Digital Governance, Participatory Planning, and Sustainable Urban Development: An Explanatory Sequential Mixed-Method Study in Emerging Philippine Cities

Hernan Ysrael Barluado Peliño[1], Dennis M. Meriales[2]

[1]Department of Education, Sultan Kudarat State University, Philippines

[2]Sultan Kudarat State University, Access Campus, Philippines

DOI: https://doi.org/10.51244/IJRSI.2026.1304000124

Received: 22 March 2026; Accepted: 27 March 2026; Published: 06 May 2026

ABSTRACT

Rapid urbanization in emerging Philippine cities presents significant and complex challenges in infrastructure, governance practices, digital transformation, and citizen participation in promoting sustainable urban development. This study investigates the impact of governance frameworks, digital governance systems, and citizen participation on sustainable urban development using an explanatory sequential mixed-methods design. Quantitative data were collected from 100 respondents, including local government officials, urban planners, and community members, and analyzed employing descriptive statistics, Pearson correlation, and regression analysis. Qualitative data from interviews were used to support and explain statistical findings. Results reveal that governance frameworks significantly predict sustainable urban development ($\beta = 0.45$, $p < 0.01$), followed by digital governance ($\beta = 0.30$, $p < 0.01$) and citizen participation ($\beta = 0.25$, $p < 0.01$), while governance structures are participatory and inclusive. The findings underscore the need for integrated governance approaches that combine institutional capacity, technological innovation, and inclusive citizen engagement.

Keywords: Digital Governance; Urban Governance; Citizen Participation, Sustainable Cities; Philippines

INTRODUCTION

Urbanization is one of the most significant global transformations in the twenty-first century. It is reshaping economic systems, spatial development, infrastructure demands, and governance structures across developing nations.

According to the United Nations (2022), increasing urban population makes cities centers of economic productivity, technological innovation, and social interaction. However, the World Bank (2020) indicates that rapid urban expansion also introduces complex challenges. These include housing shortages, transportation issues, congestion, environmental degradation, and unequal access to public services.

In the Philippines, urbanization has accelerated over the past decades due to population growth, rural-to-urban migration, and economic opportunities concentrated in urban centers. Emerging cities such as Davao City, General Santos City, and Koronadal City have experienced substantial population increases, economic activity expansion, and infrastructure development. While these developments contribute to economic growth, they also intensify the urban management challenges, such as traffic congestion, informal settlements, waste management, environmental degradation, and unequal access to social services.

Urban governance plays a crucial role in addressing these challenges. Effective governance ensures that urban development policies are properly implemented, infrastructure investments are strategically planned, and citizens are actively involved in shaping their communities. Local Government Units (LGUs) serve as the primary institutions responsible for managing urban growth, regulating land use, delivering public services, and

promoting inclusive development.

In recent years, the Philippine government has initiated several digital transformation programs aimed at improving governance efficiency and public service delivery. Digital governance initiatives, including smart city programs, digital platforms for public services, open data systems, and integrated information management tools, have the potential to enhance urban planning, transparency, and citizen engagement. Despite these developments, many emerging Philippine cities continue to experience gaps in governance capacity, infrastructure coordination, and digital integration. Additionally, citizen participation in urban planning processes has remained limited for many years, often resulting in development strategies that do not fully reflect community needs.

Furthermore, citizen participation remains a critical component of sustainable urban development. Fung & Wright (2003) highlight that participatory governance ensures that development initiatives reflect community needs and priorities, fostering transparency and accountability.

Given these challenges, this study explores how governance frameworks, digital transformation, and citizen participation influence urban development outcomes in emerging Philippine cities. By examining existing policies, institutional practices, and community engagement mechanisms, the research aims to identify strategies that can strengthen sustainable, inclusive, and technology-driven urban governance.

Background of the Study

The rapid growth of urban areas has become a defining feature of development in Southeast Asia. Urban centers in the Philippines serve as engines of economic growth, hosting major industries, service sectors, educational institutions, and government offices. However, rapid urban expansion often occurs faster than the capacity of governments to manage infrastructure, environmental protection, and social services.

Cities such as Davao City, General Santos City, and Koronadal City have become regional hubs for commerce, education, and governance. These cities continue to attract migrants seeking employment opportunities, better education, and improved living conditions. As a result, urban populations continue to grow, creating increasing demands for housing, transportation networks, water supply systems, and waste management infrastructure.

The Philippine government has recognized the importance of strengthening urban governance to address these challenges. National programs have been introduced to improve urban management systems, including initiatives related to digital governance, smart city development, infrastructure modernization, and environmental sustainability.

The Department of Information and Communications Technology (DICT) has promoted digital transformation initiatives aimed at improving government efficiency and transparency. Digital platforms for licensing public service delivery and data management are gradually being implemented in local governments. These initiatives support the broader vision of developing smart and sustainable cities responding to complex urban challenges.

However, the integration of digital governance systems into local planning and decision-making processes remains uneven. Some cities have made significant progress in implementing digital tools in governance, while others face limitations due to financial constraints, technical capacity gaps, and insufficient digital infrastructure.

Another important dimension of urban governance is citizen participation. Participatory governance emphasized the involvement of citizens, community organizations, and stakeholders in policy formulation, urban planning, and decision-making processes. Inclusive governance mechanisms ensure that development initiatives reflect the needs and priorities of communities.

