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OF SCIENCES AND LITERATURE

The Malignant Effects of a Rapidly Expanding City: Case of Metropolitan Lagos

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"THE MALIGNANT EFFECTS OF A RAPIDLY EXPANDING CITY: CASE OF METROPOLITAN LAGOS"

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(PH.D) IN EFFECTS OF CITY GROWTH AND EXPANSION**

2025

DECLARATION

I declare that:

1. This study was undertaken by me in the Faculty of Engineering and Technology, Selinus University of Science and Literature, under the supervision of Professor Salvatore Fava.
2. The study is original and has not been submitted in any other place for the award of any degree.
3. All ideas, opinions and views were products of my research, and where views and contributions of other works and authorities have been used, they were acknowledged.
4. Any liability arising from this study is mine and not that of my supervisors.

.....

Authors Name

.....

Signature /Date

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Finally, I dedicate this thesis to the resilient people of Lagos, whose lived experiences inspired this research and whose future it seeks to serve.

TABLE OF CONTENTS

Content	Page
Title Page	
Declaration	iii
Acknowledgements	iv
Table of Contents	v
List of Tables	xiii
List of Figures	xvi
List of Plates	xvii
Abstract	xviii

CHAPTER ONE

1.0 BACKGROUND TO THE STUDY	1-42
1.2 Statement of Problems	4
1.3 Justification of Study	7
1.4 Aim and Objectives	9
1.4.1 Aim	9
1.3.1 Objectives	9
1.5 Research Questions	9
1.6 Research Hypotheses	9
1.7 Scope of The Study	10
1.8 Organisation of Study	11
1.9 Definition of Relevant Terms	11
1.10 THE STUDY AREA	18
1.10.1 Introduction	18
1.10.2 Growth And Structure of Metropolitan Lagos	
1.10.3 1.10.2.1 Geographical Location and General Characteristics	18
1.10.3.1Area	18
1.10.2.3 Urban Evolution of Lagos	19
1.10.2.4 Development of Lagos	19
1.10.2.5 Population Growth and Density	22
1.10.2.5 Physical Growth of Lagos	26
1.10.2.6 Economic Activities in Lagos State	38
1.10.2.7 The Lagos Metropolis	38
1.10.3 Summary	42

CHAPTER TWO

2.0 LITERATURE REVIEW	43-113
2.1 Introduction	43
2.1.1 Malignancy Concept	58
2.2 The Dynamics of Growth and Metropolis Expansion	63
2.2.1 Contemporary Literature on Urban Growth	63
2.2.2 System of Urban Growth	64
2.2.3 City Expansion and Its Challenges	64
2.2.4 Urban Sprawl and Urban Growth	65
2.2.5 Growth of Cities	67
2.2.6 Malignant Nature in Cities	69
2.2.7 Examples of Cities and Their Malignant Nature	69
2.2.8 Malignant Growth of Cities	72
2.2.8.1 Urban Expansion as a Cancerous Growth	72
2.2.9 Urban Growth as Tumorous Expansion	74
2.3 Metropolitan Lagos	77
2.3.1 Malignant Evolution of Lagos Metropolis	77
2.4 Issues From the Literature	82
2.5 Theoretical/Conceptual Framework	89
2.5.1 Conceptual Framework	89
2.5.2 The Conceptualisation of Malignant Neoplasms in Metropolitan Area Growth	90
2.5.3 Conceptual Overlap: Urban Malignancy	95
2.6 The Concept of Urban Growth Process	97
2.6.1 Conceptualisation of Malignant Neoplasms in Metropolitan Areas Growth: The Case of Lagos	104
2.7 THEORETICAL FRAMEWORK	105
2.7.1 Urban Field Concept	105
2.7.2 Urban Diffusion	106
2.8 Summary	108
2.9 MODELS	110
2.9.1 Shannon's Entropy Model	110
2.10 OPERATIONAL SYNTHESIS OF THE CONCEPTUAL FRAMEWORK	111
2.10.1 Spatial Model of Urban Growth	111
2.10.2 Spatial Modelling of Urban Growth and Similarity to Malignant Lesion	113

CHAPTER THREE

3.0 PROFILE OF STUDY AREAS AND RESEARCH METHODOLOGY	116-141
3.1 Data and Methodology	116
3.2 The Research Design	116
3.3 Nature and Source of Data	119
3.3.1 Secondary Data Source	119
3.3.1.1 Review of Relevant Reports, Policy Documents and other Literature	120
3.3.1.2 Study of Existing Maps and Inventory of Infrastructure	120
3.3.1.3 Interviews with Government Officials	120
3.3.2 Primary Data	121
3.3.2.1 Pilot Survey	121
3.3.2.2 On-the-Spot Data Capture	121
3.3.2.3 Research Areas	122
3.4 The Case Study Areas	122
3.4.1 The Case Study Settlements of Metropolitan Lagos	122
3.5 Sample Frame and Sample Size	129
3.5.1 Sample Frame	129
3.5.2 Sample Size	130
3.6 Sampling Procedure and Technique	133
3.6.1 Sampling Procedure	133
3.6.2 Sampling Technique	133
3.7 Research Instrument	134
3.8 Data Analysis Techniques	134
3.8.1 Quantitative research	134
3.8.2 Qualitative research	135
3.9 Subject Matter of the Research Project	135
3.10 Research Strategy: Case-Study Approach	136
3.11 Methods of Data Collation and Analysis	138
3.11.1 Shannon Entropy Model	139
3.11.2 Statistical Analysis and Test of Hypothesis	140

CHAPTER FOUR

4.0 CONTENTS AND RESULTS	142-250
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4.1 Morphology of Metropolitan Lagos	142
4.2 General Characteristics Of Metropolitan Lagos Respondents	142
4.2.1 Socioeconomic/Demographic of Respondents	143
4.2.2 Educational Attainment and Occupation of Respondents	145
4.2.3 Motivation to Live and Work in Metropolitan Lagos	149
4.2.4 Respondents' Economic Activities in Metropolitan Lagos	151
4.2.5 Metropolitan Lagos Growth Process	154
4.2.6 Rating the Metropolitan Growth Process and Its Impact on Growth	155
4.2.7 The Effects of the Growth Process of Metropolitan Lagos	157
4.2.8 Significance of the Considered Effects of the Growth Process	159
4.2.9 Satisfaction with the Metropolitan Lagos Growth Setting	162
4.2.10 Dissatisfaction with the Growth of Metropolitan Lagos	164
4.2.11 Factors that Affect the Growth of Lagos Metropolis	166
4.2.12 Social Opportunities in Metropolitan Lagos	169
4.2.13 Environmental Quality Perception	171
4.2.14 Source of Noise (Decibels)	173
4.2.15 Environmental Problems	174
4.2.16 Metropolitan Development and Perception	176
4.2.17 Migrant Contribution to the Growth of Metropolitan Lagos	179
4.2.18 Metropolitan Interaction	181
4.2.19 Cities' Morphologies and Growth Patterns Similar to Malignant Processes	186
4.2.20 Physiological Malignant Growth and Urban Growth	187
4.2.21 Spatial Evolution in the Growth of Lagos Metropolitan Area	189
4.2.22 Characteristics of the Expansion Process of Lagos Metropolis	193
4.2.23 Major Growth Factors of Lagos Metropolis	196
4.2.24 Respondents' Perception of the Impact of Metropolitan Lagos Expansion on Health and Well-being	200
4.2.25 Character of Lagos Metropolitan Growth	201
4.2.26 The Positive and Negative Growth Processes of Metropolitan Lagos	203
4.2.27 The Perception of Lagos's Metropolitan Growth Process and Key Indicators	204
4.2.28 The Growth of Metropolitan Lagos as a Malignant Neoplasm	206
4.2.29 Effects of Malignant Neoplasms on Lagos Metropolitan Growth	207
4.2.30 Comparability and Similarity Between Lagos Metropolitan Growth and Cancer Growth	208
4.2.31 Perceived Challenges of Metropolitan Lagos Growth	210

4.3 MODELS AND HYPOTHESES	212
4.3.1 Land Use/Land Cover Change Detection (Post-Classification)	212
4.3.1.1 Historical Development and Settlement Pattern of Metropolitan Lagos (Pre-2006)	212
4.3.1.2 Land Use and Land Cover Analysis of Lagos Metropolis, 2006	213
4.3.1.3 Land Use and Land Cover Analysis of Lagos Metropolis, 2015	214
4.3.1.4 Land Use and Land Cover Analysis of Lagos Metropolis, 2022	215
4.3.1.5 LULC Change Between 2015 And 2022 (Increase and Decrease Threshold)	220
4.4 Analysis of the Lagos Metropolis Expansion using Shannon’s Entropy Model	223
4.4.1 Spatial–Temporal Analysis of Lagos Metropolis Expansion	227
4.4.2 Spatial Entropy of Lagos Metropolitan Districts	228
4.4.3 Spatial Entropy Heatmap of Lagos Metropolitan Districts	230
4.5 OBJECTIVES/ HYPOTHESIS TESTING	232
4.5.1 To Explore The Growth And Development Of Metropolitan Lagos	232
4.5.1.1 Population Growth and Spatial Expansion of Lagos Metropolis from 1950 to 2024	234
4.5.1.2 Demographic Profile and Historical Growth	236
4.5.1.3 The Growth Factor of Metropolitan Lagos, 1980 to 2024	236
4.5.1.4 Spatial Expansion Trajectory of Metropolitan Lagos	237
4.5.1.5 Population Dynamics of Lagos Metropolis and Malignant Growth	237
4.5.1.6 Analysis of Population Growth and Spatial Expansion in Lagos Metropolitan Districts	238
4.6 HYPOTHESIS TESTING	242
4.6.1 Objective Two: To Analyse the Features of Malignant Growth Processes	242
4.6.2 Objective Three: To Investigate the Connections between Urban Forms and Malignant Neoplasms	245
4.6.3 Objective Four: To Evaluate the Impact of Malignant Growth on the Growth and Development of Metropolitan Lagos	250
CHAPTER FIVE	
SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION	253-321
5.1 Summary of Findings	253
5.2 Findings	255
5.2.1 Socioeconomic/Demographic of Respondents	255
5.2.2 Motivation to Live and Work in Metropolitan Lagos	258

5.2.3 Metropolitan Lagos Growth Process	261
5.2.4 Effects of the Growth Process in Metropolitan Lagos	264
5.2.5 Significance of the Growth Process Effects	265
5.2.6 Factors Influencing Satisfaction with Metropolitan Lagos' Growth Environment	267
5.2.7 Dissatisfaction with the Growth of Metropolitan Lagos	268
5.2.8 Factors Influencing the Growth of the Lagos Metropolis	269
5.2.9 Social Opportunities in Metropolitan Lagos	271
5.2.10 Environmental Quality Perception	272
5.2.11 Source of Noise (Decibels)	273
5.2.12 Environmental Problems Associated with the Growth of Metropolitan Lagos	275
5.2.13 Metropolitan Development and Perception	276
5.2.14 Migrant Contribution to the Growth of Metropolitan Lagos	278
5.2.15 Metropolitan Interaction	279
5.2.16 Cities' Morphologies and Growth Patterns Similar to Malignant Process	282
5.2.17 Similarities Between (Physiological Malignant) Growth and Urban Expansion	284
5.2.18 Awareness of the Development of Lagos's Original Core and Spatial Evolution	286
5.2.19 What Typifies the Lagos Metropolis Expansion Process	290
5.2.20 Factors that Affect the Growth of Lagos Metropolis	291
5.2.21 The Expansion of the Lagos Metropolis Impacts on Health and Well-Being	294
5.2.22 Characteristics of Lagos metropolitan growth	295
5.2.23 Metropolitan Lagos's Positive and Negative Growth Process	297
5.2.24 Key Indicators of the Growth Process of Metropolitan Lagos	298
5.2.25 The Comparison Between the Growth of Lagos and Malignant Neoplasms	299
5.2.26 Urban Forms and Malignant Neoplasms	300
5.2.27 Effects of Lagos Metropolitan Growth on Malignant Neoplasms	303
5.2.28 Malignant Urban Growth in Lagos Metropolis	304
5.2.29 Empirical Evidence of Malignant Expansion in Lagos	305
5.2.30 Morphological Evidence of Malignancy	306
5.2.31 Ecological and Socio-Political Consequences	306
5.2.32 Perceived Challenges of Metropolitan Lagos Growth	307
5.3 Land Use/Land Cover Classification of Metropolitan Lagos 2006-2022	308
5.4 The Lagos Metropolis Expansion Using Shannon's Entropy Model	312
5.4.1 Spatial–Temporal Analysis of Lagos Metropolis Expansion	313
5.4.2 Spatial Entropy of Lagos Metropolitan Districts	314
5.4.3 Lagos Metropolis Population from 1950 to 2022	314

