

Kigali City Development Situation Assessment, 2018-2024: An Assessment of Measurable Indicators of Socio-Economic Development Performance, Sectoral Efficiency, Infrastructure Quality and Improvement Requirements, Policy Impacts, Resident Experiences and Perceptions

Jonathan Nturo

Department of Information Technology, Faculty of Computing and Information Sciences, University of Lay Adventists of Kigali, Kigali, Rwanda

Email: jonathannt5@gmail.com

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Abstract

Kigali City, the vibrant capital of Rwanda, has embarked on an ambitious journey to transform itself into a model of sustainable urbanization and socio-economic development under the Kigali City Integrated Development Strategy (2018-2024). While aligning with the next NST2, SSPs, this report represents a comprehensive roadmap aiming at fostering city economic growth, enhancing quality of life, and ensuring environmental sustainability. By aligning with national, regional and global development agendas, the report outlines key initiatives and strategic interventions across multiple sectors, with a focus on inclusivity and innovation in various development areas to consider for the next City Development Strategy. The development of CDS Process employs a mixed-methods approach, integrating both quantitative and qualitative data. Quantitative analysis was to assess measurable indicators of socio-economic performance, sectoral efficiency, and infrastructure quality and improvement requirement. Qualitative methods, including interviews and focus groups, provided deeper insights into policy impacts and resident experiences and perceptions. This paper recommends the development of City Development Strategy Process that employs a mixed-methods approach, integrating both quantitative and qualitative data with measurable indicators of socio-economic perfor-

mance, sectoral efficiency, and infrastructure quality and improvement requirement. The report focused on assessing the CoK development pillars: Economic Transformation Pillar, Social Transformation Pillar Transformational Governance Pillar, Alignment with Second National Strategy for Transformation (NST2) and Other Sector Strategies as well as Cross Cutting Areas (CCAs). The same, this report recommend deeper insights into policy impacts and resident experiences and perceptions. Main references of this report in Desk research included City of Kigali Integrated Development Strategy Assessment Report (2018-2024), AfDB & CoK: Kigali City Action Plan (2024-2039), Fifth Population and Housing Census, Rwanda among others. Since July 2018, the City District Development Strategy 2018-2024 has guided the City of Kigali and its Districts in implementing key priorities and action plans. The City of Kigali (CoK) is now a decentralized entity with administrative and financial autonomy, as per law n°22/2019 of 29/07/2019. The previously autonomous Gasabo, Kicukiro, and Nyarugenge Districts were administratively reformed and unified under one entity of the City of Kigali during the NST1 period. The report recommended that the CoK must position itself to better address issues facing major urban areas in emerging economies, such as informal settlements, slum dwellings, traffic congestion, and employment challenges. This report informs the new City Development Strategy (2024-2029) to emphasize a strategic and integrated approach to anticipating, managing, and resolving these issues. To do so, the strategy needs to align with various national and international policies to guide Kigali's development and progress over the next 5 years (2024 to 2029). Finally the report recommends strengthening the achievements of IDS (2018-2024) aligning with 15 Year Kigali City Action Plan and nine (9) key interventions areas were identified to inform the next CDS (2024-2029): urban agriculture and food security, diversification of cultural centers, promotion of hospitality services and ecotourism, inclusive and green urbanization, economic growth and key sectors, ICT adoption and smart city initiatives, social services: education, health, and community well-being, environmental sustainability and climate resilience, governance and stakeholder engagement.

Keywords

Economic Growth, Governance, Integrated Development, Digital Transformation, Sustainable Urban Development, Infrastructure Quality, Policy Impact Assessment, Kigali City Development Strategy (CDS), Smart City Initiatives, Environmental Sustainability

1. Introduction

Known for its clean streets, organized urban planning, and forward-looking governance, Kigali has set ambitious goals to shape its future. Since 2018, the city's development strategy prioritizes sustainable urban growth, social inclusivity, and economic resilience. To achieve these objectives, Kigali aims to focus on fostering urban agriculture, diversifying cultural centres, promoting hospitality services and

ecotourism, and embracing inclusive, green urbanization among others in city development strategy, CDS (2024-2029). As the city undergoes rapid urbanization, access to essential services and sustainable infrastructure becomes a cornerstone of its growth. This report aims at informing key strategic interventions of the next CDS which aligns with Kigali City Action Plan, sector strategies, regional and international development goals. According to [City of Kigali \(CoK\) \(2024\)](#) City of Kigali Vision was revised to meet the holistic development journey as “A world class centre of urban excellence as an inclusive and resilient city with a vibrant, liveable, and green economy” with a long-term. The City of Kigali Mission was revised as “Build and sustain a city of character, vibrant economy, and diversity through strong partnerships with stake-holders to provide responsive, rapid and effective urban development”.

Reliable water supply, improved sanitation, effective waste management, and access to clean energy are pivotal to supporting Kigali’s burgeoning population. These services not only enhance the quality of life for residents but also contribute to environmental conservation and resilience against climate change. Recognizing these imperatives, Kigali’s strategy emphasizes innovative solutions and participatory approaches to infrastructure development.

This document presents a detailed overview of Kigali’s essential infrastructure components through a series of infographic charts. It highlights key data and insights related to water supply, sanitation, waste management, and energy access. Each aspect has been meticulously analyzed to reflect the city’s commitment to equitable and sustainable development. The aim is to provide stakeholders, policymakers, and residents with a clear understanding of Kigali’s current status and future prospects in these critical areas.

By leveraging this comprehensive analysis, Kigali seeks to inspire collaboration and investment that aligns with its vision of becoming a modern, inclusive, and green city. Through targeted interventions and strategic partnerships, Kigali is poised to address pressing challenges while seizing opportunities to enhance urban living standards and ensure environmental sustainability. The following sections delve into the specifics of each domain, offering actionable insights and benchmarks to track progress toward the city’s development goals.

2. Literature Review

2.1. Introduction

A report of the Ministry of Local Government ([MINALOC, 2023](#))¹ identified 14 potentialities the City of Kigali is facing namely: (1) There are economic opportunities in the sector because of the big market potential for food items in the city of Kigali; (2) Promotion of high yielding crop/animal varieties and techniques to improve the earning from subsistence agriculture; (3) Promote domestic tourism; and promote the conservation of heritage sites around the city of Kigali; (4) Promote creation of SMEs; (5) Youth committed and ready to work for the National

¹Rwanda Ministry of Local Government ([MINALOC, 2023](#)).

interest (33% of the total population are 16 - 30 years old); (6) Socio-economic development created from improving transport; (7) Construction of the centralized sewage system and solid waste management system; (8) The City is provided with many growth opportunities in terms of available undeveloped land, and low-density areas with potential to be redeveloped; (9) The expansion of the National carrier (RwandAir) to many destinations has also opened up a new window of investment and tourism in Kigali; (10) Demarcation of green spaces and Beautification of parks and sides of the roads; (11) Potential investors in Health; (12) Availability of health insurance schemes; good health policies; (13) Availability of libraries to promote the culture of reading and writing; (14) Good government policies and program for sport and culture promotion.

Comprehensive Development Strategies (CDS) serve as an essential tool for urban planning, addressing rapid urbanization, and fostering sustainable growth. The framework of a CDS is built upon holistic integration of economic, social, and environmental dimensions. Globally, successful examples of such strategies emphasize inclusive urbanization, economic diversification, and environmental resilience. As noted by the [World Bank \(2020\)](#), “cities that adopt comprehensive and integrated planning frameworks are better positioned to address 21st-century challenges.” For Kigali City, a CDS provides an opportunity to address unique challenges such as population growth, urban sprawl, and socio-economic inequalities while leveraging its potential as a regional economic hub.

2.2. Urban Agriculture Development

Urban agriculture is increasingly recognized as a critical component of sustainable urban development. Studies by the Food and Agriculture Organization (FAO) highlight its role in enhancing food security, reducing urban poverty, and promoting environmental sustainability. According to [Mougeot \(2006\)](#), “urban agriculture not only addresses food insecurity but also strengthens community resilience and environmental sustainability in cities.” Cities like Singapore and Havana have effectively integrated urban agriculture into their planning frameworks, demonstrating its potential to improve urban resilience. For Kigali, urban agriculture aligns with Rwanda’s Vision 2050 goals by offering opportunities to address food insecurity and unemployment, particularly for low-income communities. The literature underscores the need for policy incentives, capacity-building programs, and urban land-use planning to mainstream urban agriculture into Kigali’s development strategy.