Given these relationships, there is a need to examine how governance structures, digital innovations, and citizen engagement contribute to sustainable urban development in emerging Philippine cities.

Statement of the Problem

This study aims to examine the relationship between governance frameworks, digital governance, citizen participation, and sustainable urban development in emerging Philippine cities.

Specifically, the study seeks to answer the following questions:

What is the level of

- governance frameworks
- digital governance
- citizen participation, and
- sustainable urban development?

Is there a significant relationship between:

- governance frameworks and sustainable urban development?
- digital governance and sustainable urban development?
- citizen participation and sustainable urban development?

Which variables significantly predict sustainable urban development?

Objectives of the Study

The objective of this study is to analyze the role of governance and digital transformation in promoting sustainable urban development in emerging Philippine cities.

Specifically, the study aims to

1. Determine the level of governance frameworks, digital governance, citizen participation, and sustainable urban development.
2. Examine the relationships between governance frameworks, digital governance, citizen participation, and sustainable urban development.
3. Identify which variables significantly predict sustainable urban development

Significance of the Study

The findings of this research benefit several stakeholders.

1. Local Government Units (LGUs). The study provides insights into how governance mechanisms and digital technologies can improve urban planning and service delivery.
2. Urban Planners and Policymakers. The research contributes to policy development by identifying effective strategies for managing rapid urbanization and promoting sustainable city development.
3. Academic Community. The study contributes to existing literature on urban governance, digital transformation, and sustainable development.
4. Community Members and Civil Society. The research highlights the importance of citizen participation in shaping development policies and improving accountability in governance.

Scope and Delimitation of the Study

This study focuses on selected emerging cities in the Philippines, particularly Davao City, Koronadal City, and General Santos City. It examines governance strategies, digital transformation initiatives, and citizen participation mechanisms that influence urban development.

The study primarily involves stakeholders engaged in the urban development process. Data was collected through surveys, interviews, and document analysis.

The study does not attempt to evaluate all urban development programs in the Philippines but focuses on governance practices and digital transformation initiatives in selected cities.

Theoretical Foundations

This study is grounded in three major theoretical perspectives: Sustainable Urban Development Theory, Digital Governance Theory, and Participatory Governance Theory.

Sustainable urban development theory emphasizes the balance between economic growth, environmental protection, and social equity in urban areas. According to the United Nations Human Settlements Programme (2020), sustainable cities must ensure inclusive, resilient, and resource efficiency. Similarly, Campbell (1996) explains that urban planning must reconcile the "planner's triangle" of economic development, environmental sustainability, and social justice. In this study, sustainable urban development serves as the dependent outcome, influenced by governance, digitization, and participation.

This study is anchored to digital governance theory and highlights the role of information and communication technologies (ICTs) in enhancing public administration. Heeks (2006) explains that digital governance improves efficiency, transparency, and service delivery through automation and data systems. Furthermore, Nmd & Pardo (2011) argue that smart cities operate through the integration of technology, people, and institutions. In this study, governance acts as a mediating variable that enhances urban management and decision-making.

Finally, participatory governance theory emphasizes citizens' involvement in decision-making processes. Fung & Wright (2003) assert that inclusive governance improves accountability, transparency, and policy responsiveness. Additionally, Arnstein (1969) introduces the "Ladder of Citizen Participation," which explains levels of public involvement from tokenism to full citizen control. In this study, citizen participation functions as a critical enabling factor for inclusive urban development.

Conceptual Framework

The conceptual framework of this study is anchored on the interaction of governance frameworks, digital governance systems, and citizen participation as key determinants of sustainable urban development. Pierre (2011) emphasizes that governance frameworks provide the institutional structures that guide policy formulation, implementation, and evaluation, ensuring coherence and accountability in urban management. Heels (2006) highlighted that digital governance systems enhance these processes by integrating information and communication technologies that improve efficiency, transparency, and data-driven decision-making in public administration. Furthermore, Fung & Wright (2003) analyzed that citizen participation plays a critical role in ensuring that urban development initiatives are inclusive and responsive to the needs of communities, thereby strengthening democratic governance and public trust. The interaction among these elements contributes to improved urban development outcomes, including sustainable infrastructure, equitable access to services, and efficient service delivery. Ultimately, the synergy of governance, digitization, and support drives the transformation of emerging cities into sustainable, inclusive, and resilient urban systems.

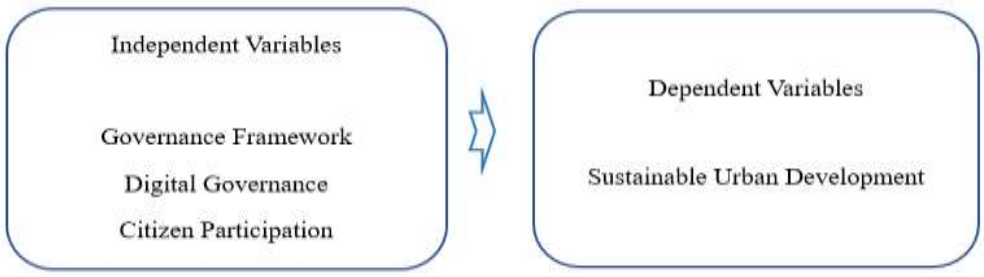

Figure 1: Conceptual Framework: Independent Variables (IV's) and Dependent Variable (DV)

LITERATURE REVIEW

Governance Frameworks

Governance frameworks refer to the structures, processes, and traditions that determine how power is exercised, how stakeholders are involved, and how decisions are made on issues of public concern. According to Pierre (2011), governance has evolved from a state-centric model to a more networked and participatory approach, particularly in urban settings. Effective governance is characterized by accountability, transparency, responsiveness, and the rule of law (World Bank, 2017).