5.4.4 Population Growth and Spatial Expansion of Lagos Metropolis from 1950 to 2024	315
5.4.5 Demographic Profile and Historical Growth	315
5.4.6 The Growth Factor of Metropolitan Lagos, 1980 to 2024	315
5.4.8 Spatial Expansion Trajectory of Metropolitan Lagos	315
5.4.9 Population Dynamics of Lagos Metropolis and Malignant Growth	316
5.4.10 Analysis of Population Growth and Spatial Expansion in Lagos Metropolitan Districts	316
5.5 Objectives/ Hypothesis Testing	316
5.5.1 Validation of Study Objectives	316
5.5.1.1 Objective One: To Explore the Growth and Development of Metropolitan Lagos	316
5.5.1.2 Objective Two: To Analyse the Features of Malignant Growth Processes	317
5.5.1.3 Objective Three: To Investigate the Connections between Urban Forms and Malignant Neoplasms	317
5.5.1.4 Objective Four: To Evaluate the Impact of Malignant Neoplasms and the Development of Metropolitan Lagos	317
5.6 Hypothesis Testing	318
5.6.1 Objective Two: To analyse the features of malignant growth processes	318
5.6.2 Objective Three: To investigate the connections between urban forms and malignant Neoplasms	319
5.6.3 Objective Four: To Evaluate The Impact of Malignant Growth on the Growth And Development of Metropolitan Lagos	321
 CHAPTER SIX	
6.0 RECOMMENDATIONS AND CONCLUSION	322-337
6.1 Recommendations	322
6.2 Curative and Preventive Strategies for Spatial Dysfunction in Metropolitan Lagos	324
6.2.1 Curative Strategies for Spatial Dysfunction in Metropolitan Lagos	325
6.2.2 Preventive Strategies for Spatial Dysfunction in Metropolitan Lagos	328
6.3 Recommendations Based on Findings	331
6.4 Rethinking Urban Strategy	332
6.5 Containment Strategy for Malignant Growth in Lagos	333
6.5.1 Strategic Containment Phases	333
6.6 A Path Towards Urban Remission	334

6.7 Implications of Findings and Recommendations for Urban and Regional Planning	334
6.8 Conclusion	336
6.9 Contribution to Knowledge	337

List of Tables

Table 1.1: Showing The Growth of Metropolitan Lagos	24
Table 1.2: Showing the Evolution of Urbanised Areas in Lagos	29
Table 1.3: Showing the Estimated Population Figures for Metropolitan Lagos	32
Table 2.1 Comparisons Between Malignant Tumours and Urban Populations	58
Table 3.1 Settlements and Influencing Factors	126
Table 3.2: Distribution of the Sampled Population Across the Five Settlement Corridors of Metropolitan Lagos	131
Table 3.3: Population Distribution of the Sample Group in the Mainland Corridor of Metropolitan Lagos	132
Table 3.4: Population Distribution of the Sample Group in the Northwest Corridor of Metropolitan Lagos	132
Table 3.5: Population Distribution of the Sample Group in the South-Western Corridor of Metropolitan Lagos	132
Table 3.6: Population Distribution of the Sample Group in the South-Eastern Corridor of Metropolitan Lagos	132
Table 3.7: Population Distribution of the Sample Group in the Ikeja Corridor of Metropolitan Lagos	132
Table 3.8: Showing the Methods of Data Collation and Analysis for the Study	139
Table 3.9: Presenting the Stated Hypotheses for the Study	141
Table 4.1 Respondents' Demographics	144
Table 4.2 Respondents' Education and Occupation	146
Table 4.3 Motivation to Live and Work in Metropolitan Lagos	148
Table 4.4 Respondents' Economic Activities and their Locations within the Metropolitan Lagos	152
Table 4.5 Metropolitan Lagos Growth Process	153
Table 4.6 Rating the Metropolitan Growth Process and Its Impact on Growth	156
Table 4.7 The Effects of The Growth Process of Metropolitan Lagos	159
Table 4.8 Significance of the Considered Effects of the Growth Process	161
Table 4.9 Satisfaction with the Metropolitan Lagos Growth Setting	163
Table 4.10 Reasons for Dissatisfaction with the Growth of Metropolitan Lagos	165
Table 4.11 Factors that Affect the Growth of Lagos Metropolis	167
Table 4.12 Social Opportunities in Metropolitan Lagos	170

Table 4.13 How Respondents Perceived Air Quality and the Frequency of Occurrence	172
Table 4.14 Source of Noise (Decibels)	173
Table 4.15 Environmental Issues and Problems Associated with Growth in Metropolitan Lagos	175
Table 4.16 Metropolitan Development and Perception	178
Table 4.17 Migrant Contribution to the Growth of Metropolitan Lagos	180
Table 4.18 Respondents' Interactions with Metropolitan Lagos	182
Table 4.19 Cities' Morphologies and Growth Patterns Similar to Malignant Processes	186
Table 4.20 Opinion of Respondents on Physiological Malignant Growth and Urban Growth	189
Table 4.21 Spatial Evolution in the Growth of Lagos Metropolitan Area	191
Table 4.22 Characteristics of the Expansion Process of Lagos Metropolis	194
Table 4.23 Growth Factors of Lagos Metropolis	197
Table 4.24 The Impact of Metropolitan Lagos Expansion on Health and Well-being	200
Table 4.25 Character of Lagos Metropolitan Growth	202
Table 4.26 The Positive and Negative Growth Processes of Metropolitan Lagos	204
Table 4.27 The Perception of Lagos's Metropolitan Growth Process and Key Indicators	205
Table 4.28 The Growth of Metropolitan Lagos as a Malignant Neoplasm	206
Table 4.29 Effects of Malignant Neoplasms on Lagos Metropolitan Growth	208
Table 4.30 Comparability and Similarity between Lagos Metropolitan Growth and Cancer Growth	209
Table 4.31 Perceived Challenges of Metropolitan Lagos Growth	210
Table 4.32 Land Use/Land Cover Pattern (1996-2022)	212
Table 4.33 Land Use/Land Cover Change Matrix	213
Table 4.34: LULC Change Summary Between 2015 and 2022	217
Table 4.35: LULC Change in Lagos (1996–2022)	218
Table 4.36: Comparative Analysis: LULC vs. Malignant Growth	219
Table 4.37: Calculation of the Shannon entropy for the year 2000 Districts for Lagos Metropolis Districts	223
Table 4.38: Calculation of the Shannon entropy for the year 2015 for Lagos Metropolis Districts	224
Table 4.39: Calculation of the Shannon entropy for the year 2022 for Lagos Metropolis Districts	224
Table 4.40: Shannon Entropy Values for the Subject Years	225
Table 4.41: Spatial Entropy Index – Lagos Metropolitan Districts	229

Table 4.42: Heat map Summary Table	230
Table 4.43: Population and Expansion of Lagos Metropolis from 1950 to 2022	233
Table 4.44: Population Growth of Lagos Metropolis (1950–2024)	235
Table 4.45: Spatial Expansion Milestone	236
Table 4.46: Conceptual Parallels: Lagos vs. Malignancy	238
Table 4.47: Spatial Expansion Distances from Lagos Island	240
Table 4.48 ANOVA for Malignant Growth Patterns of Metropolitan Lagos	242
Table 4.49 Correlation of Similarity of Pattern with Malignancy	245
Table 4.50 Multivariate Tests for the Impact of Malignant Growth on the Growth and Development of Metropolitan Lagos	250
Table 5.1 Conceptual Parallels: Malignancy vs. Metropolitan Expansion	305
Table 5.2 Evidence of Malignant Expansion in Lagos	306

List of Figures

Figure 1.1: Map of Metropolitan Lagos	19
Figure. 1.2 Lagos State within the National Context	22
Figure 1.3 Map of Lagos State Showing Lagos Metropolis and Other Districts in the State	22
Figure 1.4 The population and population density of Lagos for the year 1990	25
Figure 1.5 The population and population density of Lagos for the year 1999	25
Figure 1.6 The population and population density of Lagos for the year 2008	26
Figure. 1.7: Population Growth of Lagos from 1866 to 2019	26
Figure 1.8 Built-up Area of Lagos in 1851	27
Figure 1.9 Evolution of urbanised areas in Lagos	28
Figure 1.10 Built-up Area of Metropolitan Lagos in 1900	29
Figure 1.11 Built-up Area of Metropolitan Lagos in 1931	30
Figure 1.12 The 16 Local Government Areas (LGAs) of Metropolitan Lagos	33
Figure 1.13 Built-up Area of Metropolitan Lagos in 2000	34
Figure 1.14 Built-up Area of Metropolitan Lagos in (1850-2022)	35
Figure 1.15 Built-up Area of Metropolitan Lagos in 2004	36
Figure 1.16 Built-up Area of Metropolitan Lagos in 2000	37
Figure 1.17 Spatial Growth of Metropolitan Lagos (1900 – 2005)	39
Figure 1.18 Built-up Area of Lagos Metropolis in 2006	40
Figure 1.19 Built-up Area of Lagos Metropolis in 2012	41
Figure 2.1 Benign Tumour and Malignant Tumour	72
Figure 2.2 Representative Image of Urban Expansion through the Lens of Cancerous Growth	73
Figure 2.3 Development Pressures of the Urban Growth Centres	101
Figure 2.4 The Dynamics of City Growth	102
Figure 2.5: Conceptual Sequence of the Spatial Evolution	107
Figure 2.6 - Spatial Modelling of Urban Growth	112
Figure 2.7 Spatial Modelling of Urban Growth and Similarity to Malignant Lesion	114
Figure 3.1 Overview of the Research Design	117
Figure 3.2 Metropolitan Lagos Settlements Corridor 2025	124
Figure 4.1: Land Use/Land Cover Classification of Lagos Metropolis in 2006	213
Figure 4.2: Land Use/Land Cover Change	214
Figure 4.3: Land Use/Land Cover Classification of Lagos Metropolis in 2015	215
Figure 4.4: Land Use/Land Cover Classification of Lagos Metropolis in 2022	216
Figure 4.5: Showing Land Use/Land Cover Change Summary between 2015 and 2022	218

Figure 4.6: 16 Districts of the Lagos Metropolis	220
Figure 4.7: Built-up and Non-built-up Areas of the Lagos Metropolis 2006	221
Figure 4.8: Built-up and Non-built-up Areas of the Lagos Metropolis 2015	221
Figure 4.9: Built-up and Non-built-up Areas of the Lagos Metropolis 2022	222
Figure 4.10: Showing Shannon Entropy Value for the Lagos Metropolis 2000-2022	226

List of Plates

Plate 2.1 Showing Malignant Melanoma on the Skin	91
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REFERENCES

APPENDIX A: QUESTIONNAIRE

ABSTRACT

The study portrays Lagos, Nigeria's rapid urban growth, as a malignant lesion, comparing unregulated sprawl to pathological tissue growth. Using interdisciplinary approaches from urban morphology, environmental science, and socio-political theory, it analyses the structural, ecological, and governance impacts of this expansion. The metaphor is based on Warren Hern's concept of urban malignancy, which uses fractal geometry to liken city growth to cancerous tissue. The paper argues that Lagos's expansion shows invasive, destructive traits and suggests planning measures as healing actions against this urban sickness.