2.3. Diversification of Cultural Centers

Cultural diversification is a cornerstone of creating vibrant and inclusive cities. The United Nations Educational, Scientific and Cultural Organization ([UNESCO, 2016](#)) emphasizes that cultural hubs drive tourism, preserve heritage, and foster social cohesion. [Florida \(2002\)](#) argues that “creative cities that invest in cultural assets and diversity attract talent and fuel economic growth.” African cities like Dakar and Cape Town have utilized cultural diversification to boost their creative

economies and attract international tourism. Kigali's rich cultural heritage and growing arts scene present an opportunity to position the city as a regional cultural destination. Literature suggests that investment in infrastructure, public-private partnerships, and digital platforms can amplify the reach and impact of cultural centers in Kigali.

2.4. Promotion of Hospitality Services and Ecotourism

The hospitality and tourism sectors are vital for Kigali's economic development. According to the World Travel and Tourism Council (WTTC, 2023), tourism contributes significantly to GDP and employment in developing economies. Rwanda's existing ecotourism framework centered on attractions like Volcanoes National Park and Nyungwe Forest has positioned the country as a global leader in sustainable tourism. Honey and Krantz (2007) emphasize that "ecotourism not only supports conservation but also provides economic benefits to local communities." However, expanding hospitality services in Kigali requires addressing gaps in service quality, infrastructure, and accessibility. Literature points to the importance of workforce training, branding strategies, and policy reforms to enhance the city's competitiveness as a tourism destination.

2.5. Inclusive and Green Urbanization

Inclusive urbanization ensures that all residents, regardless of socio-economic status, benefit from urban growth. Green urbanization, on the other hand, focuses on minimizing environmental impact. The World Bank (2019) and UN-Habitat (2020) advocate for integrated approaches combining these principles to create sustainable cities. Kigali's progress in green urbanization evidenced by initiatives such as car-free zones and green buildings provides a strong foundation. Nonetheless, challenges remain in affordable housing, public transport, and waste management. Best practices from cities like Curitiba and Copenhagen highlight the need for participatory planning, innovative financing mechanisms, and enforcement of environmental regulations to achieve inclusive and green urbanization.

2.6. Access to Finance for Recovery and Resilience

Access to finance is critical for fostering resilience and recovery, especially in the context of economic shocks like the COVID-19 pandemic. The International Monetary Fund (IMF) and World Bank (2021) report stated that small and medium enterprises (SMEs) often face barriers to accessing credit, hindering their potential to contribute to economic recovery. Demirgüç-Kunt et al. (2018) argue that "financial inclusion drives economic growth and reduces income inequality by enabling access to credit and financial services." For Kigali, enhancing financial inclusion can drive entrepreneurship and innovation. Literature highlights the effectiveness of microfinance institutions, digital banking platforms, and government-backed credit schemes in expanding access to finance. Additionally, integrating financial literacy programs into community development initiatives can

enhance the long-term impact.

2.7. Understanding of Sector-Specific Patterns

- **Water Supply and Sanitation:** Access to improved water sources and sanitation facilities is a key determinant of public health and quality of life. The World Health Organization (WHO) identifies investments in water infrastructure as essential for urban resilience. Gleick (1996) argues that “ensuring access to clean water and sanitation is not only a human right but a foundation for sustainable urban development.” Kigali’s initiatives, such as expanding piped water networks and promoting eco-friendly sanitation systems, align with global standards but require sustained funding and community engagement.
- **Energy Access and Sustainability:** Expanding access to electricity and promoting clean energy sources are critical for sustainable urbanization. Studies from Sub-Saharan Africa highlight the role of decentralized renewable energy systems in addressing urban energy needs. Kigali’s adoption of solar energy and energy-efficient technologies demonstrates progress, though scaling these initiatives necessitates supportive policies and private sector collaboration.
- **Waste Management:** Solid waste management is a growing concern in rapidly urbanizing cities. Kigali’s zero-waste policy and community-driven waste collection programs are commendable but face challenges related to infrastructure and public awareness. Ellen MacArthur Foundation (2013) emphasizes the importance of “adopting circular economy principles to reduce waste and enhance resource efficiency”.

2.8. ICT Adoption and Digital Transformation

Digital technologies are transforming urban governance and service delivery. Kigali’s Smart City initiative showcases the potential of ICT in improving mobility, e-governance, and public safety. However, disparities in digital literacy and internet access persist. Research underscores the importance of addressing the digital divide through affordable internet, capacity-building programs, and inclusive technology design. As Castells (1996) notes, “The digital divide is not just about access to technology but also about the ability to use it effectively to participate in the network society.” As part of its vision to become a smart city, Kigali will continue to embrace ICT adoption across all sectors. The development strategy to include plans to enhance digital infrastructure, expand internet connectivity, and promote e-governance. Smart city initiatives, such as intelligent traffic management systems and digital public services, will improve operational efficiency and citizen engagement. By leveraging technology, Kigali aims to enhance urban mobility, increase access to information, and drive innovation.

The same, Priority Area 14: Foster digital transformation across key economic sectors: For Rwanda to achieve a digitally advanced society and economy, it is essential to develop a skilled workforce and create a conducive environment for digital innovation and entrepreneurship. By investing in digital literacy and skills

training, the ICT sector aims to empower citizens to actively and effectively participate in the digital economy. A skilled workforce, supported by a thriving innovative ecosystem, is envisaged to not only unlock new economic opportunities, but also boost productivity, and increase tech exports. Prominently under this priority, the ICT sector aims to achieve universal digital literacy, train 1.5 million citizens in ICT skills, and create over 50,000 digital jobs. The contribution of the City of Kigali in achieving the national target is the training of 546,519 citizens during the next five years. The Outcome 14.1.: Increased digital literacy and digital skills development for a globally competitive workforce: The City of Kigali recognizes ICT prevailing issues including limited access to training and a low digital literacy rate, especially among adults. To resolve these challenges, the CoK aims to empower citizens to actively and effectively participate in the digital economy to unlock new economic opportunities, boost productivity, and increase tech exports. To achieve this target, over the next five years, the CoK aims to achieve universal digital literacy by attaining cumulatively 546,519 citizens trained in ICT skills. Finally, this paper proposes “Priority Key Strategic Interventions” to include not limited to 1) Train citizens in basic coding and advanced ICT skills and 2) universal basic digital literacy.

2.9. Future Directions and Knowledge Gaps

While existing literature provides valuable insights, several knowledge gaps remain. These include the long-term socio-economic impacts of urban agriculture, the scalability of green urbanization initiatives, and the effectiveness of financial inclusion programs. Further research is needed to explore innovative financing models, community-led urban development strategies, and the consideration of citizen participation into urban planning. Collaborative efforts between academia, government, and civil society can bridge these gaps and inform Kigali’s City Development strategy implementation.

This document highlights the importance of a multi-dimensional approach to urban development, integrating economic growth, social inclusion, and environmental sustainability. For Kigali City, the Development strategy framework offers a roadmap to harness its potential while addressing urban challenges. By drawing on global best practices and adapting them to local contexts, Kigali can position itself as a model for sustainable and inclusive urbanization in Africa. Through its holistic Kigali city Master plan to guide Kigali city planners in their plans to accommodate a population of 3.8 million residents and provide 1.8 million jobs by 2050 (CoK, 2024).

2.10. Understanding Kigali City Action Plan—KCAP (2024-2030) Assumptions for the Proposed Vision

A report of Kigali City Action Plan (2024) contributed in City of Kigali (CoK) revision of its Vision: Kigali Yacu—Our Kigali^{2!} (Liliane Uwanziga Mupende,

²Liliane Uwanziga Mupende (2024): Kigali City Urban Maestro: Kigali Yacu—Our Kigali: https://urbanmaestro.org/wp-content/uploads/2021/03/urban-maestro_kigali-yacu-our-kigali_l-u-mupende.pdf

2024). To become “A world class centre of urban excellence as an inclusive and resilient city with a vibrant, liveable, and green economy” with a long-term Mission: *Build and sustain a city of character, vibrant economy, and diversity through strong partnerships with stakeholders to provide responsive, rapid and effective urban development.* With its KCAP, the city Should capture the city’s overarching development ambition over the next 10 - 15 years. City of Kigali designed horizon based on existing main CoK strategy and plans, as well national strategies. The CoK has added details on the aspirations of the City of Kigali in next development projections. By strengthening the concept of sustainability by adding a specific pillar: Sustainable Transformation-Splitting Infrastructure and Economic Pillars to provide sector-wise objectives which will clearly be related to Actions; Elaborate on the Transformative Governance Pillar to be more specific and related to an Urban Action Plan. Adding some concepts raised during the City Action Plan process to promote inclusiveness and gender equality (City of Kigali, 2024).