In the context of urban development, governance frameworks play a critical role in ensuring coordinated planning, efficient resource allocation, and policy coherence. Studies have shown that cities with strong governance structures tend to achieve better development outcomes due to improved institutional capacity and reduced bureaucratic inefficiencies (UN-Habitat, 2020). Furthermore, decentralization policies in the Philippines have empowered local government units (LGUs) to take a more active role in development planning, making governance frameworks even more critical. Brillantes & Fernandez (2011) emphasized that in the Philippines, decentralization under the Local Government Code has strengthened LGUs, enabling them to manage urban development more autonomously. However, recent ADB (2021) findings indicate persistent issues in inter-agency coordination and policy implementation.

Urbanization and Urban Development

Urbanization refers to the increasing concentration of population in cities and urban areas. It is often associated with economic growth, industrial development, and improved access to services. However, rapid urbanization also introduces challenges such as infrastructure shortages, environmental degradation, and social inequality.

Scholars emphasize that sustainable urban development requires a balance of economic growth, environmental protection, and social equity. Cities must adopt integrated planning approaches that address transportation systems, housing management, and environmental sustainability.

In developing countries, urban governance plays a critical role in managing rapid urban growth and ensuring that development benefits all sectors of society.

According to the United Nations (2022), urbanization remains one of the most transformative global trends, with over 56% of the world's population residing in urban areas as of recent estimates. In the Philippines, urban growth has accelerated due to migration, economic concentration, and regional development policies. Recent studies of the Philippine Statistics Authority (2022) highlighted that cities such as Davao, General Santos, and Koronadal are experiencing rapid expansion, creating both opportunities and governance challenges.

Philippine-based ADB (2021) research highlighted that urban growth often outpaces infrastructure governance capacity, resulting in congestion, informal settlements, and service delivery gaps. These challenges necessitate stronger governance frameworks, digital innovation, and participatory mechanisms.

Sustainable Urban Development

Sustainable urban development focuses on creating cities that are economically productive, environmentally sustainable, and socially inclusive. It promotes responsible resource use, efficient infrastructure systems, and equitable access to public services. According to the United Nations (205), sustainable cities are those that provide inclusive, safe, resilient, and sustainable living conditions. Key indicators include efficient infrastructure, equitable service delivery, and environmental sustainability.

Urban sustainability initiatives often include green infrastructure development, climate resilience planning, sustainable transportation systems, and inclusive housing programs. Newman & Kenworthy (1999) highlighted that without strong governance and active participation, sustainability efforts often fail to achieve long-term impact.

Governments are encouraged to adopt long-term planning strategies that integrate environmental protection, economic development, and social welfare. Philippine studies highlighted the need for integrated urban planning to address environmental risks, particularly flooding and waste management (DENR, 2022).

Digital Governance in Urban Management

Digital governance has become an essential component of modern urban management. Heeks (2006) emphasized the use of information and communication technologies (ICT) to improve public service delivery, enhance transparency, and promote citizen engagement. Nam & Pardo (2011) added that smart city initiatives, which integrate data analytics, automation, and digital platforms, enable governments to manage urban systems more efficiently.

However, OECD (2019) highlighted that the success of digital governance depends on institutional capacity, infrastructure readiness, and digital literacy among citizens. In developing countries, digital divides remain a major barrier to the effective implementation of digital governance systems.

In emerging cities, digital governance systems enable real-time data collection, streamlined processes, and improved communication between government and citizens. However, challenges such as the digital divide, lack of infrastructure, and limited technical expertise continue to hinder its full implementation (Gil-Garcia, 2012).

Recent studies by DICT (2023) show that while digital systems improve transparency and service delivery, disparities in access and infrastructure remain significant barriers.

Citizen Participation and Participatory Governance

Participatory governance emphasizes the involvement of citizens in decision-making processes. Community engagement ensures that development initiatives reflect local needs and priorities. Arnstein's (1969) Ladder of Citizen Participation remains a foundational model, illustrating levels of participation from manipulation to citizen control. Fung and Wright (2003) further emphasized the importance of participatory governance in improving accountability and inclusivity.

Citizen participation may take different forms, including public consultations, participatory budgeting, community planning workshops, and digital feedback platforms. In urban development, citizen participation ensures that policies and projects align with community needs. It fosters transparency, builds trust, and enhances the legitimacy of government actions. Studies indicate that participatory approaches lead to more sustainable and acceptable urban outcomes (Irvin & Stansbury, 2004).

Recent research by OECD (2021) highlights the shift toward e-participation, where citizens engage through online platforms. Research also suggests that participatory governance enhances transparency, accountability, and public trust in government institutions.

Related studies on urban governance highlight the importance of institutional coordination, infrastructure planning, and community engagement in achieving sustainable urban development. Research on digital governance demonstrates that technology can significantly improve government efficiency, transparency, and service delivery. However, successful implementation requires strong institutional capacity, adequate infrastructure, and digital literacy among citizens. Studies on participatory governance emphasize the need for inclusive decision-making mechanisms that empower communities to actively contribute to development processes.

