs per island Group

Note: Figures do not add up to 100 percent due to missing values

Table 16 disaggregates ICT unit structures by both region and LGU type, offering a nuanced picture of organizational maturity. Among Luzon cities, 75% maintain organic ICT units, while municipalities are mostly without such structures (55%) and rely on ad hoc arrangements. Luzon provinces show a balanced distribution between organic and inorganic units (both at 33%), suggesting partial institutionalization. In the Visayas, 63.64% of cities and 80% of provinces have organic ICT units, showing stronger institutional embedding compared to municipalities, where 53.42% still operate without ICT offices. Mindanao exhibits the weakest pattern overall: only 54.55% of cities and 0% of provinces have organic ICT units, while 59.38% of municipalities remain without any ICT organizational form. The data clearly point to a progressive weakening of ICT institutionalization moving from cities to municipalities and from Visayas to Mindanao, reaffirming the intertwined effects of geography and governance scale on ICT capacity.

Table 16. Percentage of LGUs by different types of organizational structures of ICT Units by Island Group and by LGU Level

Island group	LGU level	Percentage		
		Inorganic unit	Organic unit	Without ICT units
Luzon	City	16.67	75.00	8.33
	Municipality	18.70	25.20	55.28
	Province	33.33	33.33	33.33
Visayas	City	18.18	63.64	9.09
	Municipality	24.66	21.92	53.42
	Province	20.00	80.00	0
Mindanao	City	18.18	54.55	18.18
	Municipality	21.88	18.75	59.38
	Province	50.00	0.00	50

* Base: Total Number of LGUs per island Group and level

Note: Figures do not add up to 100 percent due to missing values

The tables collectively illustrate that ICT resources are highly unequal across LGUs, reinforcing the broader pattern of regional and administrative disparity in digital readiness. Cities, particularly in Luzon and the Visayas, possess both the fiscal resources and organizational structures needed to implement ICT and AI-related initiatives. Municipalities, especially in Mindanao, struggle with limited budgets and weak institutional capacity, leaving them dependent on higher-level governments for technical support. The data suggest that while the national policy environment promotes digital transformation, local ICT capacity remains fragmented and uneven, posing a challenge to inclusive AI adoption. Strengthening ICT units, formalizing their structure, and ensuring sustainable budget allocation across all LGU types will be essential for enabling a more equitable and resilient digital governance ecosystem in the Philippines.

3.4.5. Network Channel Availability

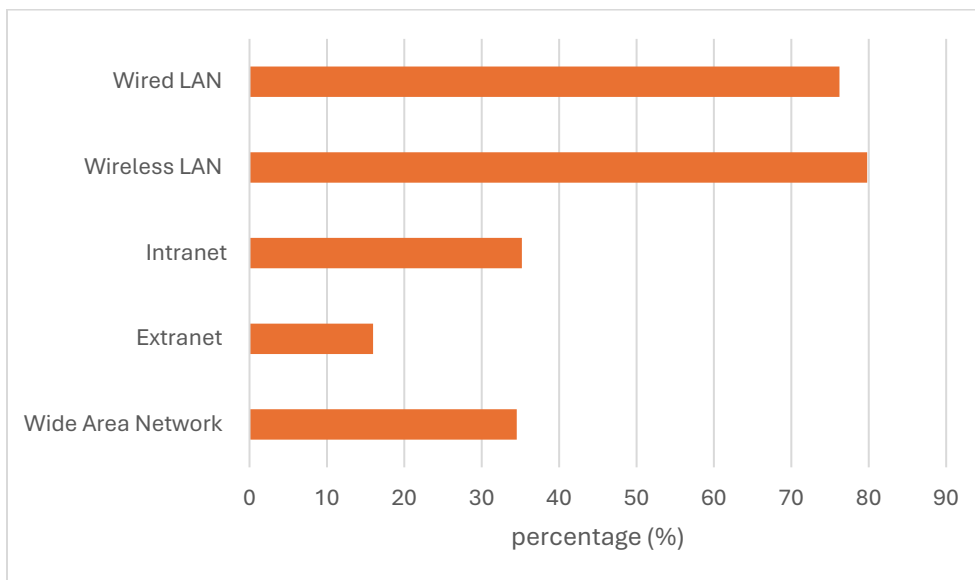
According to the results of the survey, the majority of LGUs seem to have access to network channels. However, the LGUs differ in terms of which network channels are available to them. Based on the share of LGUs by network channel availability, 245 surveyed LGUs or about 79.8

percent of the surveyed LGUs have wireless LAN while 234 surveyed LGUs (76.2 percent) have wired LAN. On the other hand, other network channels such as intranet (35.2 percent), extranet (16.0 percent) and wide area network (34.5 percent) are only available to less than half of the respondent LGUs (Figure 29).

Table 17. Number and percentage of LGUs by network channel availability

Network channel	Frequency	Percentage
Wired LAN	234	76.22
Wireless LAN	245	79.8
Intranet	108	35.18
Extranet	49	15.96
Wide Area Network	106	34.53

Figure 29. Share of LGUs by network channel availability



By island group, Visayas has the highest percentage of LGUs with both wired LAN (79.8 percent of LGUs) and wireless LAN (82.0 percent) (Figure 30). Luzon, on the other hand, has the lowest percentage of LGUs with wired LAN (73.1 percent) among the three island groups while Mindanao has the lowest percentage of LGUs with wireless LAN (76.6 percent). In terms of availability of

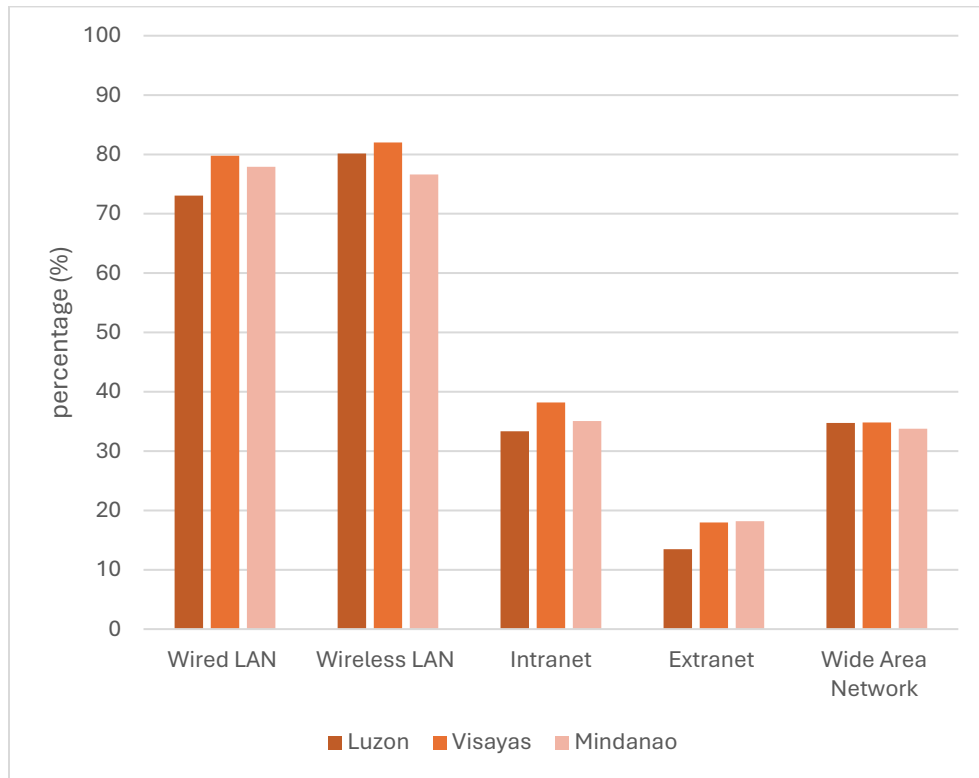
intranet, extranet and wide area network, less than half of LGUs from each island group have access to the said channels.

Table 18. Percentage of LGUs by network channel availability and by Island Group

Island group	Percentage				
	Wired LAN	Wireless LAN	Intranet	Extranet	Wide Area Network
Luzon	73.05	80.14	33.33	13.48	34.75
Visayas	79.78	82.02	38.20	17.98	34.83
Mindanao	77.92	76.62	35.06	18.18	33.77

Base: Number of LGUs per Island Group

Figure 30. Network channel availability among LGUs by Island Group



By type of LGU, the contrast is starker, especially between cities and municipalities, with about 91.2 percent of cities having wired LAN while only about 73.1 percent of municipalities having wired LAN (Figure 31). That contrast is also present in terms of availability of wireless LAN, with about 97.1 percent of municipalities having wireless LAN while about 76.9 percent of municipalities having wireless LAN. That is also the case for intranet (61.8 percent among cities versus 29.6 percent among municipalities), extranet (38.2 percent among cities versus 12.7 percent among municipalities) and wide area network (61.8 percent among cities versus 30.4 percent among municipalities). Provinces, on the other hand, have higher percentages of availability of network channels compared to municipalities but lower percentages compared to cities. The only exceptions are wired LAN, in which all the surveyed provinces are said to have wired LAN, and intranet, in which about 76.9 percent of provinces have intranet.

Table 19. Percentage of LGUs by network channel availability and by LGU Level

LGU level	Percentage				
	Wired LAN	Wireless LAN	Intranet	Extranet	Wide Area Network
City	91.18	97.06	61.76	38.24	61.76
Municipality	73.08	76.92	29.62	12.69	30.38
Province	100.00	92.31	76.92	23.08	46.15

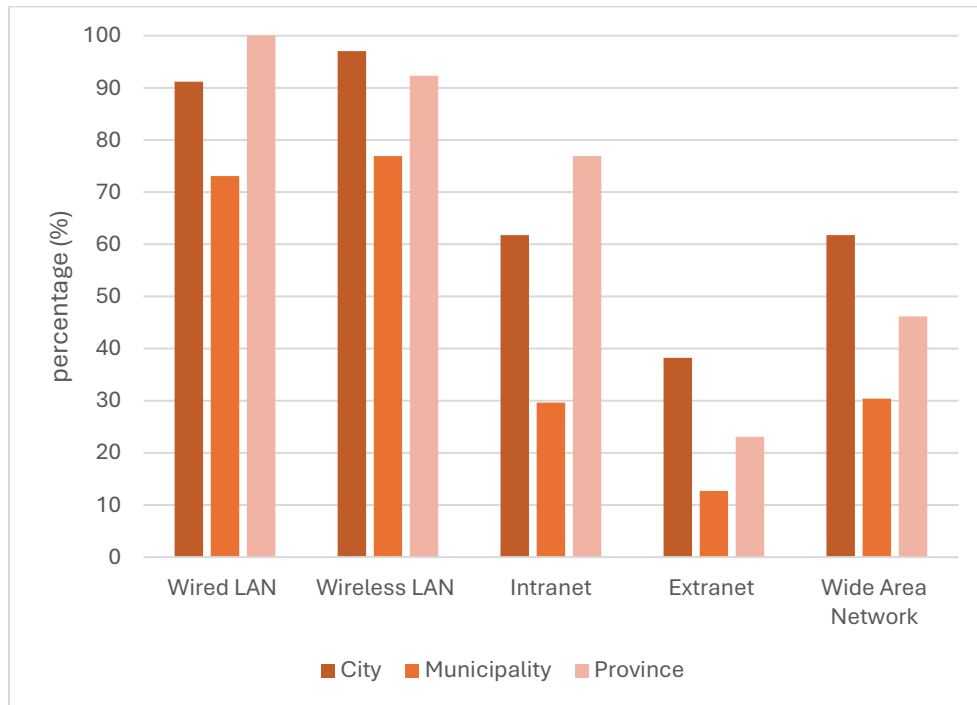
Base: Number of LGUs per Level

Table 20. Percentage of LGUs in Luzon by network channel availability and by Level

Network channel	Percent		
	City	Municipality	Province
Wired LAN	91.67	69.92	100.00
Wireless LAN	91.67	78.05	100.00
Intranet	58.33	29.27	66.67
Extranet	41.67	10.57	16.67
Wide Area Network	75.00	30.89	33.33

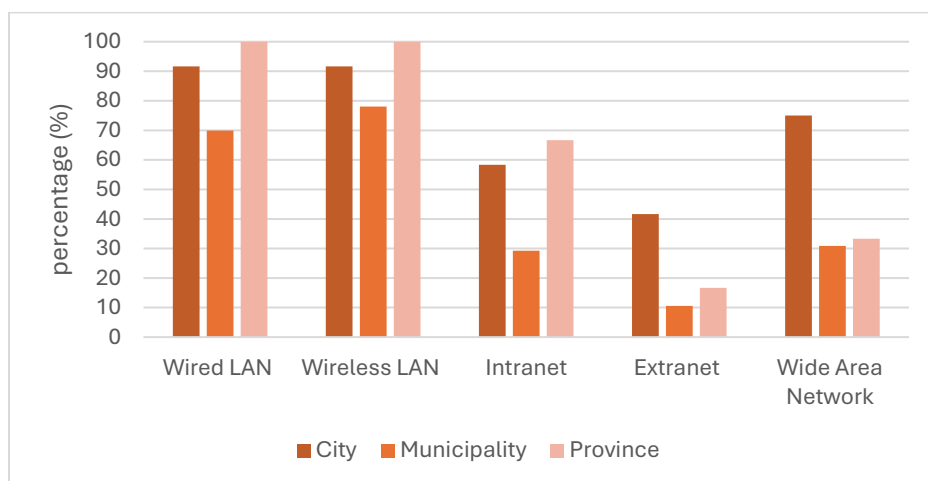
Base: Number of Luzon LGUs per level

Figure 31. Network channel availability among LGUs by Level



Among Luzon LGUs, cities generally also have higher percentages of network channel availability compared to municipalities (Figure 32). This is especially the case for extranet availability, in which the percentage of cities having extranet (41.7 percent) is almost four times larger than that of municipalities (10.6 percent). Meanwhile, Luzon provinces generally have higher percentage of network channel availability versus municipalities, with all of the surveyed provinces having both wired LAN and wireless LAN.

Figure 32. Network channel availability in Luzon by LGU Level



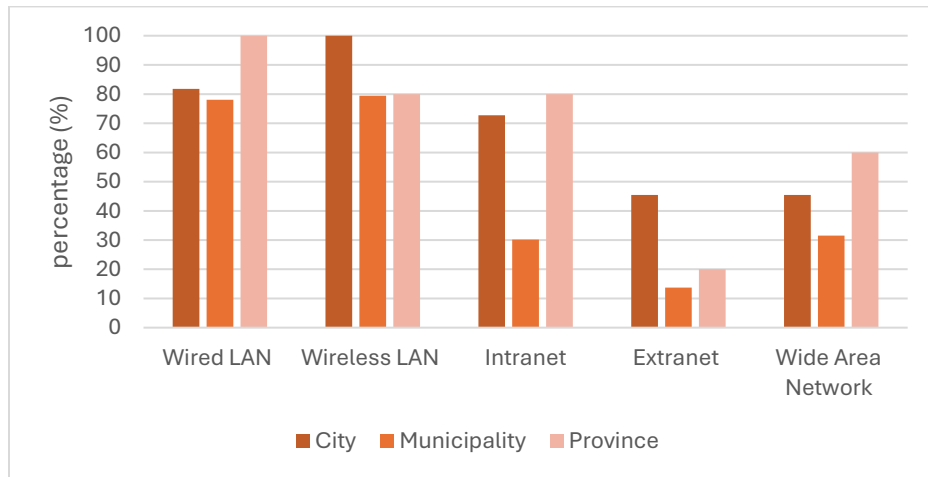
Among Visayas LGUs, cities also have higher percentages of network channel availability compared to municipalities (Figure 33; Table 21). This is evident in wireless LAN availability, in which all cities have wireless LAN compared to about 79.5 percent of municipalities. This difference between cities and municipalities is also the case for extranet availability, in which the percentage of cities having extranet (45.5 percent) is more than times larger than that of municipalities (13.7 percent). Meanwhile, Visayas provinces generally have higher percentage of network channel availability versus municipalities, with all the surveyed provinces having wired LAN.

Table 21. Percentage of LGUs in Visayas by network channel availability and by Level

Network channel	Percent		
	City	Municipality	Province
Wired LAN	81.82	78.08	100.00
Wireless LAN	100.00	79.45	80.00
Intranet	72.73	30.14	80.00
Extranet	45.45	13.70	20.00
Wide Area Network	45.45	31.51	60.00

Base: Number of Visayas LGUs per level

Figure 33. Network channel availability in Visayas by LGU Level



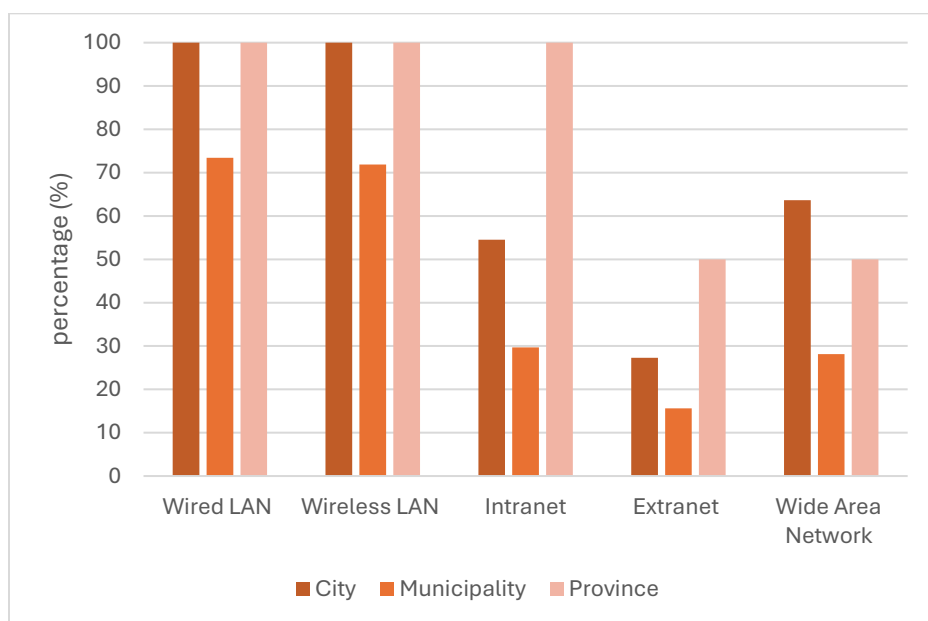
In terms of surveyed LGUs in Mindanao, cities also have higher percentages of network channel availability compared to municipalities. For cities in Mindanao, all of them have both wired LAN and wireless LAN. Intranet, extranet and wide area network are generally more available in cities in Mindanao versus their municipal counterparts. Meanwhile, the surveyed provinces in Mindanao generally have higher percentage of network channel availability versus municipalities, with all the surveyed provinces having wired LAN, wireless LAN and intranet (Figure 34).

Table 22. Percentage of LGUs in Mindanao by network channel availability and by Level

Network channel	Percent		
	City	Municipality	Province
Wired LAN	100.00	73.44	100.00
Wireless LAN	100.00	71.88	100.00
Intranet	54.55	29.69	100.00
Extranet	27.27	15.63	50.00
Wide Area Network	63.64	28.13	50.00

Base: Number of Mindanao LGUs per level

Figure 34. Network channel availability in Mindanao by LGU Level



3.4.6. Types of Internet Connection

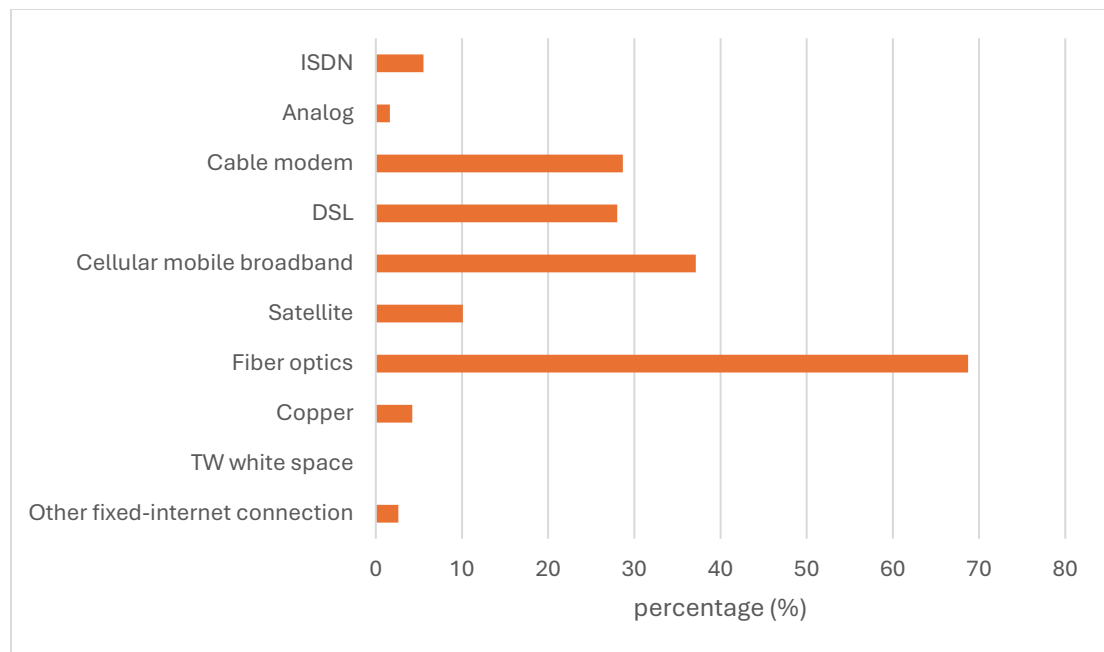
In terms of types of internet connection, a majority of the surveyed LGUs have fiber optic internet (68.7 percent). Other types of internet connection have relatively smaller presence in the LGUs—for instance, only about 37.1 percent of LGUs have cellular mobile broadband while only about 28.0 percent have DSL internet connection (Figure 35; Table 23).

Table 23. Share of LGUs by Type of Internet Connection (%)

Type of internet connection	Frequency	Percentage
ISDN	17	5.54
Analog	5	1.63
Cable modem	88	28.66
DSL	86	28.01
Cellular mobile broadband	114	37.13
Satellite	31	10.10
Fiber optics	211	68.73

Copper	13	4.23
TW white space		
Other fixed-internet connection	8	2.61

Figure 35. Share of LGUs by Type of Internet Connection

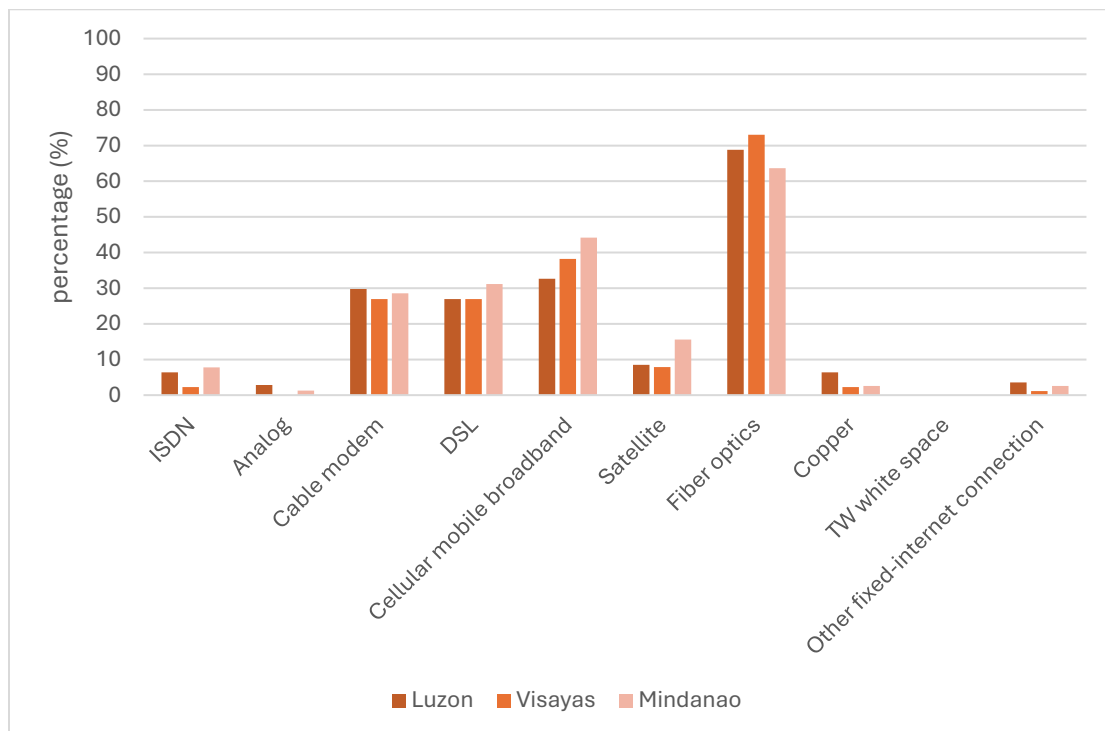


When breaking down by island group, Visayas has the highest percentage of LGUs with fiber optics internet at 73.0 percent, followed by Luzon with 68.8 percent and by Mindanao with 63.6 percent. Similar to the general results among LGUs, the other types of intern connections are only available to less than half of LGUs in every island group. It is worth noting that about 44.2 percent of surveyed LGUs in Mindanao have cellular mobile broadband, higher than the results from Luzon (32.6 percent) and Visayas (38.2 percent) (Figure 36).

Table 24. Type of Internet Connection among LGUs by Island Group (%)

Type of internet connection	Percentage		
	Luzon	Visayas	Mindanao
ISDN	6.38	2.25	7.79
Analog	2.84		1.30
Cable modem	29.79	26.97	28.57
DSL	26.95	26.97	31.17
Cellular mobile broadband	32.62	38.20	44.16
Satellite	8.51	7.87	15.58
Fiber optics	68.79	73.03	63.64
Copper	6.38	2.25	2.60
TW white space			
Other fixed-internet connection	3.55	1.12	2.60

Figure 36. Type of Internet Connection among LGUs by Island Group



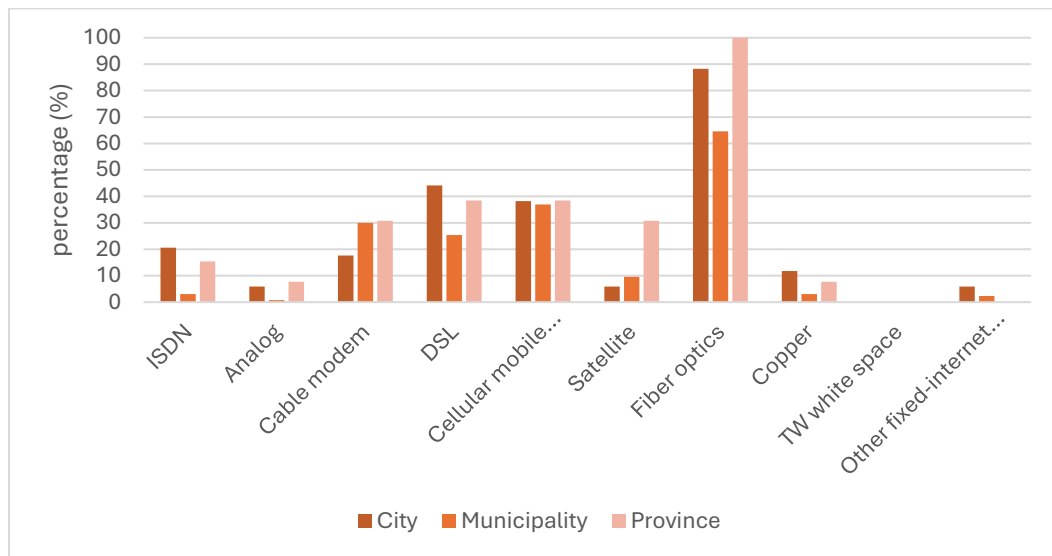
Among the different types of LGUs, all surveyed provinces mentioned that they have fiber optics compared to 88.2 percent of surveyed cities and 64.6 percent of surveyed municipalities (Figure 37). For the other types of internet connection, the results show that municipalities generally have lower availability of every type of internet connection. On the other hand, cities have greater availability of internet connections such as ISDN, DSL, copper and other fixed-internet connections while municipalities have greater availability in terms of analog, cable modem, cellular mobile broadband and satellite.

Table 25. Type of Internet Connection among LGUs by Level (%)

Type of internet connection	Percentage		
	City	Municipality	Province
ISDN	20.59	3.08	15.38
Analog	5.88	0.77	7.69
Cable modem	17.65	30.00	30.77
DSL	44.12	25.38	38.46
Cellular mobile broadband	38.24	36.92	38.46
Satellite	5.88	9.62	30.77
Fiber optics	88.24	64.62	100.00
Copper	11.76	3.08	7.69
TW white space			
Other fixed-internet connection	5.88	2.31	0.00

Base: Number of LGUs per Level

Figure 37. Type of Internet Connection among LGUs by Level



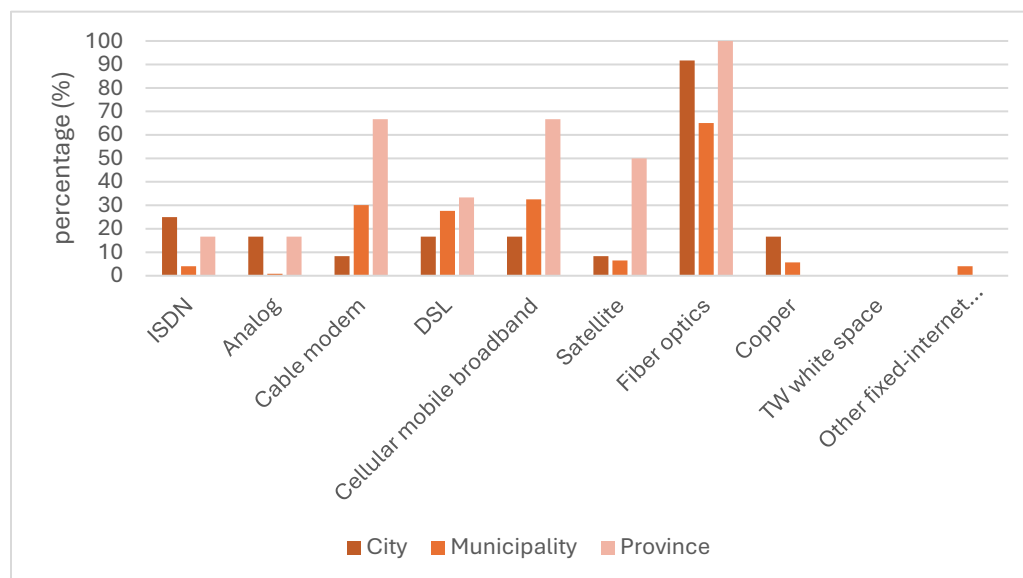
In terms of Luzon LGUs, fiber optics internet is available in all the surveyed Luzon provinces, as well as about 91.7 percent of Luzon cities and about 65.0 percent of Luzon municipalities. Most provinces in Luzon also have cable modem and cellular mobile broadband while half of these provinces have satellite internet. Conversely, only a minority of cities, municipalities and provinces have the remaining types of internet connections (Figure 38).

Table 26. Type of Internet Connection in Luzon LGUs by Level (%)

Type of internet connection	Percent		
	City	Municipality	Province
ISDN	25.00	4.07	16.67
Analog	16.67	0.81	16.67
Cable modem	8.33	30.08	66.67
DSL	16.67	27.64	33.33
Cellular mobile broadband	16.67	32.52	66.67
Satellite	8.33	6.50	50.00
Fiber optics	91.67	65.04	100.00
Copper	16.67	5.69	
TW white space			

Other connection	fixed-internet		4.07	
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Figure 38. Type of Internet Connection in Luzon LGUs by Level



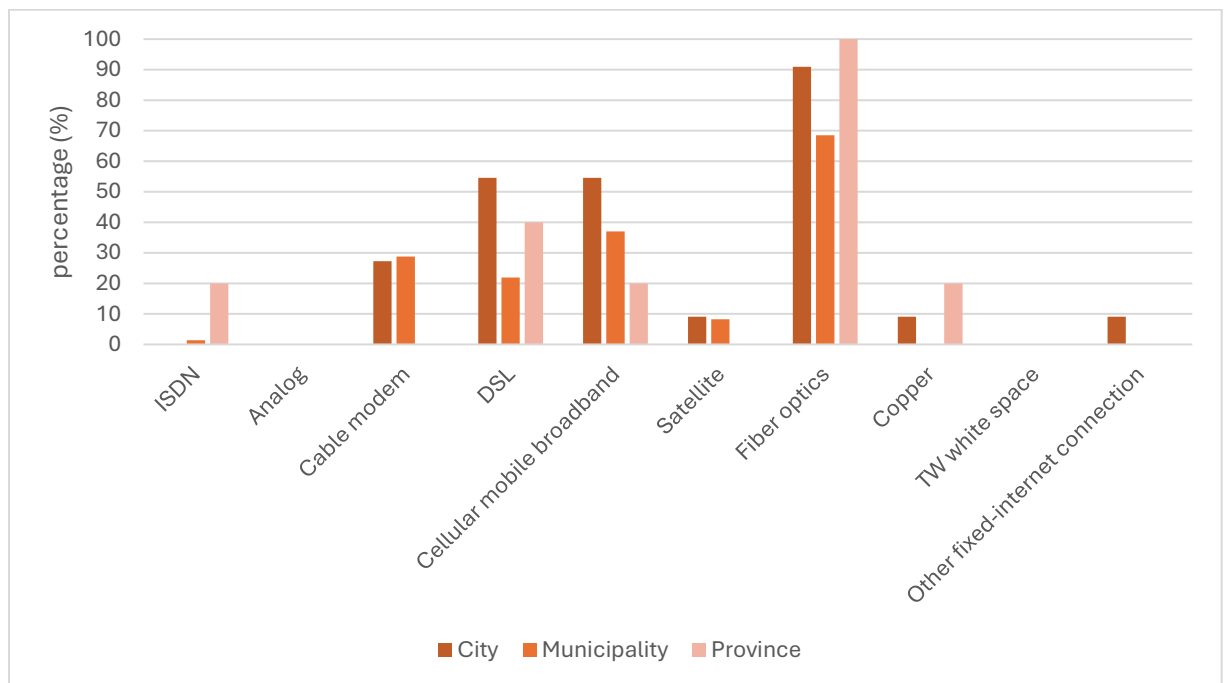
In terms of surveyed LGUs in Visayas, fiber optics internet is available in all the surveyed Visayas provinces, as well as about 90.9 percent of Visayas cities and about 68.5 percent of Visayas municipalities. Most cities in Visayas also have DSL (54.6 percent) and cellular mobile broadband (54.6 percent) (Figure 39).