3. Methodology

3.1. Research Questions

The study was guided by the following research questions:

- 1) Economic Development: What are the key factors influencing economic growth in each CoK district?
- 2) Sectoral Impact: How do policies in different sectors affect service delivery and performance within CoK districts?
- 3) Infrastructure and Quality of Life: What is the relationship between infrastructure availability and the quality of life in various CoK districts?

3.2. Research Approach

This study employed a mixed-methods approach, integrating both quantitative and qualitative data. Quantitative analysis was to assess measurable indicators of economic performance, sectoral efficiency, and infrastructure quality. Qualitative methods, including interviews and focus groups, provided deeper insights into policy impacts and resident experiences.

3.3. Scope

- **Geographical Scope:** All districts under the Council of Kigali City (CoK) jurisdiction.
- **Sectoral Scope:** Focus on key sectors such as Education, Healthcare, Infrastructure, and Economic Development.
- **Temporal Scope:** Data have been collected as of October 2024 to December 2024, providing a current snapshot of each district and sector.

3.4. Research Design

- **Design Type:** Cross-sectional study to capture data at a single point in time across all districts and sectors.

- **District-Level Analysis:** Each CoK district has been examined individually to identify unique factors and common trends.
- **Sector-Level Analysis:** Within each district, the selected sectors have been analysed to evaluate policy effectiveness and service delivery.
- **Comparative Analysis:** Comparative methods have been used to identify disparities and similarities between districts and sectors.

3.5. Sampling Methodology for CoK Development Situation Assessment

To ensure a statistically valid and representative sample for CDS Study, we employed Slovin's formula, a probabilistic approach commonly used when estimating sample sizes from large populations. The target population consists of respondents drawn from both rural and urban sectors across the three districts of Kigali City: Kicukiro, Gasabo, and Nyarugenge. The sample for this study employed Slovin's formula, a probabilistic approach commonly used when estimating sample sizes from large populations. The target population consists of respondents drawn from both rural and urban sectors across the three districts of Kigali City: Kicukiro, Gasabo, and Nyarugenge as described in **Table 1**.

Table 1. CoK residents distribution by districts.

CoK/Districts	Count as of 2022			Percentage (%)		
	Total	Urban	Rural	Total	Urban	Rural
Nyarugenge	374,319	315,899	58,420	100	84.4	15.6
Gasabo	879,505	714,069	165,436	100	81.2	18.8
Kicukiro	491,731	487,200	4531	100	99.1	0.9

National Institute of Statistics of Rwanda³ (NISR), 2022.

3.6. Sample Size Calculation

The Cochran's formula has been used to determine an ideal sample size as the population given above is large and we wanted to estimate proportions with a certain level of confidence and precision.

$$n_0 = \frac{Z^2 \cdot p \cdot (1-p)}{e^2}$$

where:

- n_0 = sample size.
- Z = Z-score (based on desired confidence level, 1.96 for 95%).
- p = estimated proportion of the population (used 0.5).
- e = desired margin of error (0.05 for $\pm 5\%$).

Based on official findings from the recent publications from NISR, the estimated total target population (n_0) from which respondents will be drawn consists of 480 individuals across the three districts. Thus, a sample size of 430 respondents

³Fifth Population and Housing Census-2022.

is required to achieve a 95% confidence level with a 5% margin of error.

Using the above formula the sample size is calculated below:

$$n_0 = \frac{(1.96)^2 \cdot 0.5 \cdot (1-0.5)}{(0.05)^2} = 384.16 \text{ for our study, we used 430 respondents.}$$

The sample size distribution is presented in **Table 2**.

Table 2. Sample distribution by CoK districts.

District	Urban Population	Rural Population	Urban %	Rural %	Sample Size Allocated
Nyarugenge	315,899	58,420	84.4	15.6	430*16.3% = 70
Gasabo	714,069	165,436	81.2	18.8	430*46.2% = 198
Kicukiro	487,200	4531	99.1	0.9	430*37.5% = 162
Total	1,517,168	228,387	-	-	430

NISR, 2022.

Each district’s sample was further broken down into urban and rural sectors according to population distribution: Given Cochran’s calculations, the study has adopted a sample size of approximately 430 respondents. The sample has been proportionally allocated across the three districts and further categorized into urban and rural sectors. Stratified random sampling has been applied to ensure representation from both urban and rural sectors while choosing every Kth respondent from the Household in the provided range of area.

3.7. Data Collection Methods

Quantitative Data: Surveys and official records from governmental and sector-specific databases. **Qualitative Data:** Quantitative Survey, Semi-structured interviews of key Informants and focus groups with key stakeholders, including policymakers, sector managers, and residents.

3.8. Sampling of Sector, Cell and Villages

As per William G. Cochran (“Sampling Techniques”), a random sampling of cells and villages is adopted in cascading as a multi-stage sampling technique designed to enhance the representativeness of the study’s population parameter. Here’s a brief description of its application which has helped us carry out this extensive field task:

A. First stage: Selection of cells

The cells within Kigali City were stratified based on relevant criteria such as geographic location, population density, or socio-economic characteristics. A random sampling method was used to select a representative subset of cells to ensure diverse coverage.

B. Second stage: Selection of villages

Within each selected cell, villages were identified as sub-units for further sampling. A similar random sampling process was applied, selecting villages to reflect

the diversity within each cell.

C. Final stage: Selection of respondents

From the chosen villages, respondents were selected using systematic random sampling. Every household or individual was selected from a pre-determined sampling frame, where k was meant to be calculated as the total population of the sampling frame divided by the desired sample size. This systematic approach has revealed to be handy and successfully minimize bias and ensure proportional representation across all strata.

3.9. Data Analysis

Quantitative Analysis: Here inference of causality patterns has been drawn to proceed with Statistical techniques such as regression analysis, ANOVA, and factor analysis to test hypotheses related to the research questions. **Qualitative Analysis:** Thematic analysis to identify recurring themes and insights from interviews and focus groups.

3.10. Ethical Considerations and Demographic Characteristics

Throughout the whole process of this study's data collection, the following ethical considerations were scrupulously respected to avoid common research misconduct: Ensure informed consent from all participants and achieve full compliance to standards of CoK & NISR study protocols. Maintain confidentiality and anonymity of respondents. Secure data storage and handle all information in compliance with ethical guidelines. When selecting rural and urban sectors within a wide range of districts' sectors for this study, criteria were mainly based on specific objectives and contexts typically considered as follows:

A. DEMOGRAPHIC CHARACTERISTICS: High population density for urban sectors; lower density for rural sectors. Furthermore, sectors experiencing rapid growth may be prioritized for urban studies or interventions. Additional population structures like the average household size, household types, and dependency ratios have been also considered. This varies from dominant industries or livelihoods, such as agriculture in rural areas or services in urban sectors. We notice that Sectors experience varying levels of income and poverty to capture disparities. Basically, Urban sectors often have diverse job markets; rural sectors may rely on subsistence farming.

B. ACCESS TO INFRASTRUCTURE AND SERVICES: Representative counts have been purposively taken in normal distribution by Presence of roads, public transport systems, and accessibility to nearby commercial centers, basic services like Availability of water, sanitation, electricity, healthcare, and education facilities. Digital connectivity like Internet and ICT access, critical for urban and semi-urban sectors. Factors like Proximity to urban centers are also critical for Sectors close to urban areas may exhibit peri-urban characteristics. For instance, urban sectors prioritize areas with higher economic activity, infrastructure development, and challenges like congestion or housing shortages. As opposed to rural sectors

whose main concerns are agricultural potential, rural poverty, and connectivity challenges. By using these criteria, decision-makers can ensure that selected sectors represent diverse conditions and provide insights into both challenges and opportunities across rural and urban areas.

3.11. Selection of Key Informants Interviews—KIIS

Key informants were sampled randomly by selecting at least four respondents from each line ministry, and were targeted from community level authorities, public institutions, FBOs and/or private sectors. A total of 12 key informants were reached for this research.