Local Studies

In the Philippine context, several studies have examined the role of governance systems, organizational structures, and participatory mechanisms in shaping institutional effectiveness and development outcomes. However, there remains a need to further explore how governance, digitalization, and citizen engagement interact in emerging urban environments.

A study by Pelino & Protacio (2026) on career stagnation among unpromoted teachers provides important insights into how organizational and structural influences individual and institutional outcomes. Using a phenomenological approach, the study revealed that systemic issues such as limited professional mobility, inadequate support systems, and organizational constraints significantly affect employees' performance and motivation. Although conducted in the educational sector, the findings highlight how governance-related structures and institutional inefficiencies can shape outcomes across different sectors. These insights are relevant to the present study, as they emphasize the importance of effective governance frameworks in ensuring sustainable and equitable development.

Similarly, another study by Pelino (2026) on risk management practices in education examined how institutions identify, assess, and respond to potential risk within organizational settings. The findings indicated that proactive governance, strategic planning, and systematic coordination are essential in mitigating risks and enhancing institutional resilience. The study further emphasized the importance of structured decision-making processes and leadership in achieving sustainable outcomes. These findings are particularly relevant to urban governance, where local government units must navigate complex challenges such as rapid urbanization, infrastructure demands, and resource allocation.

Both studies underscore the critical role of governance systems in shaping outcomes within institutional contexts. They also demonstrate that beyond quantitative indicators, qualitative insights are essential in understanding the underlying dynamics of organizational performance. In relation to the present study, these works support the integration of governance frameworks, digital systems, and participatory approaches in addressing the multifaceted challenges of sustainable urban development in emerging Philippine cities.

Synthesis

Recent literature emphasizes that sustainable urban development is solely dependent on infrastructure expansion, but on the integration of governance quality, digital transformation, and participatory inclusivity. Studies by the World Bank (2022) and OECD (2021) highlight that cities with strong institutional coordination and digital integration demonstrate higher efficiency in service delivery and environmental management.

In the Philippine context, reports from the Philippine Statistics Authority (2023) and the Department of Information and Communications Technology (2023) indicate uneven digital adoption across local government units, contributing to disparities in governance performance. Furthermore, participatory governance remains largely traditional, with limited digital engagement mechanisms.

Despite these advancements, there remains a gap in empirical studies that simultaneously examine governance frameworks, digital governance, and citizen participation using quantitative predictive models in emerging Philippine cities. This study addresses this gap by integrating these variables into a unified analytical framework.

METHODOLOGY

Research Design

This study employed an explanatory sequential mixed-method design where quantitative data were collected and analyzed first, followed by qualitative data to explain and deepen the findings (Creswell, 2014).

Research Locale

The study was conducted in selected emerging cities in the Philippines, where rapid urbanization and governance challenges are evident, including Davao City, Koronadal City, and General Santos City.

These cities are experiencing rapid urban growth and are implementing various governance and digital transformation initiatives.

Research Respondents

The study involved 100 respondents, determined using Slovin's formula, representing local government officials, urban planners, community leaders, and urban communities. A stratified random sampling technique was used to ensure representation across sectors.

Research Instrument

A structured questionnaire was utilized, consisting of four sections corresponding to the variables of the study. A 5-point Likert Scale was used to measure responses.

Validity and Reliability

The instruments undergo content validity by experts in urban planning and governance. Reliability was tested using Cronbach's alpha, with a minimum acceptable value of 0.70 (Hair et al, 2010).

Data Gathering Procedure

Permission was obtained from relevant authorities prior to data collection. The questionnaire was distributed to respondents and collected after completion. Ethical considerations, such as confidentiality and voluntary participation, were strictly observed.

Statistical Treatment of Data

The following statistical tools were used to describe the variables: mean and standard deviation, Pearson r correlation to determine relationships, and multiple regression analysis to identify predictors of sustainable urban development.

The collected data were analyzed using the following methods: Descriptive Statistics: Survey responses were summarized using statistical measures, such as frequency, percentage, and mean. Thematic Analysis. Interview data were analyzed to identify recurring themes and patterns related to governance practices and urban development challenges. Comparative Policy Analysis. Urban development policies across selected cities were compared to identify similarities, differences, and best practices.

Ethical Considerations

The study adhered to strict ethical standards. Participation was voluntary, and participants were informed of their right to withdraw at any time without penalty. Confidentiality and anonymity were ensured using pseudonyms and the removal of identifying information. All data were securely stored and used solely for academic purposes. Given the sensitive nature of career experiences, participants' dignity, emotional well-being, and professional integrity were prioritized throughout the research process.

Expected Contributions of the Study

The study is expected to contribute to the improvement of urban governance in the Philippines by:

1. Identifying key barriers to sustainable urban development
2. Influence of the effectiveness of digital governance initiatives.
3. Highlighting the role of citizen participation in urban planning.
4. Proposing a model for inclusive and technology-driven urban governance.

RESULTS AND DISCUSSION

This chapter presents the findings of the study on the interplay between governance frameworks, digital governance, citizen participation, and sustainable urban development in emerging Philippine cities (Davao City, Koronadal City, General Santos City). Both quantitative and qualitative data were analyzed to provide a holistic understanding. The results highlight the strengths and gaps in current urban governance practices, digital integration, and participatory mechanisms.