This thesis investigates malignant urban growth in metropolitan Lagos by examining its spatial, socio-economic, and infrastructural expansion through pathological analogies. It draws parallels between unchecked urban sprawl and the behaviour of malignant tumours, offering a provocative framework for understanding urban dysfunction, metastasis, and systemic strain.

It analyses how malignant urban growth relates to the spatial spread of Lagos, emphasising that its rapid, uncontrolled, and invasive expansion resembles malignancy, characterised by aggressive territorial encroachment, systemic disruption, and defiance of conventional planning.

Using an interdisciplinary method that blends urban morphology, geospatial analysis, and socio-political critique, this research explores how Lagos's rapid and often unregulated expansion reflects traits of malignancy, such as aggressive growth, invasion into adjacent areas, disruption of systemic balance, and resistance to control efforts. The study emphasises how informal settlements, infrastructural strain, and fragmented governance foster a pattern of urban metastasis, where growth does not lead to improvements in livability, sustainability, or resilience. Data were gathered through satellite imagery analysis, stakeholder interviews, and field observations, while secondary information was obtained from planning archives, demographic reports, and policy documents.

Findings indicate that Lagos's growth is characterised by spatial metastasis, with informal settlements and peripheral expansions spreading without adequate infrastructure or oversight. The research underscores significant gaps in urban governance, including fragmented planning authorities, inconsistent enforcement of building codes, and limited climate resilience strategies. The study argues that traditional urban development models do not capture the pathological aspects of Lagos's growth and recommends a shift toward regenerative planning, spatial justice, and institutional reform with participatory governance. By viewing urban growth as a pathological

condition, the research offers a new diagnostic approach for policymakers, urban planners, and scholars aiming to influence the development of rapidly expanding megacities. It promotes diagnostic urbanism as a tool for early detection and intervention, using Lagos as a case study to understand and address harmful urban expansion.

CHAPTER ONE

1.0 BACKGROUND TO THE STUDY

A metropolitan area comprises a mix of urban and rural elements that are experiencing increases in population, spatial development, and economic activity due to their proximity to the central city. The rapid expansion of metropolitan areas and the resulting changes in land use are critical features of the urban landscape. These urban areas primarily experience population increases, spatial expansion, and economic development due to their location near the city centre, resulting in both positive and negative effects (Singh, 2019).

Hern (2001) explores the reasons behind the development patterns of cities and towns. Are there specific laws that govern how urban areas expand? Worldwide, the growth of metropolitan regions is regarded as an economic clustering process linked to the rise and decline of cities (Yannis et al., 2005). This trend has initiated global transformations, resulting in significant social and physical challenges characterised by fragmented landscapes and complex, dynamic systems that respond to competing forces.

Metropolitan growth has unfolded along various lines. One aspect highlights the historical elements of urbanisation and significant population shifts from rural regions to cities, which drive this growth. Another supports enhancement through urban agglomerations and related technological progress. Additionally, there is a focus on cities' physical structure and how it evolves with growth, particularly concerning the impacts of commuting costs, changes in industrial makeup, and other technological developments on urban expansion (Henderson, 2009; Scott et al., 2001).

The fourth component concentrated on the evolution of city systems and the interactions, accommodations, and shared functions among cities of varying sizes as the economy progresses (Rossi-Hansberg et al., 2004). Notably, modern towns, particularly newer ones, exhibit rapid growth and expansion into nearby areas through invasion or distant colonisation, resembling the behaviour of malignant neoplasms.

Outlying communities are being engulfed and absorbed by a growing central city (Fankhauser, 1998). Areas once distant from the urban centre are now enveloped by new developments (Friess, 2008), resulting in indistinct borders for human settlements of all sizes, except for natural barriers such as rivers, mountains, and coastlines. This led to an explosive, disordered, and invasive landscape that evolved, illustrated by London's growth from 1800 to 1950.

Singh (2019) likens the city to a living organism that evolves in response to technological changes. This swift urban growth generates a chaotic metabolic process for the organism; as cities expand, inhabitants seek safe, comfortable, and livable areas that often lack a clear identity and character. The influx of new developments and town growth is driven by increased population movement and the search for natural resources, resulting in unpredictable urban growth. The consequences of this unplanned expansion include overcrowding, sanitation issues, fragmented urban design, and a weakened sense of community identity.

In Nigeria, Metropolitan Lagos exemplifies this expansion through the encroachment and colonisation of surrounding communities, serving as an excellent case for examining city dynamics, growth, and management often seen in malignancies. Lagos plays a pivotal role in the process of metropolitan expansion, characterised by an invasive urban form with irregular boundaries similar to a malignant lesion from a medical viewpoint. The emergence of satellite lesions or communities (suburbs) reflects patterns observed in urban and malignant growths. (Hern, 2001)

Malignant cells undergo various processes, including rapid cell cycles, genomic alterations, invasive growth, increased cell mobility, and changes in surface characteristics. These modifications cause significant variations in surface features, volume, nucleus-to-cytoplasm ratio, shape, density, and overall structure, similar to urban expansion. Morphologically, cancerous cells are characterised by large, irregular nuclei, with unlimited growth as their most defining feature. This uncontrolled growth mirrors the rapid expansion often seen in cities. Notably, while many traits are associated with malignancy, the absence of growth restrictions is exceptionally prominent, resembling urban sprawl, a malignant lesion with jagged edges. Hern (2001). Recently, Lagos has experienced dramatic population growth, counter-urbanisation, socio-economic advancements, and extensive infrastructure developments.

However, this progress comes with substantial costs, resulting in physical, social, and environmental damage. This is evident through severe traffic congestion, land-use conflicts, and inefficient urban planning, which in turn influence pollution management, sanitation, water quality, housing, transportation, and crime levels. Furthermore, the degradation of wetlands and natural habitats, as well as erosion, is a consequence of the city's expansion over time, reflecting a structure reminiscent of malignant lesions within urban environments.

This raises the question: Does a city expand and absorb neighbouring areas like a malignant tumour, sending out metastases, or does it grow by merging with adjacent regions, similar to malignant cells spreading throughout tissues away from the primary tumour (Norton, 2005)? Are urban settlements formed because the urban centre becomes large and congested, or do cities merge and “devour” smaller communities that develop at specific “nodes” beyond the central city (Benguigui et al., 2000; Benguigui & Czamanski, 2004), referred to by Frankhauser as the “enslaving principle” (Frankhauser, 1998)? Haken (1983) compared this situation to the coexistence of multiple factors competing until one dominates and captures the others while creating reproductive relations among the movements of its components. Additionally, Portugali (1994) argues that in a city, the enslaving process manifests in instances such as invasion-repulsion, invasion-succession, and the phenomenon of “gentrification” (Smith, 1982).

Metropolitan Lagos can be viewed as akin to satellite lesions, marked by the gradual extension of its periphery, the establishment of new communities far from the centre, and the transformation of natural and cultivated landscapes into urban areas. Originally a fishing and farming settlement in the seventeenth century, Lagos became significant as the only natural break along the West African coast, turning it into a critical slave-exporting port in the eighteenth century (Mehretu, 1983). By 1866, its population was approximately 25,000 (Ayeni, 1981), making it one of Nigeria's smaller settlements (Mabogunje, 1968). In 1886, Lagos spanned approximately 3.9 square kilometres and had a population of 25,083. Its total land area grew to roughly 70 km² in 1950, reflecting an increase of around 1,750% over the preceding 85 years. By 1976, urban development had expanded to cover approximately 271.2 square kilometres, increasing further to 355 square kilometres by 2000. By 2002, Lagos's lateral growth reached 845 km² over 24 years, marking a rise of approximately 323% (Oyesiku, 2002).

This growth, however, connotes an explosive, ragged, invasive appearance that increases with time. These patterns are prevalent across all continents and are not influenced by scale, culture, social organisation, or geography (Frankhauser, 1998; Manrubia et al., 1999; Frankhauser, 2004; Thomas et al., 2007). They resemble the expansion of London between 1800 and 1950 and the growth of Berlin from 1850 to 1945. Another relevant example is the five-city cluster in North Carolina, which was identified in Chapin and Weiss's (1962) ‘Urban Growth Patterns’. Hern (2008) also observed a similar morphology in the growth patterns of Kansas City, Chicago, New York City, Barcelona, and Zurich.

Today, metropolitan Lagos has expanded outward, absorbing nearby towns and villages, now covering approximately 1,068 km², with around 209 km² consisting of water and unclaimed mangrove swamps. This city is among the fastest urbanising regions globally and is Nigeria's most populous metropolitan area. Its population and area growth have been remarkable; from approximately 25,000 residents in 1866, Lagos surged to 665,000 by 1963, spanning 69.9 square kilometres (refer to Table 1). By 1995, the population exceeded ten million, earning it the designation of a megacity by the UN. Currently, its population stands at roughly 18 million, according to National Geographic (2009).

The urban socio-spatial dynamics and transformation of Metropolitan Lagos result from interactions at various system levels, individual choices, urban subsystems, and the urban macro system, leading to a continually evolving expansion process. This reflects a trend of malignant growth, driven by factors such as attractiveness, accessibility, spatial interaction, and socio-economic correlations that create areas of attraction and repulsion, resulting in rapid development.

The study examines the correlation between malignant growth and the expansion of metropolitan Lagos, exploring the parallels between urban growth patterns and malignant tumours. It highlights factors driving growth in metropolitan Lagos. It reveals that the characteristics and development of urban settlements, whether at a particular time or over lengthy periods, mirror the patterns and forms of malignant lesions.

1.2 STATEMENT OF PROBLEMS

Salau (2006) argued that Lagos, characterised by significant economic, spatial, and ongoing population growth, has developed into a Megacity. This urban structure comprises a metropolitan area that merges into continuous clusters of towns, residents, and economic activities, extending from the Atlantic Coast of Lagos eastward, westward, and northward into Ogun State, beyond Lagos State's borders.

The rapid expansion of Metropolitan Lagos has increasingly complicated and intensified various interconnected issues in its growth while also affecting the environment and heightening the demand for infrastructure, essential services, and housing. Problems such as unemployment, sanitation, waste management, transportation, crime, and social conflict are now more pronounced as the city's population surges under immense pressure. This population boom has occurred without effective control, leaving no clear prospects for management or limits on growth (Salau, 2006; Salau et al., 2009; Akinyode, 2010). Consequently, poverty, the rise of informal

settlements, overcrowding, and inadequate physical and social infrastructure have become persistent spatial and socio-economic problems stemming from urbanisation in Lagos (Ilesanmi, 2010; Morakinyo et al., 2012).

Batty and Xie (1999) and Batty (2005, pp. 429, 441) refer to this occurrence as a "spatial epidemic," in which urban agglomerations reach a state of "self-organised criticality" (SOC). This condition is characterised by unchecked, scale-independent growth that significantly affects the surrounding areas. According to Odum (1989), cities primarily function as heterotrophic and parasitic entities, consuming considerably more resources than they generate (Hern, 2008).

Settlements in Metropolitan Lagos face immense development pressure, yet there are limited signs of progress. As the city expands outward, it forms overflow settlements that spread irregularly, resembling a malignant lesion. This rapid and uncontrolled growth hurts the natural environment, as more land is consumed (Adeboyejo et al., 2007; Alabi, 2007; Hern, 2008).

Settlements often reveal the inherent inequities present in many large metropolitan areas. Population growth exacerbates these issues, potentially undermining social cohesion in cities. This growth usually leads to disparities among urban residents in terms of access to infrastructure and essential services, such as job opportunities, communal areas, and various forms of public infrastructure (Yousry et al., 1994). Additionally, these areas face heightened poverty levels, highlighting how urbanisation can contribute to greater spatial inequality (Rakodi, 1996).