3.12. Gender and Inclusiveness throughout CDS Survey Sampling

This study undertaking has strived to reach normally distributed number of respondents by gender across all Districts of the City and key informants with disability inclusion lenses, since this is one of key drivers that will guide the next five years development priorities for championing the criteria of ensuring that none is left behind within our sustainable city development interventions. In nutshell, the data collection was conducted from 394 respondents to quantitative survey questionnaires, 10 sets of FGDs and 12 Key Informant Interview sessions.

3.13. Data Collection, Analysis and Reporting

The elaboration of this Report has employed MS Forms, Kobo collect, Pictochart, Microsoft Excel Sheet and SPSS_25 to collect & analyze quantitative data from the field survey and secondary data gathering. Content analysis was used to analyze all qualitative data from FGDs and key informant interviews. A group of around 20 data enumerators and established leadership i.e., team supervisors among enumerators have been deployed for a couple of weeks and have greatly contributed to prompt smart report submissions, therefore availing an integrated database to serve as a basis for more cleaning and validation exercises for improved data quality data assurance. Kobo toolbox was used throughout the data collection, which contributed to minimizing any errors and increasing accuracy of data collection. Finally, the researcher has initiated a social media platform which enabled key role players to coordinate data collection and provide timely support to enumerators when required.

Study Limitation

While conducting this Development Strategy Assessment, and right from convening about its inception, some limitations were encountered. The main limitation was the very scope of the assignment which has been revealed to be very wide and multi-dimensional in nature, time constraints and budget which has led to reconsidering the years it has to be covering. This resulted in the fact that our elaboration of strategies has always been subject to emerging issues for constant need to be reflected with high risk of keeping several versions with unforeseen editing. This research has also faced issues of conflicting appointments of urban citizens

who happen to be always busy rushing for their business commitments, which affected the participation of the respondents especially in trade areas. However, it is noteworthy to underline the fact that alternative solutions to these limitations have been discussed and agreed upon. All limitations have been systematically recorded and their remedial actions were conveniently documented to serve as important lessons learned in further research works moving forwards.

4. Research Findings

The findings presented herein offer critical insights into key aspects of Kigali's transport and urban systems. They highlight patterns in accessibility, adoption, and preferences for e-mobility, as well as challenges and opportunities for inclusive urban transformation. Emphasis is placed on understanding the lived experiences of residents, their engagement with existing infrastructure, and the broader implications for sustainable urban growth. Key themes emerging from the analysis include: Transport Development: where patterns of accessibility, infrastructure quality, and public transport utilization are presented in details; E-Mobility Trends aimed at presenting levels of awareness, adoption rates, and perceptions of e-mobility among citizens and Inclusivity in Urban Transformation which portray an assessment of socio-economic disparities, urban planning priorities, and the effectiveness of citizen participation in shaping policies. These findings aim to inform policymakers, urban planners, and stakeholders, providing actionable recommendations for fostering a sustainable and inclusive urban environment in Kigali City. Field facts also investigate the dynamics of peripheral Vs urban settlements, respondents' preferences for future development programs as well as diversification of integrated business opportunities, sustainable green growth and off firm job creation in Kigali City, with a strong emphasis on citizen-centered approaches.

4.1. Respondents Profile

The key respondents' profile in this section includes occupation & geographical locations, characteristics of respondents assessed such as sex, education, age, marital status, disability and households' size and categories.

Gender Distribution: 49% Male: Nearly half of the respondents in the assessment were male, showing a balanced representation of genders. 48% Female/Female respondents account for a nearly equal proportion, ensuring gender inclusivity in the field data collection. This near-equal split suggests that the data is not skewed by gender and reflects diverse perspectives, which is an ideal situation for inclusive ownership of City Development Strategy findings.

Education Level: 27% Secondary Level: The largest group of respondents had completed secondary education, indicating a moderate level of education among the population. 17% O'Level: A significant proportion had basic secondary education, reflecting a transitional stage of educational attainment. 17% Tertiary: A notable share of respondents had tertiary education, highlighting advanced edu-

cational opportunities for some groups. 16% Primary: A substantial portion had completed primary education, showing foundational literacy levels. 7% None: A small percentage of the population had no formal education, pointing to educational accessibility challenges.

6% Pre-Primary or Lower Primary: A smaller group had minimal schooling, reflecting a prevailing early-stage education challenge. 5% Vocational Training: This implies that a small yet important segment received skills-oriented education. 2% Post-Tertiary: This showing that by a tiny proportion, an elite group attained higher levels of education, indicating a big gap in advanced learning pathways. These findings highlight normally distributed but varied educational attainment levels and provide CoK insights into capacity-building and literacy needs.

Age Group Distribution: 1) 32% Aged 25 - 34: This group constitutes the largest share of respondents, reflecting a youthful and economically active demographic. 2) 21% Aged 18 - 24: A significant portion falls within the younger working-age group, showcasing Kigali's potential for workforce growth. 3) 20% Aged 35 - 44: This group forms a stable mid-career demographic, contributing to economic productivity. 4) 14% Aged 45 - 54: A smaller but vital segment in the later stages of their careers. 5) 11% Aged 55+: This smallest proportion represents an elder age range of respondents, highlighting a relatively youthful population structure. These CDS results indicate a predominantly young population with implications for high level dynamism forecasted in employment, urban planning, and service provision.

Occupation of Respondents: In the context of Kigali's development strategy research, the survey highlights the varied roles that individuals occupy within the community, reflecting a blend of economic engagement and social responsibilities. 1) Trader or Business Owner (25%): The largest segment of respondents identified as traders or business owners. This indicates a robust entrepreneurial culture in Kigali, showcasing the significance of commerce and trade to the city's economy. These individuals play a crucial role in driving economic activity, providing goods and services, and contributing to job creation. 2) Other (22%): A noteworthy portion of respondents categorized their roles as "other", suggesting a variety of less-defined occupations or contributions that may not fit neatly into conventional categories but are still essential to community dynamics. 3) Farming (8%): Although urbanized, farming remains a vital occupation for some residents. This percentage reflects the importance of agriculture in sustaining local food supplies and supporting livelihoods within and around the city. 4) Parent or Caregiver (6%): This role underscores the social fabric of the community, emphasizing the importance of familial responsibilities and caregiving in the dynamics of community life. Caregivers are pivotal in nurturing the next generation and maintaining household stability. 5) NGO Representative (6%): The involvement of non-governmental organizations indicates a commitment to community service and development initiatives aimed at improving living conditions and addressing social issues. These representatives often act as a bridge between the community and

external support. 6) Government Official (4%): A small but significant number of individuals serve as government officials, which is crucial for governance and the implementation of community-focused policies and initiatives. 7) Community Leader (3%): Leaders within the community play an essential role in guiding local initiatives, promoting civic engagement, and fostering social cohesion among residents. 8) Investor or Entrepreneur (3%): This group expresses the growing trend of investment in Kigali, reflecting a forward-thinking approach to economic development and innovation within the community. 9) Students (5%) and Other (11%): Together, these categories represent the future of Kigali's workforce and the contributions of those not explicitly defined in other categories. Students are essential for educational growth, while the unspecified "other" category indicates a variety of roles contributing to the community's diversity. This narrative highlights the multifaceted nature of community roles in Kigali, emphasizing the collective effort in economic development, social responsibility, and governance that drives the city's growth and sustainability.

4.2. Analysis of City Development Core Indicators

These findings from the Kigali City development research highlight important community priorities regarding infrastructure development, reflecting a collective vision for enhancing living conditions and promoting sustainable growth. CoK citizens' development priorities & preferences were found to be ranked as follows:

- **Public Transportation (24%):** A quarter of respondents identified public transportation as a top priority. This indicates a strong demand for efficient, accessible transportation options that can facilitate mobility for residents. Improved public transport systems not only enhance daily commutes but also contribute to reduced traffic congestion and environmental sustainability.
- **Affordable Housing (24%):** Alongside public transportation, affordable housing is regarded as equally critical, with 24% of participants marking it as a priority. This underscores the urgent need for housing that is economically accessible, ensuring that residents can secure safe and quality living conditions. Lack of affordable housing can lead to overcrowding and increased living costs, which can adversely affect community stability and growth.
- **Water and Sanitation (19%):** With 19% of respondents highlighting water and sanitation needs, it is clear that access to clean water and proper sanitation facilities remains a pivotal concern. Reliable water supply and sanitary systems are essential for public health, enhancing the overall quality of life and community well-being in CoK.
- **Digital Connectivity (16%):** Reflecting the growing importance of technology in daily life, 16% of participants prioritized digital connectivity. This awareness of the need for robust internet and communication services indicates a recognition of the role that technology plays in education, business, and access to information. Enhancing digital infrastructure can foster innovation and economic opportunities in Kigali.