Here are the analyses and interpretations of data.

Profiles of the Respondents

The study involved 100 respondents distributed across different stakeholder groups to ensure representation.

Respondent Category	Frequency	Percentage
Local Government Officials	20	20%
Urban Planners	15	15%
Community Leaders	15	15%
Residents of Urban Communities	50	50%
Total	**100**	**100%**

Table 1: Distribution of Respondents by Stakeholder Group

The study involved 100 respondents distributed across key stakeholder groups, including local government officials at 20%, urban planners with 15%, community leaders with 15%, and residents of urban communities with 50%. The distribution indicates that residents comprise the largest proportion of respondents, reflecting the central role of citizens in evaluating urban governance and development outcomes. The inclusion of multiple stakeholder groups ensures a comprehensive and balanced perspective, as it captures both institutional and community- level insights. This diversity strengthens the validity of the findings by incorporating viewpoints from policy implementers, technical experts, and beneficiaries of urban development initiatives. This aligns with Fung and Wright's (2003) participatory governance frameworks, which emphasize the inclusion of diverse actors in decision-making processes.

Descriptive Statistics of Key Variables

Variables	Mean	SD	Interpretation
Governance Frameworks	3.85	0.52	High
Digital Governance	3.78	0.60	Moderate-High
Citizen Participation	3.70	0.58	Moderate-High
Sustainable Urban Development	3.90	0.55	High

Table 2. Descriptive Statistics of Key Variables

The descriptive results show that governance frameworks with a mean of 35, and SD of 0.52, and sustainable urban development the mean of 3.90 and SD of 0.55, were both rated high, indicating strong institutional performance and observable development outcomes in the selected cities. These findings support the World Bank's (2022) argument that effective governance structures are fundamental to sustainable urban development, as they provide the institutional capacity necessary for planning, coordination, and policy implementation.

In contrast, digital governance mean is 3.78 and SD with 0.60, and citizen participation with mean of 3.70 and SD with 0.58, were rated moderate high, suggesting that while these components are present, their implementation remains uneven. The relatively higher variability in digital governance implies inconsistencies in technological adoption and capacity across local government units. This aligns with OECD (2021), which

notes that developing countries often experience challenges in fully integrating digital systems due to infrastructure and capacity constraints. Similarly, participation remains limited in scope, supporting the finding of Fung and Wright (2003), who emphasize that participatory mechanisms must be institutionalized to become effective. Overall, the findings indicate that governance systems are relatively well-established, but further improvements are needed in digital integration and participatory mechanisms to achieve more inclusive and sustainable urban development.

Major Urban Development Challenge

Challenge	Mean	Interpretation
Traffic congestion	4.35	High
Housing shortage	4.10	High
Environmental degradation	3.95	High
Inequitable access to services	3.85	Moderate-High
Informal settlements	3.80	Moderate-High

Table 3. Major Urban Development Challenges

The findings reveal that traffic congestion, with a mean of 4.35, and housing shortages, with a mean of 4.10, are perceived as the most pressing urban challenges, both rated high by respondents. Environmental degradation, with a mean of 3.95, also emerged as a significant concern, reflecting issues such as pollution, flooding, and loss of green spaces. These results are consistent with global urbanization trends by UN-Habitat (2020), where rapid population growth often outpaces infrastructure development, leading to congestion and inadequate housing.

Meanwhile, inequitable access to services has a mean of 3.85, and informal settlements with a mean of 3.80 were rated moderate-high, indicating persistent but comparatively less severe challenges. These findings support the sustainable urban development framework of Sharifi (2021), which emphasizes the need to balance economic growth, environmental protection, and social equity. The persistence of inequitable access to services and informal settlements further highlights structural inequalities in urban systems, reinforcing the need for inclusive governance strategies. These results highlight the complex and interrelated nature of urban issues in emerging cities, where rapid population growth and urban migration outpace infrastructure development. The findings directly address the study's objective of identifying the urban development challenges and underscore the need for integrated and sustainable urban planning strategies.

Governance Practices in Urban Development

Governance Practice	Mean	Interpretation
Policy formulation and implementation	4.00	High
Coordination among LGUs and agencies	3.75	Moderate-High
Transparency and accountability measures	3.60	Moderate
Resource allocation efficiency	3.50	Moderate

Table 4. Governance Practices in Urban Development

Governance practices were generally rated positively, with policy formulation and implementation with a mean of 4.00 identified as a key strength. This suggests that local government units possess the institutional capacity to design and implement development policies effectively. However, coordination among agencies with a mean of 3.75, transparency and accountability with a mean of 3.60, and resource allocation efficiency with a mean of 3.50 received lower ratings, indicating operational challenges.

These findings align with governance theory, which emphasizes that effective urban management depends not only on policy design but also on coordination and accountability mechanisms (Pierre, 2011). Similarly, studies

by the World Bank (2022) highlight that fragmented governance structures often lead to inefficiencies in urban development, particularly in rapidly growing cities.

Role of Digital Governance

Digital Governance Initiative	Mean	Interpretation
Online public service platforms	4.05	High
Geographic Information Systems (GIS)	3.85	Moderate-High
Smart traffic management systems	3.70	Moderate-High
Open data and citizen feedback portals	3.60	Moderate

Table 5. Role of Digital Governance

The results indicate that digital governance initiatives contribute positively to urban management, particularly online public service platforms, with a mean of 4.05, which was rated high. This reflects the OECD (2021) results that the growing role of digital technologies is enhancing efficiency, transparency, and accessibility in governance processes.