The changing settlement pattern features low-density, sprawling development (Nelson, 1992; Lang, 2002), ongoing decentralisation to the outskirts of metropolitan areas, intrusion into agricultural and environmentally critical open spaces, ecosystem destruction, heightened infrastructure demand, and worsening suburban congestion. These developments typically display fragmented economic and residential landscapes, forming a complex and dynamic system that reacts to competing pressures. Often, this rapid process outstrips planning authorities' ability to manage the situation and regulate urban expansion.

According to METREX (1999), metropolitan regions face similar challenges, including economic shifts, social disunity, urban sprawl, traffic congestion, decline of the city centre, environmental degradation, and pollution. These regions have experienced considerable urban expansion,

resulting in increased land consumption but a decrease in the population of the urban core. Despite variations among different administrative and planning areas, Metropolitan Lagos exemplifies an international-scale urban region grappling with these shared challenges and opportunities (Rakodi, 1996; Roca et al., 2002).

Arora (2019) emphasised that metropolitan areas are characterised by high population densities, significantly low-income communities, pollution, waste production, and increasing sanitation demands. These related challenges weaken infrastructure quality, decrease open spaces, lower livability, and worsen housing conditions. Furthermore, these areas encounter increased disaster vulnerabilities and governance issues arising from overlapping territorial jurisdictions and multiple coordinating entities. Thus, these conditions present considerable challenges to metropolitan sustainability. Arora (2019) ended with an open-ended query about the importance of maintaining these cities versus passively waiting for their possible growth or decline. In this context, urban development surpasses infrastructure upgrades. Fluctuating land prices lead to housing shortages, which in turn contribute to the rise of slums and informal settlements, often located in high-risk areas vulnerable to floods and landslides. Higher population density amplifies the community's exposure to environmental and human-made dangers.

Research in Nigeria and Accra (Konadu-Agyemang, 1998; Tipple, 2000; Farunkanmi, 2003; Agbola, 2006; Salau, 2006; Salako, 2007; Tofowomo, 2008; Owei et al., 2008; and Olujimi, 2009) examined urban growth and the effects of rapidly expanding cities. Salau (2006) argued that the ongoing population and spatial growth in metropolitan Lagos have significantly impacted settlement patterns, land use, population concentrations, infrastructure, housing development, and transportation, leading to severe challenges. Konadu-Agyemang (2001) noted that the extensive growth of the Accra and Kumasi metropolitan areas has triggered rapid urbanisation with increasing densities and expansion into surrounding peripheral regions.

Tofowomo (2008) observed that urban growth in Akure is becoming increasingly spread out, extending urban land use into the rural-urban fringe and attracting more people to this interface. He suggested that the drive for a more appealing environment motivates urban growth. Over the years, this rapid expansion has coincided with unprecedented global population increases, leading to the encroachment of cities into the surrounding countryside. The scale of urban agglomerations can often resemble that of aggressive solid tumours, drawing parallels with malignancy; the city's physical structure and expansion mirror a malignant lesion, bearing the critical characteristics of a malignant neoplasm. However, the similarity between the growth and forms of cities and

malignant growth is obvious, and according to Bak (1996) and Hern (2008), there is a need to understand the complex realities of this metaphor, as a typical city may not be a cancer. However, it has all the characteristics of a cancer on the landscape. It is a complex (non-linear), dynamic (growing), topophagic (space-devouring) heterotrophic process that displays rapid, uncontrolled fractal growth, distant colonisation, invasion and destruction of adjacent natural ecosystems, and de-differentiation.

There is a strong agreement about the implications of urban growth, whether beneficial or detrimental. The positive aspect entails coordinated and structured development, whereas the negative aspect refers to chaotic and disorganised expansion, commonly known as sprawl (Oktay, 2007). This uncontrolled urban growth is often seen as a critical indicator of what many view as an "urban crisis."

Therefore, this study explored the patterns and processes underlying the growth of metropolitan Lagos. The research aims to precisely interpret the city's metropolitan growth through its expansion and associated growth processes, drawing a parallel to a malignant neoplastic lesion. By analysing Lagos's developmental stages over the past century, we can better understand its growth mechanisms and outline the harmful impacts of growth and expansion. However, the situation may have been deficient in other places, but it was notably worse in this case study, considering the poor state of things.

1.3 JUSTIFICATION OF STUDY

The theoretical framework for understanding malignant growth and urban development still needs development. A cohesive procedural framework concept, which could evolve into a theory, must still be established to ensure a consistent approach. Throughout this study, the concepts of malignant growth and urban expansion appeared only minimally in existing literature. Although the analogy between urban growth and cancer is clear (Hern, 2008), it is treated as a metaphor that requires empirical validation to establish a hypothesis. A modern city's interactions and growth dynamics may not be inherently cancerous.

However, from a medical perspective, its characteristics mirror those of a cancerous entity: the sprawling, invasive urban landscape with irregular boundaries resembles a malignant lesion. Malignant tumours typically exhibit four primary characteristics: unchecked rapid growth,

infiltration and destruction of surrounding normal tissues (ecosystems), metastasis (distant spread), and dedifferentiation. Many urban forms display striking similarities to these characteristics, often associated with urban growth and expansion. Metropolitan areas are increasingly recognised as significant drivers of social, economic, and environmental transformations in urban development, with their growth seen as competing for scarce resources rather than working in harmony (Taherkhani et al., 2009).

Development theories have primarily concentrated on contrasting urban growth and metropolitan development. While various theories explain metropolitan expansion in the planning literature, urban growth is a suitable framework. This emphasis on urban growth has led several authors to propose it as the foundation for understanding metropolitan growth and expansion.

Therefore, this study examines the processes associated with the spatial growth and expansion of metropolitan Lagos. The research analysed the development of the Lagos metropolis through the lens of its expansion and related growth factors. The evolution of metropolitan Lagos over the past century will be assessed to provide insights into growth mechanisms and the parallels and impacts of malignancy on expansion. The study analysed the growth and spread of metropolitan Lagos, comparing it to malignant development. Interestingly, no research over time has noted that such expansion typically exhibits the characteristics and effects associated with malignancy.

Furthermore, empirical evidence on the connections between metropolitan growth and expansion, as well as the similarities and impacts of malignancy on urban development, is limited. This represents a critical gap in the existing literature. Moreover, more data must be collected to ascertain whether urban growth theory effectively addresses the influence of malignancy on city expansion.

An analytical framework centred on the fractal dimension of urban growth, rather than simply detailing how malignancy affects city expansion, suggests that some evaluative frameworks from existing literature can be applied to examine these impacts on metropolitan development. Nonetheless, the insights from these studies have been mainly theoretical, resulting in a need for comprehensive descriptive analyses of actual case studies. (Bak, 1996; Fankhauser, 1998; Carr, Selin, and Schuett, 1998; Margerum, 1999a; Manrubia, et al., 1999; Lachapelle, McCool, and Patterson, 2003; Frankhauser, 2004; Salau, 2006; Aboderin, 2006; Thomas, et al., 2007; Salako, 2007; Friess, 2008; Hern, 2008; Hern, 2001; Arora, 2019).

Therefore, this study has established a descriptive framework for decision-making regarding urban growth and expansion. It examines the similarities and effects of malignancy on urban development, providing essential empirical research on metropolitan expansion and urban settlement growth.

1.4 AIM AND OBJECTIVES

1.4.2 Aim

This study examines the growth of metropolitan Lagos and its impacts, drawing comparisons to a malignant neoplasm.

1.4.3 Objectives

The goal above is accomplished via the following objectives:

1. To explore the growth and development of metropolitan Lagos.
2. To analyse the features of malignant growth processes.
3. To investigate the connections between urban forms and malignant neoplasms.
4. To evaluate the impact of malignant neoplasms on the development of metropolitan Lagos.

1.5 RESEARCH QUESTIONS

1. What are the growth and expansion processes of metropolitan Lagos?
2. What are the characteristics of malignant growth processes?
3. What are the similarities or correlations between urban forms and malignant neoplasms?
4. What are the effects of the malignant growth and expansion of metropolitan Lagos?

1.6 RESEARCH HYPOTHESES

The hypothesis below was tested to accomplish the study's objective.

Hypothesis One

H₀: Malignant growth patterns do not have a significant effect on urban forms

H_i: Malignant growth patterns have a significant effect on urban forms.

Hypothesis Two

H₀: Similarity of pattern with malignancy does not significantly affect the city's physical form and growth.

H_i: Similarity of pattern with malignancy significantly affects the city's physical form and growth.

Hypothesis Three

Ho: That cities (urban forms) have no characteristics in common with a malignant neoplasm.

Hi: That cities (urban forms) exhibit all the significant characteristics of a malignant neoplasm.

Null hypothesis: It is hypothesised that urban growth resembles a malignant neoplasm, representing a unifying process encompassing a wide variety of events and phenomena, including rapid human population growth, extensive human destruction of local, regional, and continental environments, as well as the global ecosystem, rapid urbanisation, global atmospheric changes, widespread anthropogenic extinctions, and resistance to population regulation. The hypothesis suggests that urban growth could persist similarly to cancer, despite humanity's ability to engage in numerous non-cancerous actions and occasionally demonstrate such actions.

Four characteristics of malignant tumours indicate that two should be classified as malignant. In contrast, the entire human population displays all four malignant traits, with at least three groups identified as malignant. This research examines the development of metropolitan Lagos and draws parallels between its growth and malignant neoplasms, analysing the effects of this expansion, which are similar to those of malignancy.

The study offers insights into the advantages and challenges associated with the scope and character of metropolitan Lagos. It also examines the key issues shaping the city's growth trends. Furthermore, it explores the dynamics of urban growth, emphasising the similarities between the development of metropolitan Lagos and malignant processes, along with their resultant effects. The research additionally investigates the nature and characteristics of urban Lagos, including its diversity, vulnerability, and the challenges of defining its ever-evolving boundaries. It focuses on metropolitan Lagos, renowned for its vibrant ecology, easy accessibility, varied landscapes, and cultural heritage. Consequently, it encompasses the 16 local government areas that constitute metropolitan Lagos.

1.7 SCOPE OF THE STUDY

Lagos State is situated in southwestern Nigeria, on the narrow plain of the Bight of Benin. It lies approximately at longitude 20° 42'E and 32° 2'E, and between latitude 6° 22'N and 6° 2'N. The State is bordered to the North and East by Ogun State, to the West by the Republic of Benin, and it stretches over 180 kilometres along the Guinea Coast of the Bight of Benin on the Atlantic Ocean. Its territorial extent and political jurisdiction include the city of Lagos and the four administrative divisions of Ikeja, Ikorodu, Epe, and Badagry, collectively referred to as IBILE.

This area covers 358,862 hectares or 3,577 sq. km, representing 0.4% of Nigeria's total land mass of 923,773 sq. km.

1.8 ORGANISATION OF STUDY

The First Chapter of the study presents background information and the problem statement. It explores the nature, causes, effects, and extent of the issue. This chapter also outlines the questions the study aims to address, the objectives to be achieved, the rationale for undertaking the study, and the fundamental theories that underpin the research.

The second chapter analyses literature on the topic from diverse sources. This literature review investigates the emergence and growth of Lagos metropolis over time, the impacts of this growth, and the shortcomings that accompany it. It parallels this urban expansion with malignant neoplasms while addressing the theoretical foundations required to comprehend these similarities. Additionally, the chapter proposes a conceptual framework to elucidate the connections between urban growth and expansion and their resemblances to malignant neoplasms, placing this discussion within the broader context of the growth effect in metropolitan regions.

Chapter Three delves into the characteristics of metropolitan Lagos and draws parallels with malignant neoplasms. It also outlines the research methodology employed in the study, covering aspects like research design, sampling techniques, data sources, and analysis methods.