Table 27. Type of Internet Connection in Visayas LGUs by Level (%)

Type of internet connection	Percent		
	City	Municipality	Province
ISDN		1.37	20.00
Analog			
Cable modem	27.27	28.77	
DSL	54.55	21.92	40.00
Cellular mobile broadband	54.55	36.99	20.00

Satellite	9.09	8.22	
Fiber optics	90.91	68.49	100.00
Copper	9.09		20.00
TW white space			
Other fixed-internet connection	9.09		

Figure 39. Type of Internet Connection in Visayas LGUs by Level

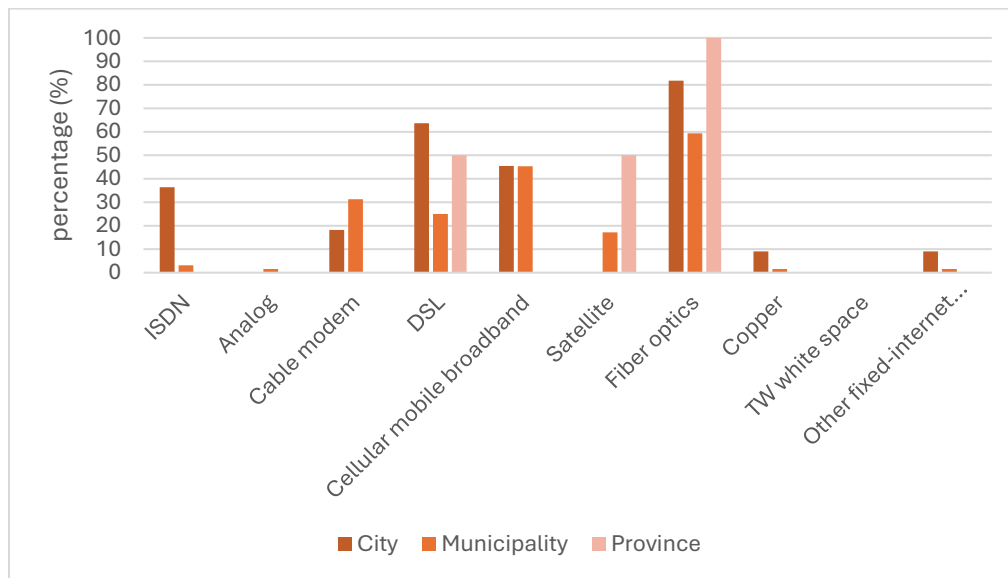


For Mindanao LGUs, all provinces have fiber optics, similar to those from Luzon and Visayas (Figure 40). Most of the cities (81.8 percent) and municipalities (59.4 percent) in Mindanao also have fiber optics internet. In terms of availability of DSL and satellite internet, majority of cities (63.6 percent) have access to DSL while satellite internet and DSL are each present in half of the provinces in Mindanao.

Table 28. Type of Internet Connection in Mindanao LGUs by Level (%)

Type of internet connection	Percent		
	City	Municipality	Province
ISDN	36.36	3.13	
Analog		1.56	
Cable modem	18.18	31.25	
DSL	63.64	25.00	50.00
Cellular mobile broadband	45.45	45.31	
Satellite		17.19	50.00
Fiber optics	81.82	59.38	100.00
Copper	9.09	1.56	
TW white space			
Other fixed-internet connection	9.09	1.56	

Figure 40. Type of Internet Connection in Mindanao LGUs by Level



3.4.7. Internet Connection Costs

In terms of the number of ISPs across LGUs, about 64.5 percent of LGUs have more than one internet service provider (ISP), with about 34.2 percent having two ISPs while 20.5 percent having three ISPs (Figure 41). Once we breakdown by type of LGU, we find that about 76.5 percent of cities, about 61.5 percent of municipalities and about 92.3 percent of provinces have more than one ISP (Figure 42). Conversely, the graph below shows that no province has zero ISP while about 2.9 percent of cities and about 5.4 percent of municipalities have no ISPs.

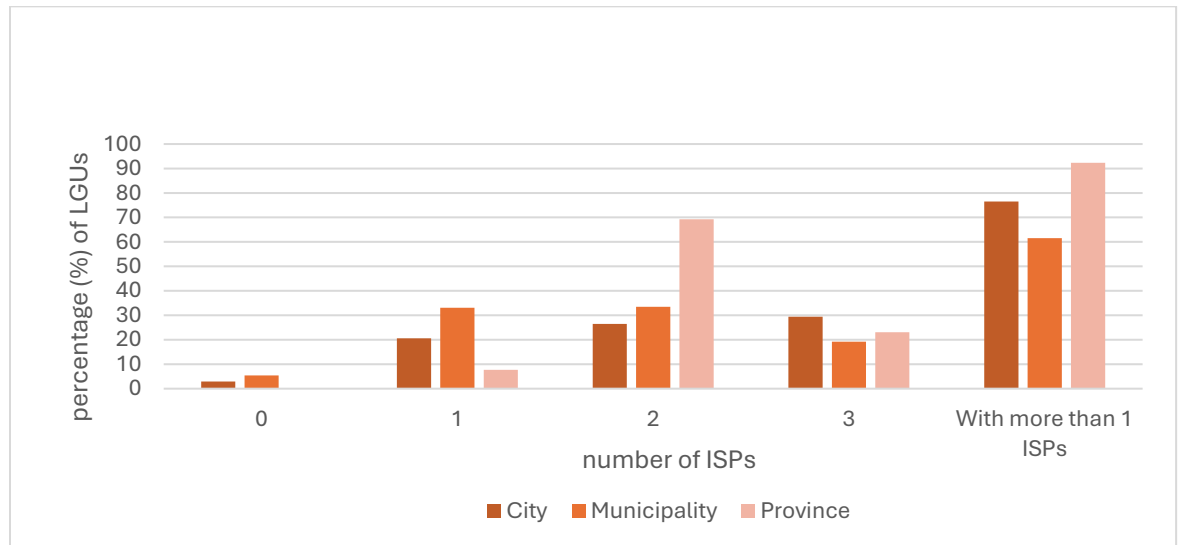
Table 29. Number of ISPs across LGUs by LGU Level (%)

Number of ISPs	City	Municipality	Province	Total
0	2.94	5.38		4.89
1	20.59	33.08	7.69	30.62
2	26.47	33.46	69.23	34.20
3	29.41	19.23	23.08	20.52
With more than 1 ISPs	76.47	61.54	92.31	64.50

Figure 41. Number of Internet Service Providers (ISPs) across LGUs



Figure 42. Number of Internet Service Providers (ISPs) across LGUs by Level



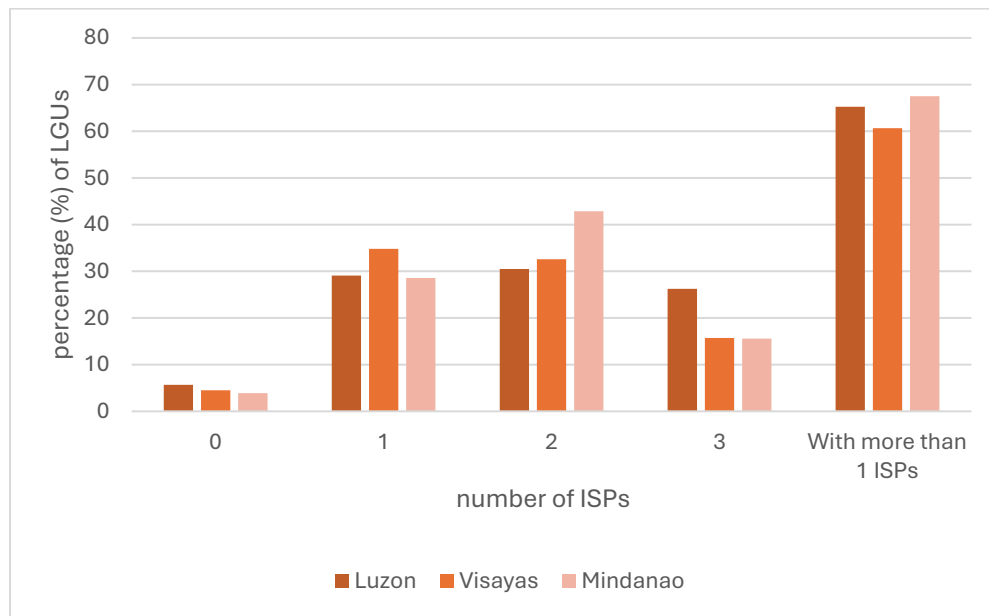
When we further disaggregate the data by island group, we find that about 65.3 percent of Luzon LGUs, about 60.7 percent of Visayas LGUs and about 67.5 percent of Mindanao LGUs have more than one ISP (Figure 43). Meanwhile, about 29.1 percent of Luzon LGUs, about 34.8 percent of Visayas LGUs and about 28.6 percent of Mindanao LGUs have only one ISP. On the other hand, only about 5.7 percent of Luzon LGUs, about 4.5 percent of Visayas LGUs and about 3.9 percent of Mindanao LGUs have no ISP in their area.

Table 30. Number of ISPs across LGUs by Island Group and by LGU Level (%)

Number of ISPs	Luzon				Visayas				Mindanao			
	City	Municipality	Province	Total	City	Municipality	Province	Total	City	Municipality	Province	Total
0	8.3	5.69		5.6	0.0	5.48		4.4	0.0	4.69		3.9
1	33.3	29.27	16.67	29.08	18.18	39.73		34.83	9.09	32.81		28.57

2	16. 67	30.08	66.67	30. 50	45. 45	28.77	60.00	32. 58	18. 18	45.31	100.0 0	42. 86
3	33. 33	26.02	16.67	26. 24	18. 18	13.70	40.00	15. 73	36. 36	12.50		15. 58
With more than 1 ISPs	58. 33	65.04	83.33	65. 25	81. 82	54.79	100.0 0	60. 67	90. 91	62.50	100.0 0	67. 53

Figure 43. Number of Internet Service Providers (ISPs) across LGUs by Island Group



In terms of average primary internet connection cost in LGUs, about 28.7 percent of LGUs across the Philippines are within the Php2,000 to Php4,999 budget range while about 20.9 percent of them are within the Php0 to Php, 1,999 budget range (Figure 44). When we disaggregate by island group, it is noticeable that a relatively large percentage of Mindanao LGUs (33.8 percent) are within the Php0 to P1,999 budget range (Figure 45). On the other hand, about 27.7 percent of Luzon LGUs and about 32.6 percent of Visayas LGUs spend about P2,000 to P4,999 per month on average.

Table 31. Average Primary Internet Connection Cost in LGUs

Island Group	LGU Level	n	Min (Php)	Max (Php)
Luzon	City	10	3,000	1,000,000
	Municipality	114	65	120,000
	Province	6	1,500	100,000
	Total	130	65	1,000,000
Visayas	City	11	1,500	100,000
	Municipality	69	100	80,000
	Province	-	11,760	90,000
	Total	85	100	100,000
Mindanao	City	10	1,559	100,000
	Municipality	61	399	60,000
	Province	2	3,000	8,000
	Total	73	399	100,000
Philippines		288	65	1,000,000

Figure 44. Average Monthly Cost for Primary Connection in LGUs

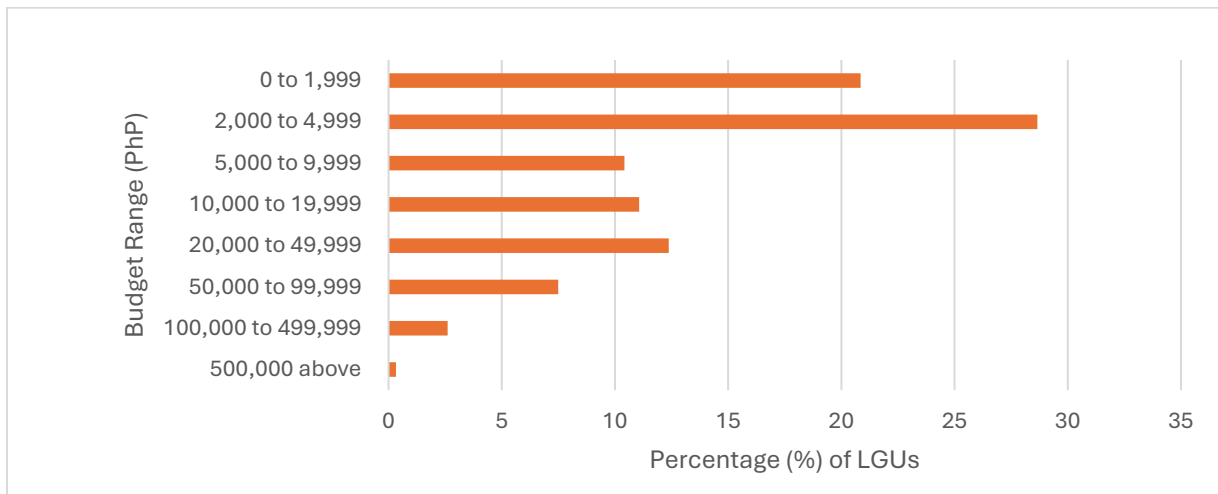


Figure 45. Average Monthly Cost for Primary Connection in LGUs by Island Group

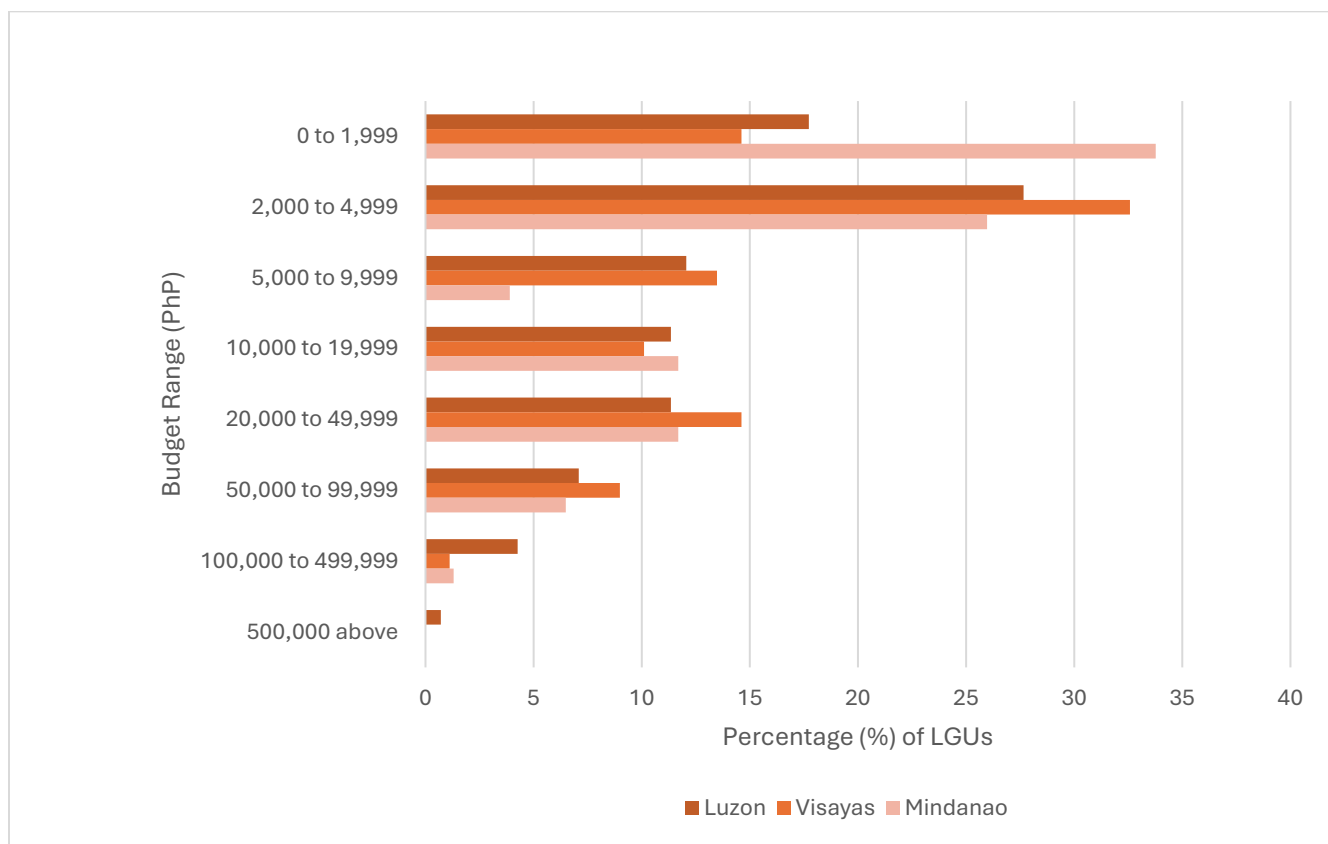


Table 32 shows that about 33.8 percent of Mindanao LGUs spend within the P0 to P1,999 budget range, about 32.6 percent of Visayas LGUs spend within the P2,000 to P4,999 budget range and about 27.7 percent of Luzon LGUs spend within the P2,000 to P4,999 budget range.

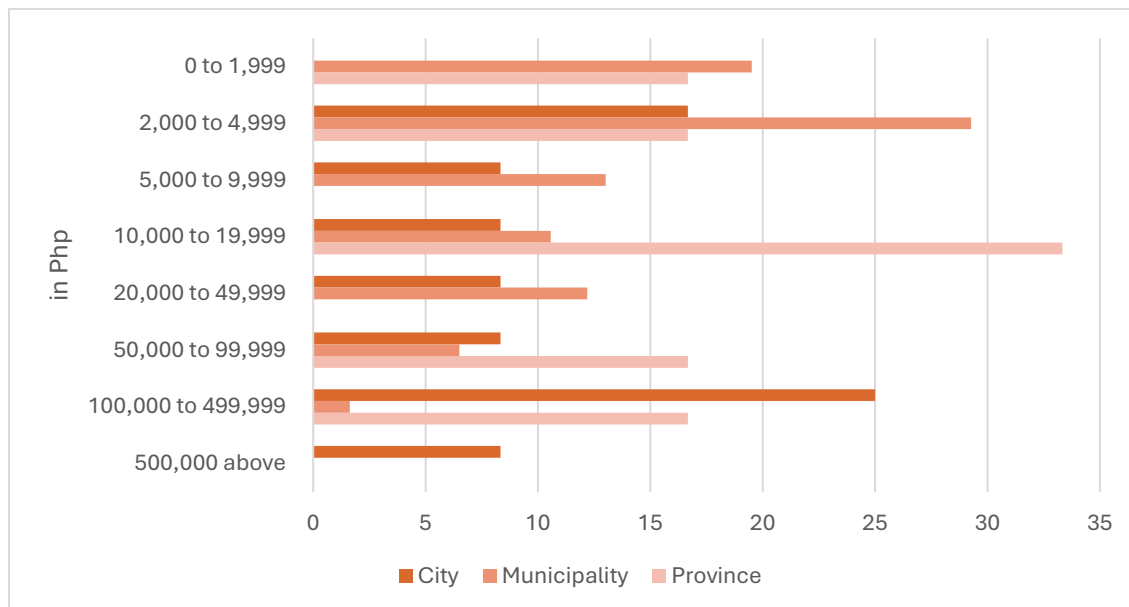
Table 32. Average Primary Internet Connection Cost in LGUs by Island Group (%)

Budget Range (PhP)	Percentage of LGUs			
	Luzon	Visayas	Mindanao	Philippines
0 to 1,999	17.73	14.61	33.77	20.85
2,000 to 4,999	27.66	32.58	25.97	28.66
5,000 to 9,999	12.06	13.48	3.90	10.42
10,000 to 19,999	11.35	10.11	11.69	11.07

20,000 to 49,999	11.35	14.61	11.69	12.38
50,000 to 99,999	7.09	8.99	6.49	7.49
100,000 to 499,999	4.26	1.12	1.30	2.61
500,000 above	0.71			0.33

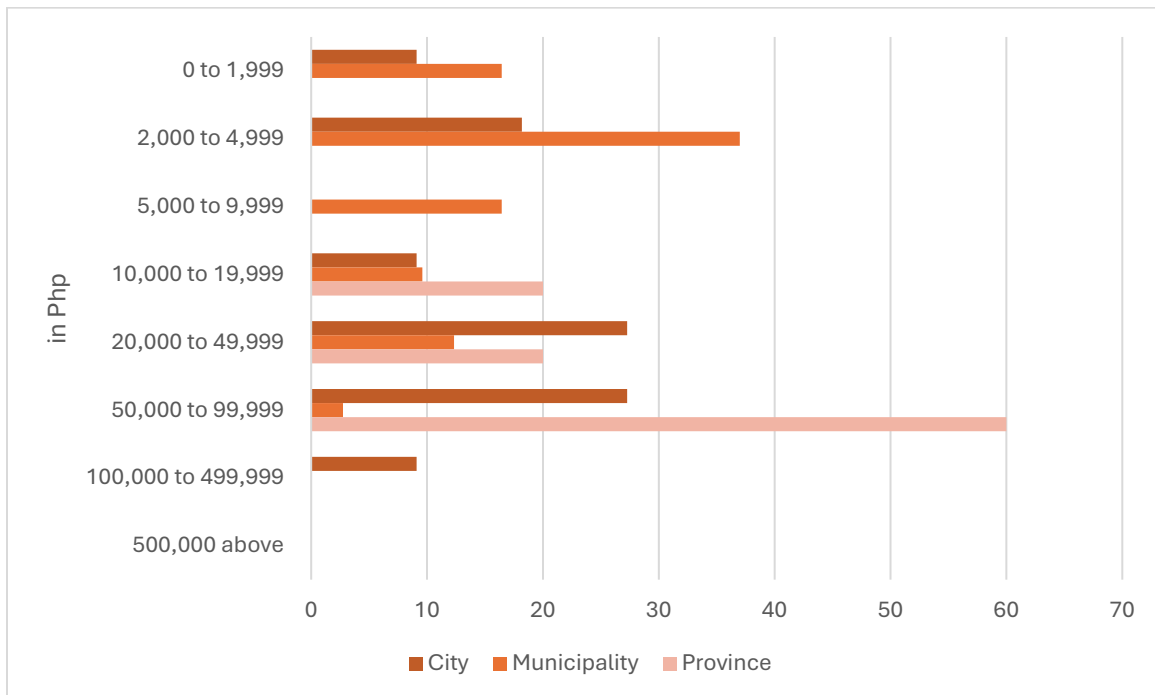
Among Luzon LGUs, about a third of Luzon provinces are within the P10,000 to P19,999 budget range while about a quarter of Luzon cities are within the P100,000 to P499,999 budget range and about 29.3 percent of Luzon municipalities are within the P2,000 to P4,999 budget range (Figure 46).

Figure 46. Average Monthly Cost for Primary Connection in Luzon LGUs



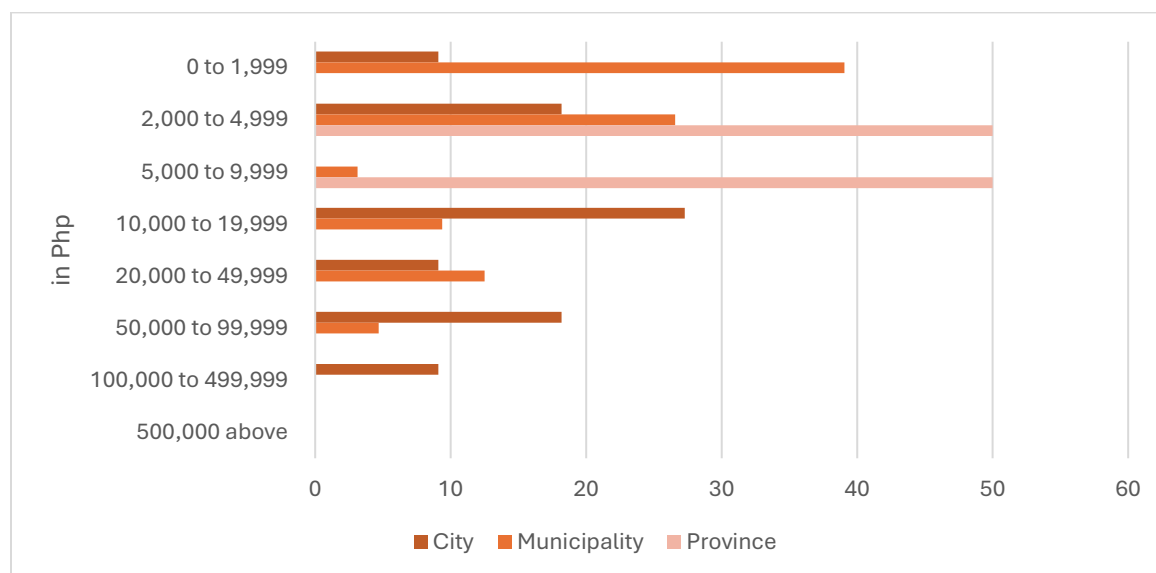
For LGUs in Visayas, about 60 percent of provinces are within the P50,000 to P99,999 budget range while about 37.0 percent of municipalities are within the P2,000 to P4,999 budget range (Figure 47). For cities in Visayas in particular, about 27.3 percent of cities are within the P20,000 to P49,999 budget range while about the same percentage of those cities are within the P50,000 to P99,999 budget range.

Figure 47. Average Monthly Cost for Primary Connection in Visayas LGUs



Among provinces in Mindanao, the average monthly cost for primary connection on half of them is within the P2,000 to P4,999 budget range while the other half of all the provinces in Mindanao is within the P5,000 to P9,999 budget range (Figure 48). Among Mindanao municipalities, about 39.1 percent of them spend on average from P0 to P1,999 per month for primary connection.

Figure 48. Average Monthly Cost for Primary Connection in Mindanao LGUs



In terms of average secondary internet connection cost, about 30.0 percent of LGUs in the Philippines spend within, on average, P1,000 to P2,999 per month while about 6.8 percent of LGUs spend around P5,000 to P9,999 on average monthly (Figure 49). By disaggregating per island group, the results below show that about 32.6 percent of Luzon LGUs, about 28.1 percent of Visayas LGUs and about 27.3 percent of Mindanao LGUs spend within the P1,000 to P2,999 budget range on average per month for secondary internet connection (Figure 50).

Table 33. Average Secondary Internet Connection Cost in LGUs

Island group	LGU Level	n	Min (Php)	Max (Php)
Luzon	City	5	2,500	149,100
	Municipality	78	100	60,000
	Province	5	500	50,000
	Total	88	100	149,100
Visayas	City	8	1,500	45,000
	Municipality	38	1,000	58,000
	Province	4	1,699	44,800
	Total	50	1,000	45,000

Mindanao	City	5	1,799	45,000
	Municipality	39	30	30,000
	Province	2	4,000	5,000
	Total	46	30	45,000
Philippines		184	30	149,100

Table 34. Average Secondary Internet Connection Cost in LGUs by Island Group and by LGU Level (%)

Budget Range (PhP)	Percentage of LGUs			
	Luzon	Visayas	Mindanao	Philippines
0 to 999	4.26		14.29	5.54
1000 to 2,999	32.62	28.09	27.27	29.97
3000 to 4,999	7.09	6.74	5.19	6.51
5,000 to 9,999	7.80	6.74	5.19	6.84
10,000 to 19,999	2.84	5.62	5.19	4.23
20,000 to 29,999	0.71	1.12		0.65
30,000 to 39,999	2.13	3.37	1.30	2.28
40,000 to 49,999	0.71	3.37	1.30	1.63
50,000 to 69,999	3.55	1.12		1.95
70,000 above	0.71			0.33

Figure 49. Average Monthly Cost for Secondary Connection in LGUs

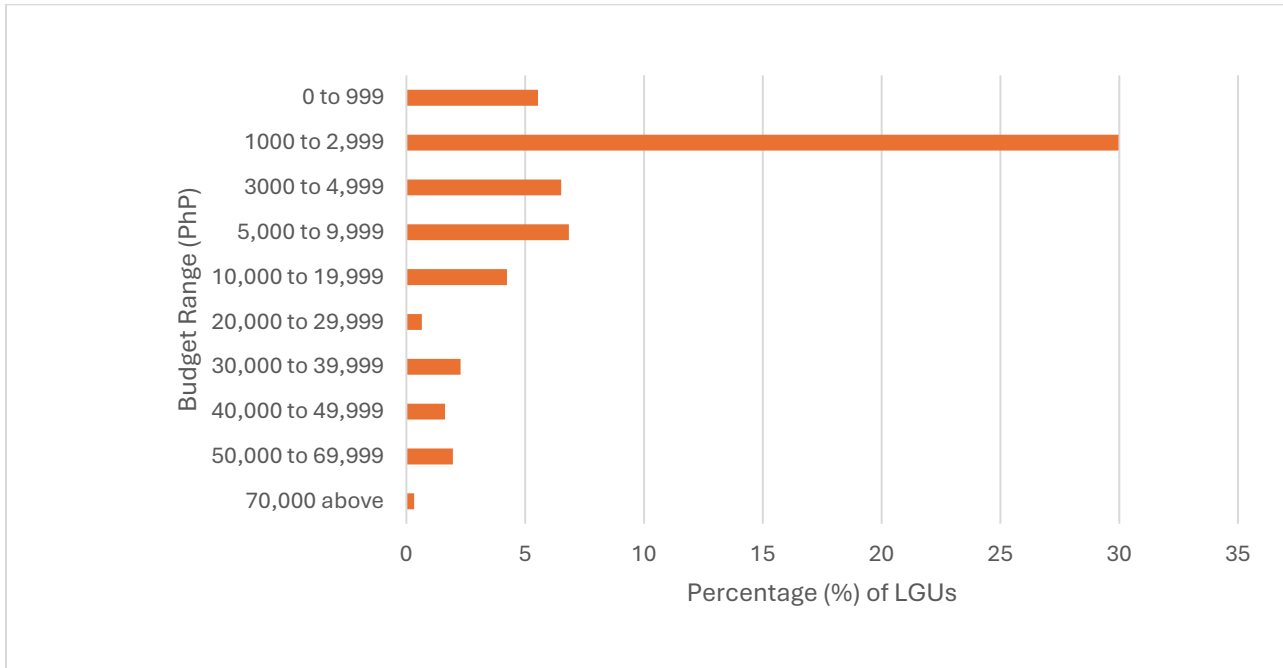
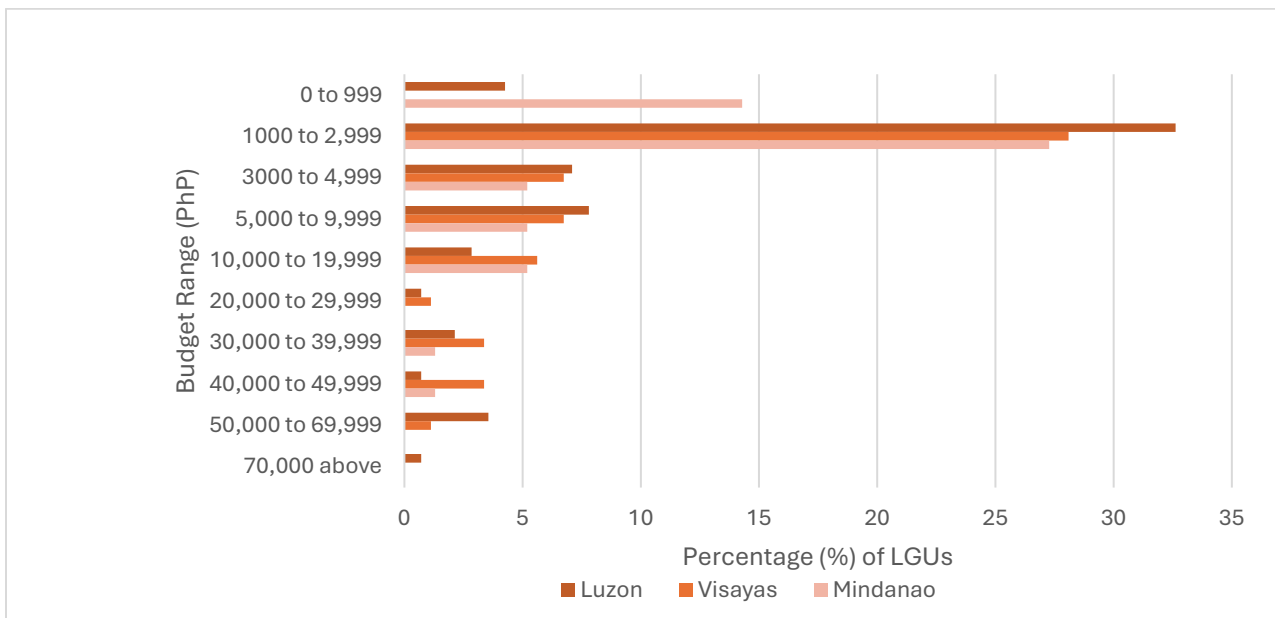
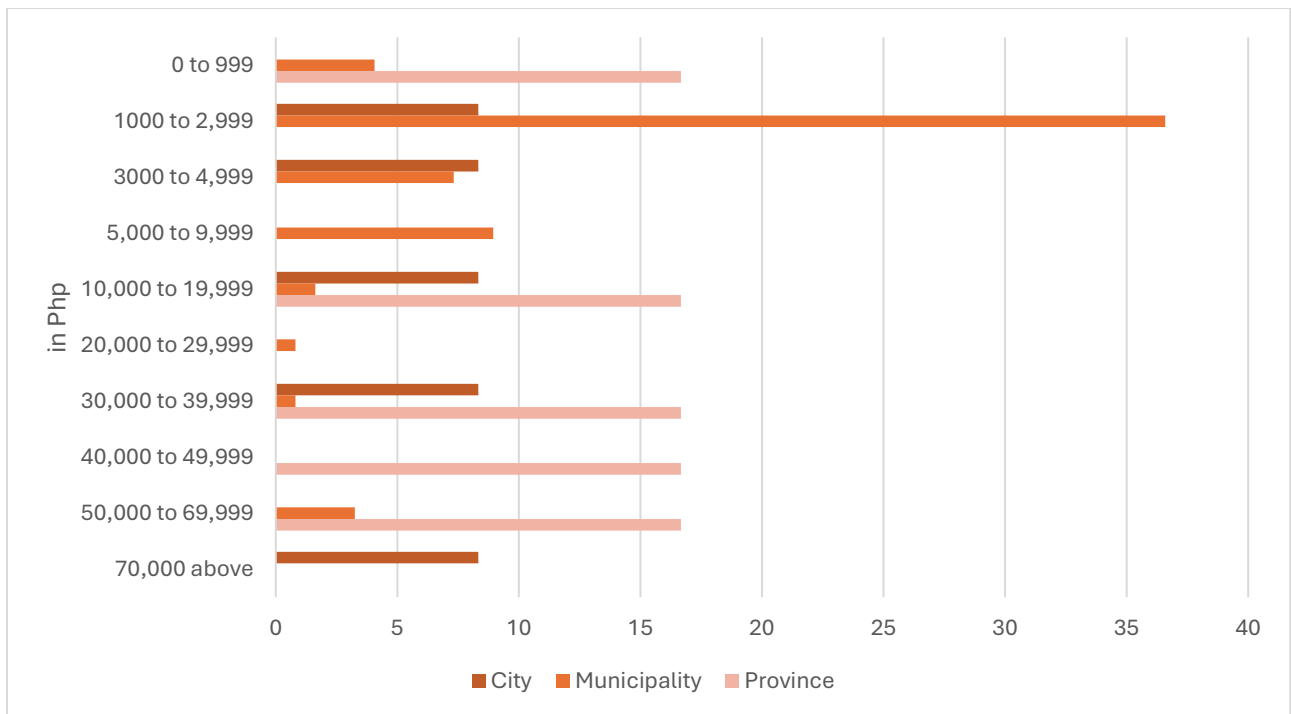


Figure 49. Average Monthly Cost for Secondary Connection in LGUs by Island Group



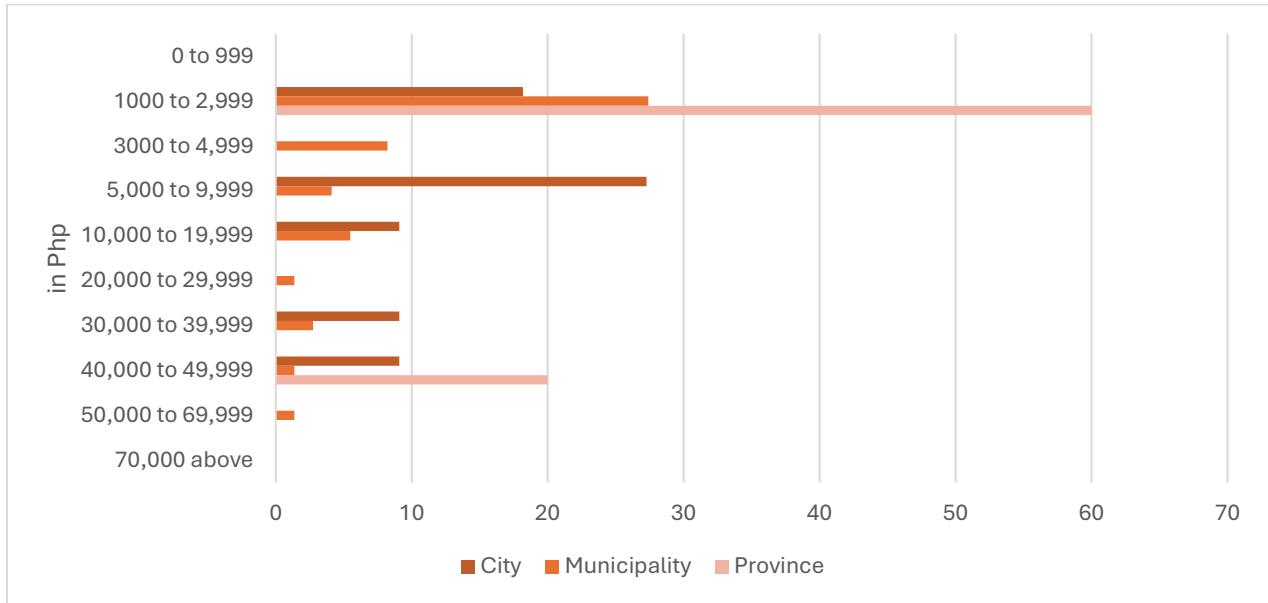
Among LGUs in Luzon, about 36.6 percent of municipalities spend on average about P1,000 to P2,999 per month while about 16.7 percent of provinces are spending within the P50,000 to P69,999 budget range and about 8.3 percent of cities are spending at least P70,000 per month for secondary internet connection (Figure 51).