However, the moderate ratings of smart systems and open data platforms suggest incomplete integration, such as GIS with a mean of 3.85, smart traffic systems with a mean of 3.70, and open data platforms with a mean of 3.60, which were rated moderate-high to moderate, suggesting incomplete integration. This is consistent with Heeks (2006) argument that digital transformation in the public sector is often constrained by gaps in infrastructure, technical capacity, and institutional readiness. These limitations highlight the need for sustained investment in digital systems.

Citizen Participation in Urban Planning

Participation Mechanism	Mean	Interpretation
Public consultations	3.90	Moderate-High
Participatory budgeting	3.70	Moderate-High
Community workshops	3.65	Moderate-High
Digital feedback platforms	3.50	Moderate

Table 6. Citizen Participation

Citizen participation mechanisms were generally rated moderate-high, with public consultations being the most practiced form of engagement, with a total mean of 3.90. Participatory budgeting with a mean of 3.70 and community workshops with a mean of 3.65 also showed moderate-high levels, indicating active but traditional forms of participation. In contrast, digital feedback platforms with a mean of 3.50 were rated moderate, reflecting limited use of technology in citizen engagement.

These findings align with Arnstein's (1969) ladder of participation, which suggests that participation often remains at lower levels unless supported by strong institutional frameworks. Moreover, OECD (2021) emphasizes that digital participation requires both technological infrastructure and citizens' readiness. The results suggest that while participation exists, it remains largely traditional and requires modernization.

Correlation Analysis

Variables	r-value	Interpretation
Governance & Sustainability	0.72, $p < 0.01$	Strong
Digital Governance & Sustainability	0.68, $p < 0.01$,	Moderate-Strong

Participation & Sustainability	0.65, $p < 0.01$	Moderate

Table 7. Correlation Analysis between Variables

The correlation analysis revealed significant positive relationships between all independent variables and sustainable urban development ($p < 0.01$). Governance frameworks exhibited the strongest relationship ($r = 0.72$), followed by digital governance ($r = 0.68$) and citizen participation ($r = 0.65$).

These results align with the World Bank's (2022) statements that improvements in governance systems, digital integration, and participatory mechanisms are associated with better urban development outcomes as they provide an institutional foundation for planning and implementation. The strength of these relationships highlights the critical role of governance as a foundational driver, while also emphasizing the complementary contributions of digitalization and citizen engagement.

Regression Analysis

Predictor	Beta	p-value	Interpretation
Governance	$\beta = 0.45$	$p = 0.001$	Significant
Digital Governance	$\beta = 0.30$	$p = 0.003$	Significant
Participation	$\beta = 0.25$	$p = 0.005$	Significant

Table 8. Regression Analysis of Predictors of Sustainable Urban Development

The regression analysis identified governance frameworks as the strongest predictor of sustainable urban development ($\beta = 0.45$, $p = 0.001$), followed by digital governance ($\beta = 0.30$, $p = 0.003$) and citizen participation ($\beta = 0.25$, $p = 0.005$). All predictors were found to be statistically significant, indicating that each variable contributes meaningfully to urban development outcomes.

The results strongly support Pierre (2011), institutional theory, which posits that governance structures shape development outcomes. At the same time, OECD (2021) explained that the significance of digital governance and citizen participation aligns with contemporary governance models that emphasize innovation and inclusivity. The findings suggest that sustainable urban development requires an integrated approach that combines strong governance, technological advancement, and active citizen engagement.

Qualitative Findings (Thematic Analysis

The qualitative phase of the study was conducted to explain and deepen the interpretation of the quantitative findings. Through thematic analysis of interview responses, five major themes emerged, each supported with multiple significant statements from participants and anchored in relevant literature.

Theme 1: Fragmented Inter-Agency Coordination and Institutional Silos

A dominant theme that emerged from the data is the persistence of fragmented coordination among local government units and agencies. While governance frameworks are perceived to be strong in terms of policy formulation, their implementation is often weakened by institutional silos and a lack of integration.

A local government official shared: "*Even if the policies are well-prepared, coordination among departments is still lacking, and each office tends to operate independently."* Another respondent emphasized that "*There is duplication of roles across agencies, and sometimes responsibilities are unclear, which delays project implementation*."

These significant statements explain the moderate-high rating in coordination and indicate that structural inefficiencies hinder governance effectiveness. This finding supports the argument that institutional fragmentation reduces the efficiency of public administration systems.

This is consistent with governance theory, which emphasizes the importance of coordinated institutional arrangements. The World Bank (2022) highlights that integrated governance systems are essential for addressing complex urban challenges, while Pierre (2011) argues that governance effectiveness depends not only on policy formulation but also on inter-organizational coordination.

Theme 2: Digital Governance Constraints due to Infrastructure and Capacity Gaps.

Another key theme relates to the limitations of digital governance, particularly in terms of infrastructure, technical capacity, and digital literacy. Although digital initiatives are present, their implementation is uneven across localities.