Chapter Four presents the data analysis derived from the field, utilising cross-tabulation and various graphical formats, including graphs and charts. This analysis includes evaluations of land use and classification, Shannon entropy models, and a review of how malignant growth compares to the development of the Lagos metropolis. The concluding chapter showcases the study's key findings, derived recommendations, and conclusions.

1.9 DEFINITION OF RELEVANT TERMS

Agglomeration: Refers to a city and its surrounding communities connected as a single, contiguous area without distinct borders.

Benign: In urban development, benign may refer to policies or designs that are non-disruptive and sustainable, such as green architecture or low-impact zoning. In contrast, a benign tumour in medical science is non-cancerous and does not spread aggressively.

A Conurbation: A large urban area formed by merging multiple cities, towns, and villages into an interconnected, continuous region. It is an urban conglomeration where individual cities' influence zones overlap through constant development, with each maintaining its specific role.

Enslaving Principle: The structure originates from complex systems theory and synergetics, which study how systems self-organise. This concept is particularly applicable to urban dynamics and social structures in cities like Lagos. Large-scale, slow-changing patterns within a system can control or influence the behaviour of smaller, faster-changing elements.

Entropy: Entropy refers to disorder or randomness in a system. Urban theory describes the breakdown of spatial order, community fragmentation, or infrastructure decay over time. As urban systems grow unchecked, entropy increases, leading to spatial and social disorder. It captures the chaotic, unplanned expansion of a city.

Geographic Scale: This refers to the sizes of physical or social elements within a landscape, evaluated based on their topological, geometric, or geographic characteristics from a human-scale viewpoint.

Invasion of Tissues: Malignant cells can infiltrate and damage surrounding tissues, leading to organ dysfunction.

Lagos: Nigeria's economic hub, Africa's cultural trendsetter, and one of the world's fastest-growing urban areas. It's a place where chaos merges with creativity, tradition blends with innovation, and resilience shapes its identity. The city expands outward and upward, sometimes chaotically, sometimes brilliantly. Its growth can be seen as both destructive and magnificent, depending on one's perspective.

Lagos Metropolis: The continuous built-up area of Lagos extends from the Atlantic Coast and spreads eastward, westward, and northward beyond Lagos's boundaries into Ogun State. Lagos Metropolis is the densely developed, contiguous urban region within Lagos State's administrative borders. It includes both the historic Lagos Island and the expansive mainland suburbs, serving as the state and arguably Nigeria's economic, cultural, and infrastructural hub. The Lagos Metropolis covers the core urban area, comprising 16 local government areas, making it the most densely populated and economically vital zone in Nigeria.

Land Use: Land use refers to the allocation and management of land for various purposes, including residential, commercial, industrial, agricultural, recreational, and mixed-use areas. It functions both as a technical tool and a political declaration, showing who has access to specific land and where.

Malignant: Malignant describes cancerous cells characterised by uncontrolled growth, invasion of surrounding tissues, and potential to metastasise. These cells grow unchecked, invade nearby tissues, and can spread to other parts of the body. A faster cell cycle, genetic changes, invasive

growth patterns, increased mobility, chemotaxis, alterations in the cell surface, and the secretion of destructive factors into the blood and lymphatic systems are characteristics of malignant cells.

Malignant Growth: In a medical or urban context, it refers to an expansion that is aggressive, harmful, and uncontrolled. It's a term full of urgency and significance. Malignant growth describes cancerous tumours that grow quickly, invade nearby tissues, and can spread (metastasise) to other parts of the body.

Malignant Neoplasms: Malignant neoplasms, often referred to as cancers, are abnormal tissue growths that have the potential to invade nearby tissues and metastasise to other body parts via the blood or lymphatic system.

Malignant Lesion: Refers to an abnormal, cancerous tissue growth. Unlike benign lesions, which are non-cancerous and usually localised, malignant lesions have the potential to spread.

Malignant Process: (Of a tumour) that is uncontrollable or resistant to treatment, rapidly spreading and carcinogenic, resulting in unrestrained growth and damage to the surrounding environment. The term explains the biological process of cancer development, including how normal cells become cancerous and subsequently grow, invade nearby tissues, and spread throughout the body.

Malignant Tumour: Characterised by unchecked growth or resistance to treatment, it spreads quickly due to uncontrolled proliferation and ecosystem disruption, displaying carcinogenic traits.

Malignant Urbanisation: This refers to uncontrolled, damaging, and unsustainable urban growth, particularly in rapidly expanding cities like Lagos. Unlike well-planned urban development, malignant urbanisation causes significant social, environmental, and infrastructural problems.

Malignant Urbanism: The concept suggests that urban growth is now pathological- more than just chaotic, it is actively damaging. Similar to a tumour, it spreads uncontrollably, draining resources, displacing residents, and harming the city's social and ecological structure. This isn't merely about bad planning; it's planning that favours the powerful, deepens inequality, and results in significant environmental and human harm.

Medical Pathology: Refers to the scientific study of diseases, their causes, development, and effects on the body. In the context of urban planning, this term is often used metaphorically to describe malignant urbanism, where cities grow in chaotic and harmful ways that resemble the progression of a disease.

Metastasis: Malignant cells can disseminate to other parts of the body through the blood or lymphatic system, resulting in secondary tumours (metastases).

Metropolis: A large city or urban area serving as a central hub for a country's or region's economy, politics, and culture, while also functioning as a key centre for regional or international connections and communication.

Metropolitan Area: Refers to a region that includes a densely populated urban core and its less populated surrounding areas, sharing industry, infrastructure, and housing. A metropolitan area typically encompasses multiple jurisdictions and municipalities, such as neighbourhoods, townships, cities, peripheral settlements, and even special districts.

Metropolitan Corridor: Arterial pathways that connect the urban fabric of a city or region are central corridors through which economic activity, population movement, and infrastructure development are concentrated. In rapidly expanding cities like Lagos, these corridors are more than just roads or rail lines; they act as vital lifelines that influence the city's growth, accessibility, and resilience.

Metropolitan Lagos: Refers to the core urban zone of Lagos State, encompassing the most densely inhabited and economically vital areas. This includes Lagos Island, Victoria Island, Ikeja, Surulere, Apapa, and parts of Alimosho, Oshodi-Isolo, and surrounding regions.

Morphological Changes: Malignant cells may exhibit differences in size, shape, and structure compared to normal cells.

Neoplasm: A neoplasm is an abnormal tissue mass caused by uncontrolled cell growth. It can be benign (non-cancerous) or malignant (cancerous). The term specifically refers to abnormal tissue growth resulting from uncontrolled cell division. Overall, it covers both benign and malignant types.

Peripheral Area: A Areas area is a region where land transitions from agricultural to urban use. These outer zones of a city are often semi-urban or rural, characterised by lower development, limited infrastructure, and an emerging but uneven urban influence.

Planning Reform: The strategic overhaul of urban policies, regulations, and frameworks seeks better to manage city growth, infrastructure, and land use. In a rapidly expanding metropolis like Lagos, it is not merely a bureaucratic exercise but a crucial survival strategy.

Population Distribution: The distribution of people across an area. In most countries, there is an uneven spread with regions of high and low densities of people.

Population Structure: Population structure describes how a population is made up in terms of age, sex, and other demographics. This perspective is essential for understanding how a city like Lagos operates and how it should develop to accommodate its residents' needs.

Population Dynamics: Refers to the patterns and processes that shape how populations increase, decrease, and migrate over time. In urban settings, particularly in a megacity like Lagos, it provides a crucial perspective for understanding challenges like housing shortages and infrastructure

overload.

Primacy: Refers to a situation where a city has a significantly larger population than other cities and exhibits high centrality, highlighting its influential economic role within the national urban system.

Rural-Urban Fringe: The rural area bordering the developed region is under the most pressure from urban expansion, driven by many individuals and businesses seeking to move out of the city.

Satellite Lesions: Secondary abnormalities that form near a primary lesion are often called “satellite lesions.” This term is commonly used in medical and dermatological settings to describe small secondary lesions that appear close to the main one. Such lesions can be found in skin infections, tumours, or inflammatory diseases.

Self-Organised Criticality (SOC): This concept from physics and complexity science describes how systems naturally approach a critical threshold, where a minor disturbance can lead to a significant, unpredictable event. It’s similar to a sandpile accumulating grains until one causes an avalanche.

Settlement Hierarchy: This refers to the relationship between different types of settlements in terms of size, function, and influence. This explains how settlements are organised based on their size or the volume of goods and services they offer. A hierarchy typically appears as a pyramid because smaller settlements are more numerous than larger ones.

Settlement Structure: This pertains to the form and layout of settlements, covering land use patterns within them. Settlement refers to the spatial arrangement and hierarchy of settlements, from isolated rural hamlets to densely populated urban centres. It encompasses form, such as linear, clustered, radial, or dispersed layouts; scale, from single dwellings to megacities; function, including residential, commercial, industrial, or mixed-use purposes; and connectivity, how settlements are linked through roads, transit, and services.

Spatial Expansion: Spatial expansion refers to the outward growth of settlements, physically extending into surrounding areas. Population pressure, Economic development, Infrastructure projects, Land speculation and Planning failures or absence drive it. It entails the physical growth of urban regions outward from a central core, essentially, how cities like Lagos spread across land, how they stretch, sprawl, and reshape the land over time.

Spread Effects: This describes how growth in one region extends into neighbouring areas. Urban expansion affects nearby towns, where regions surrounding a growth hub gain from more outlets for agricultural products and are motivated to adopt technological advancements along the way.

Suburbanisation: Describes how regions expand around major cities, leading to urban sprawl. It

involves the migration of people, businesses, and services from city centres to nearby suburbs, influenced by factors like housing demand, transportation options, and lifestyle choices.

Transit-Oriented Development (TOD): This strategy integrates land use and transport planning to create compact, walkable communities centred on high-quality public transit. It involves designing cities so that residential, commercial, and recreational zones are clustered around efficient, sustainable, and inclusive public transportation networks.

Uncontrolled Growth: Malignant cells divide and multiply quickly, lacking the normal cellular controls that regulate growth and cell death. Just as cities expanding beyond their capacity cause traffic, pollution, and fragmented communities, rapid industrialisation that surpasses regulations or sustainability results in deforestation, overdevelopment, or resource depletion driven by unchecked growth.

Urban Agglomeration: Defines a broader urban region that encompasses the developed parts of a central municipality along with neighbouring suburbs, forming a connected metropolitan area. Multiple towns or cities come together to create a seamless urban environment, often with diverse economic and cultural zones that share infrastructure, labour markets, and services, despite having separate administrative boundaries. This region tends to attract increased investment, migration, and innovation, but also encounters issues such as congestion and inequality.

Urban Area: A geographical area that constitutes a city or town; an area with a higher density of human-made structures compared to the surrounding regions. Urban areas may include cities, towns, or conurbations, but the term is not generally used for rural settlements such as villages and hamlets.

Urban Cluster: An urban cluster comprises interconnected metropolitan areas, including major cities and similar-sized towns, that are situated close enough to facilitate commuting. It also denotes a dense zone in a city where population, infrastructure, and economic activities are highly concentrated. Seen as a node within the larger urban network, these clusters are usually compact, lively, and often act as catalysts for further development.

Urban Development: Urban development encompasses the planning, design, and management of urban growth and improvement. It involves aspects like infrastructure, housing, transportation, and economic development to foster sustainable, livable, and vibrant cities. Additionally, it accounts for changes, growth, or decline caused by various factors that lead to encroachment into natural landscapes such as deserts, forests, and swamps. Today, urban development is not just about expanding cities; it also involves a broader process of territorial transformation.