Figure 50. Average Monthly Cost for Secondary Connection in Luzon LGUs



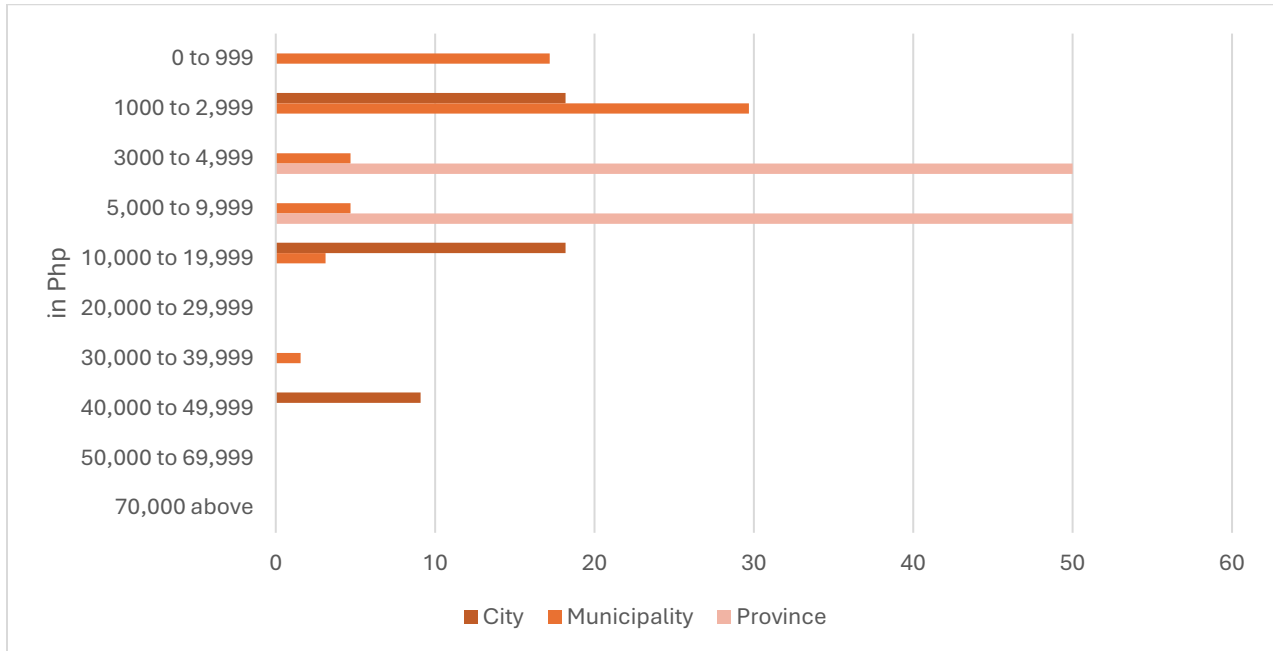
In Visayas, about 60.0 percent of Visayas provinces are spending on average from P1,000 to P2,999 per month for secondary internet connection (Figure 52). Among surveyed cities and municipalities in this island group, about 27.3 percent of cities have an average monthly cost of P5,000 to P9,999 for secondary internet connection while about 27.4 percent of municipalities have an average monthly cost of P1,000 to P2,999 for secondary internet connection.

Figure 51. Average Monthly Cost for Secondary Connection in Visayas LGUs



Among LGUs in Mindanao, about half of provinces spend on average within P3,000 to P4,999 per month for secondary internet connection and the remaining half of provinces spend around P5,000 to P9,999 per month on average (Figure 53). Among municipalities, about 29.7 percent of them spend on average within the P1,000 to P2,999 per month budget range. Meanwhile, for Mindanao cities, approximately 18.2 percent of them spend around P10,000 to P19,999 per month on average and around 18.2 percent of them spend around P1,000 to P2,999 per month on average for secondary internet connection.

Figure 52. Average Monthly Cost for Secondary Connection in Mindanao LGUs



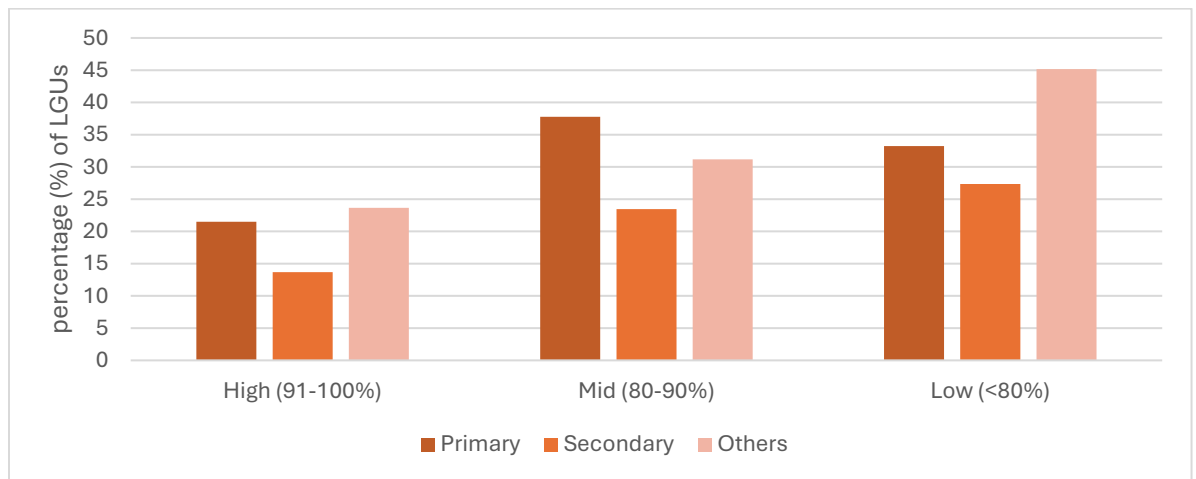
3.4.8. Internet Connection Uptime

Table 35 and Figure 54 shows that about 21.5 percent of LGUs across the country experience high internet uptime in terms of their primary internet connection while about 37.8 percent of them experience mid-uptime and about a third of LGUs experience low uptime. In terms of secondary internet connection, about 13.7 percent of LGUs experience high uptime, about 23.5 percent of LGUs experience mid-uptime and about 27.4 percent of LGUs experience low uptime. For others, about 23.7 percent, 31.2 percent and 45.2 percent of LGUs experience high, mid-, and low uptime, respectively.

Table 35. Number and Percentage of LGUs by Internet Subscription Monthly Average Uptime Percentage

Uptime Percentage	Count			Percentage		
	Primary	Secondary	Others	Primary	Secondary	Others
High (91-100%)	66	42	22	21.50	13.68	23.66
Mid (80-90%)	116	72	29	37.79	23.45	31.18
Low (<80%)	102	84	42	33.22	27.36	45.16
Total	284	198	93			

Figure 53. Internet Subscription Monthly Average Uptime



When disaggregated by island group, about 41.6 percent of LGUs in Mindanao, about 31.2 percent of LGUs in Luzon and about 29.2 percent of LGUs in Visayas experience low internet uptime for primary internet connection (Figure 55). This relatively high figure for Mindanao versus the other two regions is also present in terms of secondary internet connection (around 40.0 percent) (Figure 56) and other connection (around 16.9 percent) (Figure 57).

Table 36. Percentage of LGUs by Internet Subscription Monthly Average Uptime for Primary, Secondary and Other Connections, and by Island Group

Uptime Percentage	Primary Connection			Secondary Connection			Other Connection		
	Luzon	Visayas	Mindanao	Luzon	Visayas	Mindanao	Luzon	Visayas	Mindanao
High (91-100%)	21.28	25.84	16.88	13.48	14.61	12.99	7.09	8.99	5.19
Mid (80-90%)	39.01	37.08	36.36	24.82	28.09	15.58	13.48	8.99	2.60
Low (<80%)	31.21	29.21	41.56	26.95	17.98	38.96	14.18	10.11	16.88

Figure 54. Internet Subscription Monthly Average Uptime for Primary Connection by Island Group

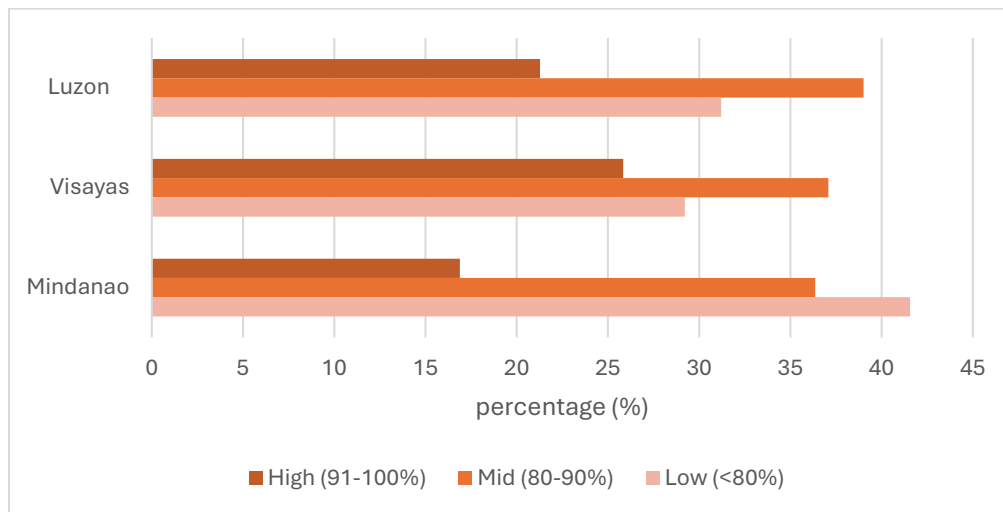


Figure 55. Internet Subscription Monthly Average Uptime for Secondary Connection by Island Group

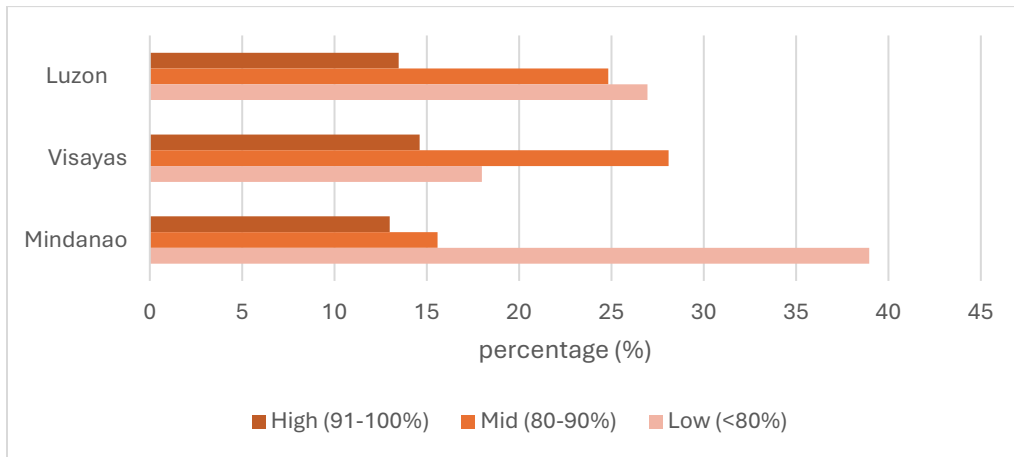
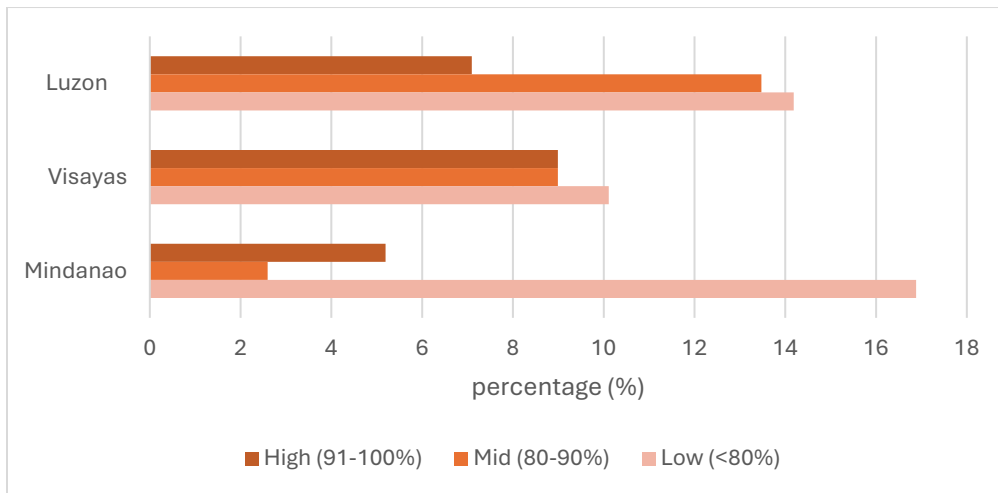


Figure 56. Internet Subscription Monthly Average Uptime for Other Connection by Island Group



In terms of type of LGU, about 46.2 percent of provinces experience high internet uptime for primary internet connection with another 46.2 percent of provinces experience mid-internet uptime (Figure 58). Among cities, about 41.2 percent of them experience high internet uptime. In contrast, only about 17.7 percent of municipalities experience high internet uptime for primary internet connection.

When factoring in secondary internet connection, about 38.5 percent of provinces experience high internet uptime while about 46.2 percent of provinces experience mid-internet uptime (Figure 59).

Among cities and municipalities, the percentages of those experiencing high internet uptime are 29.4 percent and 10.4 percent, respectively, while the percentages of those experiencing low internet uptime are 23.5 percent and 28.9 percent, respectively.

Table 37. Percentage of LGUs by Internet Subscription Monthly Average Uptime for Primary, Secondary and Other Connections, and by LGU Level

Uptime Percentage	Primary Connection			Secondary Connection			Other Connection		
	City	Municipality	Province	City	Municipality	Province	City	Municipality	Province
High (91-100%)	41.18	17.69	46.15	29.41	10.38	38.46	26.47	4.23	15.38
Mid (80-90%)	29.41	38.46	46.15	23.53	22.31	46.15	5.88	10.00	7.69
Low (<80%)	20.59	36.54		23.53	28.85	7.69	17.65	13.85	

Figure 58. Internet Subscription Monthly Average Uptime Percentage for Primary Connection by LGU Level

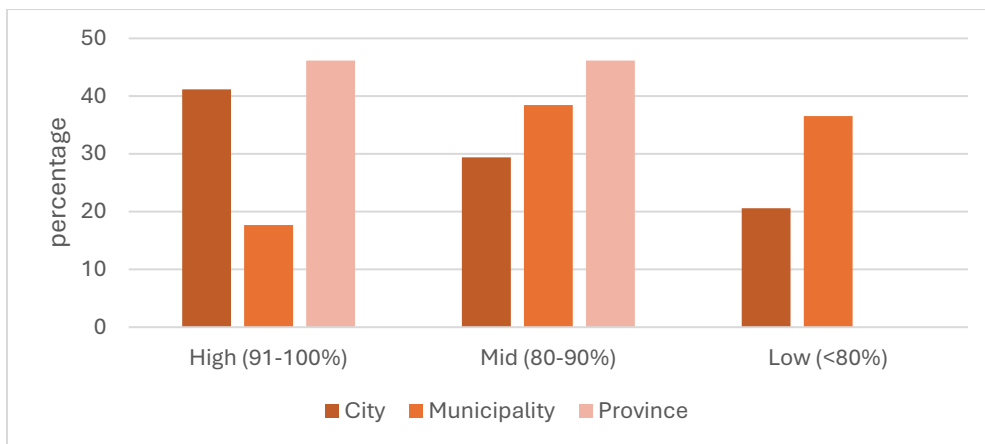


Figure 57. Internet Subscription Monthly Average Uptime Percentage for Secondary Connection by LGU Level

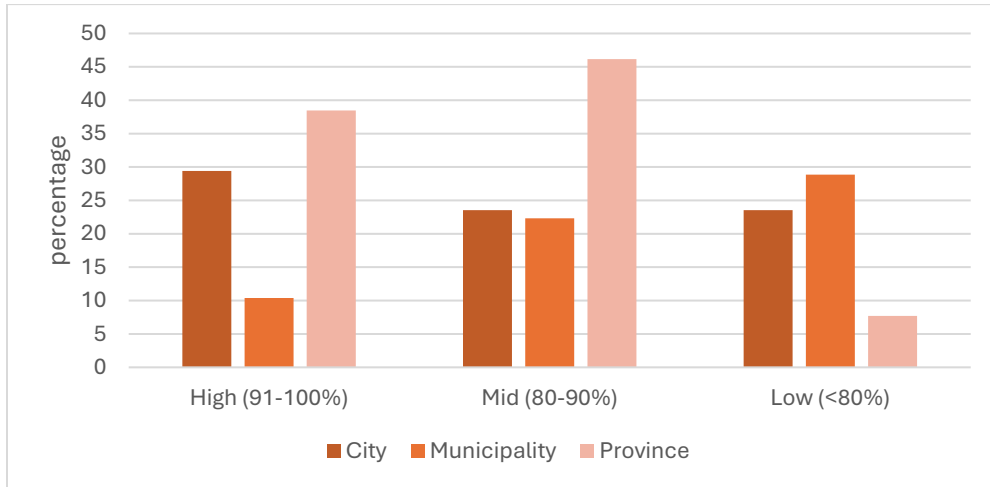
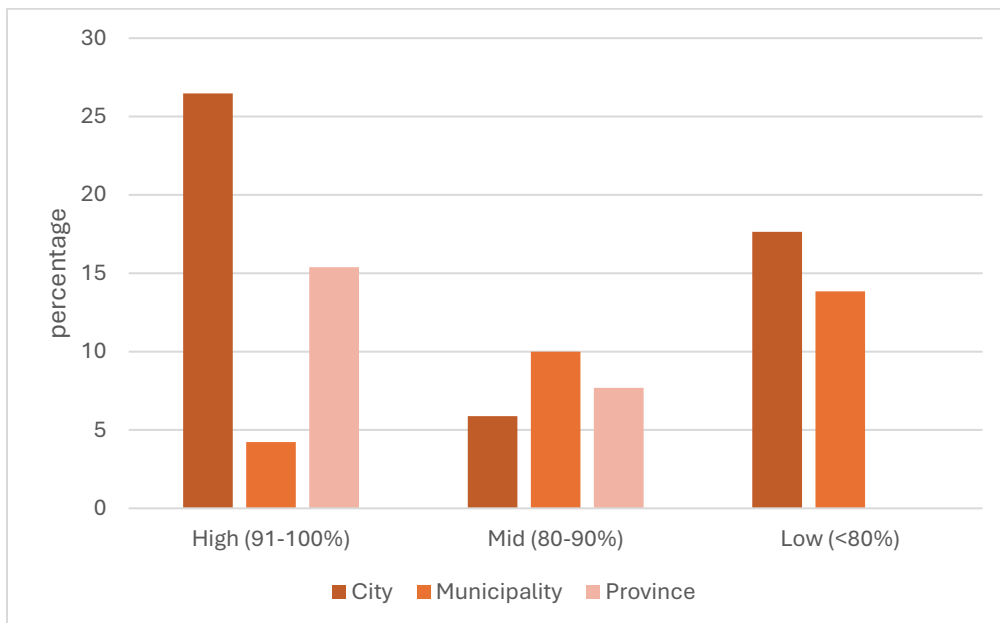
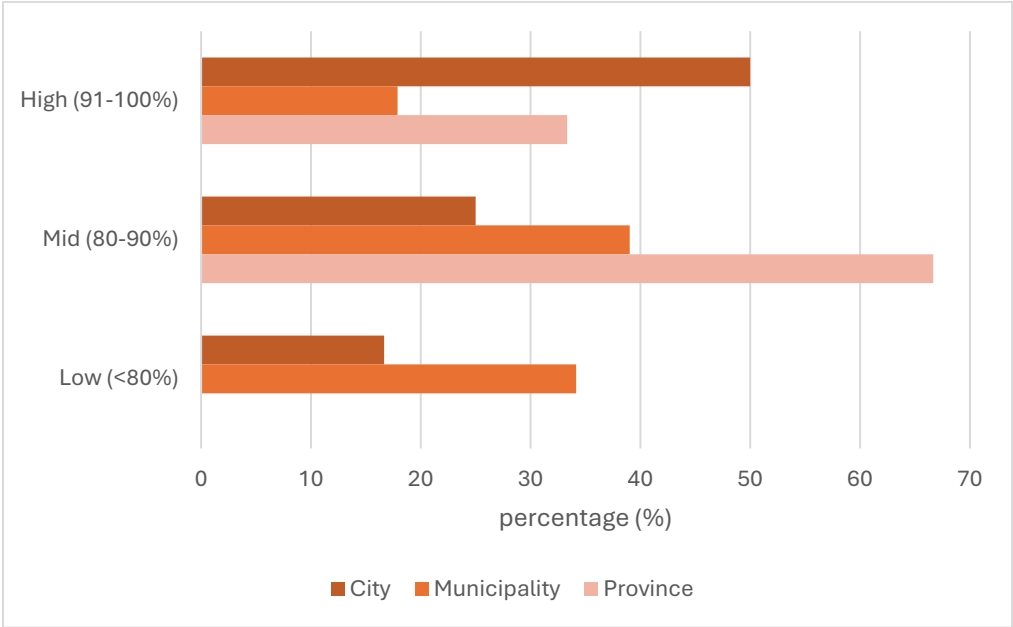


Figure 58. Internet Subscription Monthly Average Uptime Percentage for Other Connections by LGU Level



For surveyed LGUs in Luzon, half of all Luzon cities experience high internet uptime for primary internet connection while only about a third of provinces and about 17.9 percent of municipalities have high internet uptime (Figure 61). In terms of low uptime for primary internet connection, only about 16.7 percent of cities experience it while about 34.2 percent of municipalities and no province experience low internet uptime.

Figure 59. Primary Internet Connection Monthly Average Uptime in Luzon LGUs



When factoring in secondary internet connection, about 16.7 percent of Luzon provinces experience high internet uptime while about two-thirds of Luzon provinces experience mid-internet uptime (Figure 62). Among cities and municipalities, the percentages of those experiencing high internet uptime are 33.3 percent and 11.4 percent, respectively, while the percentages of those experiencing low internet uptime are about 8.3 percent and about 30.1 percent, respectively.

Figure 60. Secondary Internet Connection Monthly Average Uptime in Luzon LGUs

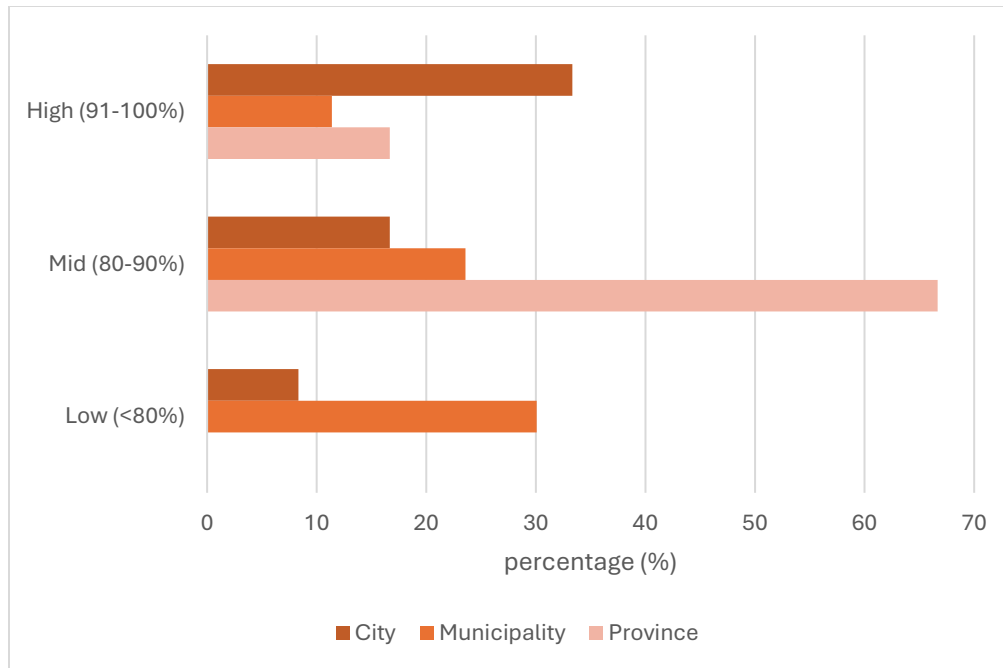
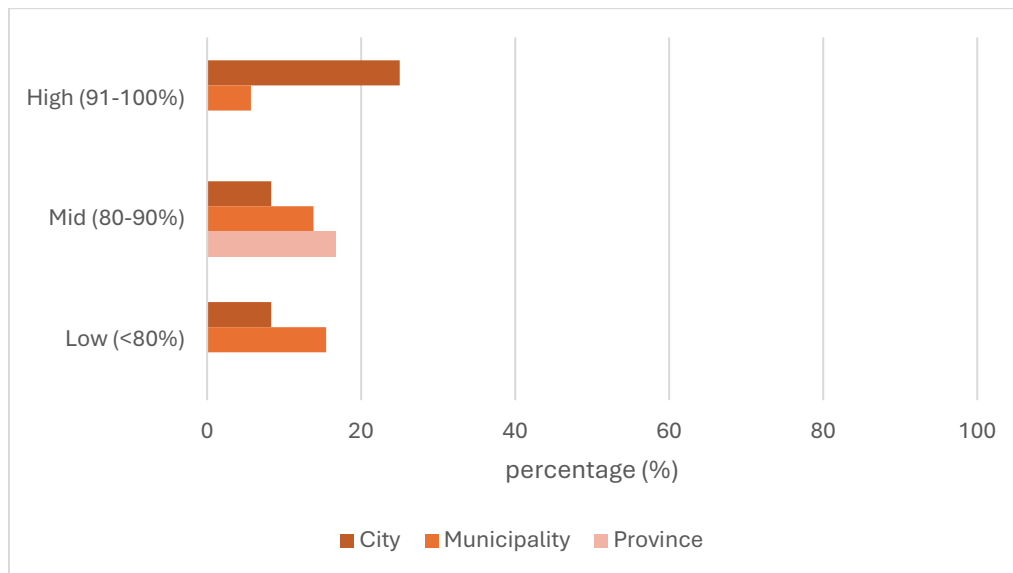


Figure 61. Other Internet Connection Monthly Average Uptime in Luzon LGUs



For surveyed LGUs in Visayas, around 80.0 percent of provinces experience high internet uptime for primary internet connection while only about 21.9 percent of municipalities and about 27.3 percent of cities have high internet uptime (Figure 64). In terms of low uptime for primary internet

connection, only about 18.2 percent and 32.9 percent of cities and municipalities, respectively experience it while no province experience low internet uptime.

When factoring in secondary internet connection, about 80.0 percent of provinces in the Visayas experience high internet uptime while about 20.0 of provinces in the Visayas experience mid-internet uptime (Figure 65). Among cities and municipalities, the percentages of those experiencing high internet uptime are 18.2 percent and 9.6 percent, respectively. On the other hand, the percentages of Visayas cities and municipalities experiencing low internet uptime are about 18.2 percent and about 19.2 percent, respectively.