- Energy and Electricity (14%): Finally, energy and electricity are regarded as essential by 14% of respondents. Access to reliable power is fundamental for both residential and commercial activities. This priority highlights the need to ensure consistent energy supplies to support industrial growth and improve living standards.

Highlight of Achievements in Transport Sector: 1) Construction of roads: New roads were built, improving movement and traffic flow across the city. 2) Bus waiting times: Reduced from 30 minutes to 15 minutes, significantly improving the commuting experience. 3) Passenger shelters: Shelters were built to make waiting for buses more comfortable, especially in bad weather. 4) Introduction of electric buses: Eco-friendly buses were introduced, contributing to a greener transport system. 5) Construction of footbridges: Enhanced safety for pedestrians, making it easier and safer to cross busy roads.

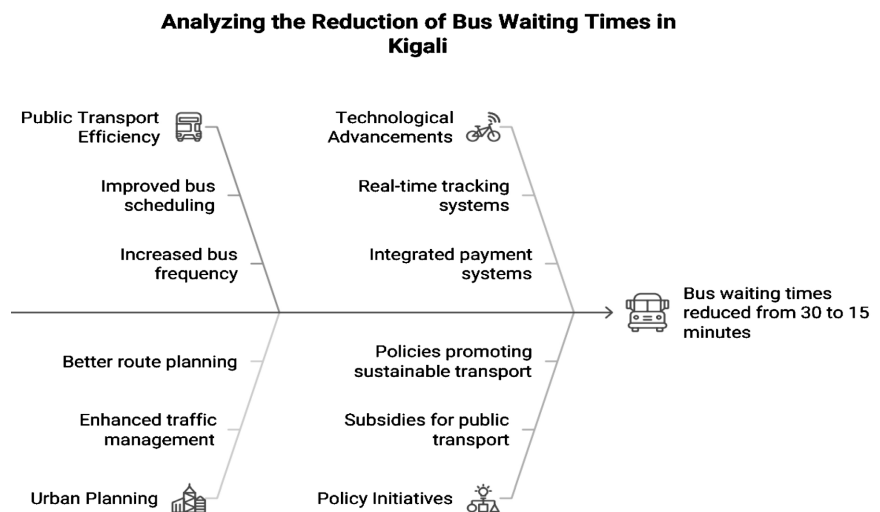


Figure 1. Bus waiting times in Kigali.

The findings from the Kigali City Development Survey indicate key priorities and challenges that aim to shape the city’s future to address Bus waiting times to include efficiency in transport, introducing improved bus scheduling, technological advancement and integrated payment systems coupled with better route planning, enhanced traffic management, urban planning guided by promoting policies in sustainable transport, subsidies and policy initiatives as well (Figure 1).

4.2.1. Social Issues Facing the City of Kigali

Access to Affordable Housing (37%) tops the list as the most critical social issue. This highlights the urgent need for affordable housing solutions amidst urbanization. Healthcare Services (17%), Education and Training (15%), Crime and Safety (14%), and Social Inclusion (12%) follow. These figures indicate a multi-faceted approach is essential in tackling social disparities to create a more equitable urban setting. Implication: The focus on affordable housing suggests that any urban development strategy must prioritize this aspect to provide a sustainable living en-

vironment. This aligns with research questions aimed at identifying urban challenges and potential solutions.

4.2.2. Barriers to Accessing Digital City Services

Lack of Internet Access (28%) and Limited Digital Literacy (25%) are the main barriers, suggesting that the shift toward digital governance poses challenges for residents, especially in accessing city services. Other concerns include data privacy (14%) and a preference for in-person services (10%). Implication: Addressing digital literacy and internet access through decentralization of IREMBO services for instance is expected to keep accelerating this trend and be vital for promoting inclusivity in urban services, aligning with research questions concerning access to information and technology in urban settings.

4.2.3. Smart City Initiatives

Smart Traffic Management (19%) and Digital Public Services (18%) are the most favoured initiatives. This indicates a clear interest in enhancing urban mobility and service delivery through technology. Implication: Investment in smart technologies can significantly improve urban infrastructure and efficiency, which resonates with research questions about technological integration in urban planning.

4.2.4. Governance Challenges

Public Participation (29%) and Efficiency in Service Delivery (25%) are identified as major governance challenges. This highlights the need for citizen engagement and effective management in urban governance. Implication: Enhancing transparency and public involvement will foster trust and collaboration, which are pivotal for effective governance, directly linking to research questions on governance efficacy.

4.2.5. Environmental Issues

Air Pollution (22%) is the primary concern, with Water Pollution (14%) and Waste Management (19%) also highlighted. These findings stress the urgency of addressing environmental sustainability in urban strategies. Implication: A pressing focus on environmental issues shows the necessity for sustainable practices and policies, corresponding to research questions about environmental sustainability and urban development.

4.2.6. Integration with Previous Findings

The previous findings from the Kigali City Development Strategy include: 1) Economic Growth Prioritization (51%): Residents emphasize that economic growth will underpin all other aspects of urban development. This echoes the concern for affordable housing and effective governance, suggesting that economic strategies must be linked to social and environmental policies. 2) Sectoral Priorities for Development: Identifying technology and manufacturing as crucial sectors aligns with the need for digital services and smart city initiatives. It suggests that prioritizing these sectors can stimulate economic development while enhancing digital

engagement. 3) Road Infrastructure Evaluation: High satisfaction regarding road improvements connects with public feedback on smart traffic systems, reinforcing the idea that efficient transportation networks are critical for economic and urban development.

4.2.7. Economic Growth and Job Creation

A majority of respondents (51%) believe that economic growth and job creation are the foundational elements upon which all other urban development efforts should rely.

4.2.8. Research implications

The alignment of these findings with overarching research questions reveals several implications for urban development strategies: 1) Holistic Development Approach: Strategies should address socio-economic disparities, technological barriers, and environmental challenges. This creates a framework for integrated urban planning. 2) Public Participation and Inclusivity: Enhancing citizen engagement in decision-making fosters transparency and accountability, ensuring that urban development reflects the community’s needs. 3) Investment in Technology and Infrastructure: Prioritizing smart initiatives, digital literacy, and infrastructure will support economic growth, improve service delivery, and advance environmental sustainability. In conclusion, these findings point toward a comprehensive framework for Kigali’s Urban Development Strategy 2024-2029, underscoring the critical need for an integrated approach that balances economic growth, social equity, technological advancement, and environmental sustainability. This collective insight can inform policy decisions and future research avenues in urban development.

4.3. Perceptions of CoK Residents on Sectoral Priorities for Economic Development

The citizens proportions emphasize a diverse economic landscape, with technology and manufacturing as prioritized sectors for growth. The outlined sectoral priorities reflect a strategic approach to economic development, balancing innovation with traditional industries.



Figure 2. Perceptions of CoK residents on sectoral priorities for socio-economic development.

By focusing on these key areas, stakeholders can work towards a more diversified and resilient economy that meets the needs of CoK population while fostering sustainable growth (Figure 2). Technological Transformation was adopted with 26% of citizens respondents followed by manufacturing and Trade with 24%, urban agriculture 16%, tourism and Hospitality as well as service delivery 15%. Urban and rural settlements was preferred at 14% while good governance, unity and resilience was selected by 13% as CoK Sectoral contributions to the economic growth in Rwanda.



Figure 3. Environmental & climate change challenges.

Despite of huge achievements in environmental management, like other cities in the region the CoK face Biodiversity degradation due to waste water and storm water management, Water pollution, Air pollution as well as climate change impacts, waste management and deforestation. The findings revealed that further environmental management best practices are required to sustain the socio-economic development and add value to the CoK development pillars (Figure 3).