Urban Expansion: Is defined as the physical expansion of towns, cities, and metropolitan areas into the surrounding countryside, encompassing nearby villages and towns in the process. It refers to the physical expansion of urban regions, encompassing the outward growth of cities and towns

into surrounding rural or undeveloped areas. It often involves the conversion of land from non-urban uses, such as agriculture or forests, to urban uses, such as residential, commercial, or industrial areas. Various factors, including population growth, economic development, and changes in land use, can drive this expansion.

Urban Field: A region where urban features such as infrastructure, population density, and economic activity are spread across multiple nodes, rather than centred on a single dominant city. Functional interdependent towns, suburbs, and cities within the area are connected through transport, commerce, and shared services.

Urban Growth: as the absolute increase in the size of the urban population, refers to the proportionate growth of urban areas themselves, that is, annual net additions to the urban population divided by the size of the urban population. It is the expansion and transformation of cities over time, both physically and socially, as well as their demographic and economic growth. It's the heartbeat of urban evolution, but it can be either productive or pathological.

Urbanisation: Urbanisation refers to the rising share of people living in towns and cities. This process involves transforming land for residential, commercial, industrial, and transportation purposes. It encompasses both densely populated city centres and their surrounding peri-urban or suburban areas. Urbanisation reflects the percentage of a country's population living in urban zones and signifies the increasing concentration of people in cities, driven by social, economic, and technological factors. It is a defining feature of modern civilisation, as rural populations move to urban areas seeking better jobs, education, healthcare, and improved living standards.

Urban Pathology: Is a compelling metaphor that depicts cities as living organisms and identifies the diseases that afflict them when growth becomes harmful, chaotic, or unsustainable.

Urban Sprawl: Excessive urban growth refers to the physical expansion of cities, where development outpaces population growth. Urban or suburban sprawl involves the spread of low-density development, with cities expanding outward to include scattered housing, strip malls, and broad roads. This expansion often encroaches on surrounding agricultural land, resulting in fragmented communities. In these areas, essential services such as schools, hospitals, and shops are unevenly distributed, resulting in pockets of isolation.

Zoning is a fundamental principle in urban planning that divides land into designated zones, specifying the types of development and land use that are allowed or restricted. It functions as a city's guideline for permissible constructions and activities.

1.11 THE STUDY AREA

1.10.1 Introduction

This section analyses the study area and the geographical and locational features of metropolitan Lagos. It also explores current land use and development trends.

1.10.4 GROWTH AND STRUCTURE OF METROPOLITAN LAGOS

1.10.4.1 Geographical Location and General Characteristics

Metropolitan Lagos is a megacity in southwestern Nigeria, located on the country's west coast. It lies within latitudes 6° 42' N and 6° 41' N and longitudes 2° 42' E and 3° 42' E. This area includes the majority of the habitable sections of Lagos State. The study encompasses the 16 urban local government areas that make up metropolitan Lagos, as identified by the World Bank in 2005. These same areas were officially acknowledged by the Federal Government of Nigeria and the National Assembly as part of Lagos Metropolis in 2007.

Figure 1.1 highlights the 16 LGAs, including Agege, Eti-Osa, Ikeja, Ojo, Alimosho, Oshodi/Isolo, Ajeromi/Ifelodun, Amuwo/Odofin, Ifako/Ajayi, and Lagos Island. Additionally, it includes Lagos Mainland, Surulere, Kosofe, Mushin, Shomolu, and Apapa. The Metropolitan Lagos constitutes 37% of the total land area of the state and houses 88.7% of Lagos State's population (Lagos State Economic Summit, 2001). Covering 2,910 sq. km, the Lagos metropolis forms part of the 3,577 sq. km of the Lagos Metropolitan Area (George, 2002; Lagos State Digest, 2003).

Metropolitan Lagos features an island that is rich in creeks and lagoons. Water and wetlands are the primary topographical characteristics of Lagos, accounting for approximately 40% of the state's land area, with an additional 12% prone to seasonal flooding. The area has transformed from mainly farming and fishing villages into urbanised communities. It is bordered to the west by Ojo and Ijanikin, to the east by the Lekki Peninsula, and to the north by Ikorodu and Alagbado towns, as illustrated in Figure 1.1. According to the United Nations (UN) population growth projections for 2015, Lagos ranks as the world's third-largest city in terms of population. The increasing population inevitably leads to remarkable pressure, resulting in an unprecedented demand for land and expansion.

1.10.4.2 Area

Metropolitan Lagos spans 2,910 square kilometres and 787 square kilometres of lagoons and creeks. Notable waterways include the Lagos Lagoon, Lagos Harbour, Five Cowrie Creek, Ebute-Metta Creek, Porto Novo Creek, New Canal, Badagry Creek, Kuramo Waters, and Lighthouse

Creek.



Figure 1.1: Map of Metropolitan Lagos

Source: Lagos State Government (2022)

1.10.4.3 Urban Evolution of Lagos

In recent decades, cities around the globe, particularly in developing nations, have become the primary type of human settlement. In 1800, merely 50 million people were residing in urban areas worldwide. By 1975, this number had climbed to 1.5 billion, reaching approximately 3 billion by the end of the last century, exceeding the total world population of 1960.

UNDP projects that by 2025, the global urban population will exceed 5 billion, with 90% of this increase anticipated in developing countries. In this setting, Lagos has experienced significant growth since the colonial era, when it was Nigeria's administrative hub. Its advantageous location has greatly enhanced trade with its internal regions and neighbouring global markets.

The growth rate has been striking recently. Lagos, the second largest city in Nigeria, initially had a population of just over 250,000 in 1952, trailing behind Ibadan. By 1963, however, Lagos surpassed Ibadan, reaching a metropolitan population of more than 1.5 million. This city constantly grows and faces challenges such as uneven demographic expansion, congested urban centres, poorly designed streets, heavy traffic, and significant pollution (Koko et al., 2023).

1.10.4.4 Development of Lagos

Lagos transitioned from a small farming and fishing village in the 15th century to a megacity with

over 10 million residents by 2004. It has rapidly grown to be Africa's leading urban centre, home to various nationalities and numerous regional and sub-regional hubs for administration, commerce, transportation, industry, employment, information, communication, and technology (Lagos Megacity Report, 2004). The original name of Lagos, 'Oko,' which means 'farm,' represents its beginnings as a fishing and farming settlement founded by the Aworis, a subgroup of the Yoruba people. Its strategic location on the lagoons, adjacent to the Atlantic Ocean, made Lagos a prominent trading centre, drawing the Ijebu people as the first migrant traders from Nigeria's hinterland (Uthman, 2002).

Uthman (2002) suggests that from its establishment in the 15th century until 1861, when it was ceded to the British, Lagos served as a notorious 'slave port' along the Guinea Coast of West Africa, often called the Slave Coast. Portuguese traders named the city Lagos due to its extensive lagoon system during their visits in 1472 and 1482. After the British completely controlled the Lagos Colony in 1861, they abolished the slave trade. As the Crown Colony grew, Lagos became the terminus for numerous routes and a critical British Atlantic trading hub.

The first steamer route connecting Lagos and England commenced in 1853. Meanwhile, the Bank of British West Africa, now known as First Bank of Nigeria Plc, was founded in 1881, and telephone services started in 1882. Additionally, the Lagos Chamber of Commerce and Industry was established in 1884. These developments and the arrival of formerly enslaved people from Sierra Leone and the Americas significantly enhanced the diversity and scale of commerce in Lagos, leading to the construction of a modern port. This marked the beginning of Lagos's transformation into a distinguished commercial hub recognised worldwide.

In 1914, after the unification of the Southern and Northern protectorates, Lagos became Nigeria's capital. This merger led to railways and roads, improving regional connectivity and significantly boosting trade. Critical structures like the Carter and Denton bridges and the Ijora Causeway strengthened the connection between Lagos Island and the mainland in the Lagos colony. The city's increased political importance and a boom in domestic and international trade led to a significant uptick in urban activities and attracted many migrants. By 1800, Lagos's population had grown from 6,000 to 20,000 (Miller, 1994).

Miller (1994) noted that in 1917, the colonial administration categorised Nigerian towns into First, Second, and Third Class, designating Lagos as the sole First-Class town. This categorisation influenced the colonial administration's decisions regarding infrastructure, amenities, and

industries, supporting Lagos's swift physical and spatial expansion from its core.

When Nigeria gained independence in 1960, the Federal Ministry of Lagos Affairs governed Lagos as a Federal Capital Territory, while the Lagos City Council acted as the municipal authority. In 1967, amid the civil war, the nation was reorganised into twelve states, with Lagos and its surrounding areas designated as Lagos State. Lagos then became the Capital of both Nigeria and the new Lagos State. Earlier, with the creation of the Federal Capital Territory, Abuja, in 1976 and a further restructuring of the Federation into 19 States, Ikeja, located 80 km North of Lagos and within the Metropolitan area, became the capital of Lagos State (State of Lagos Metropolis Report, 2004).

Conversely, Lagos has grown beyond its physical boundaries, extending into adjoining Ogun State at various points. (Salako, 2007) This spatial growth of metropolitan Lagos has reached outwards, incorporating nearby areas, including settlements along the southwestern region of Ojo-Badagry, the southeastern route of Lekki-Epe, the northeastern stretch of the Ikorodu corridor, and Alimosho-Igando-Iba-LASU in the northwest. It has also extended to the Lagos-Otta and Lagos-Ibadan routes to the north of metropolitan Lagos and surrounding communities in the Agege-Agbado-Akute-Ojodu region (Salako, 2007).

Consequently, the Lagos Metropolis now incorporates an ever-expanding zone comprising 16 of the 20 urban local government areas in Lagos State. It includes newly established urban and rural communities and settlements from various geographic regions that have developed at different times, all closely linked to the Lagos metropolitan area (Lagos Mega City Report, 2006).

Salako (2007) remarked that due to the saturation of metropolitan Lagos, growth has extended outward to surrounding settlements. These areas are highly conducive to expansion, demonstrating strong connections with Lagos and vibrant informal economic activities that benefit local and urban populations. Consequently, regions along the borders between Lagos and Ogun State, including Otta, Ibafo/Mowe, Ojodu/Akute, and Ogijo, are experiencing increased pressure as the Lagos Metropolis spreads into them. (Lagos Megacity Report, 2006).