Figure 62. Primary Internet Connection Monthly Average Uptime in Visayas LGUs

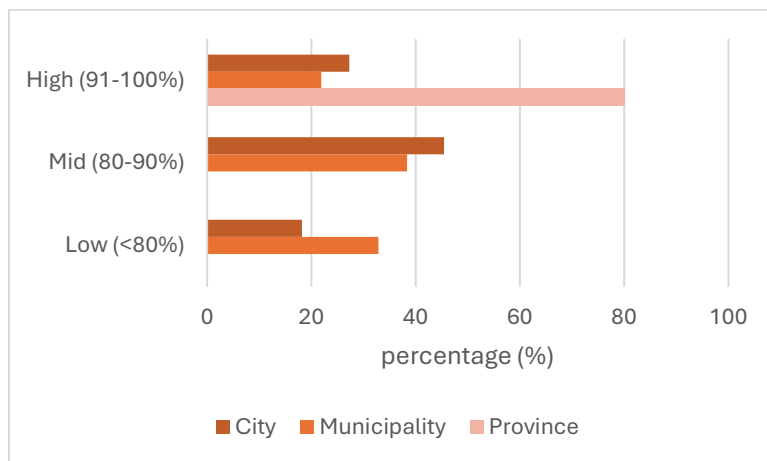


Figure 63. Secondary Internet Connection Monthly Average Uptime in Visayas LGUs

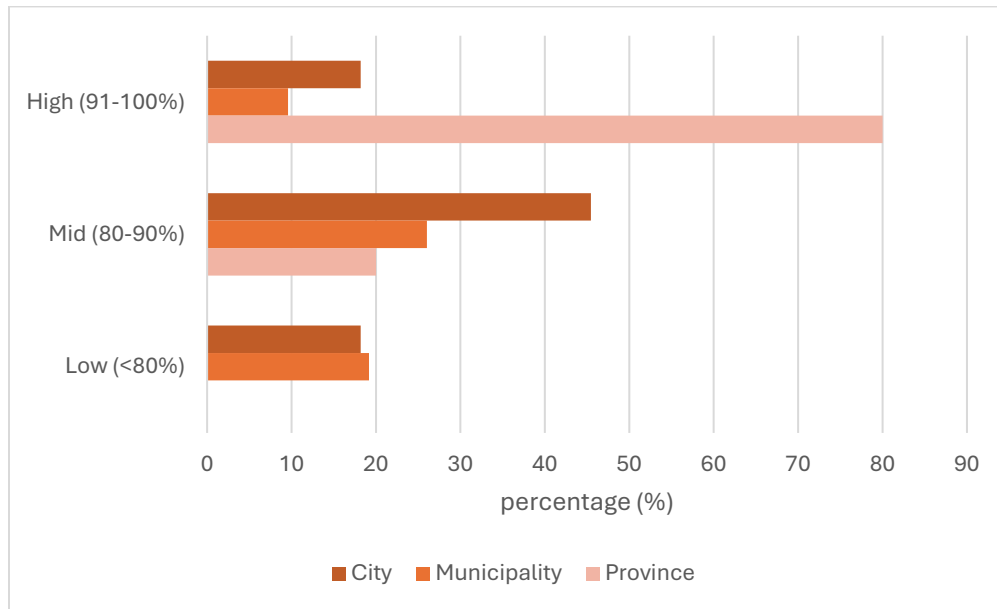
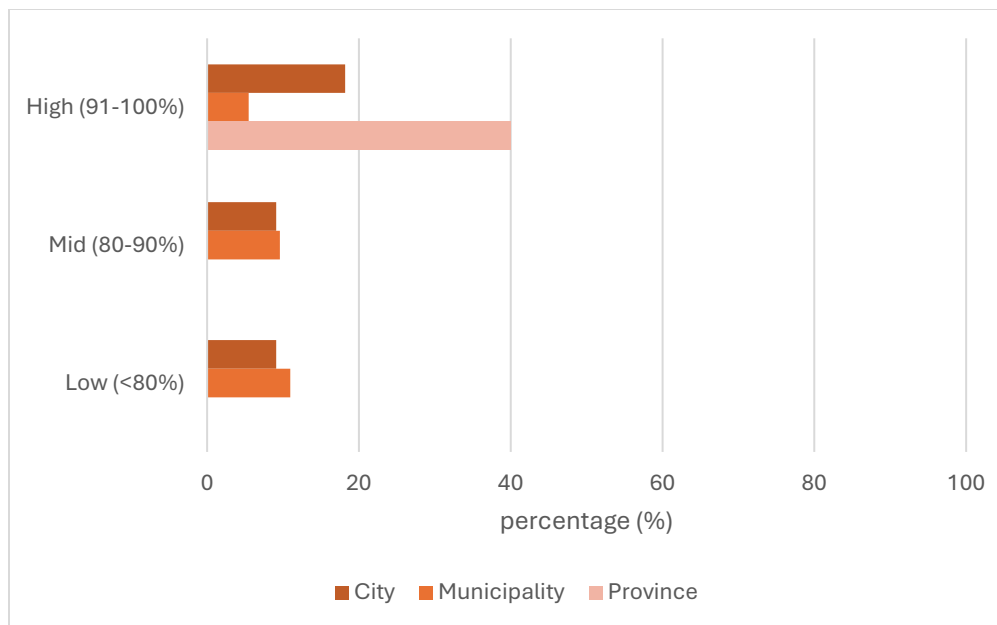


Figure 64. Other Internet Connection Monthly Average Uptime in Visayas LGUs



For surveyed LGUs in Mindanao, around 45.5 percent of cities have high internet uptime for primary internet connection while only about 12.5 percent of municipalities experience high internet uptime (Figure 67). In terms of low uptime for primary internet connection, about 27.3 percent and 45.3 percent of cities and municipalities, respectively experience it.

In terms of secondary internet connection among Mindanao LGUs, about 36.4 percent of Mindanao cities have high internet uptime while only about 9.4 percent of Mindanao municipalities have high internet uptime (Figure 68). Meanwhile, about 45.5 percent of Mindanao cities and about 37.5 percent of Mindanao municipalities have low internet uptime.

Figure 65. Primary Internet Connection Monthly Average Uptime in Mindanao LGUs

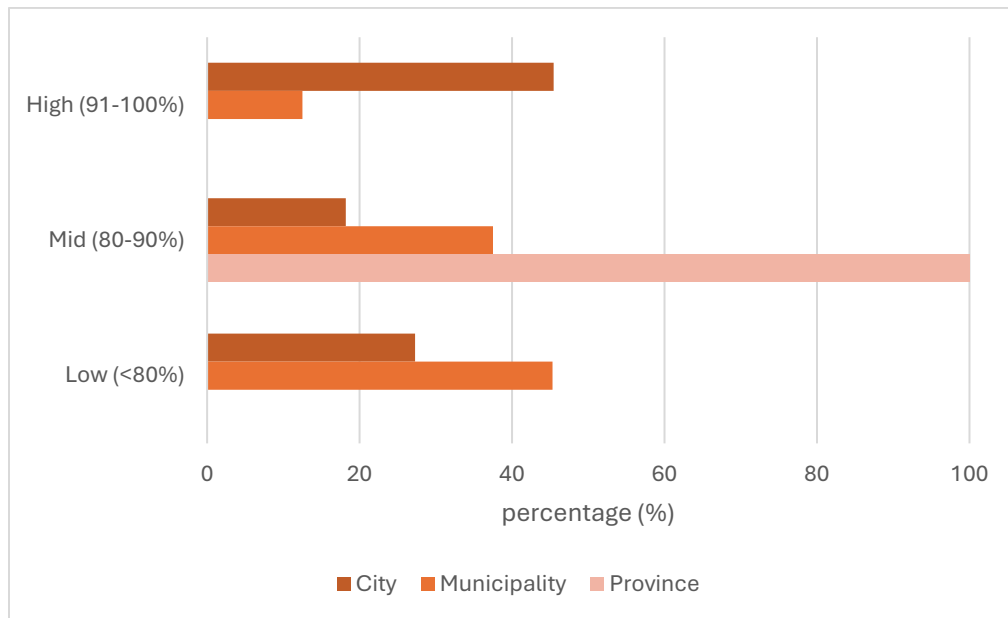


Figure 68. Secondary Internet Connection Monthly Average Uptime in Mindanao LGUs

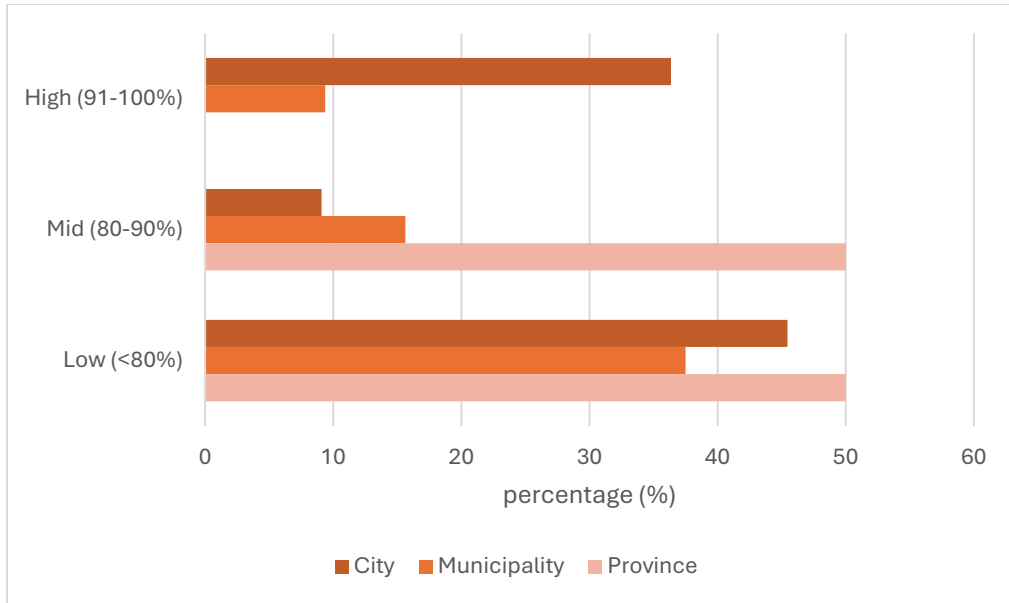
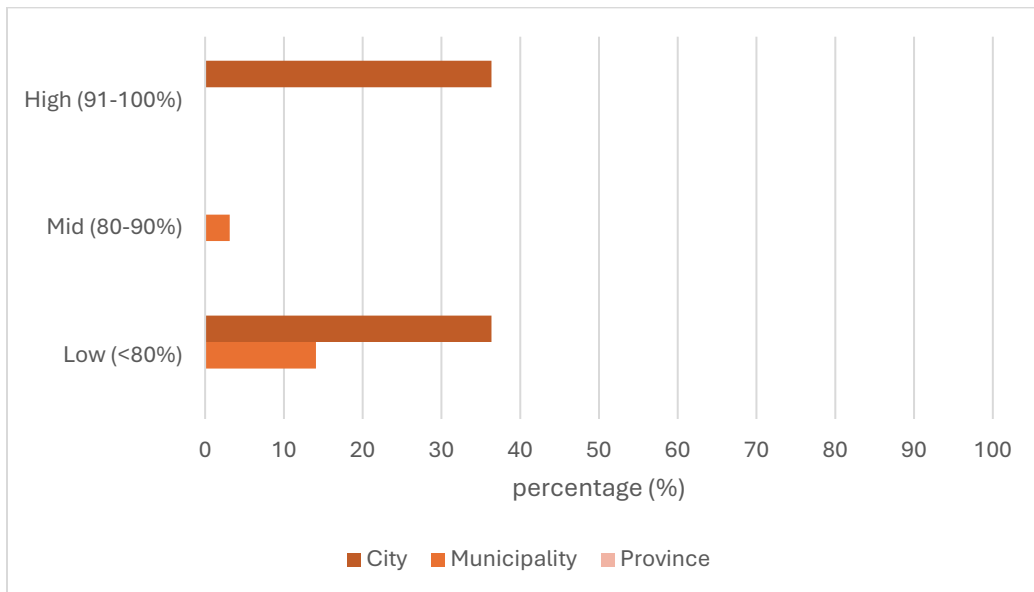


Figure 69. Other Internet Connection Monthly Average Uptime in Mindanao LGUs



3.4.9. Processes that use ICT

When we look at the ICT utilization in organizational processes in LGUs, the results show that most LGUs use ICT for business operations and support (63.2 percent), disaster response services (59.9 percent) and IT and software development and management (50.5 percent) (Figure 70). Conversely, only about 13.0 percent of LGUs in the country use ICT for marketing and sales.

When disaggregating by island group, the results show that ICT is heavily used in business operations and support, with about 68.5 percent of LGUs in Visayas, about 59.6 percent in Luzon and about 63.6 percent in Mindanao using ICT for such purpose (Figure 71). Disaster response services is also heavily used in every island group, with about 68.5 percent of LGUs in Visayas, about 58.9 percent of LGUs in Luzon and about 52.0 percent of LGUs in Mindanao using ICT for disaster response.

When disaggregating by type of LGU, the results show that cities generally utilize ICT for their organizational processes, specifically in terms of business operations and support (about 91.2 percent), disaster response services (about 85.3 percent), IT and software development and management (about 82.4 percent), research and innovation (about 73.5 percent), education and training (about 70.6 percent), customer service and support (about 61.8 percent) and financial services (about 58.8 percent) (Figure 72). On the other side, municipalities are using ICT the least among all types of LGUs in terms of organizational processes, with municipalities mainly focusing their ICT utilization in business operations and support (about 59.6 percent) and disaster response services (about 56.5 percent).

Table 38. ICT Utilization in Organizational Processes among LGUs (% of LGUs)

Type of organizational process	Percentage						
	Luzon	Visayas	Mindanao	City	Municipality	Province	Philippines
IT and Software Development and Management	51.77	52.81	45.45	82.35	44.23	92.31	50.49
Business Operations and Support	59.57	68.54	63.64	91.18	59.62	61.54	63.19

Customer Service and Support	34.75	43.82	38.96	61.76	34.62	53.85	38.44
Marketing and Sales	11.35	16.85	11.69	32.35	10.77	7.69	13.03
Education and Training	48.23	51.69	44.16	70.59	45.38	46.15	48.21
Research and Innovation	34.75	37.08	36.36	73.53	28.85	76.92	35.83
Financial Services	31.21	37.08	29.87	58.82	28.85	38.46	32.57
Disaster Response Services	58.87	68.54	51.95	85.29	56.54	61.54	59.93
Specialized Services	17.02	22.47	14.29	47.06	13.85	23.08	17.92
Others	2.84	3.37	6.49		4.62		3.91

Figure 66. ICT Utilization in Organizational Processes among LGUs

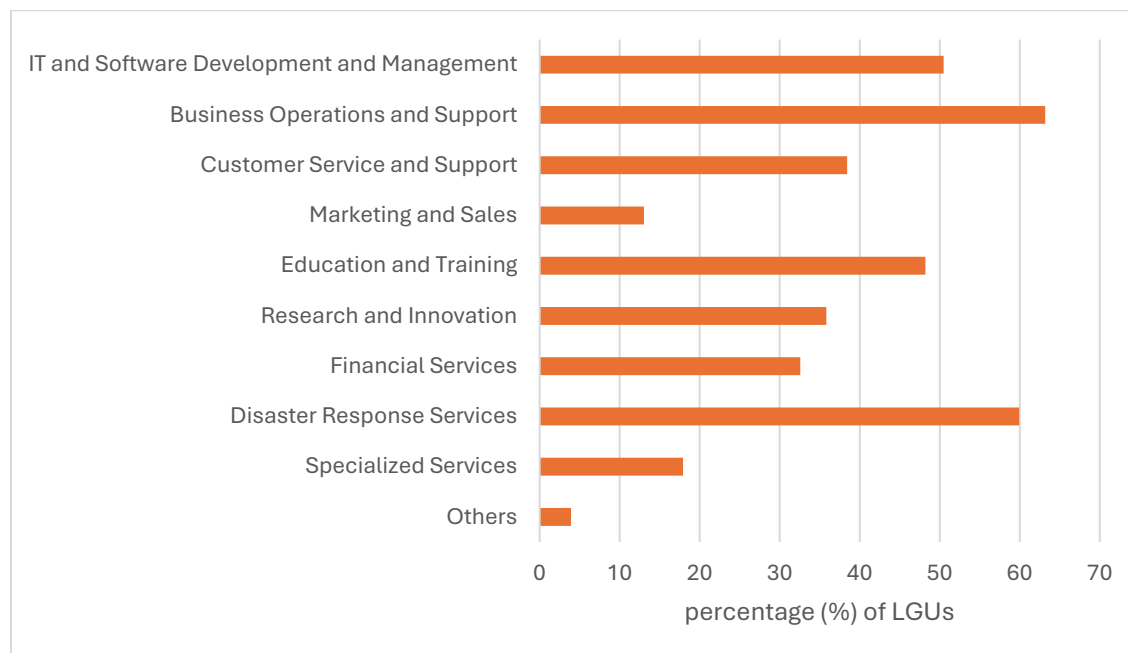


Figure 67. ICT Utilization in Organizational Processes by Island Group

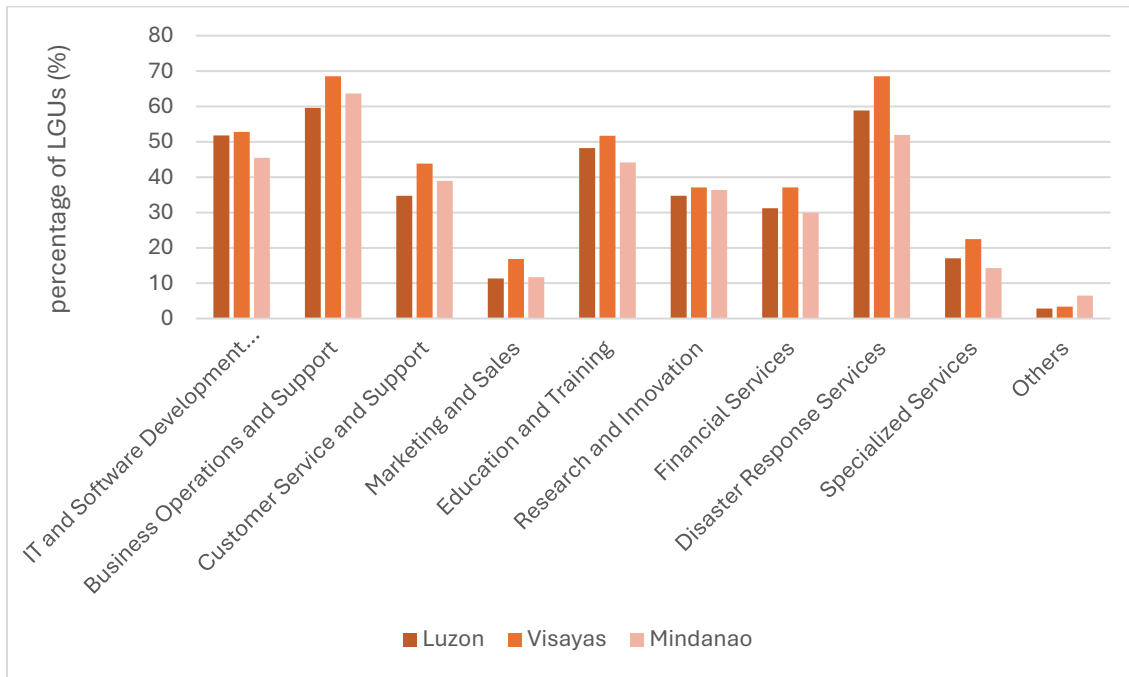
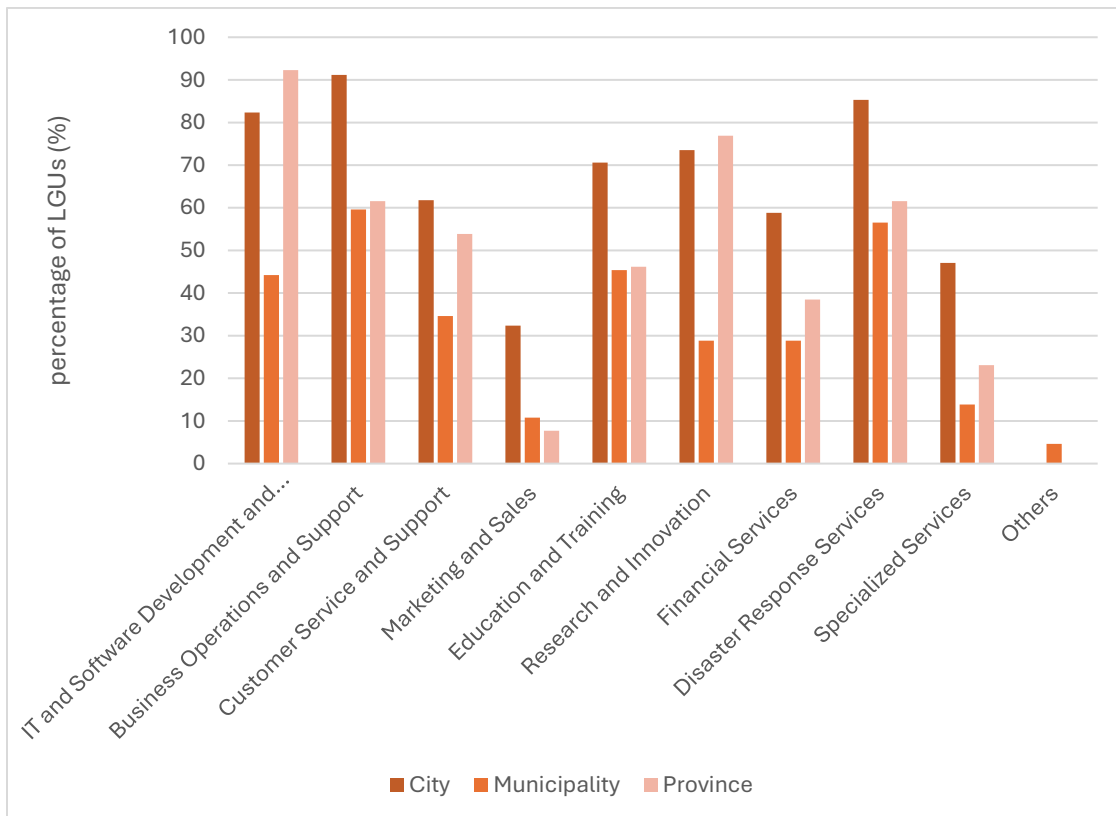
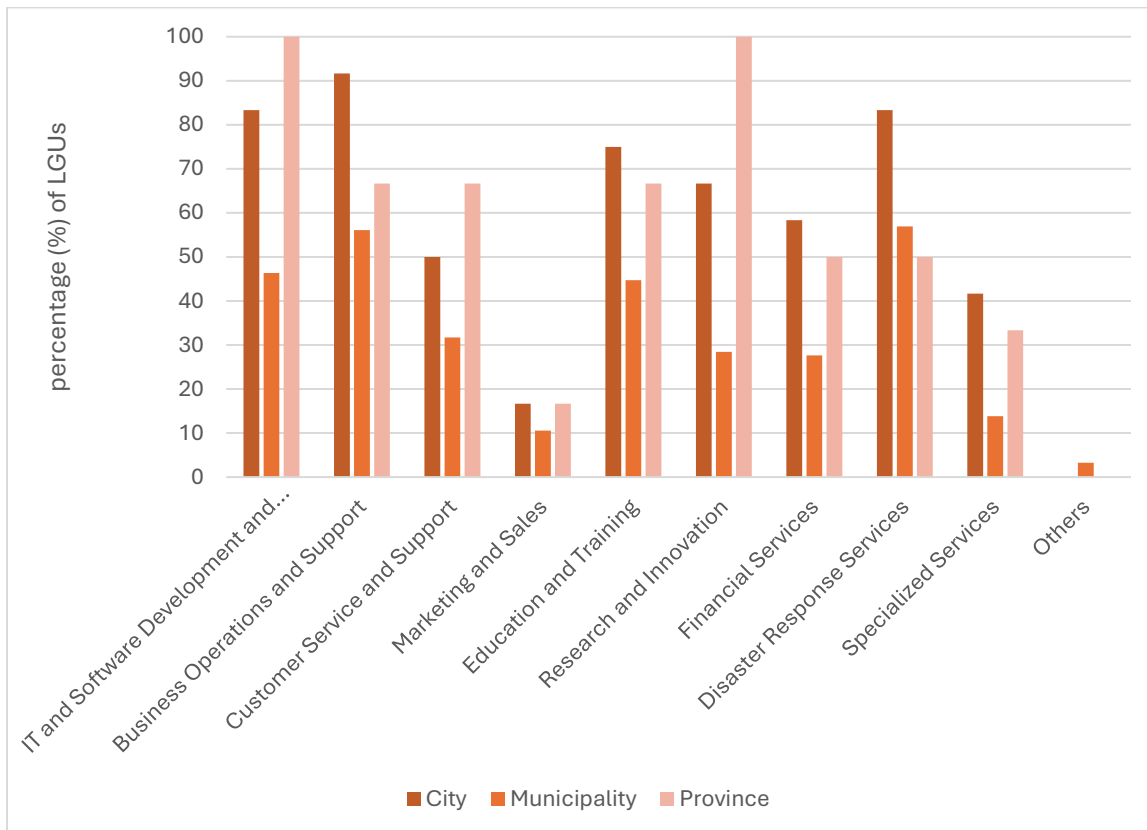


Figure 68. ICT Utilization in Organizational Processes by LGU Type



When looking at LGUs in Luzon, all the surveyed Luzon provinces have mentioned that they are using ICT for IT and software development and management as well as for research and innovation. Meanwhile, about 91.7 percent of Luzon cities, about 83.3 percent of Luzon cities and about 83.3 percent of Luzon cities are using ICT for business operations and support, IT and software development and management, and disaster response services, respectively. Among Luzon municipalities, only about 56.9 percent of these municipalities are utilizing ICT for disaster response services while only about 56.1 percent of these municipalities are using ICT for business operations and support (Figure 73).

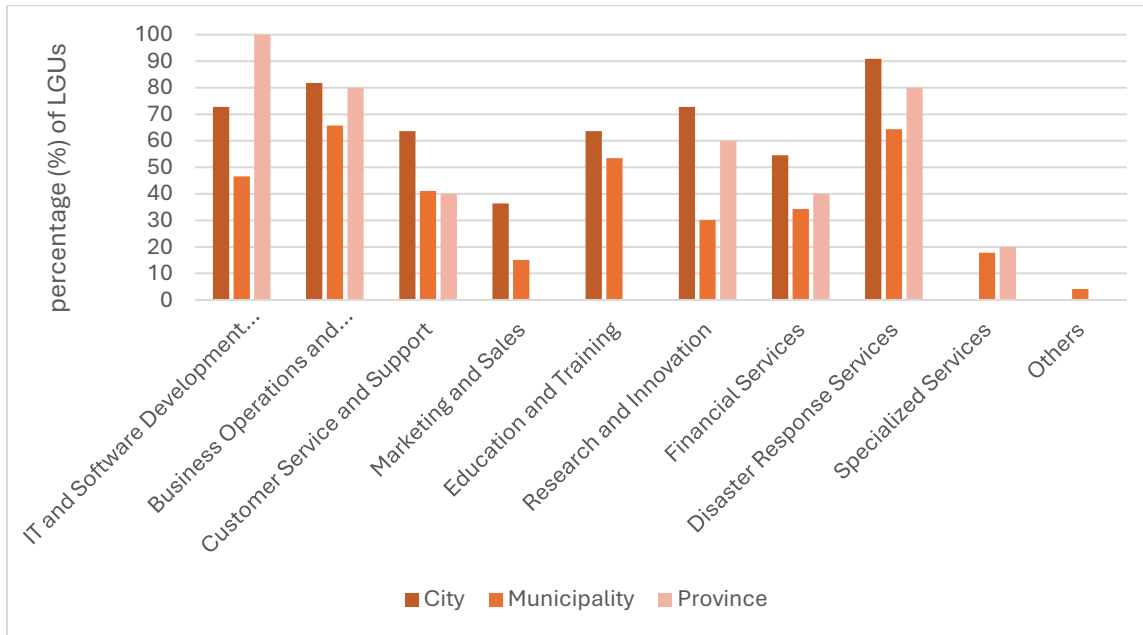
Figure 69. ICT Utilization in Organizational Processes in Luzon LGUs



In terms of Visayas LGUs, all the surveyed provinces in this island group have mentioned that they are using ICT for IT and software development and management (Figure 74). Meanwhile, about 90.9 percent of cities in Visayas, about 81.8 percent of cities in Visayas, about 72.7 percent of cities in Visayas and about 72.7 percent of cities in Visayas utilize ICT for disaster response

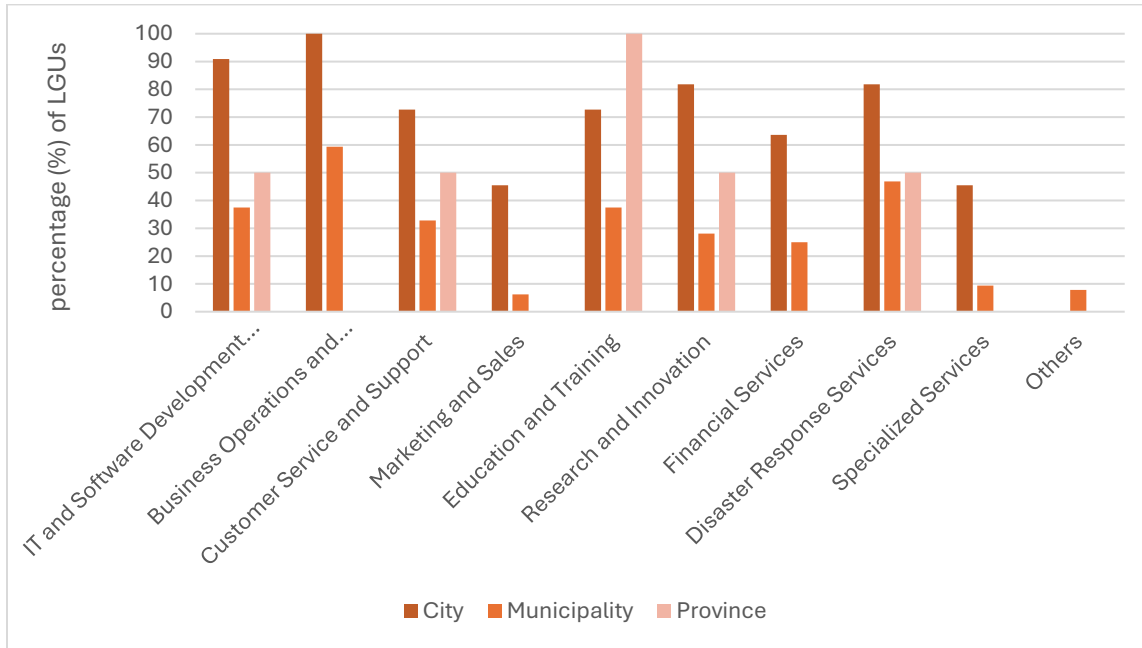
services, business operations and support, IT and software development and management, and research and innovation, respectively.

Figure 70. ICT Utilization in Organizational Processes in Visayas LGUs



For cities and provinces in Mindanao, the results seem to suggest that all Mindanao cities use ICT for business operations and support while all Mindanao provinces use ICT for education and training (Figure 75). Cities in Mindanao seem to also heavily use ICT for IT and software development and management (90.9 percent), research and innovation (81.8 percent), disaster response services (81.8 percent), customer service and support (72.7 percent), and education and training (72.7 percent). Conversely, only a minority of municipalities in Mindanao generally use ICT for organizational processes with the exception of business operations and support (59.4 percent).

Figure 71. ICT Utilization in Organizational Processes in Mindanao LGUs

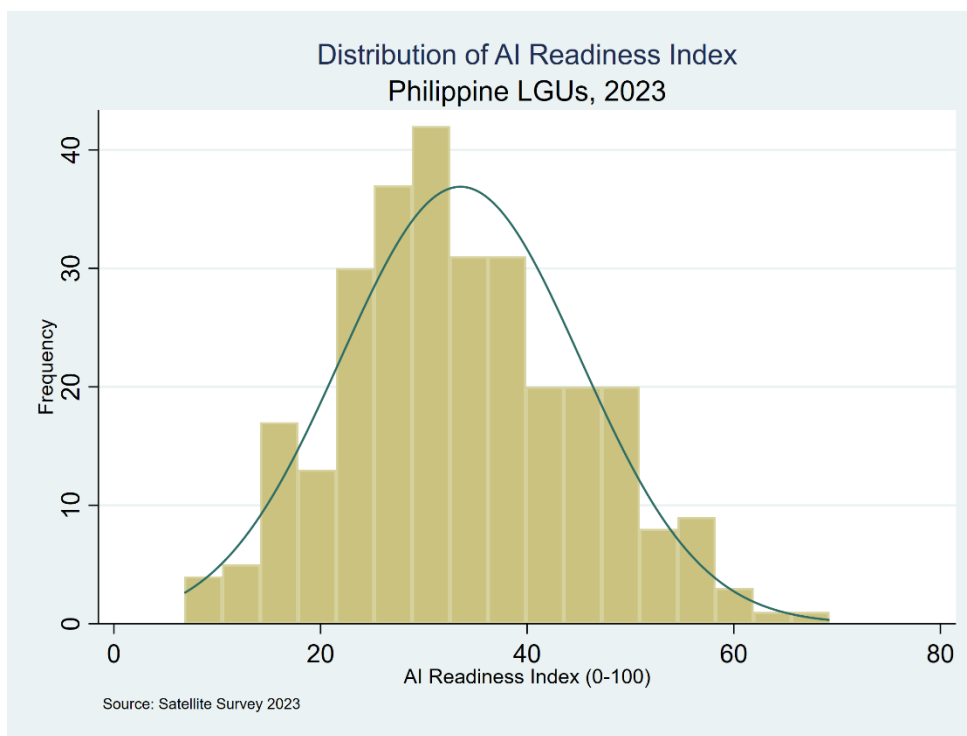


4. Results and Discussion²

4.1. Discussion of Overall Performance

Figure 76 shows the overall distribution of the AI Readiness Index among Philippine local government units (LGUs) in 2023. The distribution closely follows a bell-shaped curve but one can observe that it is slightly right-skewed, with most LGUs clustering in the 20–45 range. This indicates that, on average, Philippine LGUs exhibit low to moderate levels of AI readiness.

Figure 72. Distribution of the AI Readiness Index across Philippine LGUs (2023)



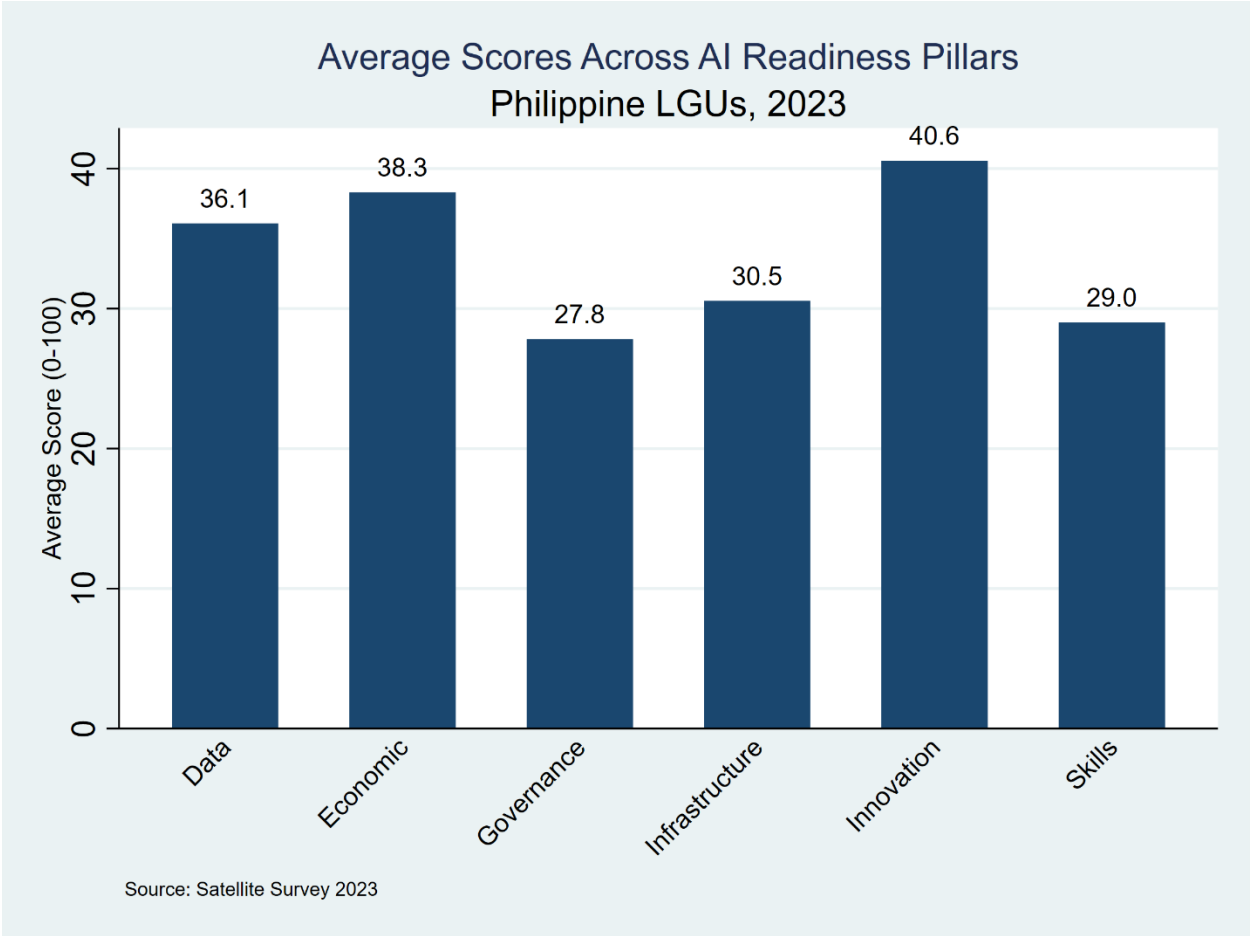
The peak of the distribution is around the low-to-mid 30s which implies that an average LGU has only partially accumulated the foundational conditions necessary for AI adoption as measured by the pillars of the index. Importantly, the long right tail, extending beyond 60, indicates the presence of a small group of high-performing LGUs that are substantially more prepared for AI use.