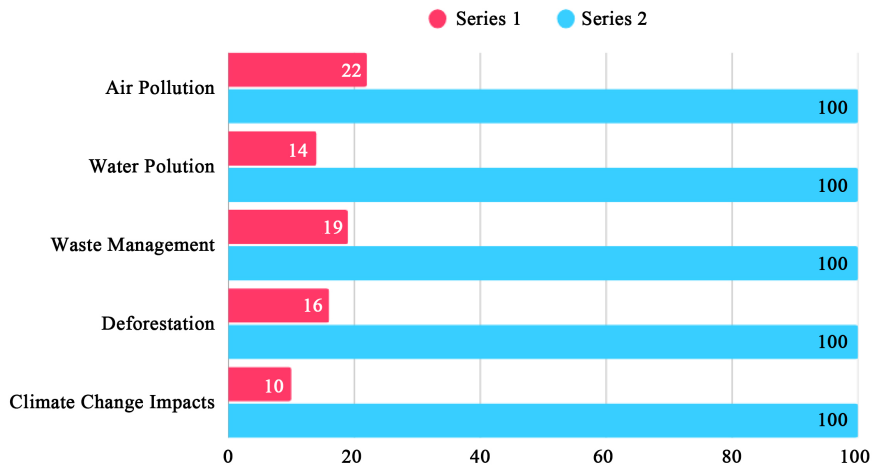


Figure 4. Environmental issues.

Air pollution is the primary environmental concern, reflecting the need for targeted policy interventions in urban clean air initiatives (Figure 4).

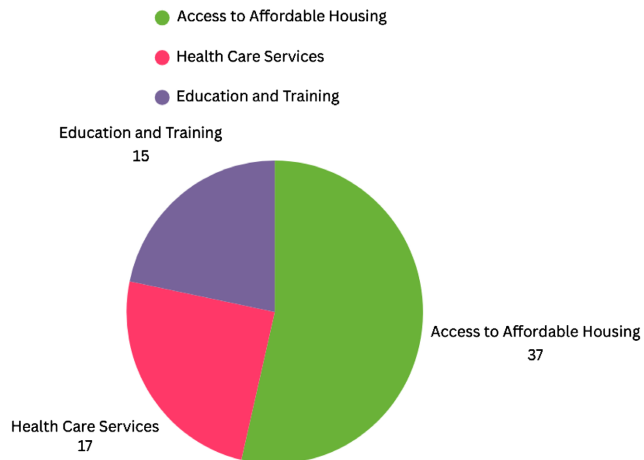


Figure 5. Perceptions on social issues in Kigali City.

The substantial 37% focusing on housing indicates a serious challenge for urban planners in ensuring accessible living conditions (Figure 5). Access to affordable housing stands out as the most significant concern for the residents of Kigali, with 37% identifying it as a top issue. The rapid urbanization and population growth in the city have exacerbated the housing crisis, making it increasingly difficult for many to find suitable and affordable living conditions. The CDS data highlights the percentage of concern among residents for each issue, providing insight into the priorities and challenges faced by the population. Understanding these perceptions is crucial for CoK policymakers, stakeholders, and community leaders to address the needs of our urban citizens effectively.

4.4. Understanding Barriers to Accessing Digital Services in CoK

This study employed a mixed-methods approach, integrating both quantitative

and qualitative data. Quantitative analysis was to assess measurable indicators of economic performance, sectoral efficiency, and infrastructure quality. Qualitative methods, including interviews and focus groups, provided deeper insights into policy impacts and resident experiences.

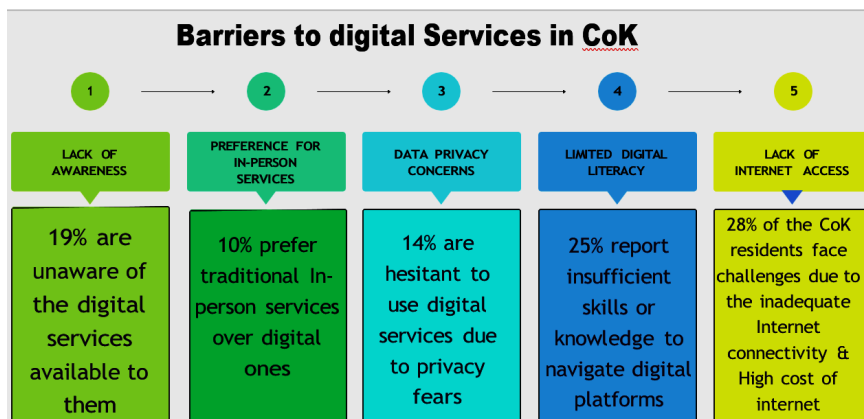


Figure 6. Barriers to accessing digital.

A significant portion of the population, 28% face challenges due to inadequate internet connectivity coupled with the high cost of internet. Approximately 25% of individuals report limited digital literacy as a barrier. Data privacy concerns affect 14% of the population, leading to hesitance in using digital services. Some individuals, accounting for 10%, prefer in-person services over digital alternatives (Figure 6). This preference may be rooted in comfort with traditional methods, a desire for personal interaction, or scepticism about the reliability of digital services. Finally, a notable 19% of the population lacks awareness of the digital services available to them. This gap in knowledge can prevent individuals from seeking out and utilizing services that could benefit them, highlighting the need for improved outreach and education.

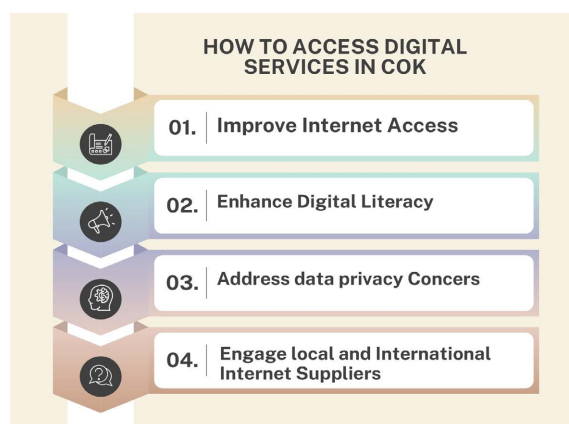


Figure 7. Strategies in access to digital services and ICT improvement.

To overcome ICT barriers in CoK highlight the crucial need for digital access

and literacy programs in facilitating better integration of digital services. Understanding these barriers is crucial for developing strategies to improve access to digital services. By addressing issues such as internet connectivity, digital literacy, data privacy, service preferences, and awareness, we can work towards creating a more inclusive digital environment for all CoK citizens (Figure 7).

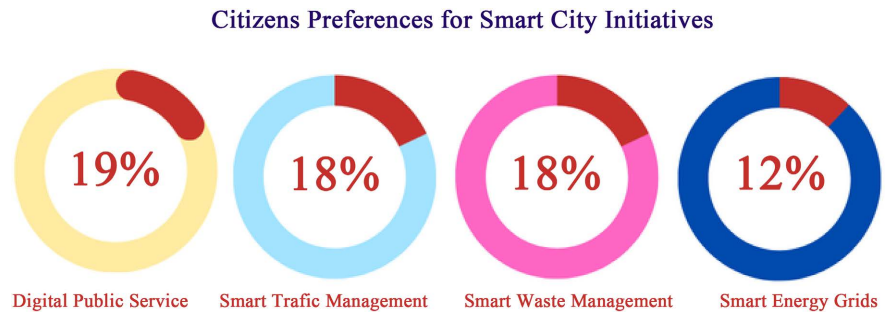


Figure 8. Citizen preferences for smart city initiatives.

The inclination towards digital public services suggests that residents are looking for more accessible and efficient ways to interact with city governance. It can be explicitly demonstrated in their preference options as follow (Figure 8):

- **Digital Public Services:** 19% are significant portion of Kigali citizens who prioritize digital public services, indicating a strong demand for online access to government services and information. This reflects a desire for convenience and efficiency in interactions with public institutions.
- **Smart Traffic Management:** At 18%, Traffic congestion and management are critical concerns for CoK residents. This preference for smart traffic management solutions suggests that Kigali citizens are looking for innovative ways to improve mobility and reduce travel times within the city.
- **Smart Waste Management:** At equal rate of importance (18%), CoK citizens prefer the implementation of smart waste management systems. This preference indicates a collective interest in sustainability and efficient waste disposal methods that can enhance the cleanliness and environmental health of the city.
- **Smart Energy Grids:** 12% interest in smart energy grids reflects a growing awareness of energy efficiency and sustainability. This implies that CoK Citizens are likely seeking solutions that promote renewable energy sources and optimize energy consumption within the urban environment.
- **Public Wi-Fi Networks:** 15% Access to public Wi-Fi networks is another priority for CoK residents, highlighting the importance of connectivity in today's digital age. This preference underscores the need for accessible internet services to support both Kigali residents and a good number of migrants who never cease to cross around the city.