An urban planner noted, "*Some areas still lack stable internet connectivity, which makes it difficult to implement digital systems effectively."* Similarly, another participant stated, "*Even when digital tolls are available, many personnel are not fully trained, so the systems are underutilized."*

These statements clarify why digital governance was rated moderate - high indicating partial but consistent implementation. The findings suggest that technological adoption is constrained by both infrastructural and human resource limitations.

This aligns with findings from the OECD (2021), which emphasizes that digital transformation requires both infrastructure and institutional capacity. Additionally, Heeks (2006) explains that e-governance initiatives often face implementation gaps due to mismatches between technology and local capabilities.

Theme 3: Predominance of Traditional Participation Mechanisms

The study also reveals that citizen participation remains largely traditional, with limited adoption of digital engagement platforms. Participation is primarily conducted through face-to-face consultations and community meetings.

A community leader explained: "*More citizens are more comfortable attending barangay meetings rather than using online platforms."* Another respondent added that "*Digital participation tools exist, but many people are not aware of them or do not know how to use them."*

These statements explain the moderate level of digital participation and the moderate rating of overall participation. While participation exists, it is not fully inclusive or technologically advanced.

This finding is consistent with Arnstein (1969), who argues that meaningful participation requires empowerment and access, not just consultations. Furthermore, Fung and Wright (2003) emphasize that participatory governance must be institutionalized and inclusive to be effective. OECD (2021) also highlights the importance of digital inclusion in strengthening citizen engagement.

Theme 4: Rapid Urbanization Outpacing Planning and Infrastructure Development

Rapid urbanization emerged as a critical factor influencing urban challenges such as traffic congestion, housing shortages, and environmental degradation. Respondents highlighted the mismatch between growth and infrastructure development.

One respondent stated: "The population is growing fast, but infrastructure projects are not keeping pace with the demand." Another participant noted: "Urban migration is increasing, but housing and transportation systems are not expanding accordingly."

These statements explain the high ratings of traffic congestion and housing shortages. They indicate that urban challenges are driven by structural and demographic pressures.

This finding is supported by the UN-Habitat (2020), which notes that rapid urbanization often leads to infrastructure deficits and service gaps. Similarly, Sharifi (2021) emphasizes that sustainable urban development requires proactive planning to manage population growth and environmental pressures.

Theme 5: Need for Integrated Governance, Digitalization, and Participation

A cross-cutting theme is the need for an integrated approach that combines governance frameworks, digital systems, and citizen participation. Respondents emphasized that these elements should function cohesively rather than independently.

A local government official remarked: Governance *digital tools, and citizen engagement should work together, not separately, to achieve better outcomes."* Another participant stated: "*We need a unified system where policies, technology, and community participation are aligned."*

These statements reinforce the regression findings, where governance, digital governance, and participation were all significant predictors of sustainable urban development. The findings highlight that integration is essential for achieving sustainable outcomes.

This aligns with contemporary governance frameworks, which emphasize systems integration. The World Bank (2022) and OECD (2021) both stress that sustainable urban development requires coordinated efforts across institutional, technological, and social dimensions.

Integration of Quantitative and Qualitative Findings

This study employed an explanatory sequential mixed-method design in which qualitative findings were used to explain and provide deeper insights into the quantitative results. The integration occurred at the interpretation stage. Where statistical relationships identified through correlation and regression analysis were supported and contextualized using thematic analysis.

The qualitative results revealed that governance frameworks, digital governance, and citizen participation significantly influence sustainable urban development, with governance emerging as the strongest predictor. However, these numerical findings alone do not fully explain the underlying dynamics of these relationships.

The qualitative findings provided critical explanations for these results. For instance, the moderate-high rating of governance coordination was explained by the theme of fragmented inter-agency coordination, where respondents highlighted institutional silos and overlapping roles. Similarly, the moderate-high level of digital governance was clarified by the presence of infrastructural and capacity limitations, as reflected in the theme on digital governance constraints.

Furthermore, the moderate level of digital participation was supported by qualitative evidence indicating the predominance of traditional participation mechanisms and limited adoption of digital platforms. The high ratings of urban challenges such as traffic congestion and housing shortages were also explained by the theme of rapid urbanization outpacing infrastructure development.

Finally, the qualitative findings reinforced the regression results by emphasizing the need for an integrated approach that combines governance, digitalization, and citizen participation. This confirms that sustainable urban development is a multidimensional process requiring coordinated institutional, technological, and participatory efforts.

Overall, the integration of quantitative and qualitative data enhanced the validity and depth of the findings, providing both statistical generalization and contextual explanation, which are essential in understanding complex urban governance systems.

DISCUSSION

The findings confirm that governance frameworks are the strongest determinant of sustainable urban development, supporting institutional theory by Pierre (2011), which emphasizes the role of governance structures in shaping developmental outcomes. This aligns with recent studies of the World Bank (2022), which highlight governance quality as a primary driver of urban sustainability.

Digital governance also demonstrates a significant effect, reinforcing Heeks' (2006) argument that ICT enhances efficiency and transparency. However, the moderate rating reflects persistent digital divides, consistent with OECD (2021) findings in developing countries.

Citizen participation, while significant, remains less influential, suggesting that participatory mechanisms are still evolving. This supports Fung and Wright's (2003) assertion that participation must move beyond tokenism toward meaningful engagement.

Qualitative findings further reveal that inter-agency coordination, limited digital infrastructure, and low digital literacy constrain the effectiveness of governance systems. These findings suggest that sustainable urban development requires not isolated interventions but an integrated governance ecosystem.