² AI-readiness and Pillars scores for all the respondents are available upon request.

Conversely, the left tail (below 20) reflects LGUs that remain significantly constrained, likely due to deficits in ICT infrastructure, human capital, and institutional capacity.

To better understand the underlying drivers of the overall distribution observed in Figure 76, Figure 77 presents the constituent pillars of AI readiness by reporting the average scores of each pillar. The results explain why most LGUs cluster at moderate AI readiness levels rather than achieving high overall readiness as the average scores range from around 28 to 40. This implies that most of the pillars are critical bottlenecks and would need urgent attention to ensure that AI-readiness.

Figure 73. Average Scores across AI Readiness Pillars (Philippine LGUs, 2023)



Among the six pillars (Figure 77), Innovation registers the highest average score (40.6), followed by Economic foundations (38.3) and Data readiness (36.1). These relatively stronger pillars suggest that many LGUs benefit from high sources of income through economic activity,

implementation of digital services, or basic data generation and collection. In contrast, Governance (27.8) and Skills (29.0) emerge as the weakest pillars, while Infrastructure (30.5) remains only modestly developed. These results indicate that the principal bottlenecks to AI readiness lie not in the absence of innovation potential, but in institutional and human capital constraints.

Figure 78. AI Readiness Index by Income Classification of LGUs (2023)

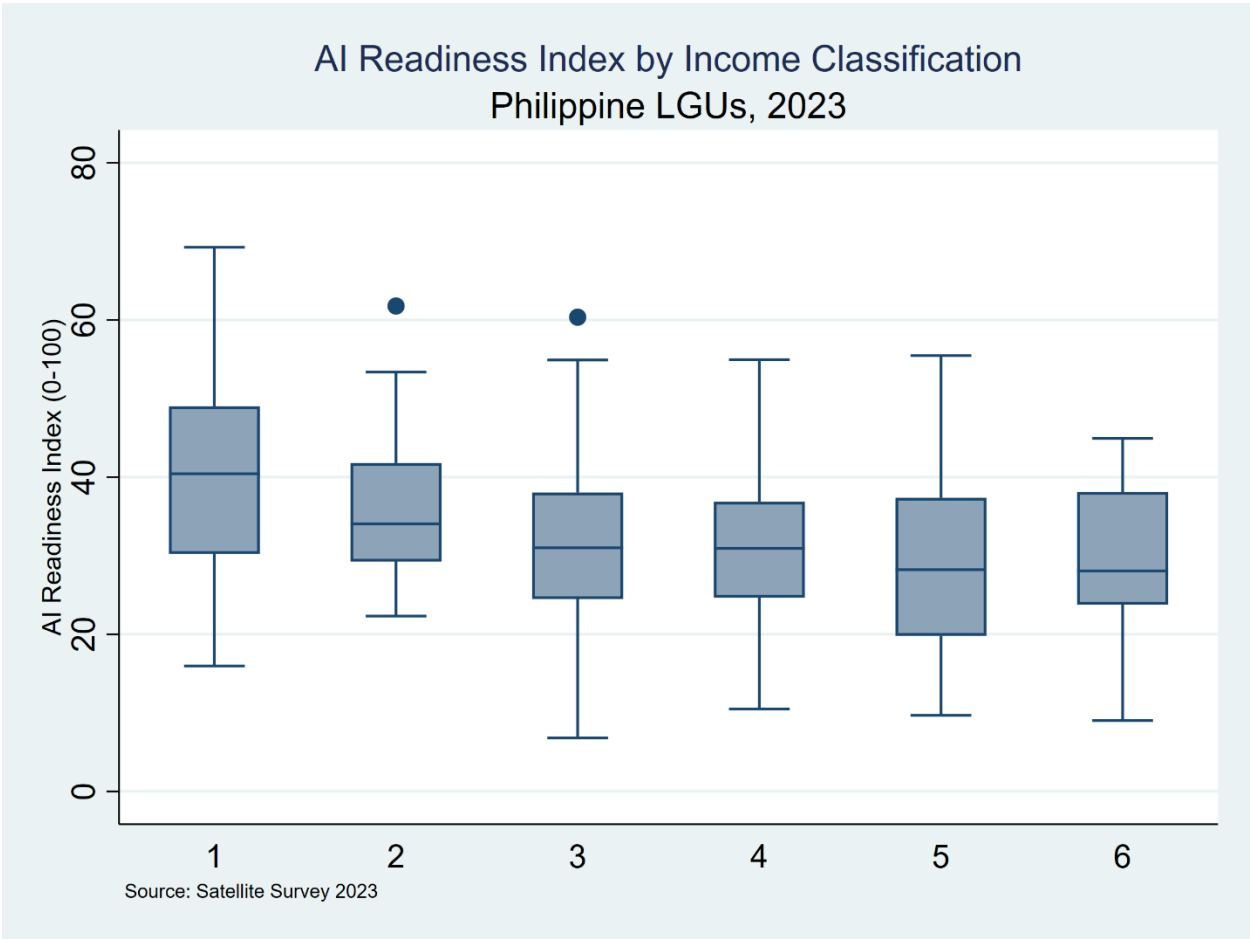


Figure 78 compares AI readiness across LGUs by income classification. A clear income pattern can be discerned. First-class LGUs display the highest average AI readiness scores, along with a wider range and higher upper bounds, indicating both stronger average AI-readiness but also greater internal heterogeneity. This implies that while many high-income LGUs are relatively AI-ready, others still lag despite having more fiscal resources.

As income class moves from the first to the sixth, the mean AI readiness scores generally decrease, and the upper bounds also tend to fall. Fifth- and sixth-class LGUs cluster at lower median values, typically below 30, reflecting structural constraints faced by fiscally weaker LGUs. These constraints likely include limited ICT investment, difficulty in attracting skilled ICT staff, and weaker institutional systems for data management and innovation.

Notably, there is still some overlap in distributions across income classes, indicating that income is an important but not the only critical factor. Some lower-income LGUs outperform higher-income counterparts, suggesting that leadership and policy prioritization can partially offset fiscal disadvantages. Nevertheless, the overall pattern emphasizes the need for targeted fiscal support and capacity-building support for lower-income LGUs to prevent AI readiness gaps from reinforcing existing regional and socioeconomic inequalities.

Figure 74. AI Readiness Index by Region (2023)

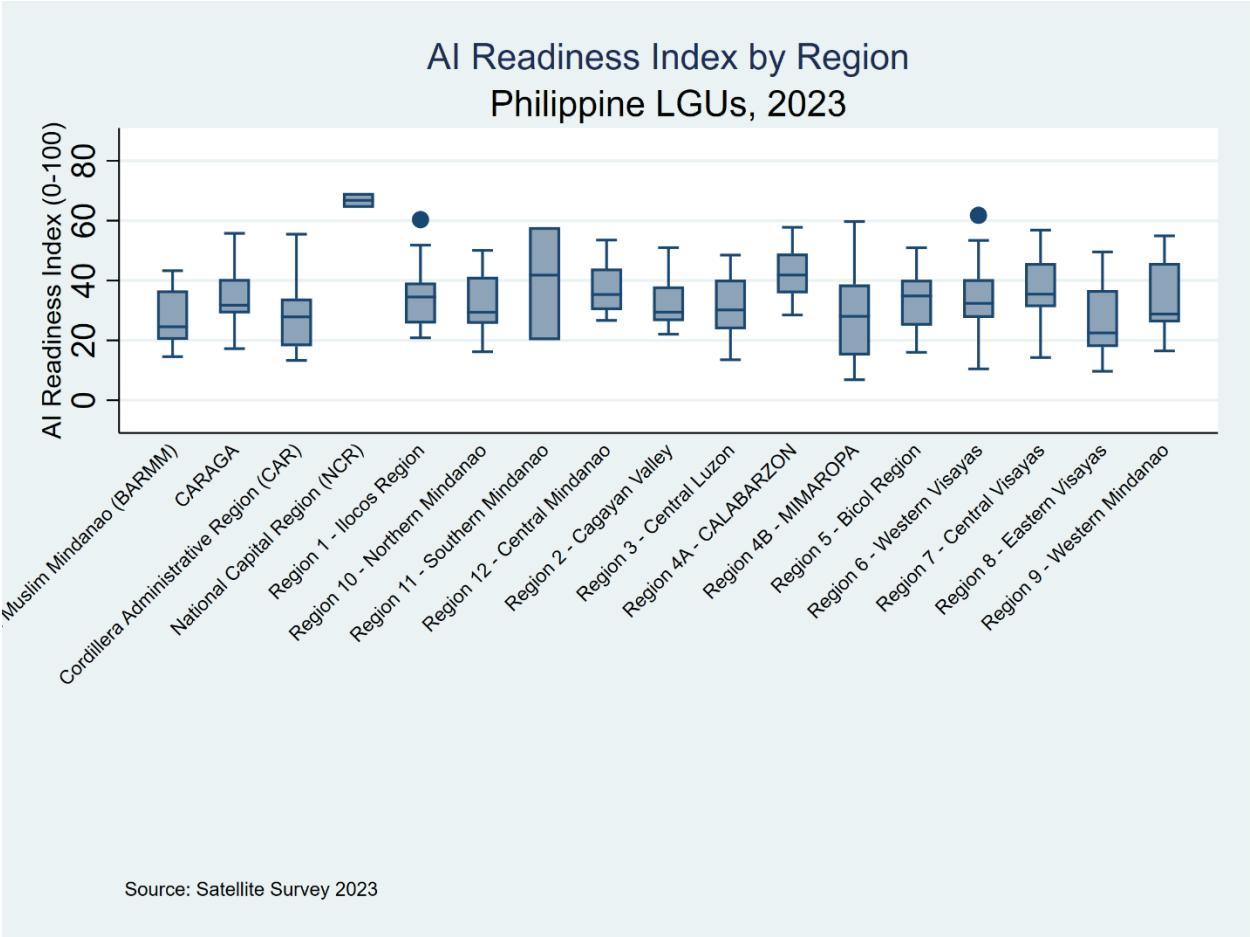


Figure 79 highlights substantial regional disparities in AI readiness. The National Capital Region (NCR) stands out clearly, with the highest median scores. This reflects NCR's concentration of digital infrastructure, skilled human capital, national government agencies, and exposure to technology-driven service sectors. Following NCR is CALABARZON with AI-readiness score of 42 exhibiting a moderate level of AI readiness while most of the regions in Visayas and Mindanao have average AI-readiness scores in the low-to-mid 30s. In addition, these regions also show wide dispersion, indicating uneven readiness among LGUs within the same region. This suggests that intra-regional inequality can be as important as inter-regional differences.

In contrast, the Bangsamoro Autonomous Region of Muslim Mindanao (BARMM), Region VIII-Eastern Visayas, Cordillera Administrative Region (CAR) and Region IVB-MIMAROPA show lowest mean scores of AI readiness with average scores below 30 for these regions. This pattern points to persistent development gaps related to infrastructure, skills, and governance capacity.

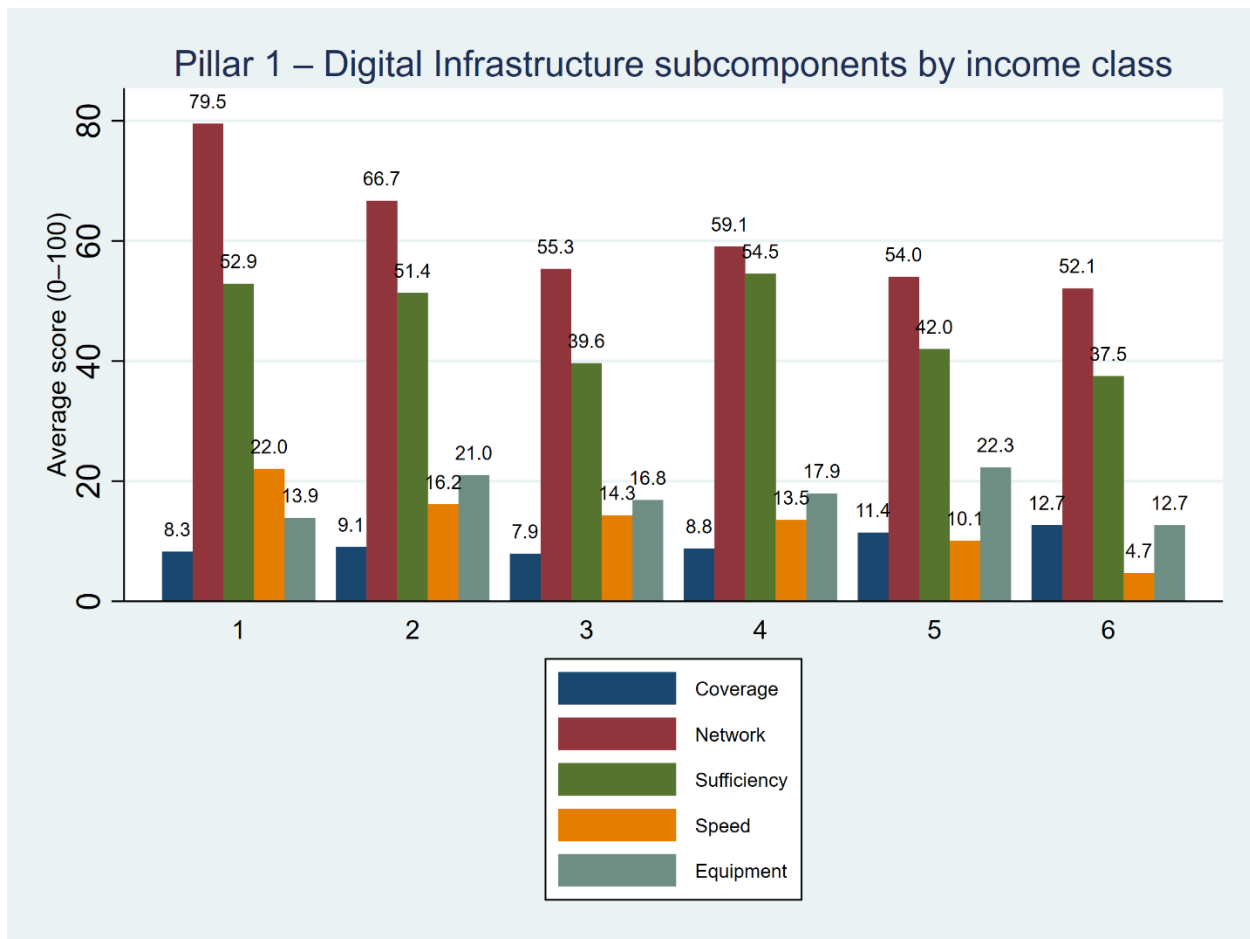
4.2. Discussion of Performance by Pillar

The following sections provide a more detailed discussion of the performance of the respondent LGUs by looking at each of the specific pillars.

PILLAR 1: DIGITAL INFRASTRUCTURE

Income Class 1 demonstrates the strongest performance in terms of digital network component with scores around 79.5 for network infrastructure, while Income Classes 5 and 6 show the weakest performances. This pillar reveals a clear stratification by income level, although certain critical weaknesses can be perceived for all income classes.

Figure 75. Digital Infrastructure Components by Income class



The analysis of internet coverage also shows an alarming pattern across all income groups. Average scores range from just 8.3 percent for Class 1 to 12.7 percent for Class 6 (Figure 80). This means that all income classes show, on average, very low barangay internet coverage. As one of the weakest subcomponents across all income classes, barangay internet connection can be seen as a critical bottleneck for AI readiness. The geographic reach of digital connectivity remains severely limited regardless of the financial capacity of the LGU, and this suggests systematic infrastructure challenges that transcend income availability.

Network infrastructure presents a more encouraging picture, particularly for wealthier municipalities. First class LGUs achieve a score of 79.5, indicating high to excellent readiness in this subcomponent. Second class LGUs follows with a score of 66.7, also in the high category, while Classes 3 through 6 score between 52.1 and 59.1, placing them in the moderate readiness range. Higher income LGUs have better access to multiple network types including wired LAN,

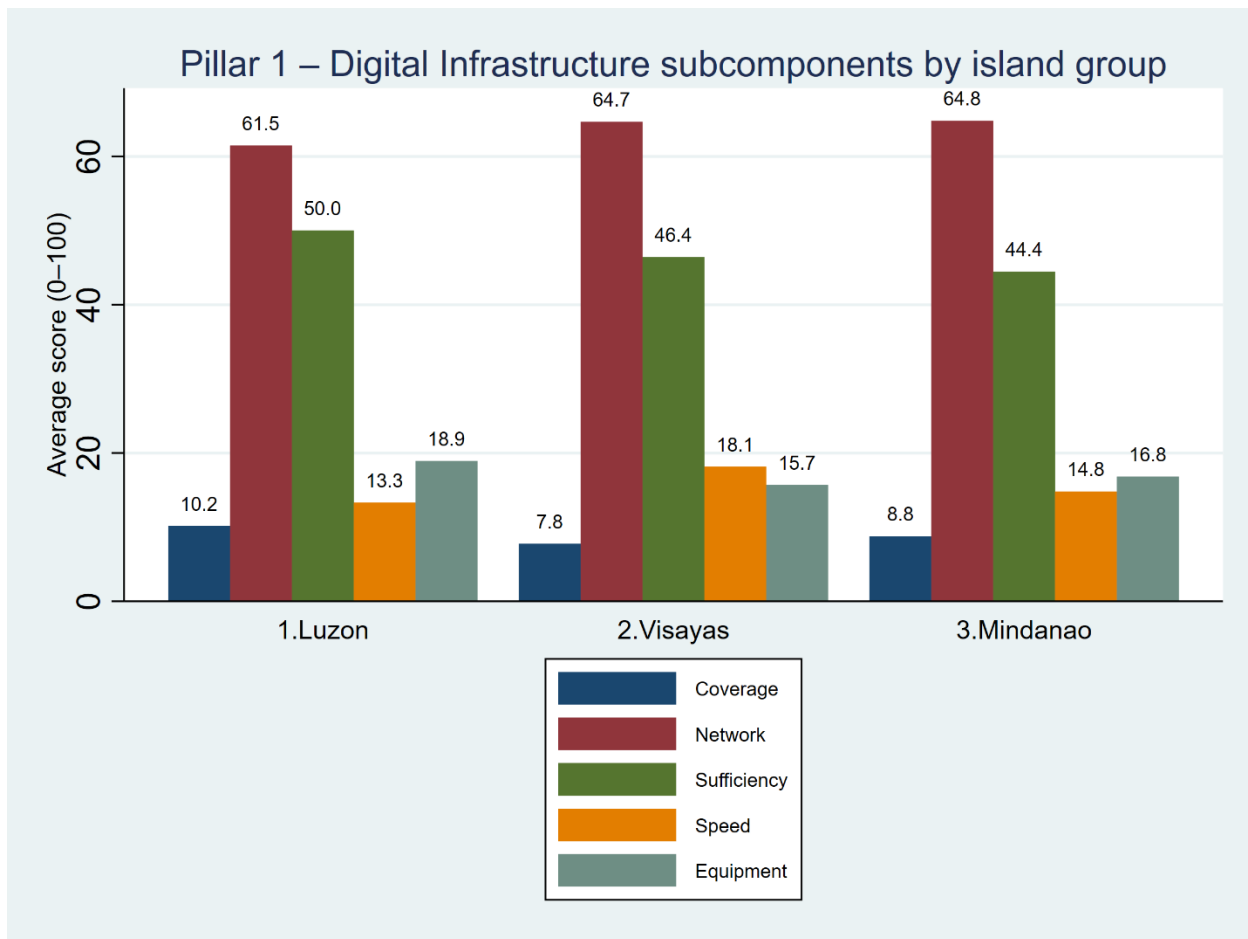
wireless LAN, and Wide Area Network. This diversity in network types provides redundancy and flexibility that are essential for running AI applications effectively. The availability of multiple network types ensures that if one connection method fails, others can maintain operations, which is particularly important for mission-critical AI systems.

Internet sufficiency shows mixed results across income classes. Class 1 achieves a moderate score of 52.9, suggesting reasonable confidence in their connectivity. Classes 2 through 4 range from 39.6 to 54.5, spanning low to moderate levels, while Classes 5 and 6 score between 37.5 and 42.0, both in the low category. This pattern indicates that even among LGUs with better actual infrastructure, there remains significant doubt about whether current connectivity is adequate for their operational requirements.

Similar to barangay connectivity, Internet speed emerges as a common weakness, with all income classes scoring between 4.7 and 22.0, which falls in the very low category. This represents a critical limitation for the deployment of sophisticated AI applications. Many advanced AI systems, particularly those involving real-time data processing, computer vision, or large language models, require high-speed internet connections to function effectively. The severely constrained data processing speed across all income levels means that even LGUs with good network infrastructure cannot fully leverage AI technologies due to bandwidth limitations.

ICT equipment density presents another area of universal concern. Class 1 scores just 13.9, while Classes 2 through 5 range from 10.1 to 22.3, and Class 6 achieves 12.7. All of these scores fall in the very low category, indicating that physical capital for digital work is inadequate across all income levels. As the indicator is a measure of the number of desktops, laptops, servers, smartphones, routers, and access points per employee in the LGU, the low scores suggest that even in wealthier municipalities, there is insufficient hardware to support widespread AI adoption among the workforce.

Figure 76. Digital Infrastructure components by Island Group



The digital infrastructure pillar reveals a pattern across all three island groups: network infrastructure emerging as a clear strength while internet coverage, speed, and equipment density represent universal weaknesses (Figure 81). This pattern suggests that while LGUs have made progress in establishing diverse network types, fundamental connectivity and hardware gaps persist regardless of geographic location.

Network infrastructure demonstrates exceptional performance across all island groups, with scores of 61.5 for Luzon, 64.7 for Visayas, and 64.8 for Mindanao, all falling in the high readiness category (Figure 83). The remarkable similarity among regions may be an indication that the availability of multiple network types including wired LAN, wireless LAN, and Wide Area Network has become relatively standardized across the Philippines. This uniformity likely reflects national telecommunications policies and infrastructure investments that have distributed network

capabilities broadly. The relatively high scores demonstrate that LGUs across all island groups have achieved the redundancy and flexibility needed for reliable AI operations.

Internet sufficiency shows moderate performance with notable variation across island groups. Luzon achieves 50.0, placing it exactly at the moderate categories, while Visayas scores 46.4 and Mindanao 44.4, both in the low range. The slight advantage of Luzon may reflect proximity to the National Capital Region and its more developed telecommunications infrastructure. The fact that even the highest-performing region scores only 50.0 may be an indication of widespread doubt about connectivity adequacy, which could reflect growing operational demands outpacing infrastructure improvements.

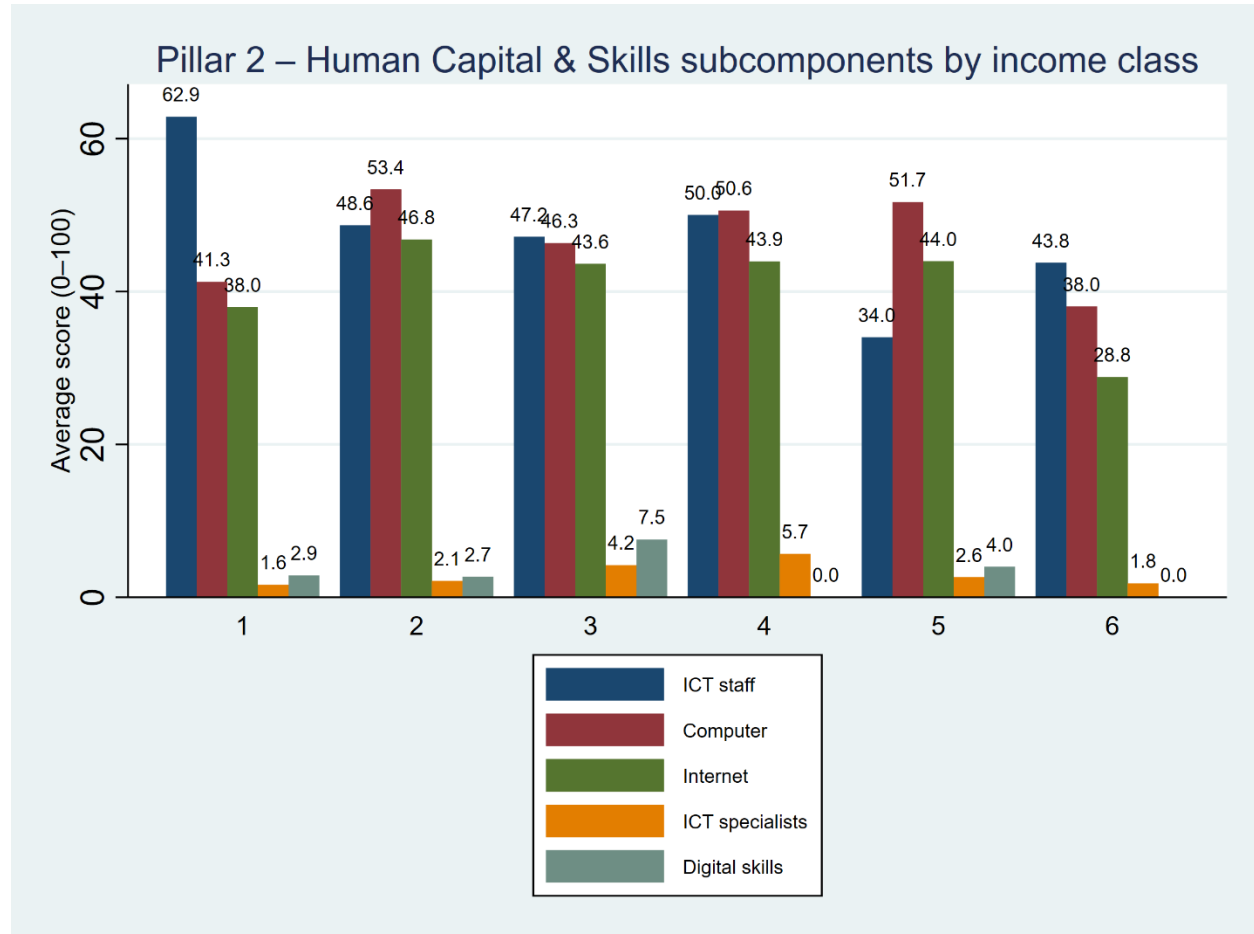
Internet coverage emerges as the most severe weakness across all island groups, with catastrophically low scores of 10.2 for Luzon, 7.8 for Visayas, and 8.8 for Mindanao, all in the low category. These scores measure the percentage of barangays with internet connection, and the fact that all regions score below 11 percent indicates that geographic reach of digital connectivity remains severely limited nationwide.

Internet speed shows similarly poor performance across all island groups, with scores of 13.3 for Luzon, 18.1 for Visayas, and 14.8 for Mindanao, all in the low category. These scores reflect subscribed internet speeds in MBPS, and the universally low levels indicate that bandwidth constraints severely limit the types of AI applications that can be deployed. Sophisticated AI systems requiring real-time data processing, computer vision, or large language models demand high-speed connections that current infrastructure cannot support.

ICT equipment density demonstrates universal inadequacy, with scores of 18.9 for Luzon, 15.7 for Visayas, and 16.8 for Mindanao, all very low. As this indicator measures desktops, laptops, servers, smartphones, routers, and access points per employee, the low scores indicate insufficient hardware to support widespread digital work across all LGUs. Luzon's slight advantage may reflect higher government budgets, but the narrow range suggests that physical capital constraints affect all island groups similarly. The low equipment density means that even if connectivity and other infrastructure improve, LGUs lack the hardware needed to enable widespread AI tool usage among their workforce.

PILLAR 2: HUMAN CAPITAL & SKILLS

Figure 77. Pillar 2 - Human Capital and Skills subcomponents by Income class



The human capital and skills pillar reveals the most dramatic differentiation between income classes among all six pillars. Income Class 1 shows exceptional performance with 62.9 percent ICT staff availability, placing it firmly in the high readiness category, while lower income classes face significant human capital constraints that threaten their ability to effectively implement and manage AI systems (Figure 82).

ICT staff availability demonstrates the sharpest income differences of any indicator in the assessment. Class 1 achieves a score of 62.9, indicating that a substantial majority of these wealthier LGUs have established ICT offices with dedicated personnel. Class 2 follows at 48.6, which falls in the moderate category, while Classes 3 through 6 range from 34.0 to 47.2, spanning

low to moderate levels. This indicator is particularly critical because dedicated ICT staff are essential for AI system management and support. Without personnel specifically tasked with managing digital infrastructure and systems, LGUs will struggle to maintain AI applications even if they successfully implement them initially. In addition, the presence of an ICT office in the LGU may be viewed as organizational commitment to digital operations and provides a structural foundation for ongoing technology management (Figure 82).

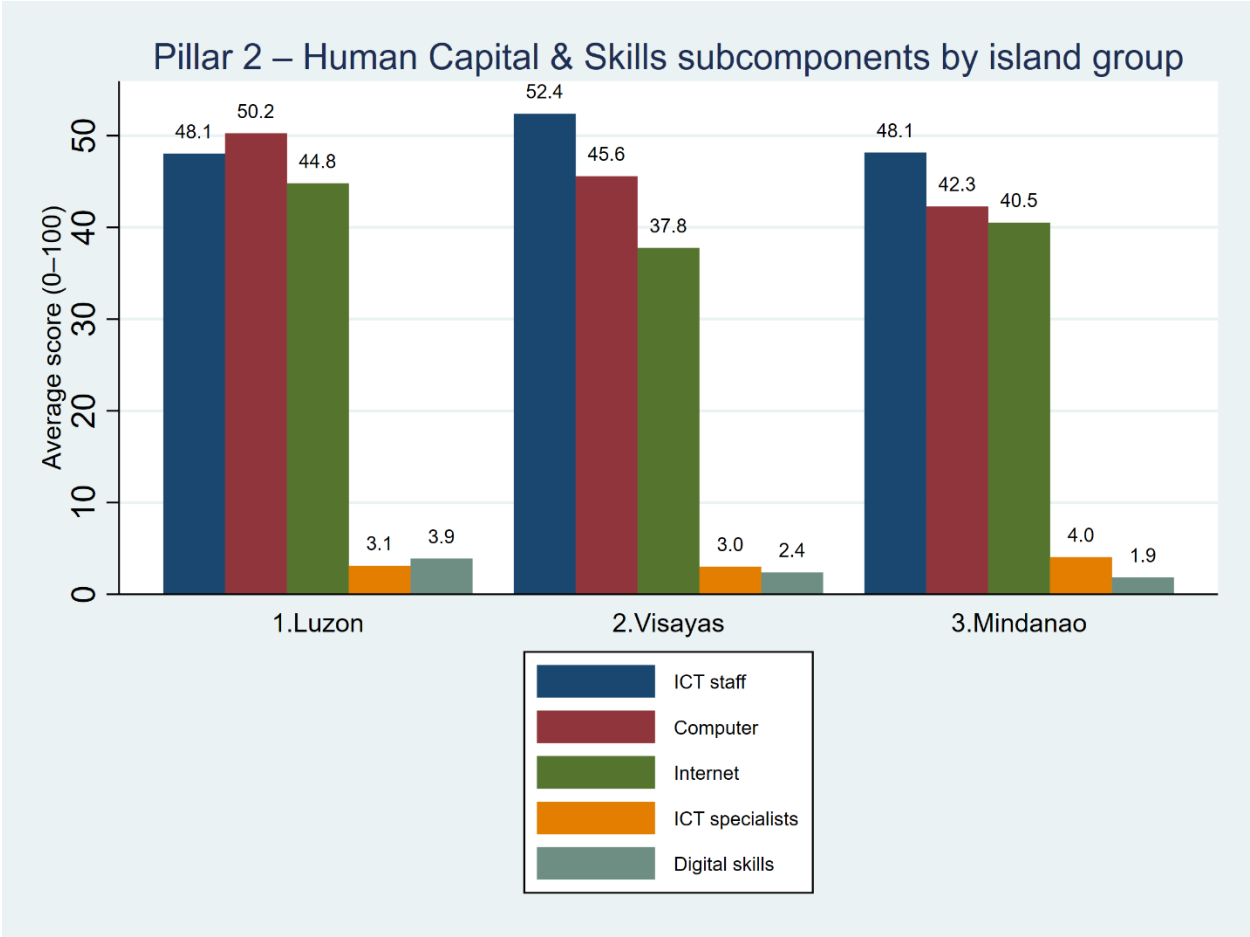
Computer literacy rates across LGU employees have scores that are more uniformly distributed across income classes. Classes 1 and 2 achieve scores between 41.3 and 53.4, respectively while Classes 3 through 6 range from 38.0 to 50.6, spanning low to moderate levels (Figure 82). These scores indicate that basic computer skills are present throughout the workforce but need strengthening across all income levels. As discussed in the conceptual framework, computer literacy is a foundational skill for AI-powered tool usage, as employees must be comfortable with computing systems before they can effectively utilize AI applications layered on top of those systems.