4.5. Green Space Satisfaction

A high satisfaction rate regarding green spaces indicates that urban development

efforts may be successful in maintaining livable environments.

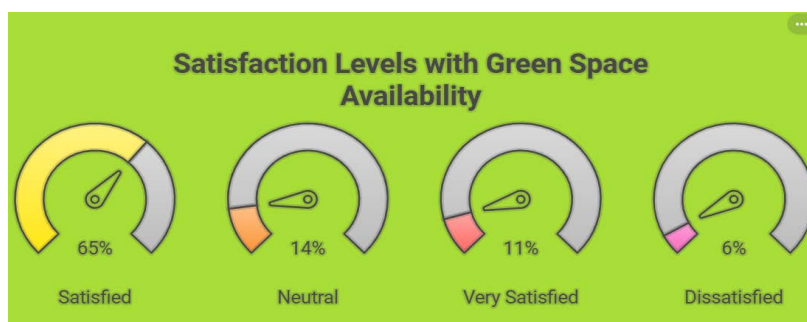


Figure 9. Green spaces satisfaction in Kigali City.

These findings can guide local authorities and urban planners in understanding community needs and keep enhancing the quality and accessibility of green spaces (Figure 9).

4.6. CoK Citizens Views about Road Infrastructure Improvement

The overwhelming majority of respondents, at 72%, believe that there has been some improvement in road infrastructure (Figure 10). Additionally, 20% of citizens feel that the improvements have been significant. Only a small fraction of the population perceives no change (4%) or a significant decline (1%).

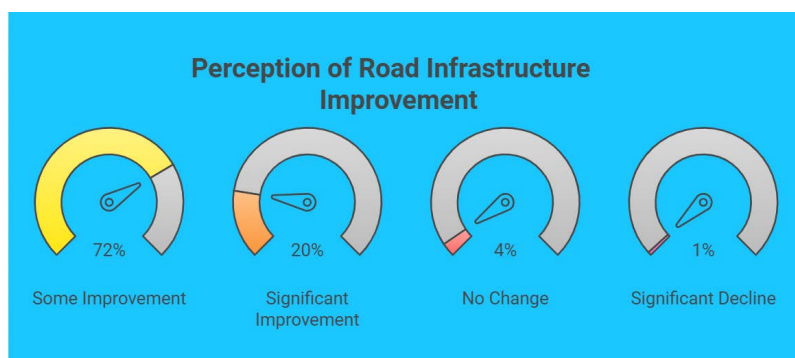


Figure 10. Road infrastructure improvement.

5. Integration of Findings

Cross-Indicator Relationships: The high priority given to economic growth (51%) correlates with the emphasis on technology (26%) and manufacturing (24%). As per collected Citizens' views, this CDS explores the relationships between various indicators based on the perceptions of data providers in Kigali. It highlights the significant priority that citizens place on economic growth and how this correlates with their emphasis on technology and manufacturing sectors. The findings suggest that the focus on economic growth is intricately linked to advancements in technology and the manufacturing industry, reflecting a broader trend in urban development. In addressing socio-economic inequalities in Kigali, specific socio-

economic disparities will be addressed with following development strategy aimed or proposed to tackle CDS issues:

A. ECONOMIC GROWTH PRIORITY

Kigali citizens prioritize economic growth at an impressive rate of 51%. This high level of importance placed on economic development indicates a collective aspiration for improved living standards, job creation, and overall prosperity within the city. The emphasis on economic growth serves as a foundation for other sectors, influencing various aspects of urban life.

B. CORRELATION WITH TECHNOLOGY

The emphasis on technology stands at 26%, showcasing a recognition among citizens that technological advancements are crucial for driving economic growth. This correlation suggests that citizens believe that investing in technology can lead to increased efficiency, innovation, and competitiveness in the economy. As technology continues to evolve, its integration into various sectors is likely to further enhance economic opportunities for the citizens of Kigali.

C. MANUFACTURING SECTOR FOCUS

Additionally, the manufacturing sector is highlighted with a 24% emphasis from the citizens. This focus indicates an understanding of the role that manufacturing plays in economic development. By prioritizing manufacturing, Kigali citizens are likely acknowledging the potential for job creation, export opportunities, and the establishment of a robust industrial base that can support sustainable economic growth.

In summary, the perceptions of Kigali citizens reveal a clear relationship between their high priority on economic growth and the emphasis on technology and manufacturing. This interconnectedness suggests that efforts to enhance economic development should consider the vital roles that technology and manufacturing play in achieving these goals. Understanding these cross-indicator relationships can guide policymakers and stakeholders in making informed decisions that align with the aspirations of the citizens.

1) Social Matters and Digital Services: The significant concern around affordable housing (37%) and significant barriers to digital services (28% lack of Internet access) necessitate a holistic approach to urban development that considers socio-economic disparities.

2) Governance and Public Engagement: The notable challenges in governance especially around public participation (29%) imply the need for mechanisms that foster community engagement in urban planning processes.

D. RESEARCH IMPLICATIONS DERIVED FROM FINDINGS

- **Holistic Urban Planning:** Prioritizing economic growth must be coupled with social equity, environmental sustainability, and technological advancement. This aligns with research questions focused on comprehensive urban development strategies.
- **Need for Inclusive Governance:** Enhancing public participation and transparency in governance is vital for fostering trust and effectively implementing

urban strategies.

- **Focus on Digital Literacy and Infrastructure:** Bridging the digital divide through internet access and literacy initiatives will empower residents to engage with digital city services effectively.
- **Sustainable Development Leadership:** Addressing pressing environmental concerns and enhancing green spaces can lead to a more sustainable and resilient urban environment.

The citizens perceptions on CDS were on very big importance. The findings indicate on focus on current preferences of citizens interests, highlight key areas of concerns, involve citizens in planning, matching projects with people's needs and implement solutions by deployment of smart services were suggested as community preferences and transformative strategies (Figure 11).

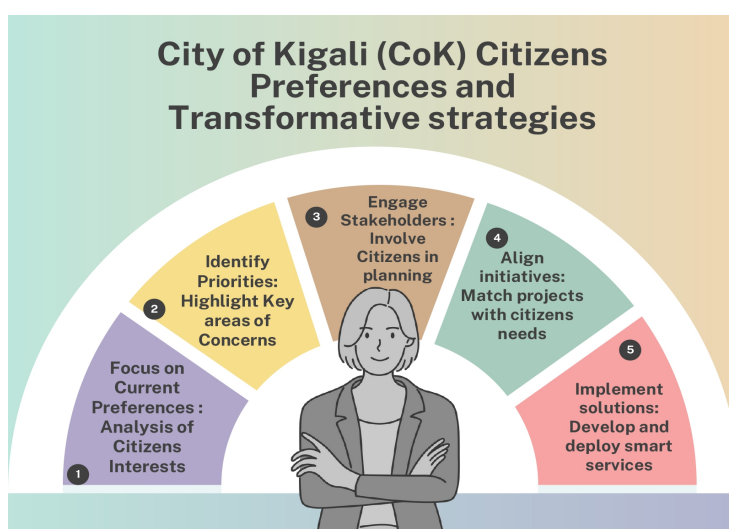


Figure 11. CoK citizen preferences transformative strategies.

The findings provide an overview of the urbanization trends in City of Kigali (CoK), highlighting key statistics such as annual growth rates, housing affordability challenges, and population density. The data indicates a significant need for affordable housing and presents a clear picture of the urban landscape that policymakers and stakeholders must address. CoK is experiencing a robust annual growth rate of 4.1%. This growth reflects the increasing urbanization of the area, which is likely driven by various factors including economic opportunities, migration, and population dynamics (Figure 12).

A critical issue facing CoK is the affordability of housing. Currently, 75% of residents are in need of affordable housing options. This high percentage underscores the urgency of addressing housing needs to ensure that all residents have access to suitable living conditions. The analysis reveals a significant gap in housing availability, with an annual need for 31,000 additional housing units. This gap highlights the challenges in meeting the demands of a growing population and the necessity for strategic planning and development initiatives.