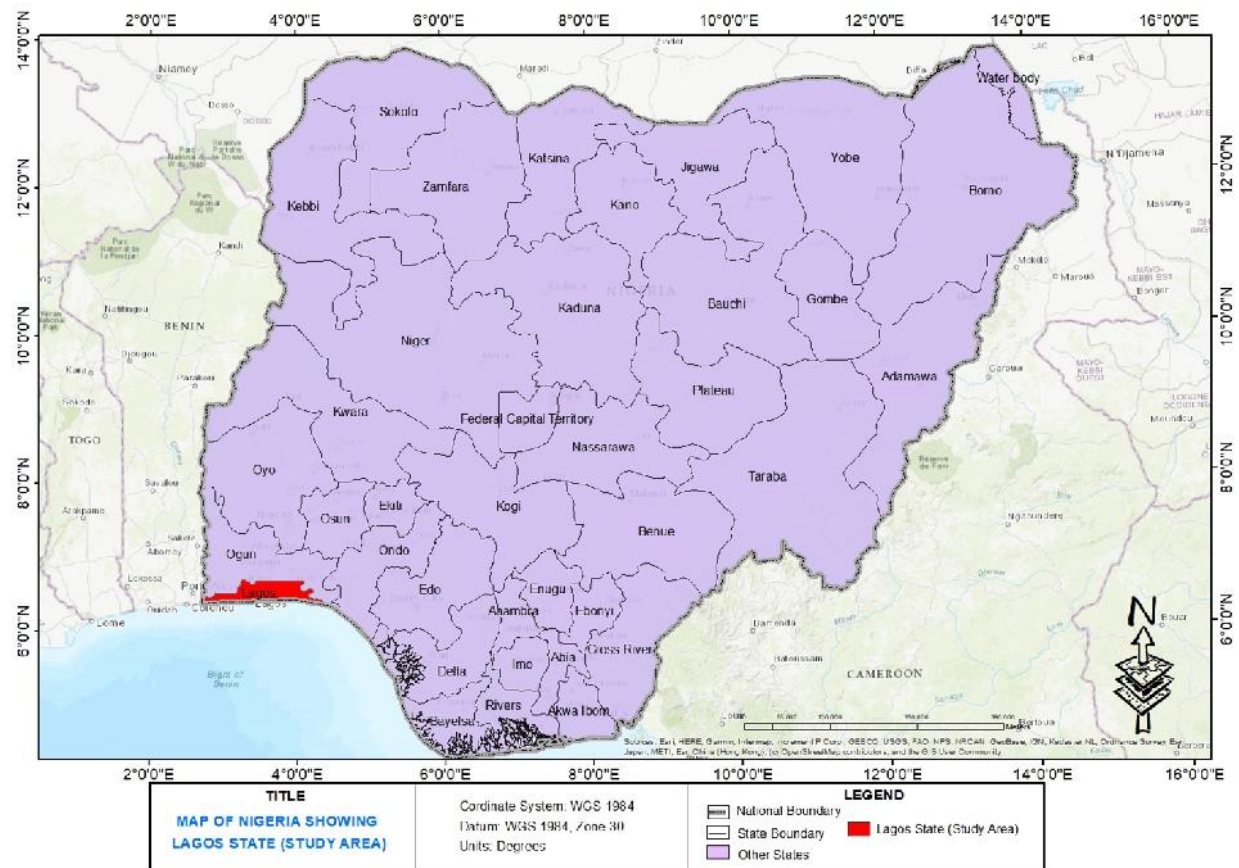


Figure. 1.2 Lagos State within the National Context

Source: Lagos State Government (2022)

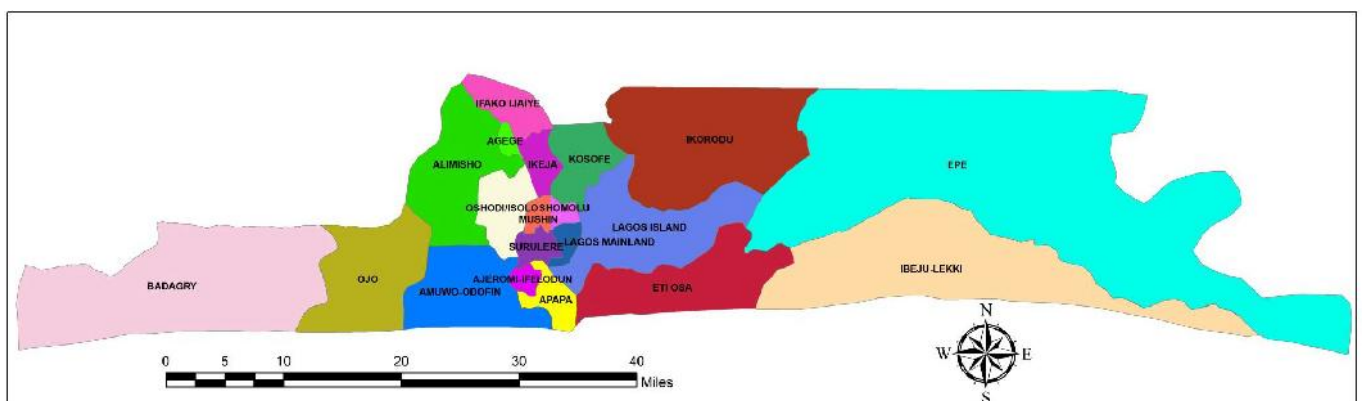


Figure 1.3 Map of Lagos State Showing Lagos Metropolis and Other Districts in the State

Source: Lagos State Government (2009), Ministry of Physical Planning and Urban Development

1.10.4.5 Population Growth and Density.

Lagos State spans roughly 358,862 hectares, equivalent to 3,577 sq. km, of which around 75,755 hectares are wetlands (Lagos State Government, 2011). Positioned on the coastal floodplain of the

Bight of Benin, it lies approximately between latitudes 6° 23' N and 6° 41' N, along with longitudes 2° 42' E and 3° 41' E.

A robust economic landscape matches the population growth, further promoting population increases. Since 1960, the total population has surged from 763,000 to 2,025,000 by 1975 and 4,385,000 in 1985. By 1990, it reached 7,742,000, growing to 10,287,000 in 1995, 13,427,000 in 2000, and 16,864,000 by 2005.

According to estimates by the Lagos State Government and the United Nations, Lagos is recognised as a megacity (Abiola, 2012). Ilesanmi (2010) identifies Lagos as the world's fifth-largest city. Roughly 91% of its population lives in urban areas, with a density of about 20,000 people per square kilometre in developed regions. The average occupancy rate ranges from 8 to 10 residents per room, with 72.5% of households occupying one-room apartments (Lagos State Ministry of Housing, 2010). Lagos's population increase reveals three clear trends: modest but consistent annual growth rates, succeeded by rapid and explosive expansion, and ultimately a phase of steady decline, though characterised by a high annual growth rate and a period of steady low growth from 1866 to 1950. This period can be further divided into 1891 to 1921 and 1950, during which the city's population increased by more than threefold in each subperiod. (Ajetumobi, 2010).

The growth of Lagos mainly stems from the merging and clustering of smaller settlements, driven by rapid urban development. Consequently, many new residents frequently relocate to the suburbs of Lagos. This ongoing growth of the Lagos metropolis underscores the significance of urban development and the transformation of metropolitan areas as vital components.

Between 1952 and 1970, Lagos experienced significant population growth, which can be divided into two phases: 1952-1963 and 1963-1970, during which the city's population reached one million. (See Table 1.1) Over the past few decades, Lagos's population has tripled in just ten years. (Lagos Metropolis Report, 2004) Higgins (2011) observed that by 1995, nearly all of the city's approximately five million residents lived in central Lagos. This pattern underscores the substantial expansion of Lagos's area and population from 1990 to 2008, with an urban density averaging 15,182 individuals per square kilometre. (Refer to Figure 1.7)

Table 1.1: Showing The Growth of Metropolitan Lagos

No	Year of census	Total population	Area covered by the Census (km ²)
1	1851	25,000	3.9
2	1866	28,518	3.97
3	1901	40,000	3.97
4	1911	73,766	46.6
5	1921	99,690	52.3
6	1931	126,108	66.3
7	1952	272,000	69.9
8	1963	665,000	69.9
9	1970	1m	112.70
10	1995	10m	710
11	2006	9,113,605	974
12	2011	Projected to 18m	1,085.90
13	2015	20,430,000	1,171
14	2019	23,249,300	1,240
15	2024	24,495,600	1,368

Sources: Adapted from Abiodun (1997), Ayeni (1981), National Population Commission of Nigeria, Lagos State Government 2006, and the National Geographic (2009).

The city is compact, with the highest population density in its northern, western, and eastern regions. In contrast, Figures 1.6-1.7 illustrate that from 1990 to 1999, the city increased its population and expanded its area, growing by about 5.69 million, averaging an increase of roughly 474,000 people annually. The central regions of the city continue to see a rise in density. Meanwhile, there are more sparsely populated zones in the regions where the city has expanded since 1990, particularly in the western parts. As a result, the overall urban area is now less dense compared to 1990.

Higgins (2011) states that growth is defined more by spatial expansion than by population increase. Throughout the study period, the city's population surged from approximately five million in 1990 to over ten million by 2008, as illustrated in Figure 1.8. Meanwhile, the city's physical area expanded nearly threefold during this timeframe. Higgins (2011) further highlighted that in 2008, Lagos saw ongoing growth in its population and size. Although the city's expansion rate started to slow down, the population growth exceeded that of earlier years. Between 1999 and 2008, the area's population surged to nearly three million, resulting in an annual increase of about 330,000

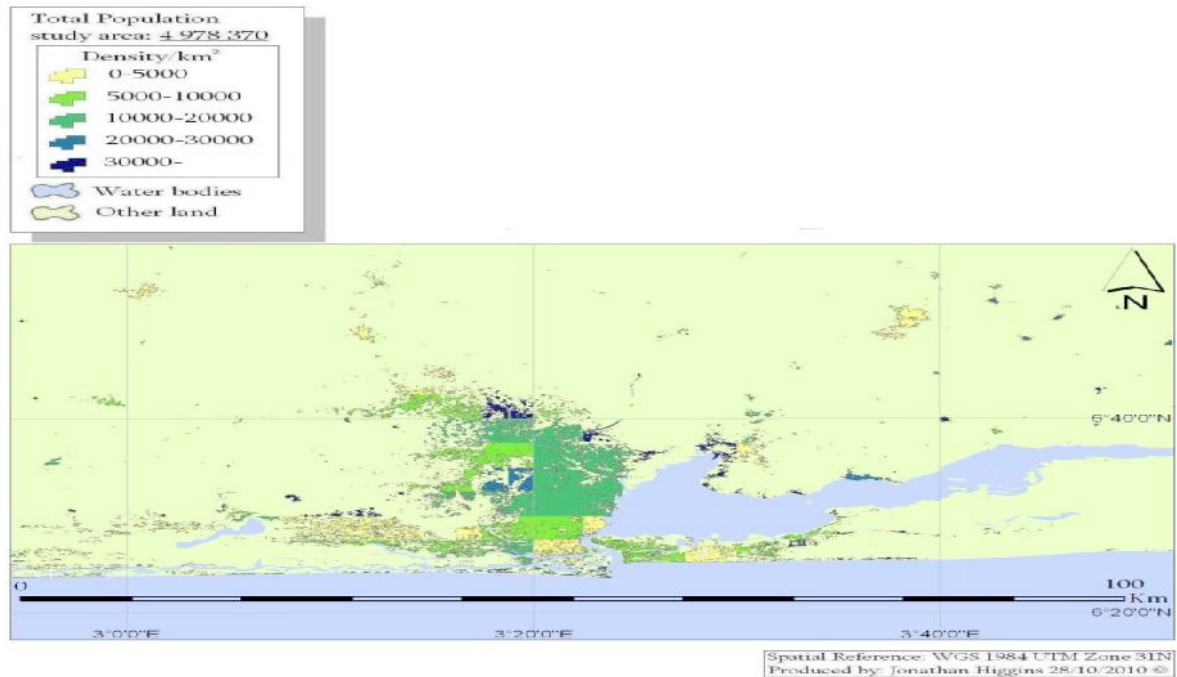


Figure 1.4 The population and population density of Lagos for the year 1990

Source: Higgins, 2011

people.