Internet literacy presents a somewhat weaker picture than computer literacy, with Classes 1 and 2 scoring between 38.0 and 46.8, while Classes 3 through 5 achieve scores at mid-40s level. Only Class 6 scored 30 on average which indicates that the poorest LGUs are also limited by internet proficiency constraints (Figure 82). Because AI systems are increasingly operating through web-based interfaces and rely on cloud computing infrastructure, internet literacy becomes essential for effective utilization. The relatively low scores across all income classes suggest that many employees, while capable of basic computer operations, lack confidence or competence in navigating internet-based systems and services (Figure 82).

The availability of ICT specialists represents the most severe gap in human capital across all income classes. Every income class scores between just 1.6 and 5.7, all in the low category. This critical gap indicates extremely limited capacity to develop, customize, and maintain AI solutions. ICT specialists, measured as the proportion of ICT staff to total employees, are essential for adapting commercial AI tools to local needs, troubleshooting technical problems, ensuring system security, and developing custom solutions when needed. The near absence of specialists across all income levels means that LGUs will be heavily dependent on external vendors and consultants for AI implementation and support, which limits flexibility, increases costs, and creates sustainability challenges.

Digital skills planning shows universally poor performance, with Classes 1 through 3 scoring between 2.7 and 7.5 and Classes 4 through 6 achieving between 0.0 and 4.0, all in the very low category. This indicator measures whether digital skills are incorporated in LGU planning documents, which serves as a signal of organizational prioritization. The absence of digital skills in planning documents suggests that workforce development for digital competencies is not being systematically addressed. Without planned approaches to skills development, improvements in human capital will be ad hoc and insufficient to meet the demands of AI adoption (Figure 82).

Figure 78. Human Capital and Skills Subcomponents by island group



Looking at the performance island groups for Pillar 2, Figure 83 reveals an almost uniform performance across the island groups but there are still some geographic differentiations particularly with Visayas leading in ICT staff availability while all the island groups face critical shortages in specialized personnel and digital skills planning. The patterns suggest that while

organizational structures for ICT support vary somewhat by region/island group, fundamental gaps in technical expertise and strategic workforce development are universal challenges.

ICT staff availability shows the strongest regional differentiation among all subcomponents in this pillar. Visayas achieves 52.4, the highest score among island groups and placing it in the moderate category, while Luzon and Mindanao both score 48.1 (Figure 83), also moderate but slightly lower. Visayas's performance indicates that LGUs in this island group have been particularly effective at establishing dedicated ICT offices with personnel. This advantage may reflect active regional government associations, particular capacity building programs, or cultural factors emphasizing organizational structure for technology management. The presence of ICT offices signals institutional commitment to digital operations and provides the organizational foundation needed to support AI system implementation and maintenance. However, even Visayas's best performance at 52.4 means that fewer than half of all LGUs have adequate ICT staffing, indicating substantial room for improvement across all regions.

Computer literacy demonstrates strong performance across all island groups with relatively modest variation. Luzon leads at 50.2, placing it in the moderate category, while Visayas scores 45.6 and Mindanao 42.3, both also moderate (Figure 83). These scores indicate that basic computer skills are reasonably widespread among government employees across all regions, providing a starting point for introducing AI-powered tools. The moderate scores across all regions suggest that computer literacy, while present, needs strengthening to support sophisticated AI applications that require confident navigation of complex digital interfaces.

Internet literacy presents a more concerning picture with notably lower scores than computer literacy. Luzon achieves 44.8, falling in the moderate category, while Mindanao scores 40.5, also moderate, and Visayas lags at 37.8 in the low category (Figure 83). This pattern is somewhat surprising given Visayas's strength in ICT staffing, suggesting that organizational capacity has not translated into workforce internet proficiency. The lower scores relative to computer literacy indicate that while employees can operate computers for basic tasks, they lack confidence or competence in utilizing internet-based systems and cloud services. This gap is particularly problematic for AI adoption, as modern AI applications increasingly operate through web interfaces and rely on cloud computing infrastructure. The fact that even Luzon scores only 44.8 suggests that internet literacy development should be a training priority across all regions.

ICT specialists show critically low availability across all island groups, with Mindanao achieving the highest score at just 4.0, while Luzon scores 3.1 and Visayas 2.4, all in the low category

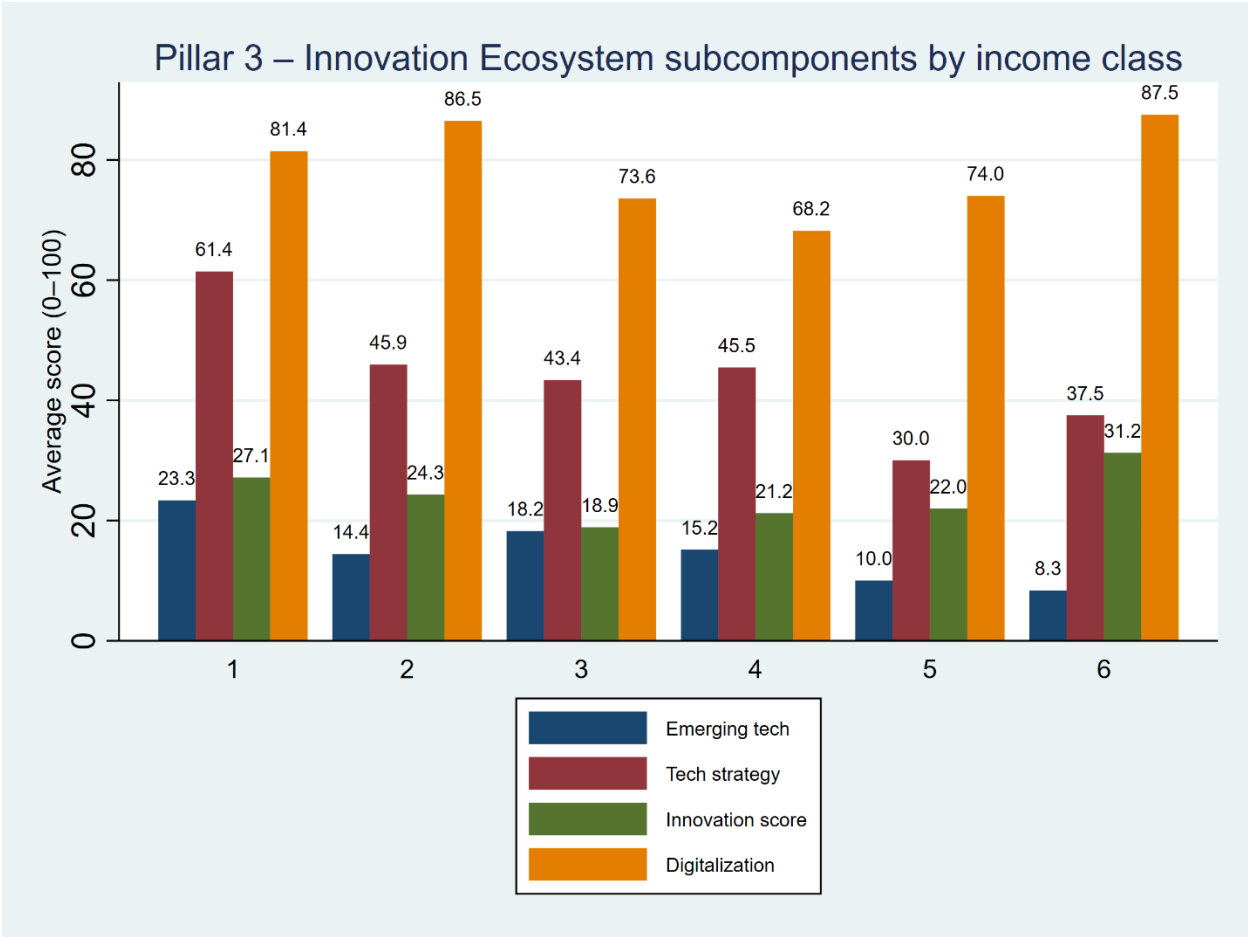
(Figure 83). These scores measure the proportion of ICT specialists to total employees, and the near absence of specialized technical expertise across all regions represents perhaps the most severe human capital constraint. Specialists are essential for developing custom AI solutions, adapting commercial systems to local needs, troubleshooting complex problems, and maintaining security. The universally low scores indicate that LGUs across all island groups will be heavily dependent on external vendors and consultants for AI implementation, limiting flexibility and increasing long-term costs.

Digital skills planning demonstrates universal neglect, with Luzon scoring just 3.9, Visayas 2.4, and Mindanao 1.9, all very low (Figure 83). These scores indicate whether digital skills are incorporated in local government plans or agenda, and the near absence across all regions signals that workforce development for digital competencies is not being strategically addressed. The slight variation among regions likely reflects individual LGU initiatives rather than systematic regional or national approaches. Without planned strategies for skills development, improvements in human capital will remain ad hoc and insufficient to support sustained AI adoption.

PILLAR 3: INNOVATION ECOSYSTEM

The innovation ecosystem pillar stands out as the best performing pillar overall, with particularly strong scores for digitalization of services across all income classes. However, this strength is unevenly distributed across the subcomponents, with emerging technology adoption remaining critically limited across all income levels. This pattern may be an indication that while LGUs are actively digitalizing existing services, they have not yet explored the adoption and use of cutting-edge technologies.

Figure 79. Pillar 3 Innovation Ecosystem subcomponents by income class



Emerging technology adoption scores reveal a significant weakness across all income classes, with scores ranging from just 8.3 to 23.3, all falling in the low category. This indicator measures whether LGUs have plans to adopt blockchain, Internet of Things, and 5G technology (Figure 84). The near absence of plans for these complementary technologies represents a major gap in strategic thinking about technology adoption. While these specific technologies may not be prerequisites for AI adoption, the lack of engagement with them suggests a limited awareness of the broader technology ecosystem in which AI operates. Strategic adoption of complementary technologies often indicates organizational readiness for AI integration, as it demonstrates forward-thinking leadership and willingness to experiment with emerging tools.

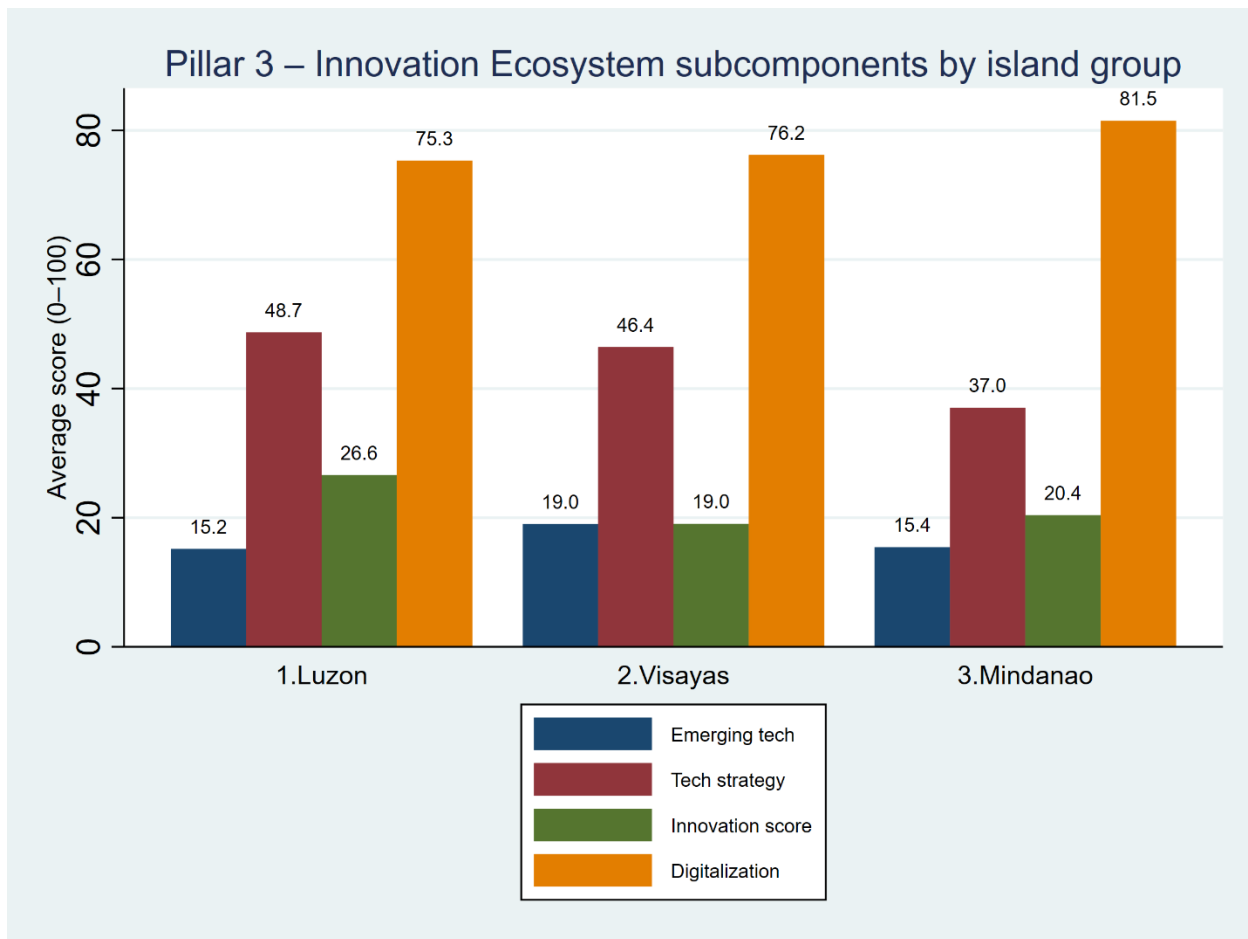
Technology strategy shows much stronger performance among wealthier LGUs. Class 1 achieves a score of 61.4, placing it in the high readiness category, while Classes 2 through 4 score between 43.4 and 45.9 in the moderate range. Classes 5 and 6 score 30.0 and 37.5 respectively, falling in the low category. This indicator measures whether LGUs have overall ICT development plans,

which serve as evidence of organizational readiness for innovation and adoption of new processes. The presence of such plans in higher income LGUs suggests that these LGUs are thinking systematically about technology adoption rather than making ad hoc decisions. The absence of such plans in lower income classes indicates that technology adoption may be reactive rather than strategic.

Innovation self-assessment reveals that LGUs across all income classes rate themselves poorly on innovation culture and prioritization. Class 1 scores just 27.1, which falls in the low category, while Classes 2 through 5 range from 18.9 to 24.3, spanning very low to low levels (Figure 84). Surprisingly, Class 6 LGUs have performed best in this category which may be an optimistic view of the innovations being implemented in the LGUs. Still, all these scores are quite low which reflects how LGU leadership and staff perceive their own organizational culture. The low scores suggest a lack of confidence in innovation capacity regardless of actual technical capabilities. This perception gap may itself be a barrier to AI adoption, as organizations that do not see themselves as innovative may be reluctant to attempt ambitious technology implementations.

Digitalization progress emerges as the strongest subcomponent within this pillar (Figure 84). All income classes achieve scores between 68.2 and 87.5, placing them in the moderate to high readiness categories for these subcomponents. This indicator measures whether LGUs have initiated digitalization of their services, which demonstrates commitment to digital transformation. The consistently high scores across all income levels indicate that digitalization has become a priority throughout the Philippines. This widespread digitalization provides an excellent foundation for AI integration, as AI applications can be layered onto existing digital systems and services. The digitalization of basic government services creates the data infrastructure and digital workflows that AI systems need to function effectively.

Figure 80. Pillar 3 Innovation Ecosystem subcomponents by island group



The innovation ecosystem pillar demonstrates consistent patterns across island groups, with all three island groups showing strong digitalization progress while struggling with emerging technology adoption and innovation culture. This uniformity suggests that innovation readiness is shaped more by national trends and systemic constraints than by regional characteristics, creating both challenges and opportunities for intervention design.

Digitalization progress emerges as the dominant strength across all island groups, with Mindanao leading at 81.5, Visayas at 76.2, and Luzon at 75.3 (Figure 85). The consistently strong performance is an indication that digitalization of services has become a universal strategy throughout the Philippine LGUs. Mindanao's exceptional performance is particularly noteworthy, as it achieves the highest score despite having weaker economic foundations and lower technology strategy scores than other regions. This pattern may be suggesting that Mindanao LGUs perceive the digitalization of services delivery as a means of overcoming geographic

challenges, improving access for dispersed populations, or compensating for limitations in physical infrastructure. Meanwhile, the strong digitalization across all island groups likely reflects national policies, programs, and initiatives that have promoted digital service delivery systematically. This provides an excellent foundation for AI integration, as digitalization creates the workflows, generates the data, and establishes the operational patterns that AI applications need to function effectively.

Technology strategy shows more substantial regional variation. Luzon achieves 48.7, placing it in the moderate category, while Visayas scores 46.4, also moderate, and Mindanao lags at 37.0 in the low category. These scores measure whether LGUs have developed overall ICT development plans, and the declining trend from Luzon to Mindanao suggests that strategic planning capacity varies by island group. Luzon's advantage may reflect proximity to national government resources while Mindanao's weaker performance may indicate that despite strong digitalization implementation, formal strategic planning for technology remains less developed. This disconnect between strong execution and weak planning in Mindanao is intriguing and may indicate that digitalization has been driven by practical necessity or external programs rather than internally generated strategic frameworks.

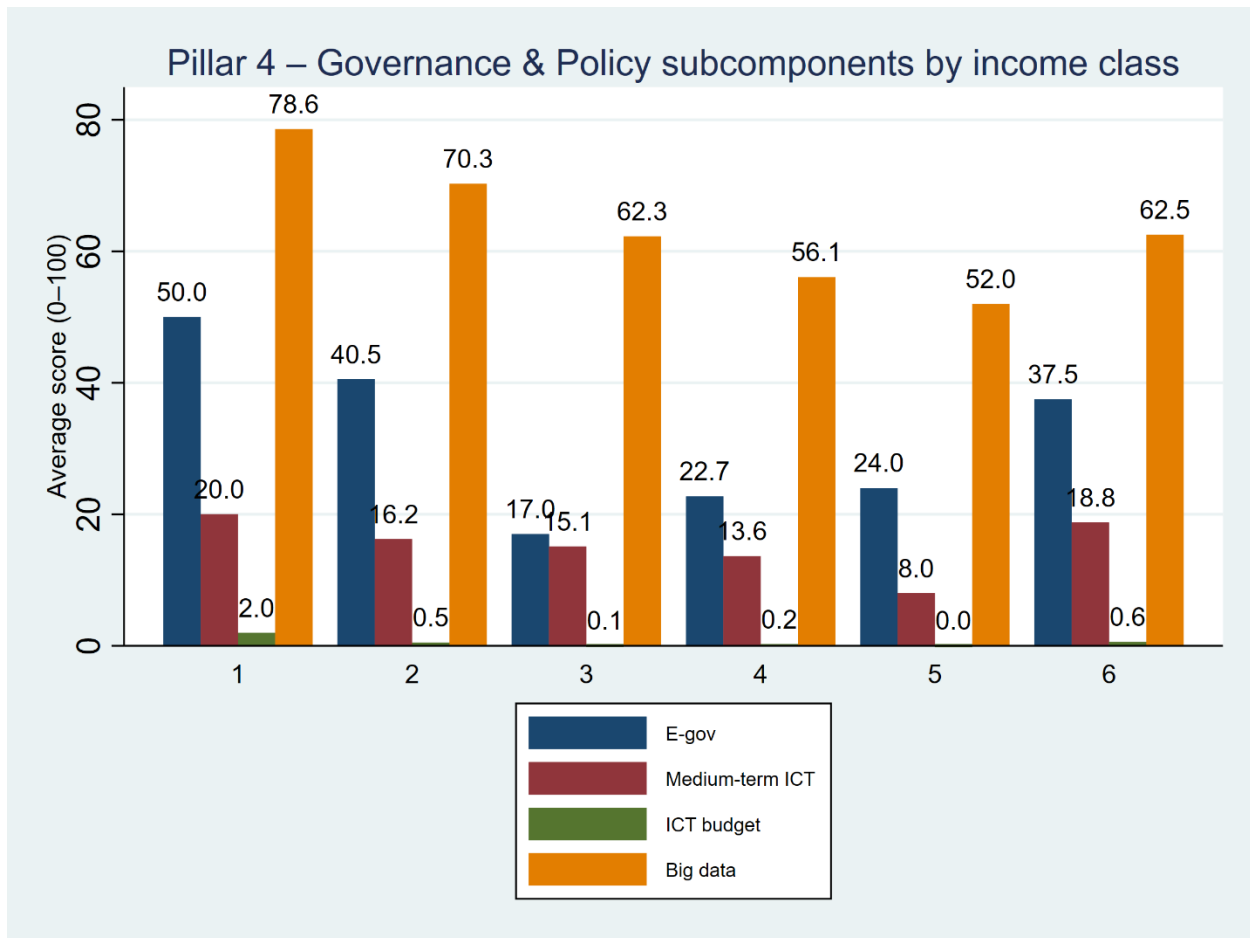
Innovation self-assessment reveals universally weak perceived innovation capacity, with scores of 26.6 for Luzon, 20.4 for Mindanao, and just 19.0 for Visayas (Figure 85). These scores reflect how LGU leadership and staff assess their own organizational culture and innovation prioritization, and the low levels across all regions indicate widespread lack of confidence in innovation capacity despite actual technical progress. This universal pattern of low innovation confidence despite strong digitalization suggests a significant perception gap that may itself be a barrier to AI adoption. Organizations that do not see themselves as innovative may be reluctant to attempt ambitious technology implementations even when they possess the technical prerequisites.

Emerging technology adoption demonstrates universal weakness, with scores of 19.0 for Visayas, 15.4 for Mindanao, and 15.2 for Luzon (Figure 85). These scores measure plans to adopt blockchain, Internet of Things, and 5G technology, and the near absence across all regions indicates minimal engagement with cutting-edge technologies nationwide. The poor performance indicates that the lack of emerging technology adoption is not a capacity issue specific to certain regions but rather a systemic gap in strategic technology awareness across the entire local government sector.

PILLAR 4: GOVERNANCE & POLICY

The governance and policy pillar presents a striking paradox across all income classes. While LGUs show strong scores for digitalization plans, they display critical weaknesses in ICT budget allocation and medium-term planning. This disconnect between policy intentions and resource commitment represents one of the most significant barriers to AI adoption revealed by the assessment.

Figure 81. Pillar 4 – Governance and Policy subcomponents by income class



E-government strategy performance varies considerably by income class but on average, can be considered moderate. Class 1 achieves a score of 50.0, placing it in the moderate category, while Classes 2 through 4 range from 17.0 to 40.5, spanning very low to moderate levels. Classes 5 and 6 score between 8.8 and 37.5, falling in the very low to low categories (Figure 86). This indicator measures whether LGUs have established e-government frameworks, which provide the

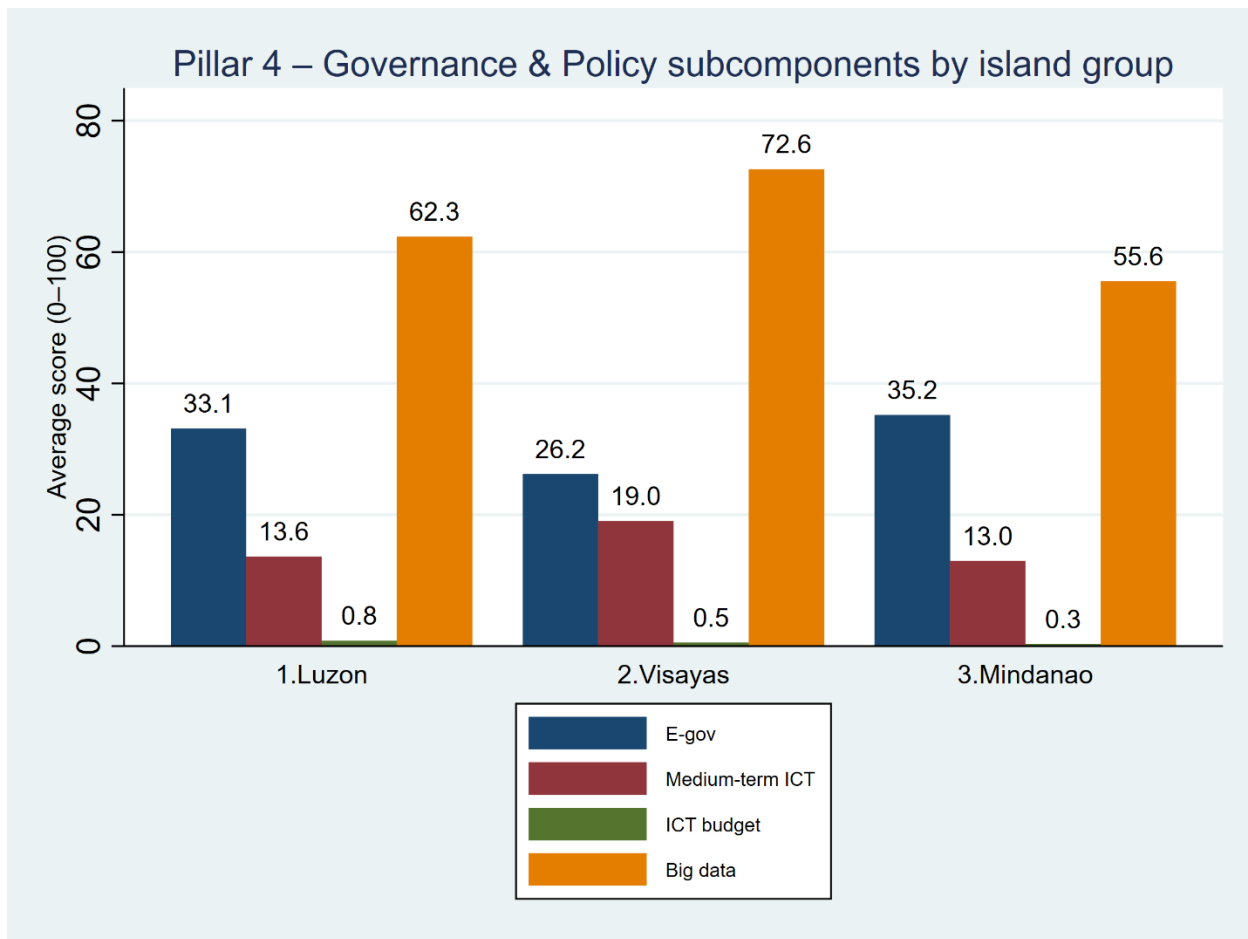
foundation for digital service delivery including AI applications. The presence of e-government frameworks in wealthier LGUs suggests that these municipalities have begun to think systematically about how to deliver government services through digital channels. However, even among the highest performers, scores remain only moderate, indicating that comprehensive e-government strategies are not yet commonly done in most LGUs.

Medium-term ICT planning emerges as one of the most critical gaps across the entire assessment. All income classes score between 0.0 and 20.0, placing every single class in the very low category (Figure 86). This indicator measures whether LGUs engage in multi-year ICT planning that considers sustained technology investments. The near absence of medium-term planning suggests that ICT decisions are made on an annual or ad hoc basis rather than as part of a strategic vision. This represents a fundamental problem for AI adoption, which requires sustained investment over multiple years to build infrastructure, develop capacity, acquire systems, and achieve organizational learning.

ICT budget allocation presents perhaps the most alarming finding in the entire assessment. All income classes score between just 0.1 and 2.0, placing every class in the very low category (Figure 88). This indicator measures the normalized budget allocation to ICT as a percentage of total LGU budgets. The severely constrained financial commitment to ICT indicates that regardless of policy statements or strategic intentions, LGUs are not backing their digital ambitions with actual resources. This gap between policy pronouncements and resource allocation suggests that ICT and AI may be viewed as aspirational rather than operational priorities. Without adequate budget commitment, LGUs cannot acquire necessary hardware, purchase software licenses, hire specialized staff, or maintain systems effectively.

Big data planning presents a much more encouraging picture and represents a genuine strength of the governance pillar. Classes 1 and 2 achieve scores of 78.6 and 70.3 respectively, placing them in the high category, while Classes 3 through 6 range from 52.0 to 62.5, spanning moderate to high levels (Figure 86). This indicator measures whether LGUs have plans to use big data, which signals the data-driven orientation necessary for AI adoption. Strong performance across all income classes suggests that LGU leadership understands the importance of data for modern governance and is thinking about how to leverage data resources. This orientation toward data-driven decision making is essential for AI, as most AI applications depend on access to substantial amounts of data.

Figure 82. Pillar 4 -Governance and Policy subcomponents by island groups



The governance and policy pillar reveals a striking paradox across all island groups, where strong policy commitments to big data orientation contrast sharply with critical weaknesses in ICT budget allocation and medium-term planning. This pattern indicates that while LGU leadership across all regions understands the importance of data-driven governance and has embraced digitalization rhetorically, these commitments are not being translated into the resource allocation and strategic planning frameworks necessary for sustained AI adoption.

Big data planning emerges as the dominant strength across all island groups, with Visayas leading at 72.6, Luzon at 62.3, and Mindanao at 55.6, placing them in the high to moderate categories (Figure 87). This strong big data orientation is essential for AI readiness, as most AI applications depend on access to substantial amounts of structured data. The fact that even Mindanao, with the lowest score, achieves 55.6 in the moderate category demonstrates that data-driven thinking has penetrated throughout the Philippine local government system. This represents a genuine strength that creates favorable conditions for AI adoption, as organizations oriented toward data

utilization are more likely to recognize the value of AI systems that can analyze and extract insights from their data resources.

E-government strategy shows more substantial regional variation, with Mindanao achieving 35.2, Luzon 33.1, and Visayas 26.2, all in the low category (Figure 87). Mindanao's relative advantage is noteworthy, suggesting that LGUs in this region have prioritized establishing e-government frameworks despite facing greater economic constraints and infrastructure challenges than other regions. This may reflect recognition that digital service delivery can help overcome geographic barriers and improve access for dispersed populations. E-government frameworks provide the organizational foundation for digital service delivery including AI applications, establishing governance structures, service standards, and citizen interaction models that AI systems can enhance.

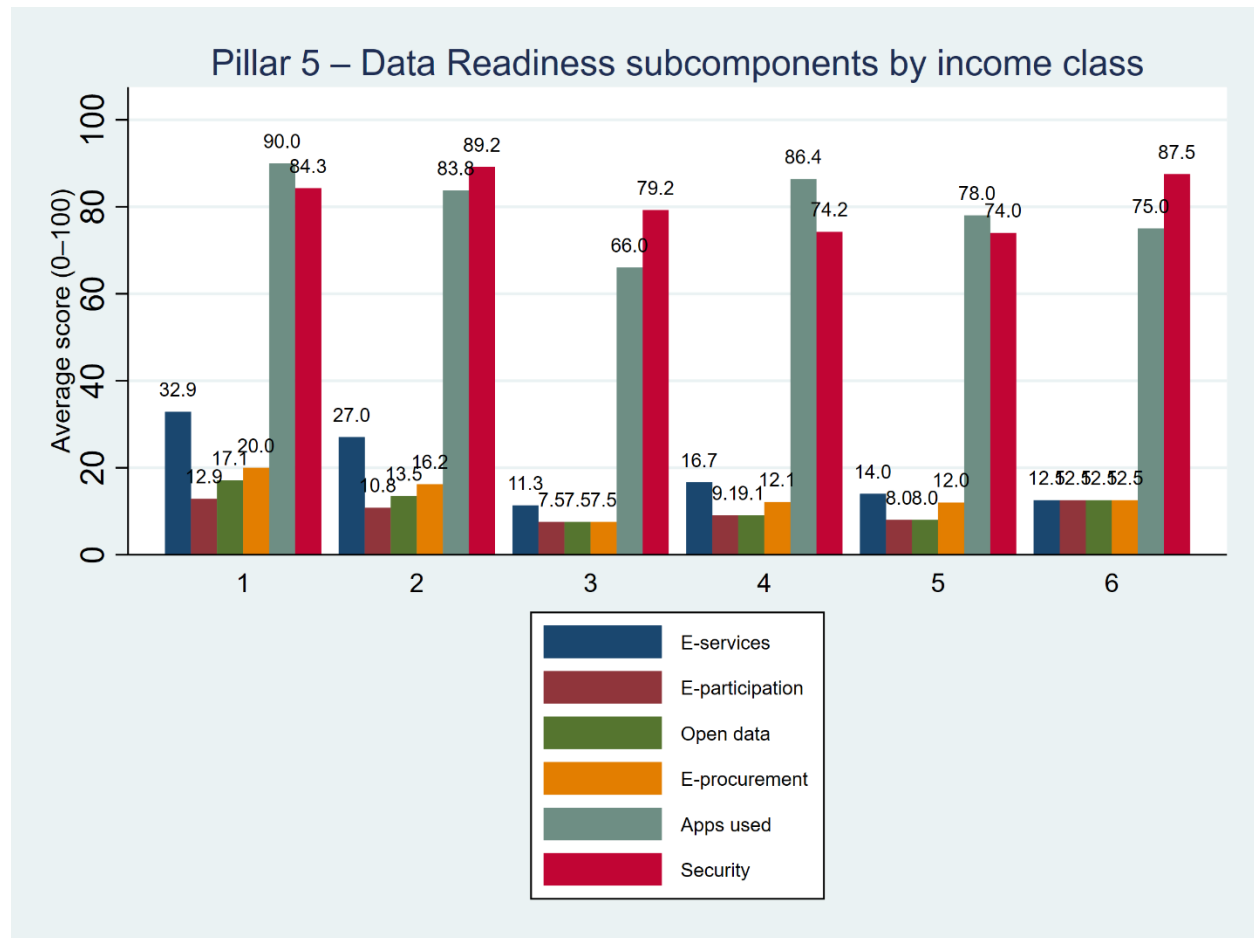
Medium-term ICT planning demonstrates universal weakness across all island groups, with Visayas scoring 19.0, Luzon 13.6, and Mindanao 13.0 (Figure 87). These scores indicate that multi-year ICT planning that considers sustained technology investments is largely absent throughout the Philippines regardless of island group. This represents a critical governance gap, as AI adoption requires sustained commitment over multiple years to build infrastructure, develop workforce capacity, acquire and implement systems, and achieve organizational learning. The near absence of medium-term planning suggests that even when LGUs recognize the importance of technology and allocate some resources, they do so on annual or ad hoc bases that cannot support the kind of strategic, sustained investment that successful AI implementation demands.