Synthesis of Results

The findings confirm that governance frameworks are the strongest determinant of sustainable urban development, supporting institutional theory, which emphasizes the role of governance structures in shaping development outcomes (Pierre, 2011). This aligns with the recent global studies by the World Bank (2022), which identify governance quality as a key driver of urban sustainability.

Digital governance also shows a significant influence, supporting Heeks (2006), who argues that ICT enhances efficiency and transparency in public administration. However, its moderate rating reflects persistent digital divides, consistent with OECD (2021) findings in developing contexts.

Citizen participation, although significant, remains less influential, suggesting that the participatory mechanisms are still evolving. This supports Fung and Wright (2003), who emphasize that participation must move beyond tokenism toward meaningful engagement.

SUMMARY

The study examined the role of governance frameworks, digital governance, and citizen participation in promoting sustainable urban development in selected emerging Philippine cities, including Davao City, Koronadal City, and General Santos City. The findings revealed that governance frameworks are generally strong, particularly in terms of policy formulation and implementation. However, notable gaps persist in inter-agency coordination, transparency, and resource allocation, which constrain the overall effectiveness of governance systems. Digital governance and citizen participation were also found to be present but unevenly implemented, indicating the need for stronger integration and innovation in urban governance practices.

CONCLUSIONS

The study concludes that governance frameworks significantly influence sustainable urban development and emerged as the strongest predictor ($\beta = 0.45$). Digital governance enhances efficiency and transparency in public service delivery; however, its implementation remains inconsistent due to limitations in infrastructure and institutional capacity. Citizen participation contributes to inclusivity and democratic engagement, yet it continues to rely largely on traditional mechanisms rather than digital platforms. Overall, sustainable urban development is best achieved through the integrated application of governance, digitalization, and participatory approaches.

POLICY RECOMMENDATIONS FOR LGUs

In response to the findings, the study recommends that local government units (LGUs) strengthen inter-agency coordination mechanisms by establishing integrated urban planning bodies. Investments in digital infrastructure and smart city initiatives, such as GIS-based planning systems, should be prioritized to improve efficiency and data-driven decision-making. LGUs are also encouraged to develop successful digital participation platforms to enhance citizen engagement and feedback mechanisms. Furthermore, capacity-building programs should be implemented to equip LGU personnel with competencies in digital governance institutions. Lastly, inclusive urban planning should be promoted through participatory budgeting and regular community consultations to ensure that development initiatives are responsive to the needs of the stakeholders.

Implications

The findings of the study present important implications across theoretical, practical, and policy dimensions. Theoretically, the study supports the integration of governance, digital, and participatory models in explaining sustainable urban development. Practically, it provides guidance for LGUs in enhancing urban management, service delivery, and citizen engagement. From a policy perspective, the results support the initiatives of the Department of Information and Communications (DICT) and contribute to the advancement of national urban development strategies aimed at fostering inclusive, resilient, and sustainable cities.

REFERENCES

1. Arnstein, S. R. (1969). A ladder of citizen participation. Journal of the American Institute of Planners, 35(4), 216–224. https://doi.org/10.1080/01944366908977225
2. Brillantes, A. B., & Fernandez, M. T. (2011). Restoring trust and building integrity in government. International Public Management Review, 12(2), 55–80.
3. Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approach (4th ed.). Sage Publications.
4. Fung, A., & Wright, E. O. (2003). Deepening democracy: Institutional innovations in empowered participatory governance. Verso.
5. Gil-Garcia, J. R. (2012). Enacting electronic government success: An integrative study of government-wide websites. Springer.
6. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis (7th ed.). Pearson.
7. Heeks, R. (2006). Implementing and managing eGovernment. Sage Publications.
8. Irvin, R. A., & Stansbury, J. (2004). Citizen participation in decision making. Public Administration Review, 64(1), 55–65.
9. Newman, P., & Kenworthy, J. (1999). Sustainability and cities: Overcoming automobile dependence. Island Press.
10. OECD. (2021). The governance of digital government: Driving digital transformation. OECD Publishing. https://doi.org/10.1787/4b5f5bb7-en
11. OECD. (2022). Digital government review of public sector innovation. OECD Publishing. https://doi.org/10.1787/7b6c8f6e-en
12. Pelino, H. Y. B., & Protacio, A. (2026). Career stagnancy: A phenomenological inquiry into unpromoted teachers. American Journal of Interdisciplinary Research and Innovation, 5(1). https://doi.org/10.54536/ajiri.v5i1.6990
13. Pelino, H. Y. B. (2025). Managing risks in education: A qualitative study on risk management practices. Globus Journal of Management Studies. https://doi.org/10.46360/cosmos.ahe.520252006
14. Pierre, J. (2011). The politics of urban governance. Palgrave Macmillan. https://doi.org/10.1057/9780230306501
15. Sharifi, A. (2021). Urban sustainability assessment: An overview. Sustainable Cities and Society, 65, 102576. https://doi.org/10.1016/j.scs.2020.102576
16. United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development.

17. United Nations. (2022). E-government survey 2022: The future of digital government.
18. UN-Habitat. (2020). World cities report 2020: The value of sustainable urbanization.
19. World Bank. (2022). World development report 2022: Finance for an equitable recovery. World Bank Publications. https://doi.org/10.1596/978-1-4648-1730-4