Figure 12. Urbanization and housing.

The population density of 2124 people per square kilometer can contribute to various urban challenges, including congestion, strain on infrastructure, and increased demand for public services. Normally urbanization trends in Kigali present both opportunities and challenges. With a 4.1% annual growth rate and a pressing need for affordable housing, it is crucial for stakeholders to collaborate on effective solutions to bridge the housing gap and manage the implications of high population density. Addressing these issues will be the adoption of Inclusive and Green Urbanization strategies to prioritize inclusive and green urbanization as fundamental principles for Kigali’s development. To achieve this, the city will focus on *affordable housing projects, integrated public transportation systems, and the expansion of green spaces*. Emphasis will also be placed on *modernizing urban planning to accommodate population growth* while minimizing environmental impact. Affordable and sustainable housing initiatives aim to address the challenges of urban sprawl and improve living conditions for residents of all income levels. Concurrently, investments in renewable energy and waste management systems will ensure Kigali maintains its reputation as a clean and green city.

E-Mobility Transition: 5% adoption of electric vehicles; targeted increase to 20% by 2030. Public Transport: 70% rely on buses and motorcycles. Road Network: 1100 km; 60% paved (**Figure 13**).

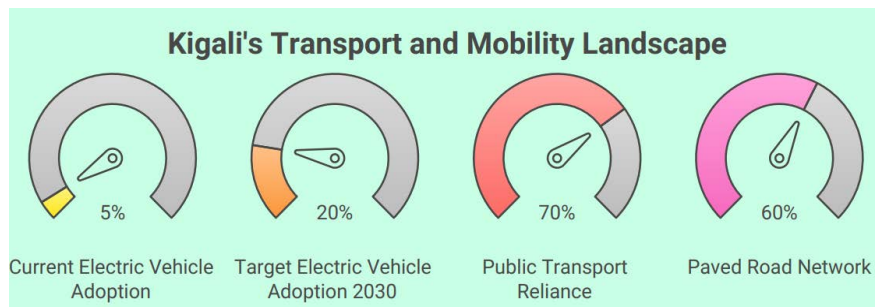


Figure 13. Transport and mobility landscape.

6. City of Kigali Theory of Change

Kigali City's development strategy is anchored in a transformative **Theory of Change (ToC)** centered on inclusive urbanization, economic resilience, and sustainable growth. More specifically, following key strategies are formulated in ToC.

1) Foundational Principles: The strategy reflects citizen-centered planning, leveraging Kigali's role as Rwanda's economic hub. Investments in infrastructure, housing, and service delivery create pathways for equitable development.

2) Key Transformation Levers:

E-Mobility and Transport: Driving green urban mobility and reducing emissions while enhancing connectivity.

Affordable Housing: Addressing urban housing shortages through public-private partnerships and innovative financing.

Urban Agriculture and Green Spaces: Promoting food security and environmental stewardship within the city fabric.

Digital Transformation: Expanding ICT infrastructure to foster innovation, efficiency, and competitiveness.

7. Conclusion and Recommendations

7.1. Conclusion

The CoK will continue developing valuable strategies as suggested by its citizens to come up with on CoK strategies best practices: urban agriculture and food security, diversification of cultural centers, promotion of hospitality services and ecotourism, inclusive and green urbanization, economic growth and key sectors, ICT adoption and smart city initiatives, social services: education, health, and community well-being, environmental sustainability and climate resilience, governance and stakeholder engagement. Following recommendations were formulated:

7.2. Recommendations

1) Urban agriculture and food security: Urban agriculture forms a cornerstone of Kigali's development strategy, addressing food security while promoting efficient land use. The plan encourages the integration of agricultural activities within urban spaces to maximize the utilization of limited land resources. By adopting modern farming techniques and sustainable practices, the strategy aims to increase agricultural productivity, reduce dependency on food imports, and create employment opportunities. Furthermore, urban agriculture initiatives will contribute to Kigali's resilience against supply chain disruptions and climate-related challenges.

2) Diversification of cultural centers: Recognizing the cultural richness of Kigali, the development strategy seeks to diversify and enhance cultural centers as hubs of creativity and economic activity. Investment in cultural infrastructure will support the growth of arts, music, and heritage industries, thereby fostering social cohesion and attracting tourism. The diversification of cultural offerings aligns

with Kigali's vision of becoming "a world class centre of urban excellence as an inclusive and resilient city with a vibrant, liveable, and green economy".

3) Promotion of hospitality services and ecotourism: Kigali's strategic location and natural beauty position as an ideal destination for ecotourism and hospitality. The development strategy outlines measures to improve infrastructure, enhance service delivery, and preserve the natural environment to attract more visitors. Key initiatives include the development of eco-friendly lodges, guided tours to protected areas, and community-based tourism programs. By leveraging its unique biodiversity and cultural heritage, Kigali aims to establish itself as a premier destination for sustainable tourism, which will significantly contribute to the local economy.

4) Inclusive and green urbanization: The strategy prioritizes inclusive and green urbanization as fundamental principles for Kigali's development. To achieve this, the city will focus on affordable housing projects, integrated public transportation systems, and the expansion of green spaces. Emphasis will also be placed on modernizing urban planning to accommodate population growth while minimizing environmental impact. Affordable and sustainable housing initiatives aim to address the challenges of urban sprawl and improve living conditions for residents of all income levels. Concurrently, investments in renewable energy and waste management systems will ensure Kigali maintains its reputation as a clean and green city.

5) Economic growth and key sectors: Underpinning Strategy is a commitment to catalyzing economic growth through innovation and entrepreneurship. Key sectors identified for development include technology, manufacturing, and services. The city aims to create an enabling environment for businesses by improving access to finance, streamlining regulatory processes, and investing in skills development programs. Special focus will be given to empowering youth and women entrepreneurs, thereby fostering inclusive economic participation. Kigali's strategic investments in infrastructure, such as industrial parks and ICT hubs, will serve as catalysts for industrial growth and job creation.

6) ICT adoption and smart city initiatives: As part of its vision to become a smart city, Kigali will continue to embrace ICT adoption across all sectors. The development strategy includes plans to enhance digital infrastructure, expand internet connectivity, and promote e-governance. Smart city initiatives, such as intelligent traffic management systems and digital public services, will improve operational efficiency and citizen engagement. By leveraging technology, Kigali aims to enhance urban mobility, increase access to information, and drive innovation.

7) social services: education, health, and community well-being: The strategy underscores the importance of quality education and healthcare in improving overall well-being. Investments in modern educational facilities, teacher training programs, and digital learning tools will ensure equitable access to quality education for all residents. Similarly, the health sector will benefit from the expansion of healthcare infrastructure, the deployment of advanced medical technologies,

and increased funding for preventive care initiatives. The strategy also emphasizes community development programs to strengthen social cohesion and foster a sense of belonging among residents.

8) Environmental sustainability and climate resilience: In response to the growing challenges posed by climate change, the strategy integrates environmental sustainability as a central theme. Kigali's green initiatives include the promotion of renewable energy, efficient waste management, and reforestation programs. These measures aim to reduce greenhouse gas emissions, enhance biodiversity, and improve air quality. Furthermore, the strategy incorporates climate-resilient infrastructure to mitigate the impacts of extreme weather events, ensuring the city's long-term sustainability.

9) Governance and stakeholder engagement: Effective governance and stakeholder collaboration are critical to the success of the City Development Strategy 2024-2029. The strategy emphasizes transparency, accountability, and community participation in decision-making processes. By fostering partnerships with private sector actors, non-governmental organizations, and international development agencies, Kigali seeks to mobilize resources and expertise to achieve its development goals. Citizen engagement initiatives will ensure that the voices of all stakeholders are heard, fostering a sense of ownership and collective responsibility.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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List of Acronyms and Abbreviations

AfDB	African Development Bank
CCAs	Cross Cutting Areas
CDS	City Development Strategy
CDS	Comprehensive Development Strategies
CoK	City of Kigali
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
ICT	Information Communication and Technology
IDS	Integrated Development Strategy
NST2	Second National Strategy for Transformation
SMEs	Small and Medium Enterprises
SSPs	Sector Strategic Plans
SWOT	Strengths, Weaknesses, Opportunities and Threats
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UNHABITAT	United Nations Human Settlements Programme
WHO	World Health Organization
WTTC	World Travel and Tourism Council