ICT budget allocation emerges as the most alarming finding across the entire governance pillar, with critically low scores of 0.8 for Luzon, 0.5 for Visayas, and just 0.3 for Mindanao (Figure 87). These significantly low scores measure normalized ICT budget allocation as a percentage of total LGU spending. The fact that all island groups allocate less than 1 percent of their budgets to ICT indicates severe financial constraints on technology initiatives regardless of geography. The minimal budget allocations across all island groups mean that LGUs cannot acquire necessary hardware, purchase software licenses, hire specialized staff, maintain systems effectively, or invest in the infrastructure improvements that AI adoption requires.

PILLAR 5: DATA READINESS

The data readiness pillar reveals a pattern where LGUs demonstrate strong performance in security measures and application usage but face critical gaps in the platforms needed to generate, manage, and share data effectively. This pattern suggests that while LGUs have embraced consumer-facing digital technologies and understand the importance of cybersecurity, they have not yet developed the systematic data infrastructure that AI applications require.

Figure 88. Pillar 5 – Data readiness subcomponents by income class



E-services availability shows weak performance across all income classes. Class 1 achieves just 32.9 while Classes 2 through 6 score between 11.3 and 27.0, all scoring in the low category. This represents a gap because e-services generate the structured transaction data that forms the foundation for many AI applications. When government services are delivered digitally, each transaction creates data that can be analyzed to improve service delivery, predict demand, identify

inefficiencies, and personalize citizen interactions. The limited availability of e-services means that LGUs are missing opportunities to generate valuable data while simultaneously limiting the convenience and accessibility of their services to citizens.

E-participation platforms show even weaker implementation, with all income classes scoring between just 2.9 and 12.9, all in the very low category (Figure 88). This represents a severe limitation in citizen engagement infrastructure. E-participation platforms such as online forums, feedback systems, and participatory budgeting tools generate valuable feedback and sentiment data that can inform policy decisions and service improvements. The near absence of such platforms means that LGUs lack systematic digital channels for citizen input and miss opportunities to capture citizen preferences, complaints, and suggestions in a structured, analyzable format. This gap is particularly problematic for AI applications focused on citizen services, as these systems benefit greatly from understanding citizen sentiment and preferences.

Open government data shows similarly weak performance across all income classes. Classes 1 and 2 score between 17.1 and 13.5, respectively while Classes 3 through 6 achieve scores from 7.5 to 12.5, all in the low category (Figure 88). This indicator measures whether LGUs maintain open government data portals where datasets are made publicly available. The limited adoption of open data practices constrains both AI development and transparency. Open data enables researchers, private sector developers, and civil society organizations to create AI applications using government data. It also promotes transparency and accountability by making government operations more visible to the public. The lack of open data infrastructure means that valuable government data remains siloed and inaccessible, limiting innovation and reducing accountability.

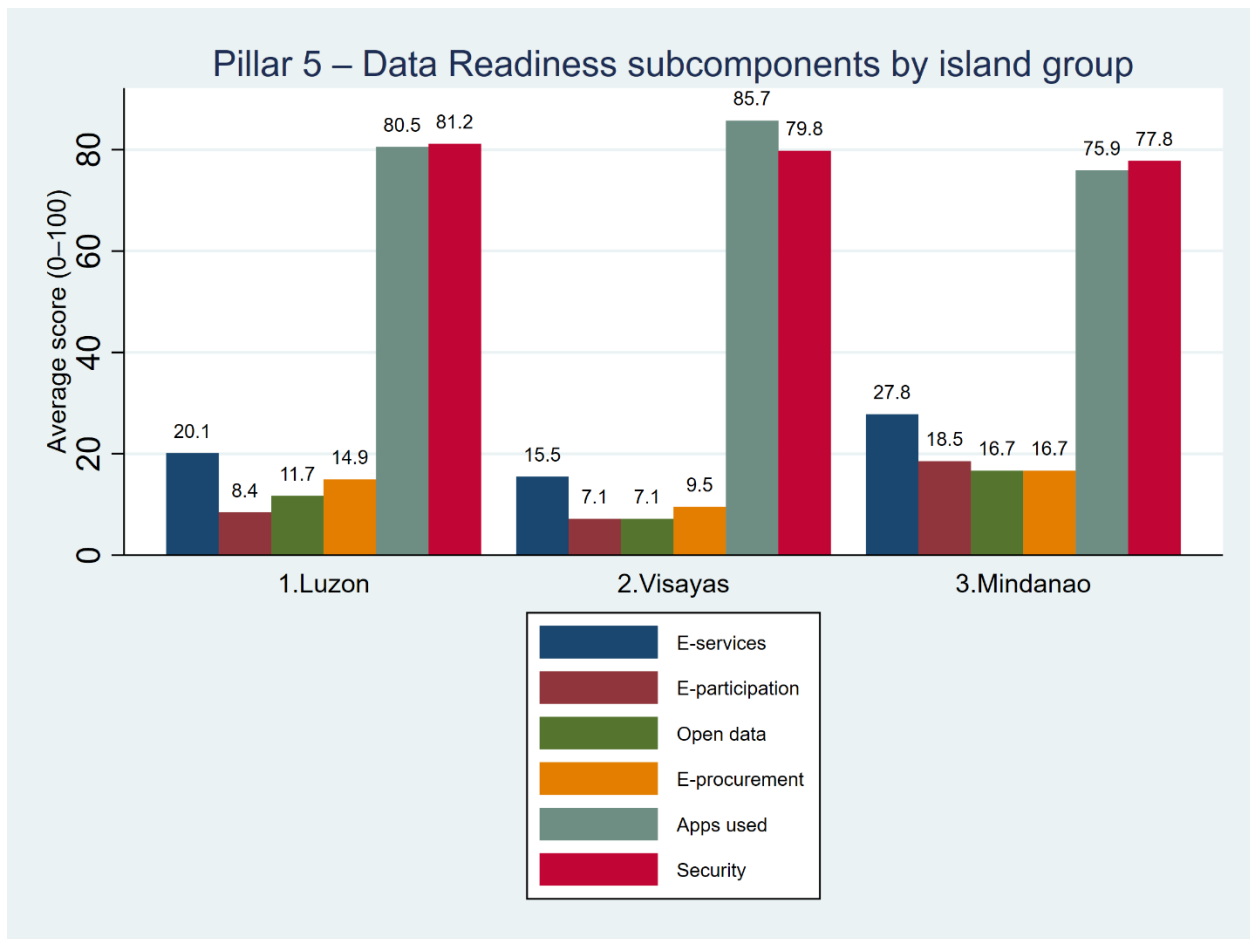
E-procurement systems demonstrate limited deployment across all income classes. Class 1 achieves a score of 20.0, Class 2 scored 16.2 and Classes 3 through 6 range from just 7.5 to 12.5, all in low category. Digitalized procurement systems are particularly valuable for AI applications because they generate rich transactional data that can be analyzed to optimize purchasing decisions, identify fraud or corruption, benchmark prices, and improve supplier relationships. The absence of e-procurement systems means that LGUs continue to rely on paper-based or minimally digitized procurement processes that do not generate machine-readable data. This represents a missed opportunity both for efficiency gains and for the kind of systematic data generation that enables AI-driven procurement optimization.

Digital applications usage presents a dramatically different picture and represents a major strength. All income classes score between 66.0 and 90.0, placing them in the high to very high

categories (Figure 88). This indicator measures whether LGUs utilize digital applications such as those used on smartphones. The widespread adoption of mobile applications signals digital maturity and demonstrates that LGU staff are comfortable using digital tools in their daily work. This familiarity with digital applications provides a foundation for introducing AI-powered tools, as staff who are already comfortable with smartphones and apps are more likely to adopt new digital systems.

Security measures implementation shows equally strong performance across all income classes, with scores ranging from 74.0 to 89.2, all in the high pillar categories. This indicator measures whether LGUs have implemented cybersecurity measures to protect their systems and data. The excellent performance in this area demonstrates that LGUs recognize the importance of information security and have taken concrete steps to protect their digital assets. Strong cybersecurity is essential for AI adoption because AI systems often process sensitive citizen data and represent attractive targets for cyberattacks. The robust security posture across all income classes removes a major potential barrier to AI adoption.

Figure 89. Pillar 5 – Data Readiness subcomponents by island group



The data readiness pillar reveals excellent performance in security measures and application usage which contrasts sharply with critical gaps in data generation platforms. This pattern suggests that while LGUs have embraced consumer-facing digital technologies and recognize the importance of cybersecurity, they have not yet developed the systematic data infrastructure needed to generate, manage, and share the structured data that AI applications require.

Security measures demonstrate exceptional and remarkably uniform performance across all island groups, with Luzon achieving 81.2, Visayas 79.8, and Mindanao 77.8, all in the high to very high categories (Figure 89). The narrow range of just 3.4 points separating all regions indicates that cybersecurity implementation has become a universal priority throughout the Philippine local government system. This uniformity likely reflects national policies, standards, or mandates that have promoted security measures systematically regardless of geographic location or local resources. The consistently high scores demonstrate that LGUs across all regions recognize the

importance of protecting their digital assets and have taken concrete steps to implement security controls. This robust security posture is essential for AI adoption, as AI systems often process sensitive citizen data, handle critical government operations, and represent attractive targets for cyberattacks. The strong security implementation across all regions removes what could otherwise be a major barrier to AI deployment and demonstrates that when clear national priorities are established with appropriate standards and support, geographic disparities can be minimized.

Applications usage shows similarly strong performance with modest regional variation, with Visayas leading at 85.7, Luzon at 80.5, and Mindanao at 75.9, all in the high to very high categories. These scores measure whether LGUs utilize digital applications such as those used on smartphones, and the widespread adoption indicates that government staff across all regions have achieved digital maturity and are comfortable using modern technology interfaces in their daily work. Visayas's exceptional performance may reflect demographic factors such as younger workforce composition, particular training initiatives, or cultural affinity for mobile technology. The consistently high scores across all regions provide strong evidence that LGU employees are ready to adopt AI-powered applications, as staff already comfortable with smartphones and mobile apps are more likely to successfully adopt new digital tools layered onto familiar interfaces.

E-services availability presents a dramatically different picture, with Mindanao achieving 27.8, Luzon 20.1, and Visayas 15.5, all in the low to very low categories. Mindanao's relatively stronger performance, while still inadequate in absolute terms, is particularly noteworthy given this region's weaker economic foundations and infrastructure challenges. This pattern suggests that particular e-services initiatives, programs, or partnerships may have focused on Mindanao, or that recognition of the value of digital service delivery for overcoming geographic barriers has driven stronger implementation. E-services generate the structured transaction data that forms the foundation for many AI applications in government. When services are delivered digitally, each transaction creates data that can be analyzed to improve delivery efficiency, predict demand, identify bottlenecks, and personalize citizen interactions. The limited e-services availability across all regions means that LGUs are missing opportunities to generate valuable operational data while simultaneously limiting service convenience and accessibility for citizens.

E-participation platforms demonstrate even weaker implementation than e-services, with Mindanao scoring 18.5, Luzon 8.4, and Visayas just 7.1, all very low. Mindanao's substantially better performance compared to other regions is striking and deserves investigation to understand what factors have enabled relatively stronger citizen engagement infrastructure. E-participation platforms such as online forums, feedback systems, and participatory budgeting tools generate

valuable citizen feedback and sentiment data that can inform policy decisions and service improvements. The near absence of such platforms across most regions means that LGUs lack systematic digital channels for capturing citizen input, missing opportunities to understand citizen preferences, complaints, and suggestions in structured formats that could be analyzed to improve governance and feed AI applications focused on citizen services.

Open government data and e-procurement show similarly weak patterns. Open data scores of 16.7 for Mindanao, 11.7 for Luzon, and 7.1 for Visayas, all very low, indicate limited open data culture across all regions. E-procurement achieves 16.7 for Mindanao, 14.9 for Luzon, and 9.5 for Visayas, also all very low. Mindanao's consistent relative advantage across multiple data generation platforms suggests systematic rather than coincidental patterns that merit study for potential replication in other regions.

PILLAR 6: ECONOMIC FOUNDATION

As expected, the economic foundation pillar is consistently following a decreasing trend by income class. Higher income classes show substantially stronger fiscal autonomy and capacity for sustained technology investment, though all classes face concerning patterns in the relationship between local revenue, total income, and expenditure levels. These economic patterns have fundamental implications for AI adoption, as technology initiatives require sustained financial commitment over multiple years.

Local revenue generation shows a clear decreasing trend by income class. Class 1 achieves a score of 65.6, placing it firmly in the high category and demonstrating strong fiscal autonomy (Figure 90). Class 2 follows with 58.7, while Classes 3 through 6 score between 45.4 and 55.3. This indicator measures locally generated income as an indicator of fiscal autonomy and capability to sustain investments in technology. LGUs with higher local revenue generation have more predictable and controllable sources of funding, which enables LGUs to make multi-year commitments to technology investments. They are less dependent on external transfers and grants, which can be unpredictable and may come with restrictions on how funds can be used. The strong local revenue generation in wealthier LGUs provides them with the financial flexibility needed for ambitious technology initiatives.

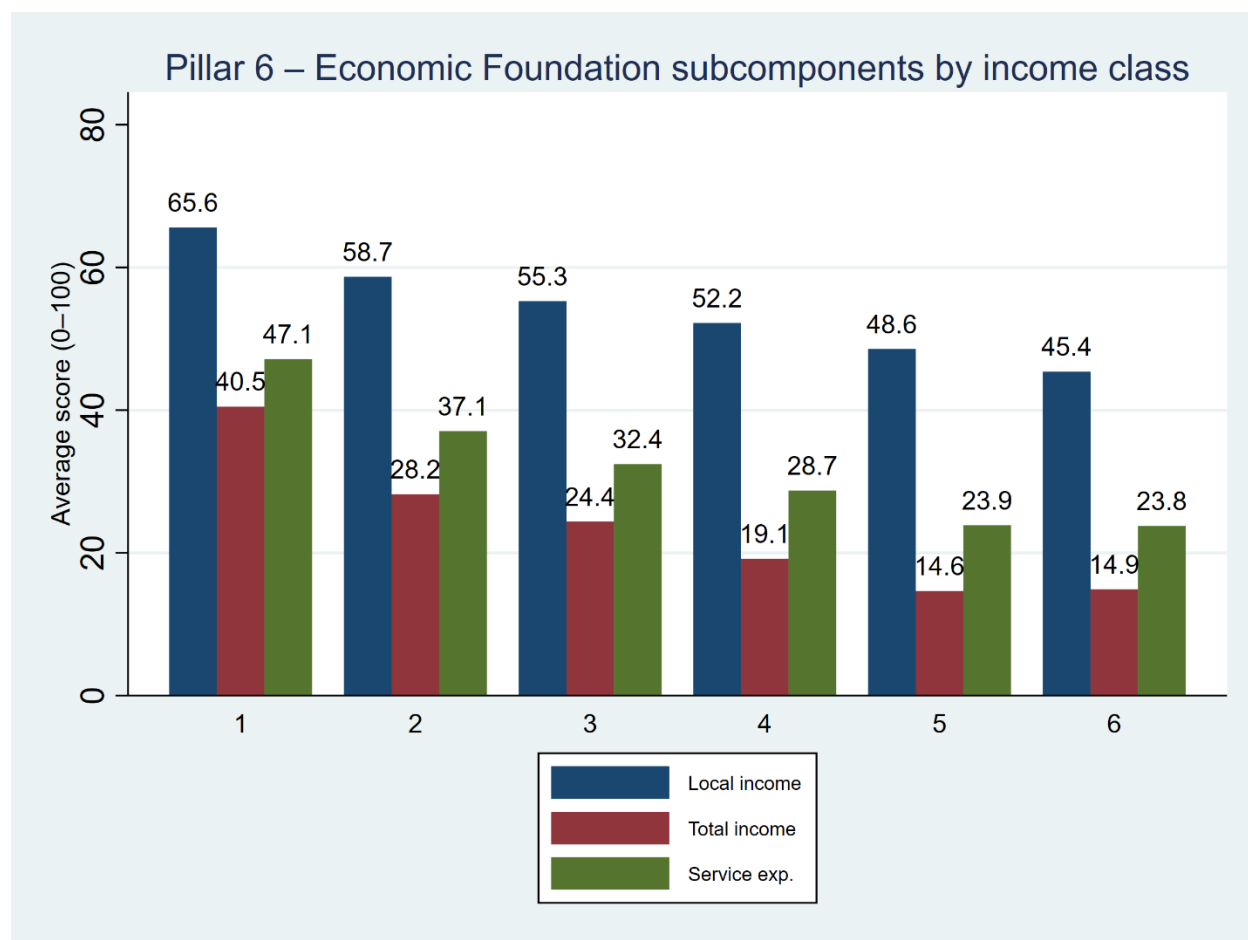
Total income reveals a concerning pattern across all income classes. Class 1 scores 40.5, placing it in the moderate pillar category, while Classes 2 through 6 achieve between just 14.6 and 28.2,

all classified as a low pillar score. This indicator measures the total pool of funds available for operations and AI investments, including both locally generated and externally sourced income. The fact that total income scores are significantly lower than local revenue scores across all classes is noteworthy. This pattern suggests heavy reliance on local generation relative to external support, which may indicate limited access to external funding sources or transfers. For lower income classes in particular, the low total income scores represent a fundamental constraint on their capacity to invest in new initiatives like AI, regardless of their policy commitments or strategic priorities.

Services expenditure shows moderate performance that varies by income class. Class 1 achieves 47.1, placing it in the moderate category, while Classes 2 through 6 score between 23.8 and 37.1, spanning the low classification. This indicator examines LGU expenditure on social and economic services, which represents the operational areas that could benefit most significantly from AI adoption. AI applications in service delivery, such as predictive analytics for social services, optimization of economic development programs, or automation of routine service transactions, require ongoing expenditure to implement and maintain. The moderate levels of service expenditure imply that LGUs have meaningful operational budgets that could potentially be enhanced through AI, but these expenditure levels also indicate the financial constraints within which LGUs operate. Higher service expenditures would provide more opportunities and resources for AI integration into service delivery.

The economic stratification revealed by this pillar has profound implications for AI adoption strategies. Wealthier LGUs are clearly better positioned for sustained AI investment due to their stronger fiscal autonomy, higher total resources, and greater service expenditures. These LGUs can more easily absorb the upfront costs of AI systems, maintain ongoing licensing and operational expenses, and sustain multi-year technology initiatives even if results take time to materialize. Lower income LGUs face significant economic constraints that cannot be overcome through improved planning or organizational changes alone. These municipalities may have the policy commitment and even the technical interest in AI, but lack the financial resources to act on these intentions.

Figure 83. Pillar 6 Economic foundation subcomponents by income class



Looking at the patterns by income group, Pillar 6 economic foundation pillar reveals remarkably similar patterns across island groups in local revenue generation. Similarly, the weaknesses in total income and service expenditure observed in income class are also observed in patterns by island group. This pattern suggests that while fiscal autonomy varies modestly by island groups, all island groups face significant resource constraints that limit their capacity for sustained technology investment, with important implications for how AI initiatives should be financed and supported across the Philippines.

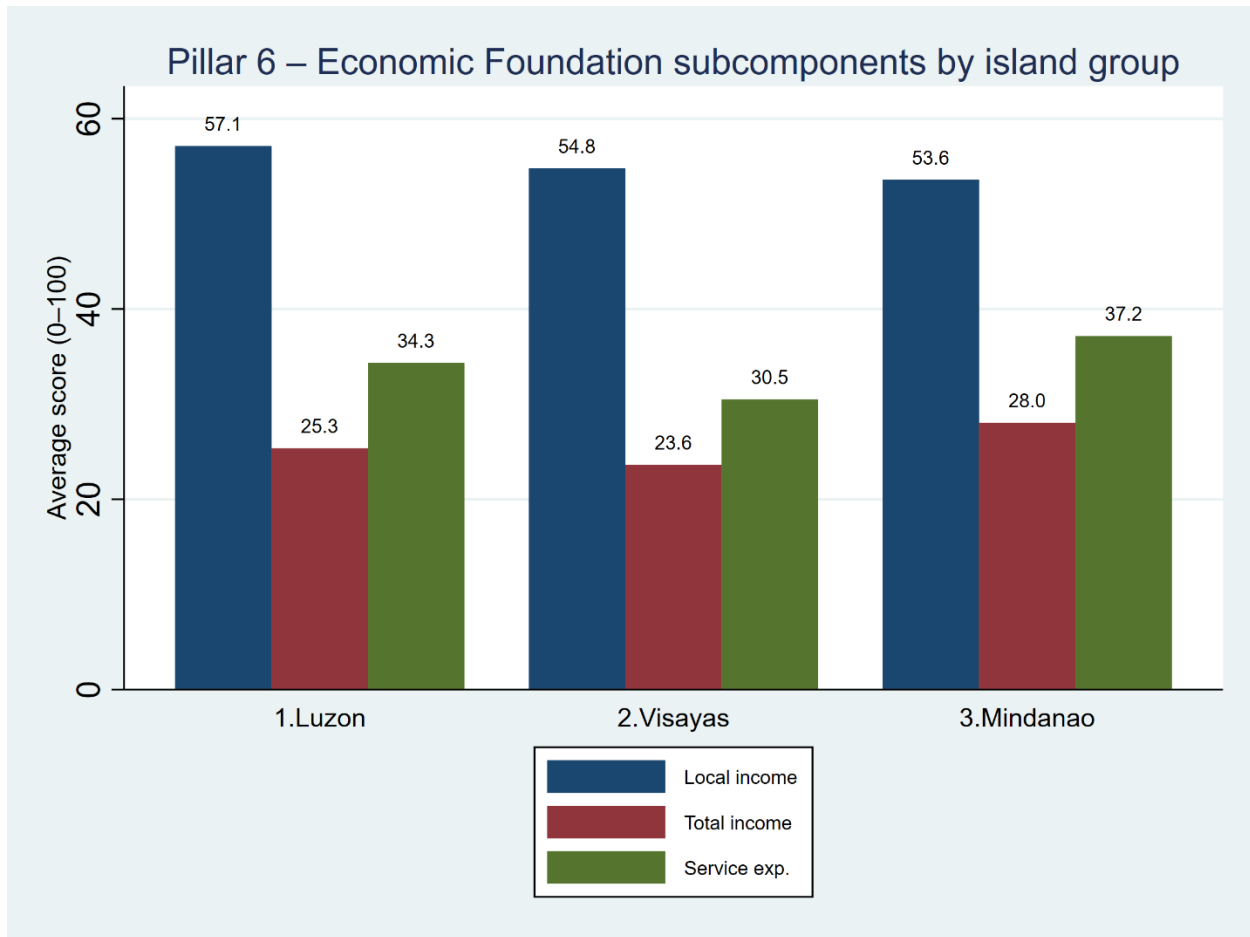
Local revenue generation demonstrates surprising uniformity across all island groups, with Luzon achieving 57.1, Visayas 54.8, and Mindanao 53.6, all in the moderate category (Figure 91). This narrow range is somewhat counterintuitive given the economic differences typically associated with different island groups and suggests that local revenue generation capacity is relatively standardized geographically. The moderate scores indicate reasonable fiscal autonomy across

all island groups, meaning that LGUs have developed local revenue bases that provide some predictable and controllable funding streams for operations. Luzon's slight advantage at 57.1 may reflect the concentration of economic activity and higher property values in areas near the National Capital Region, providing larger tax bases and more revenue opportunities.

Total income presents a more concerning picture with universally low scores, though showing modest regional variation. Mindanao achieves the highest score at 28.0, followed by Luzon at 25.3 and Visayas at 23.6, all falling in the low category. This indicator measures the total pool of funds available for operations and investments, including both locally generated revenue and externally sourced income such as transfers, grants, and shared revenues. The fact that total income scores are substantially lower than local revenue scores across all regions is particularly noteworthy and concerning. This pattern suggests that external funding mechanisms are not adequately supplementing local resources, meaning that LGUs across all island groups are heavily dependent on their own generation capacity rather than receiving significant external support.

Service expenditure shows the most substantial regional variation among all subcomponents in this pillar, with Mindanao achieving 37.2, Luzon 34.3, and Visayas 30.5, all in the low range (Figure 93). This indicator measures LGU expenditure on social and economic services, representing the operational areas that could benefit most significantly from AI adoption through improved efficiency, better targeting, enhanced monitoring, or automated processes. Mindanao's performance is particularly interesting given its moderate local revenue and may reflect either higher external funding for service programs or deliberate policy choices to allocate a larger proportion of available resources to service delivery despite overall resource constraints. The higher service expenditure in Mindanao creates more opportunities for AI applications to demonstrate value by enhancing existing operations, potentially making AI investments more justifiable through improved service outcomes or cost savings.

Figure 84. Pillar 6 Economic foundation subcomponents by island group



4.3. Robustness Checks

To assess whether the results of the AI Readiness Index are sensitive to alternative weighting choices, three robustness checks were conducted following the Stata procedures outlined in Step 8. These include: (i) equal weighting across all pillars, (ii) a foundation-focused scheme assigning higher weights to infrastructure and skills, and (iii) a strategic-focused scheme emphasizing innovation and governance capacity. The scatterplots below compare each alternative index with the baseline AI Readiness Index.

Figure 85. Strategic-Focused AI Readiness Index vs. Baseline Index

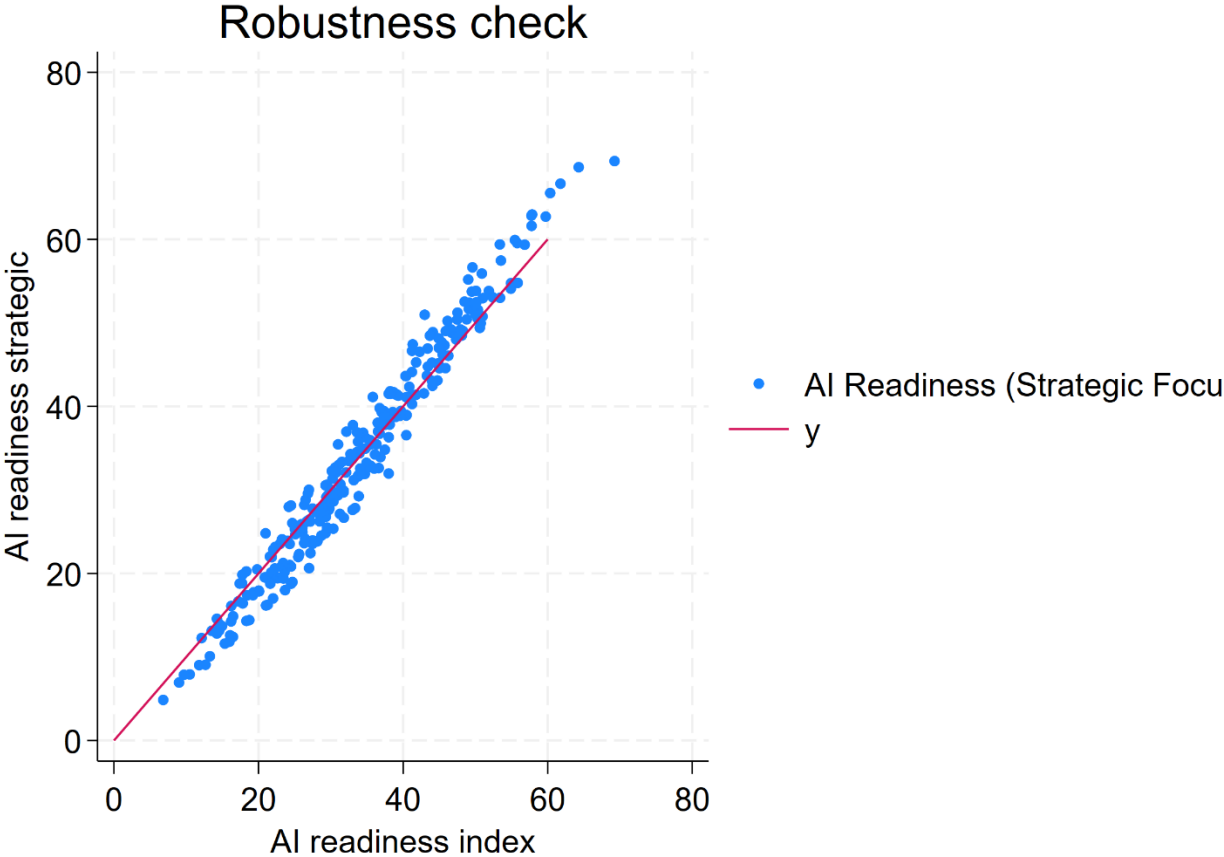


Figure 92 plots the baseline AI Readiness Index (x-axis) against the strategic-focused index (y-axis), which assigns higher weights (0.25 each) to innovation and governance, reflecting the argument that strategic capability and policy readiness are central determinants of sustained AI adoption.

The near-perfect alignment of points along the 45-degree line indicates that the baseline and strategic-focused indices produce highly similar LGU rankings. Even with heavier emphasis on institutional and innovation-oriented pillars, the resulting scores remain closely correlated with the original index. This means that Philippine LGUs that perform strongly in the baseline index also tend to exhibit strong innovation ecosystems and governance frameworks, reinforcing the internal coherence of the baseline weighting structure.

Figure 86. Foundation-Focused AI Readiness Index vs. Baseline Index

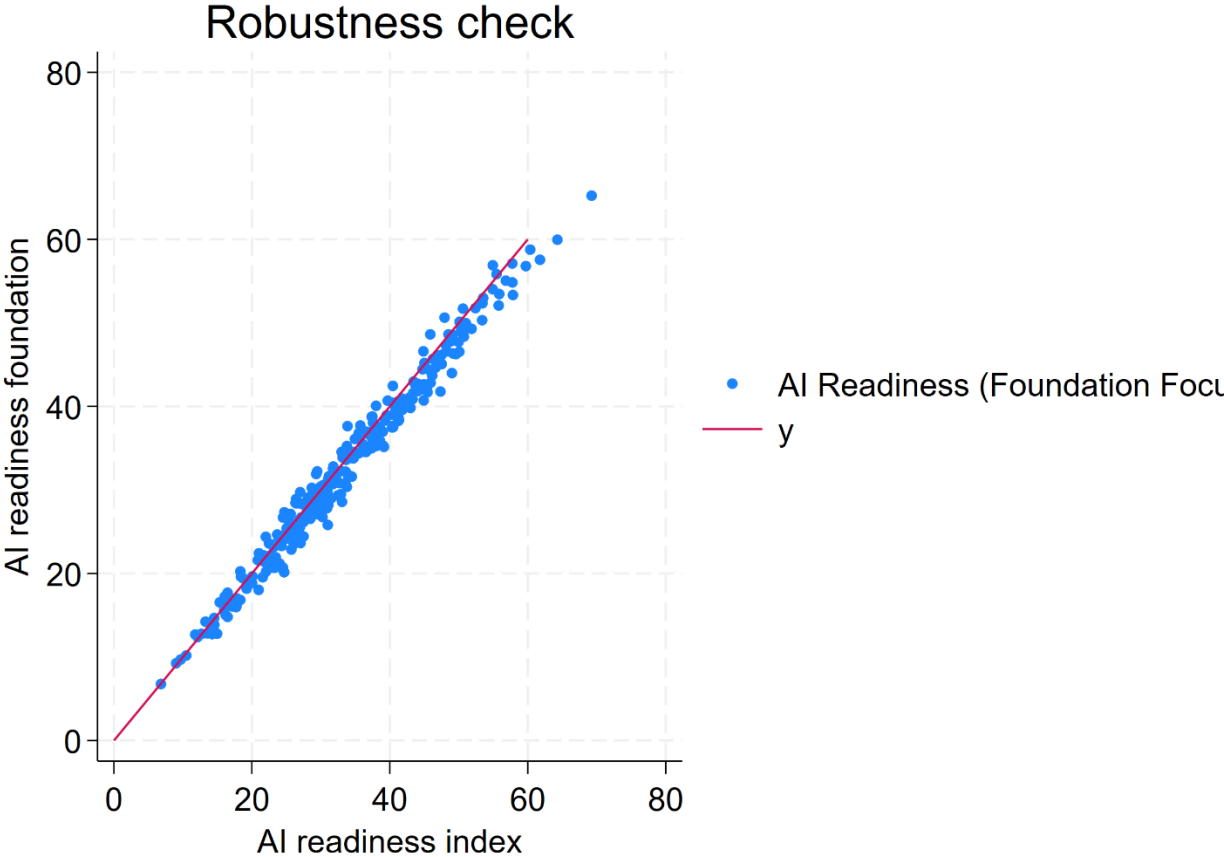


Figure 93 evaluates the foundation-focused scheme, which raises the weights of infrastructure and skills to 0.25 each, reflecting the notion that AI readiness fundamentally depends on physical ICT systems and human capital development.

Again, the results show an exceptionally tight linear relationship with the baseline index. LGUs with strong foundational capacities, such as those in higher-income classes rank similarly under both schemes. Importantly, even LGUs with lower baseline scores maintain their relative position, meaning that weak foundations and weak overall readiness tend to align well. This demonstrates that the baseline index is not disproportionately influenced by innovation or economic pillars, but instead reflects a balanced measure of both foundational and strategic capabilities.

Figure 87. Equal-Weighing Scheme vs. Baseline Index

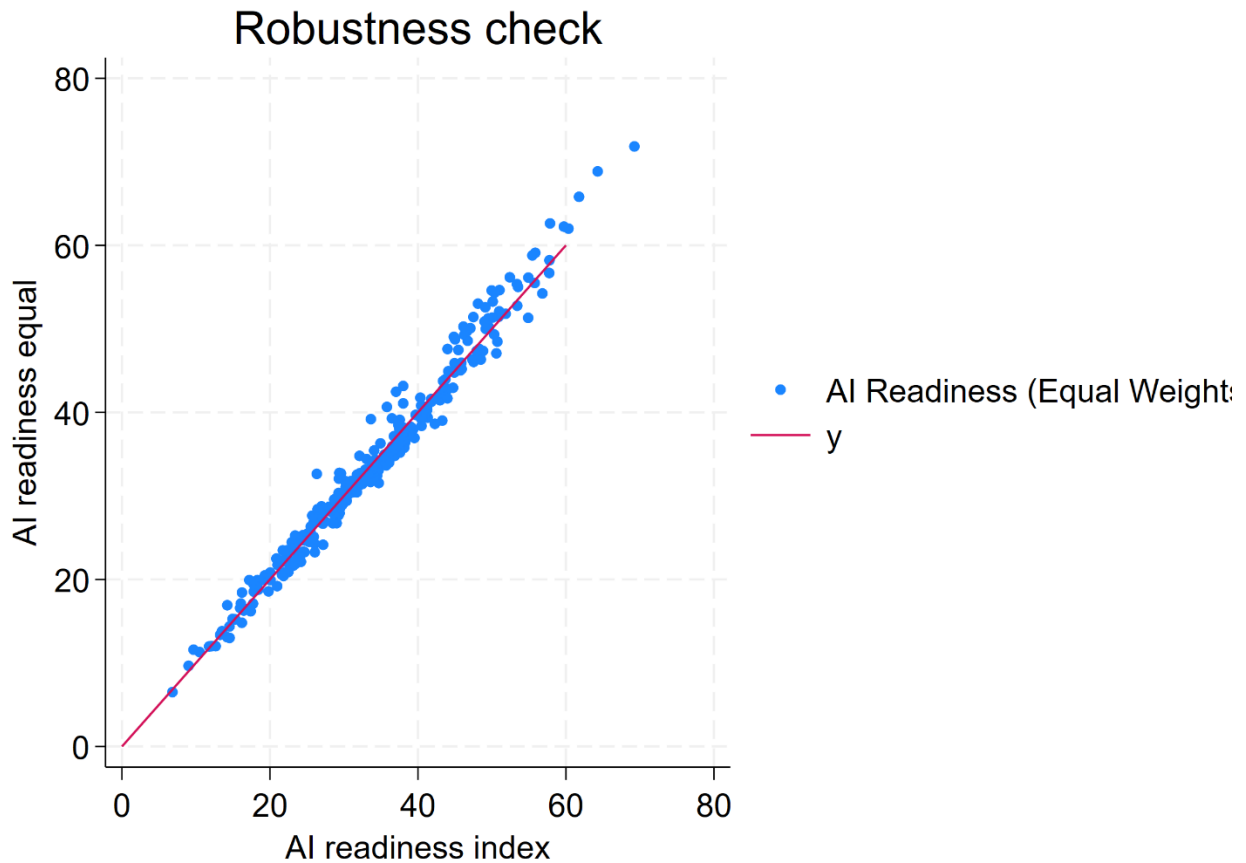


Figure 94 applies a simple equal-weights scheme (each pillar weighted at 16.67%). The results again show a strong 45-degree alignment, with only minimal dispersion. This suggests that no single pillar in the baseline scheme is exerting excessive influence on the index, and that the relative performance of LGUs across the six pillars is structurally consistent.

Equal weighting smooths minor differences across LGUs but does not fundamentally alter the ranking pattern, demonstrating that the baseline index does not rely on arbitrary weighting assumptions. Instead, it captures a genuinely stable, underlying readiness structure.

Across all three alternative weighting schemes, the scatterplots indicate very high correlation with the baseline AI Readiness Index, which is typically confirmed by Spearman rank correlations exceeding 0.95 in similar LGU-level composite indices. The tight clustering along the 45-degree line demonstrates that:

1. LGU rankings are stable regardless of how pillar weights are assigned,
2. The baseline index is not sensitive to plausible changes in weighting assumptions, and
3. The AI readiness landscape reflects structural patterns across Philippine LGUs.

These findings provide strong validation that the baseline AI Readiness Index is methodologically robust, internally consistent, and reliable for policy analysis, whether used for inter-LGU comparisons, regional diagnostics, or monitoring progress over time.

4.4. Interviews

The authors also conducted two key informant interviews and one dyad interview with two interviewees (Table 39). On the one hand, one of the interviewees from the key informant interview is a municipal councillor from a first-class municipality in Mindanao (R3) while the other interviewee is the head of the public information office of a first-class component city in Luzon (R4). On the other hand, the participants of the dyad interview include a licensing officer and officer-in-charge (OIC) of the ICT department from a first-class component city in Mindanao (R1) and an acting municipal treasurer from a first-class municipality in the Visayas (R2).

The number of interviews in the said dyad is in line with the suggestion of the Agency for Healthcare Research and Quality (2014) under the US Department of Health and Human Services, which suggests that two to four persons per interview is an efficient and effective use of time, especially given that the interviewees are high-ranking plantilla officials with busy schedules. Moreover, it seems that about 97 percent of all codes were identified after interviewing R1, R2 and R3. The authors reckon that this can be considered as “code saturation” in line with the findings of Hennink et al. (2016), which found that about 91 percent of all codes were identified after interviewing nine respondents. Nevertheless, the authors would like to highlight that time constraints have prevented us from interviewing more respondents or interviewees from LGUs. Hence, we would like to stress that the interviews serve to complement the quantitative results of this paper.

Table 39. Respondents' profile

Respondent code	Position	Island group of respondent's LGU	Income class and LGU type of respondent's LGU
R1	Licensing officer / ICT department OIC	Mindanao	First-class component city
R2	Acting municipal treasurer	Visayas	First-class municipality
R3	Municipal councillor	Mindanao	First-class municipality
R4	Head of public information office	Luzon	First-class component city

Plans to adopt AI

All interviewees have mentioned that their respective LGUs have no official plans of adopting or using AI in the short-term. R1 cited that there are no available skilled workers within the LGU to manage or use AI as a big reason for having no plans. R3 mentioned that their LGU is more focused on providing social services such as scholarships and medical assistance given their LGU's limited budget. For R4, their LGU has been approached by AI solutions providers to potentially implement AI in disaster risk reduction and management (DRRM) purposes. Nevertheless, R4 mentioned that this adoption of the said AI tools is more of a long-term goal. In the meantime, R4 mentioned that their office is unofficially using AI software such as ChatGPT and Grammarly to help their team in idea generation and grammar check for the LGU's social media posts.

While the respondents mentioned that their LGUs have no plans in the short-term to officially adopt or use AI, they have nevertheless mentioned that their LGUs are in the process of adopting digital solutions that are not necessarily AI. R2 and R4 shared that their LGU is more focused in implementing digital solutions such as the implementation of online payment platforms for local taxes and fees because laws such as the Ease of Doing Business Act and agencies such as the Department of Information and Communications Technology (DICT) have been pushing them towards digitalization. R3 said that the Department of Science and Technology (DOST) has helped them in the adoption of Starbooks, which is a DOST program where the public can access digital archives of local ordinances and other reading materials.

Opportunities with respect to adopting AI

Among the opportunities that almost all the respondents (i.e. R1, R3, R4) see when it comes to adopting AI in local governance is allowing for more efficient and quick public service delivery to their constituents. R3 and R4 added that AI also has the potential to help reduce the monetary cost of the LGU through reduced staffing needs as well as help reduce burden placed upon LGU staffers in terms of paperwork. For R3 in particular, they mentioned that LGUs adopting AI also may focus more on bringing in more employees with AI-ready skills. Both R3 and R4 also mentioned that AI has the potential to help the LGU in providing critical services during disasters. On the other hand, R1 mentioned that AI can help eliminate the need for 'fixers' as people would not find them useful, especially if there are increases in the efficiencies of public service delivery due to AI.

Perceived challenges with respect to adopting AI

While the interviewees acknowledge the opportunities that can be leveraged with respect to adopting AI in local governance, they also cited different challenges on its adoption. One challenge is the budgetary constraints that LGUs face. This was especially emphasized by R3, wherein their LGU, while a first-class municipality in Mindanao, still cannot afford to adopt AI in the time being as they would rather focus their resources on providing social services.

Another challenge is the lack of AI-ready skills among employees. This is due to different factors. As mentioned earlier, R1 said that their LGU is not ready to adopt AI and has no plans in the short-term to adopt AI given that their colleagues have only been familiar with AI recently. R3 mentioned that their colleagues are only familiar with AI within the context of social media. Meanwhile, R4 reckoned that there might not be the urge to use and learn AI for local government contexts as not all jobs within the LGU (e.g. creek cleaners) need to use AI to get the job done.

In connection with the previous challenge, one challenge cited is the potential for AI to make certain positions in the LGU redundant. This affects the willingness of elected officials to spend their political capital on such endeavor as they might not want to be seen as threats to job security of LGU employees.

Another challenge is the generational gap within the LGUs themselves. R1, who is already in their 50s, mentioned that their LGU's organizational workforce is comprised of mainly 50 years old and above on one side and Millennials, and Generation Z (Gen Z) on the other side. The general

openness of their Millennial and Gen Z colleagues to adopt AI is in stark contrast to the general hesitation of adopting AI among their fellow colleagues in their 50s. R2 also shared this same observation with R1.

R1, R3 and R4 also raised their concerns about the unclear or lack of policies about AI, specifically on matters related to, among other things, data sharing, cyber-security, and data management. R4 also specifically highlighted that there is no clear policy on which line item the procurement of AI tools should be charged to. This may cause delays in the procurement of such tools as the LGU needed to make sure that the procurement is above board.

There is also the concern of the so-called over-reliance on AI as raised by R3 and R4. For them, AI is a tool that has the potential to provide benefits to their constituents. However, they raised the concern about LGU employees becoming too reliant on AI that they might forget to double check AI's outputs. This is especially true in the case of R4, who

Moving forward

Respondents (i.e. R1 and R2) mentioned during the interview that the national government is a huge driver of AI usage or adoption, especially in the context of local governance. This is because the national government already has laws that are driving such trend such as the E-Governance Act and the Ease of Doing Business Act. Given the big role and influence of the national government on matters such as AI adoption, all respondents reckoned that there should be capacity building for LGUs, their officials and employees, and the constituents if there is a serious push to adopt or use AI in local governance. In the case of R4, they mentioned that the national government should have clearer policies in place to regulate AI usage at the LGU level.

5. Conclusion and Policy Recommendations

5.1. General Conclusion

To conclude this study, this section synthesizes the findings from the AI Readiness Index assessment of Philippine Local Government Units (LGUs), identifies critical bottlenecks across multiple dimensions, examines practical realities through stakeholder interviews, and acknowledges methodological limitations.

5.2. Key Findings and Common Threads

The AI Readiness Index reveals that Philippine LGUs exhibit low to moderate preparedness for AI adoption, with overall scores hovering around 30-35. This observation reflects not a just the absence of capability but also a complex interplay of infrastructural, human capital, institutional, and economic constraints that systematically limit readiness across multiple dimensions. Several critical patterns also emerge that cut across the six pillars of the index.

Income classification emerges as a powerful predictor of AI readiness, with first-class LGUs demonstrating substantially higher scores across nearly all pillars. However, the relationship is not deterministic with considerable heterogeneity existing within income classes. Some lower-income LGUs outperform wealthier counterparts. This suggests that non-income factors such as leadership, policy prioritization, and strategic capacity can partially compensate for fiscal constraints, though economic limitations remain a fundamental barrier for most lower-income municipalities.

Regional and Island-group patterns reveal persistent inequalities that align with broader development disparities. The National Capital Region demonstrates the highest readiness, while BARMM, Eastern Visayas, CAR, and MIMAROPA show particularly weak performance. Without deliberate interventions, AI readiness gaps may reinforce existing regional inequalities, as better-resourced areas advance while peripheral regions fall further behind.

The skills pillar emerges as the weakest dimension with an average score of only 29.0. The near-total absence of ICT specialists (scores of 1.6-5.7 across all income classes) indicates extremely limited capacity to develop, customize, and maintain AI solutions. This universal shortage means LGUs will be heavily dependent on external vendors, limiting flexibility, increasing costs, and creating sustainability challenges. Even first-class LGUs struggle with this constraint, suggesting systemic workforce development challenges rather than merely fiscal limitations.

LGUs have achieved moderate success in establishing diverse network types (scores of 52-80), yet face critical gaps in barangay internet coverage (8-13 percent) and speed (4-22). This paradox indicates that while backbone infrastructure has improved, last-mile connectivity remains severely limited. The universal nature of these gaps implies systematic infrastructure challenges requiring national-level policy interventions.

The governance pillar reveals a striking disconnect between policy commitments and resource allocation. While LGUs demonstrate strong big data orientation (scores of 52-79), they show catastrophic weaknesses in ICT budget allocation (0.1-2.0) and medium-term planning (0.0-20.0). All income classes and regions allocate less than 1 percent of total budgets to ICT, indicating that despite commitments to digital transformation, LGUs are not backing their ambitions with actual resources.

The innovation pillar shows strong digitalization progress (68-88), yet data readiness reveals critical gaps in systematic data generation platforms. E-services (11-33), e-participation (3-19), and open data (7-17) all score very low, indicating that LGU digitalization has focused on internal systems rather than on platforms that generate structured data for AI applications. This suggests that while basic digital transformation is underway, the data ecosystems necessary for advanced AI remain underdeveloped.

Both quantitative findings and qualitative interviews consistently emphasize the crucial role of national government in driving local digital transformation. Existing laws such as the E-Governance Act and Ease of Doing Business Act have successfully catalyzed digitalization, demonstrating that national mandates combined with technical support can overcome local capacity constraints. However, this dependency raises questions about sustainability and local ownership of technology strategies.

These common threads suggest that successful AI adoption among Philippine LGUs will require coordinated interventions across multiple dimensions simultaneously. No single pillar improvement will suffice: infrastructure gaps undermine skilled workforce utilization, resource constraints prevent strategic implementation, and governance weaknesses limit sustained investments. The interconnected nature of these challenges demands comprehensive, multifaceted policy responses rather than isolated interventions.

5.3. Qualitative Insights: Validation from LGU Practitioners

Interviews with four officials from first-class municipalities and component cities validate the quantitative findings while revealing additional practical barriers not fully captured by index scores.

All interviewees confirmed that their LGUs have no short-term AI adoption plans despite relatively better fiscal and institutional capacity, citing multiple interconnected constraints.

Resource prioritization emerged as fundamental elected officials must balance technology investments against immediate social service needs that offer clearer political returns. Workforce readiness concerns aligned closely with quantitative skills gaps, with interviewees noting that employees understand AI primarily through social media rather than professional governance contexts. Generational divides within LGU workforces create additional resistance, with officials over 50 generally more hesitant than younger colleagues.

Political economy considerations around employment security affect elected officials' willingness to invest in AI, as potential job displacement threatens constituent relationships. The absence of clear policy frameworks on procurement, data management, and cybersecurity creates operational uncertainty that delays initiative even when resources exist. These qualitative insights confirm that successful AI deployment requires addressing not only technical and fiscal prerequisites but also political dynamics, organizational cultures, and policy frameworks difficult to capture quantitatively.

5.4. Limitations of the Study

Several important limitations must be acknowledged to properly contextualize findings and guide appropriate interpretation. These fall into four categories: data constraints, methodological choices, conceptual simplifications, and validation challenges.

The index relies on self-reported data from the 2023 DICT Satellite Survey, which introduces potential response bias. The cross-sectional snapshot may not reflect current conditions given rapid digital transformation. Missing values and incomplete data for some LGUs create uncertainty about score precision, while unequal coverage means some scores rely more heavily on imputation, potentially affecting comparability.

We also recognize that equal component weights within pillars assume equal importance, which may not reflect true relative significance. Linear aggregation assumes perfect substitutability between dimensions, potentially obscuring critical minimum thresholds. Readiness level cutoffs are judgment-based rather than empirically derived. Most fundamentally, cross-sectional data prevent outcome validation as the index measures theoretical prerequisites rather than validated predictors of actual AI adoption success.

The index necessarily simplifies complex, multifaceted AI readiness into a single score, obscuring local political dynamics, leadership qualities, and organizational cultures. The framework was designed specifically for Philippine LGUs and may not generalize to other contexts. As a static measure, it cannot capture momentum or trajectories. Most critically, the index measures capacity rather than actual utilization—high scores do not guarantee successful implementation without proper change management and political will.

Only four officials from first-class LGUs were interviewed, limiting generalizability. Official positions may introduce self-censoring or social desirability bias. Perspectives from lower-income classes, different regions, or different functional roles might reveal additional barriers not captured.

These limitations should guide cautious interpretation of the index results but also these should not diminish the value of the systematic assessment. Ultimately, the AI Readiness Index provides not a deterministic prediction of AI adoption success but rather a diagnostic tool identifying where investments will yield greatest impact. By addressing the interconnected constraints across infrastructure, skills, innovation, governance, data, and economic dimensions, the Philippines can position its LGUs to leverage AI's transformative potential for improved public service delivery, enhanced

5.5. Recommendations

Based on the results and discussion presented and utilizing the lessons from the LGUs in other localities, the following recommendations are presented by pillar to align interventions with specific bottlenecks identified in the assessment.

Pillar 1: Digital Infrastructure

The results suggest that the average score of Pillar 1 is 30.5, with critical gaps in barangay internet coverage (8-13%), internet speed (4-22), and ICT equipment density (10-22) across all income classes. Meanwhile, network infrastructure seems to show relative strength (52-80). This is an indication that while backbone systems exist, last-mile connectivity and bandwidth remain severely constrained. The following policy recommendations are presented:

1. Remove Regulatory Barriers to Infrastructure Deployment. Eliminate the legislative franchise requirement for connectivity service providers, data centers, and cloud service providers to lower entry barriers, foster competition, and attract private investment. Reform outdated laws including the Public Telecommunications Policy Act of 1995 (RA 7925) and

Radio Control Law (Act No. 3846) that hinder telecommunications modernization. Implement spectrum management reforms to ensure efficient allocation of frequencies for 5G networks.

2. **Mandate Universal Service Obligations for Broadband Providers.** Require telecommunications companies to expand high-speed broadband access to underserved and rural areas as part of franchise conditions. Establish minimum speed and coverage targets, with particular focus on achieving at least 50% barangay-level internet coverage in all LGUs within 3 years and 80% within 5 years. Create incentive mechanisms including tax breaks and streamlined permitting for providers meeting or exceeding universal service targets in low-income municipalities.
3. **Establish LGU Equipment Modernization Fund.** Create a dedicated national fund to provide grants or subsidized loans for LGU procurement of ICT equipment (desktops, laptops, servers, routers). Target achieving minimum equipment density of 0.5 devices per employee within 3 years, prioritizing fourth- through sixth-class municipalities. Condition funding on LGU commitment to ICT staff training and equipment maintenance plans.
4. **Complementary Measures:**
 - Encourage investment in green data centers with energy-efficient cooling technologies through BOI incentives and streamlined environmental permitting. Promote public-private partnerships for shared regional data center facilities serving multiple LGUs to achieve economies of scale.
 - Develop connectivity mapping dashboard showing real-time barangay-level coverage, speed, and service quality to enable evidence-based infrastructure planning and hold providers accountable to service commitments.
 - Promote adoption of hybrid cloud and edge computing strategy as cost-effective approach for LGUs. Cloud component enables pay-per-use model for storage and software (Microsoft Azure, AWS) while edge computing provides low latency by processing data near generation points without cloud upload requirements, generating monetary savings (Accenture, 2025; Microsoft, 2025b). Hybrid approach also offers system redundancy ensuring data security during partial system failures (IBRD/World Bank, 2020).

Pillar 2: Human Capital and Skills

Human Capital and Skills is the lowest-performing pillar with average score of 29.0. While first-class LGUs show 62.9% ICT staff availability versus 34.0-47.2% for lower classes, critical shortage of ICT specialists (1.6-5.7) across all income classes still remains. Computer and internet literacy seems to be moderate but insufficient (38-54 and 30-47 respectively). There is also a near-universal absence of digital skills planning (0.0-7.5). The following recommendations are meant to address these findings:

5. Integrate AI and Data Literacy into Education Curricula. Building on RA 11927 (Philippine Digital Workforce Competitiveness Act), mandate integration of AI concepts, critical thinking, numeracy, and problem-solving into K-12 education starting 2026. Develop specialized AI-related programs in higher education and TESDA institutions focusing on machine learning, data science, and AI ethics. Create teacher training programs to build capacity for delivering AI literacy education.
6. Establish LGU ICT Specialist Deployment Program. Create a national program deploying ICT specialists to LGUs lacking technical capacity, modeled on the Doctors to the Barrios program. Provide competitive salaries and benefits funded nationally to overcome local budget constraints. Target placing at least one ICT specialist in every municipality and component city within 3 years, with priority for fourth- through sixth-class LGUs. Include provisions for knowledge transfer and local capacity building to ensure sustainability.
7. Develop Industry-Recognized AI Certification Programs. Partner with private sector to create and recognize certification programs for AI-related skills as envisioned under RA 11927. Establish certification tracks for LGU employees including basic digital literacy, intermediate data management, and advanced AI implementation. Provide certification subsidies for LGU employees with priority for lower-income municipalities. Integrate certifications into LGU career progression systems to incentivize participation.
8. Mandate Digital Skills Planning in LGU Development Plans. Require all LGUs to include digital skills development components in their Comprehensive Development Plans and Executive-Legislative Agendas. Provide technical assistance and templates from DILG for developing skills plans aligned with local service delivery priorities. Link inclusion of credible digital skills plans to eligibility for national ICT infrastructure and equipment grants.
9. Complementary Measures:

- Develop targeted upskilling and reskilling programs for workers in industries susceptible to automation (BPOs, manufacturing) aligned with RA 11962 (Trabaho Para sa Bayan Act), focusing on roles complementing AI such as oversight, analysis, and customer engagement.
- Create internship and apprenticeship programs providing hands-on experience with AI technologies through partnerships between LGUs, private sector, and educational institutions.
- Launch public awareness campaigns on AI literacy targeting general population beyond workforce, addressing common misconceptions and ethical considerations to build societal understanding and trust.

Pillar 3: Innovation Ecosystem

As mentioned earlier, Pillar 3 is the highest-performing pillar with average score of 40.6. The results suggest that there is strong digitalization progress (68-88) across all groups, but weak emerging technology adoption (8-23) and moderate technology strategy (30-61 varying by income class) seem to also be present. There also seems to be low innovation self-assessment (19-27) despite actual digitalization achievements, which suggests confidence gap among LGUs. The following measures address these weaknesses.

10. Establish Unified National AI Strategy with Clear Institutional Leadership. Formalize a comprehensive national AI strategy through Executive Order designating a lead agency or office for implementation and oversight, building on existing work by DICT, DTI, DOST while incorporating multi-stakeholder inputs. Clarify roles and responsibilities of different agencies: DOST for AI research and innovation, DOH for healthcare AI patient safety and privacy, DepEd for AI literacy integration. Ensure flexibility for sectors to develop tailored policies addressing unique risks and opportunities.
11. Create Sectoral AI Councils and Communities of Practice. Establish sector-specific councils comprising government, industry, academia, and civil society representatives to identify risks, propose solutions, and develop tailored regulatory guidelines. Form Communities of Practice per sector to drive knowledge sharing, collaboration, and dissemination of best practices. Sectors should include agriculture, healthcare, education, finance, and public administration. Councils should meet quarterly and publish annual sector AI readiness assessments.

12. Implement Risk-Based Regulatory Framework for AI Governance. Adopt risk-based framework patterned after the European Union AI Act (EU AI Act), categorizing AI systems by potential risks and benefits to enable flexible, context-specific regulations. Avoid rigid horizontal rules applying uniformly across sectors given nascent stage of AI adoption in Philippines. Establish regulatory sandboxes allowing controlled testing of AI innovations with appropriate safeguards. Mandate sector-specific AI guidelines while ensuring baseline ethical principles of fairness, accountability, and transparency.

13. Complementary Measures:

- Create LGU Innovation Awards recognizing successful digitalization and AI pilot implementations to build confidence and showcase best practices, addressing low innovation self-assessment scores.
- Develop technology roadmaps for LGUs linking emerging technologies (IoT, blockchain, 5G) to AI applications, providing strategic vision beyond current digitalization efforts.
- Establish inter-LGU knowledge sharing platforms enabling high-performing municipalities to mentor lower-performing peers, leveraging heterogeneity within income classes.

Pillar 4: Governance and Policy

Pillar 4 is the second worst performing pillar with average score of 27.8. This pillar boasts of strong big data orientation (52-79) performance but critically low ICT budget allocation (0.1-2.0) and medium-term planning (0.0-20.0) across all groups. E-government strategy is moderate for first-class LGUs (50.0) but weak for lower classes (8.8-40.5). This pillar is also characterized by a strategy-resource gap, indicating technology is viewed as aspirational rather than operational priority. To strengthen performance in this pillar, it is suggested that:

14. Mandate Minimum ICT Budget Allocation with Enforcement Mechanisms. Require all LGUs to allocate minimum 2% of total budget to ICT by 2026, increasing to 3% by 2028, through budget ringfencing that ensures dedicated funding for digital and AI adoption (UNDP, 2024). This commitment to funding AI-friendly policies, combined with actual resource allocation, could generate GDP increases of up to 0.15 percent as observed in select Asia-Pacific economies adopting cloud technology (ADB, 2024). Link compliance to eligibility for national grants and performance-based transfers. Provide budget preparation guidelines and templates from DBM showing recommended ICT expenditure

categories including infrastructure, software, personnel, and training. Create monitoring dashboard tracking LGU ICT budget allocations and utilization quarterly.

15. Require Medium-Term ICT Investment Plans in LGU Development Planning. Mandate all LGUs to develop 3-year rolling ICT investment plans as component of Comprehensive Development Plans, identifying infrastructure needs, capacity building priorities, and budget requirements. Provide technical assistance from DICT and DILG for plan development. Establish peer review mechanisms where provincial ICT offices support municipal planning. Make credible medium-term ICT plans prerequisite for accessing national technology funds.

16. Establish AI Oversight and Coordination Body. Create dedicated oversight body to monitor AI strategy implementation progress, align policies across sectors, and engage stakeholders. Body should have clear mandate to coordinate sectoral councils, track outcomes of AI initiatives, address cross-cutting concerns, and publish annual AI readiness progress reports. Include representation from government, private sector, academia, and civil society to ensure comprehensive perspective and accountability.

17. Complementary Measures:

- Develop national guidelines for AI governance prioritizing fairness, accountability, and transparency. Establish clear regulatory standards and ethical frameworks to build public confidence and ensure responsible development.
- Implement human-in-the-loop workflows requiring human intervention when AI model predictions are not fully accurate, particularly for critical tasks and decisions. Human reviewers examine predicted results and data sources, providing feedback and corrections to ensure accurate predictions (IBRD/World Bank, 2020; Schubert & Barrett, 2024). This procedure is essential for maintaining accountability and ethical AI use in governance contexts.
- Establish impact assessment procedures enabling LGUs to manage AI-related risks throughout project lifecycle from procurement to deployment. Impact assessments should identify risks at each stage and designate accountable personnel or offices for every project step (IBRD/World Bank, 2020).

- Launch public awareness campaigns on AI benefits, risks, and limitations to build trust and acceptance. Use transparent communication highlighting real-world examples while addressing misconceptions and ethical concerns.
- Create incentive mechanisms for early adopter LGUs including recognition programs, preferential access to technical assistance, and showcase opportunities at national forums.

Pillar 5: Data Readiness

The previous discussion observed strong security measures (74-90) and application usage (66-90) but critical gaps are observed in data generation platforms: e-services (11-33), e-participation (3-19), open data (7-17), and e-procurement (8-20). These patterns indicate consumer technology adoption without systematic data infrastructure for AI applications. This paper suggests the following recommendations:

18. Establish Comprehensive National Data Governance Framework Under PSA Leadership. Develop unified data governance framework under Philippine Statistics Authority (RA 10625) supported by DBM, NPC, and DICT, establishing standards for data generation, collection, storage, processing, and sharing across public and private sectors. Framework must address fragmented practices by promoting consistency and interoperability, with guidelines on data protection, privacy, cybersecurity, and ethical use. Create centralized data portal managed by PSA providing secure access to curated datasets for authorized researchers and regulators.
19. Accelerate E-Services Digitalization with Data Architecture Standards. Mandate digitalization of high-volume government services (business permits, tax payments, document requests, social service applications) with data architecture standards ensuring transaction data is captured in structured, analyzable formats. Provide implementation support including software templates, integration guidance, and capacity building. Target achieving 50% of major LGU services digitalized within 2 years, 80% within 4 years, prioritizing services with highest transaction volumes.
20. Develop LGU Open Data Portals with Publication Mandates. Require all first- and second-class LGUs to establish open data portals within 2 years, third- through sixth-class within 4 years. Mandate publication of key datasets including budget and expenditure, service delivery statistics, development indicators, and approved planning documents. Provide

portal software and technical support from PSA and DICT. Link open data compliance to transparency and accountability assessments affecting performance-based transfers.

21. Implement E-Procurement Systems with Fraud Detection AI Capabilities. Deploy standardized e-procurement platform across LGUs with built-in data generation for transparency and AI-powered fraud detection. System should capture all procurement transactions in structured format enabling analysis of pricing patterns, supplier relationships, and potential irregularities. Start with first- and second-class LGUs and progressively expand. Provide training on system use and procurement data analysis.

22. Complementary Measures:

- Establish e-participation platforms enabling citizen feedback, participatory budgeting, and service quality reporting. Promote through Open Government Partnership initiatives while ensuring data captured feeds into service improvement analytics.
- Establish data quality assurance policies ensuring accuracy and quality of collected data while promoting open sharing with researchers and stakeholders. Publicly-funded data are critical assets that can make or break economic, political, and social policies (ANAO, 2025; OECD, 2025a). Examples include the Valencian regional government's (in Spain) sharing of anonymized COVID-19 patient and outbreak location data with scientists to forecast outbreaks and craft containment policies (ESADE, 2025; Fuente et al., 2022).
- Develop data-sharing agreements and protocols between LGUs and national agencies, enabling pooling of datasets for AI applications while protecting privacy and ensuring data sovereignty.
- Create public-private partnerships for data digitalization in high-impact sectors (healthcare, education, agriculture), generating critical datasets for AI while ensuring ethical data handling.
- Publish Annual Data Governance Report by PSA providing updates on progress, challenges, compliance with standards, ensuring accountability and building public trust in data governance efforts.

Pillar 6: Economic Foundation

The results of this paper suggest that local revenues are moderate with decreasing trend by income class (65.6 for Class 1 to 45.4 for Class 6). Total income is observed to be low even for

first-class LGUs (40.5), indicating limited external funding supplementing local resources. Economic constraints cannot be overcome through planning alone, but it would require resource transfers.

23. Create National LGU AI Readiness Fund with Equity-Based Allocation. Establish dedicated national fund providing grants for AI infrastructure, systems, and capacity building with allocation formula favoring lower-income municipalities. Funding tiers: fourth-through sixth-class LGUs receive 100% grants, third-class 75% grants/25% loans, second-class 50/50, first-class 25% grants/75% subsidized loans. Condition funding on credible implementation plans, counterpart contributions (in-kind acceptable for poorest LGUs), and commitment to knowledge sharing with peer municipalities.
24. Integrate AI Readiness into LGU Performance-Based Fiscal Transfer System. Incorporate AI readiness indicators into Seal of Good Local Governance and other performance-based transfer mechanisms, rewarding demonstrated progress on infrastructure, skills development, data systems, and governance frameworks. Create graduated recognition system acknowledging improvements from baseline rather than only absolute performance, ensuring lower-capacity LGUs can compete. Link enhanced transfers to specific AI readiness milestones with higher weight for lower-income municipalities.
25. Promote Inter-LGU Collaboration and Resource Sharing Mechanisms. Encourage formation of LGU clusters or provincial-municipal partnerships for shared AI infrastructure and services to achieve economies of scale. Provide additional funding incentives for collaborative arrangements. Examples include shared data centers, joint procurement of AI systems, pooled ICT specialist positions, and coordinated training programs. Particularly valuable for smaller municipalities unable to independently sustain full AI capabilities.
26. Complementary Measures:
 - Provide technical assistance on improving local revenue generation through better tax administration, enabling LGUs to sustainably fund technology investments beyond initial grant periods.
 - Develop public-private partnership models enabling private sector investment in LGU digital infrastructure with appropriate risk-sharing and return mechanisms.

- Establish AI readiness certification programs through collaboration with private sector organizations and professional associations. Similar to Indonesia's approach where Green Building Council Indonesia and Association of Indonesia Green Data Center Professionals certify organizations adopting sustainable practices (ADB, 2025; Prime Pradata Integra Media, 2024), Philippine AI or digital organizations could provide readiness certifications to LGUs meeting established standards, creating incentives for capacity building while leveraging private sector expertise.
- Create revolving fund mechanism where successful AI implementations generating cost savings or revenue increases can reinvest a portion into expanding AI capabilities or supporting peer LGUs.

Cross-Cutting Priorities Spanning Multiple Pillars

27. Environmental Sustainability in AI Adoption. Adopt standards for measuring energy consumption and carbon footprint of AI processes and applications. Support research to minimize environmental footprint of AI systems through efficient algorithms and hardware. Promote sustainable e-waste management for AI hardware including responsible disposal, recycling, and repurposing programs. Encourage green data centers with energy-efficient cooling technologies and renewable energy integration.
28. Equity and Inclusion Safeguards. Ensure AI adoption does not exacerbate existing inequalities by maintaining equity focus across all interventions. Conduct periodic assessments of AI readiness gaps by income class, region, and urbanization level. Adjust resource allocation and support mechanisms based on equity monitoring results. Require impact assessments for major AI initiatives examining effects on marginalized populations and rural communities.
29. Monitoring and Evaluation (M&E) Framework. Establish systematic M&E framework tracking AI readiness indicators over time using periodic updates of this index. Conduct longitudinal validation studies examining whether readiness scores predict successful AI implementation as adoption progresses. Publish annual AI readiness progress reports disaggregated by income class, region, and sector. Use M&E results to adaptively manage interventions and resource allocations.

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