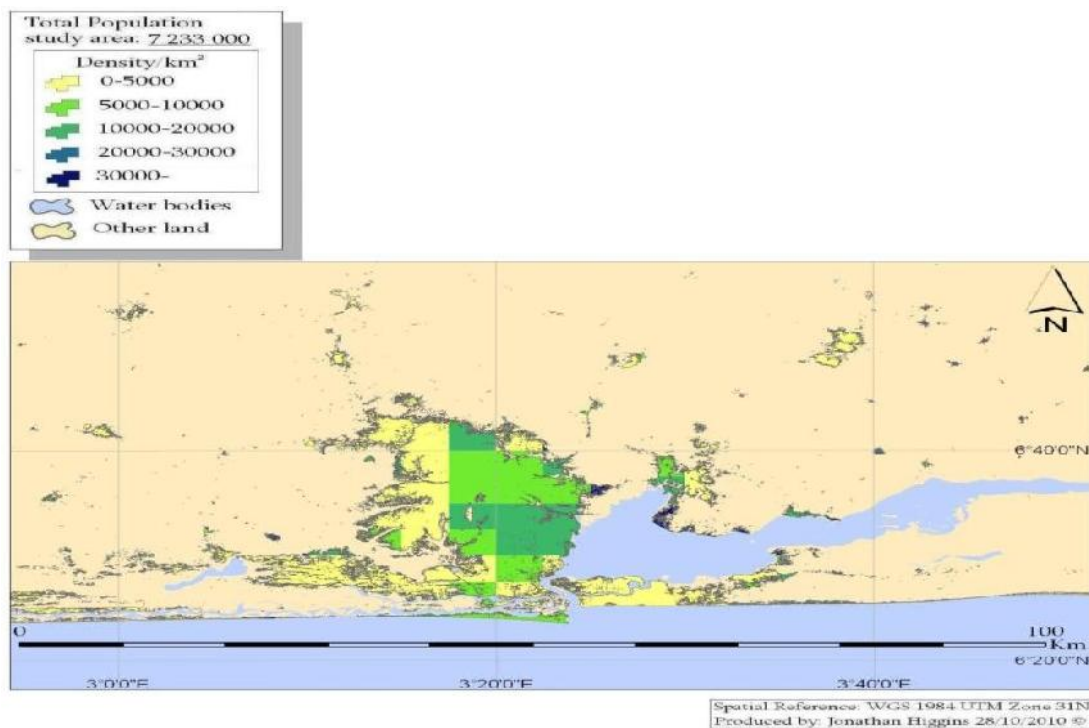


Figure 1.5 The population and population density of Lagos for the year 1999

Source: Higgins, 2011

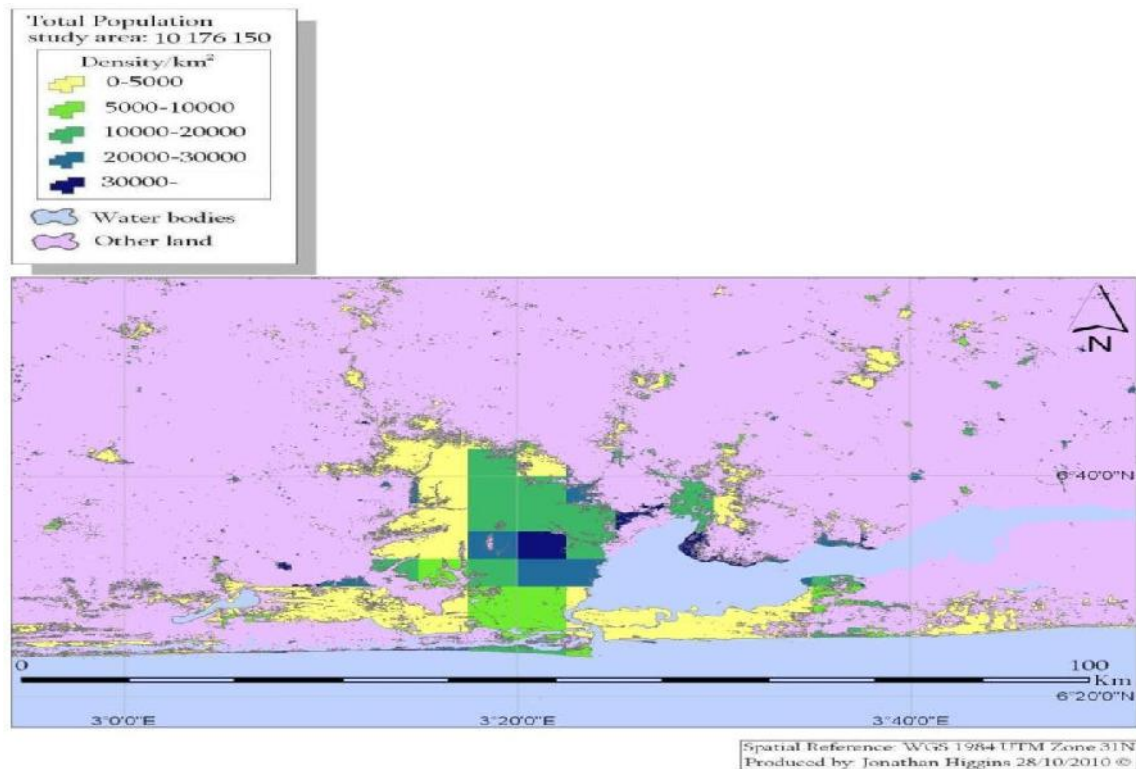


Figure 1.6 The population and population density of Lagos for the year 2008

Source: Higgins, 2011

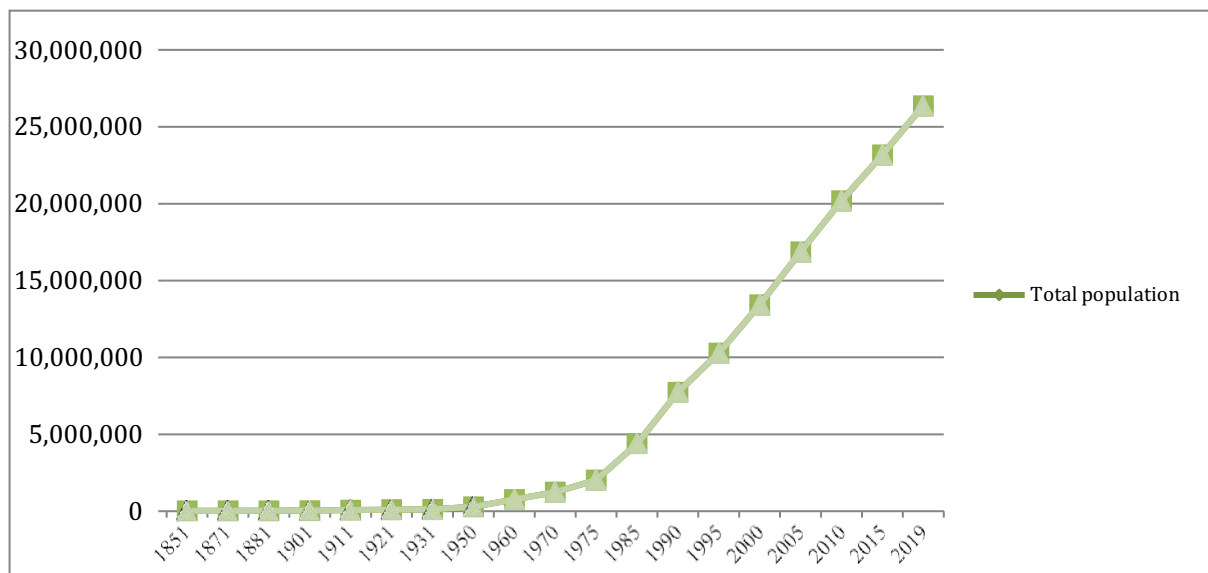


Figure. 1.7: Population Growth of Lagos from 1866 to 2019

1.10.2.5 Physical Growth of Lagos

After the British colony was formed in 1861, Governor Macgregor initiated a significant clearance project around the Lagos Marina. This led to the displacement of residents to make way for broad sidewalks along the Marina and Broad Street. By 1900, Lagos had transformed into a modern city.

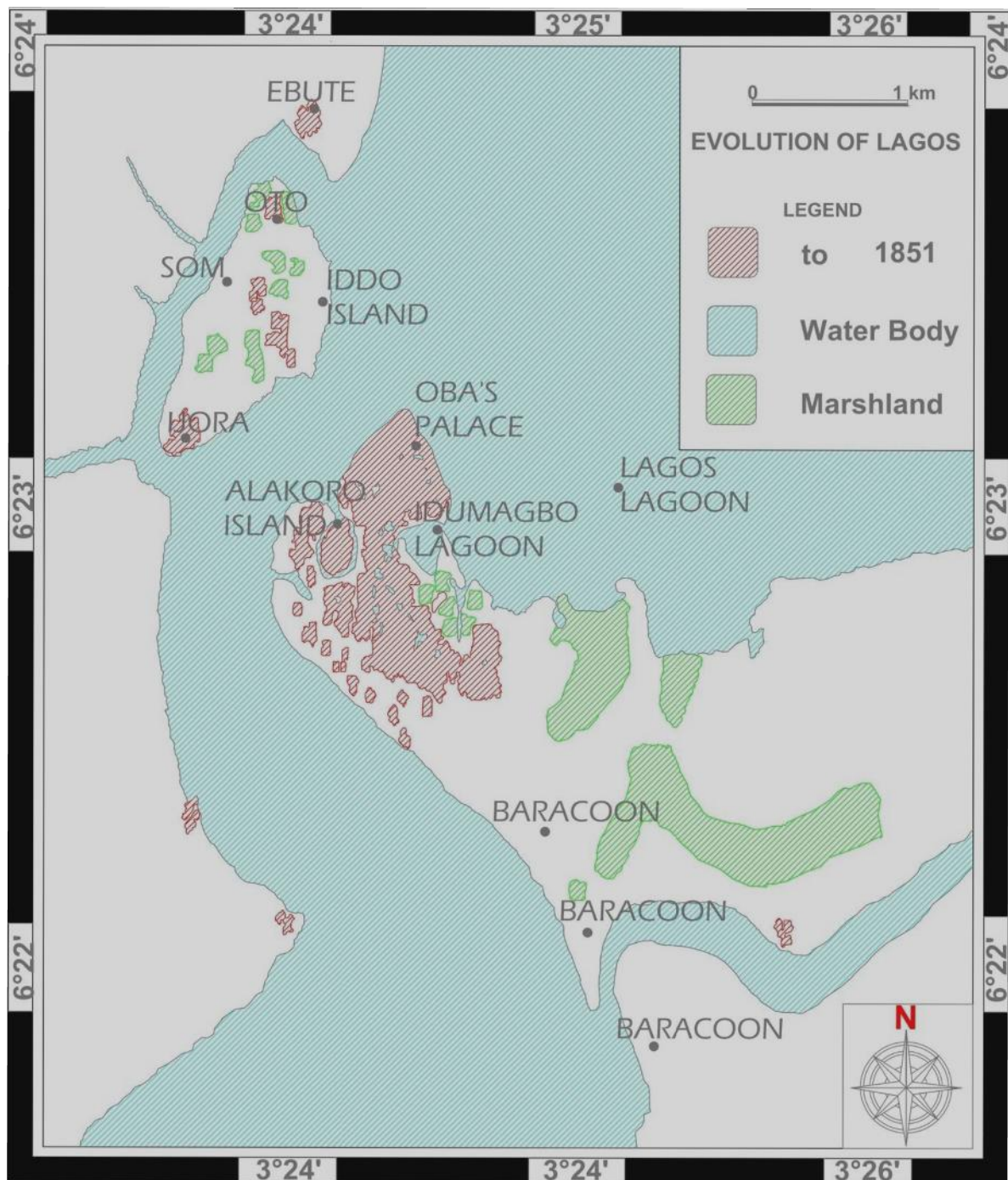


Figure 1.8 Built-up Area of Lagos in 1851

Source: Adapted from the Federal Surveys Map 1963

The city has expanded from its original 70 km² base to accommodate rapid population growth, incorporating neighbouring fringe settlements. The creeks, lagoons, and mangrove swamps surrounding Lagos pose various challenges for physical development. However, in the past decade, Lagos has witnessed impressive growth. As of 1963, the population was 665,000,

distributed over 70 km² (Abiodun, 1997). Figure 1.10 illustrates the urban development of Lagos from 1962, 1967, 1984, to 2000, showcasing the significant rise in land-use demand. Between 1980 and 2000, the population of Lagos nearly tripled, as illustrated in Table 1.2. This swift population growth generated an increasing demand for residential land, informal settlements, and commercial spaces, resulting in spatial transformations that contributed to the expansion of the Lagos metropolis.

Urban researchers have identified specific areas in Lagos referred to as the Indigenous nucleus, featuring notable place names that encompass significant Indigenous neighbourhoods, including Ebute Ero, Ofin, Olowogbowo, Epetedo, Obalende, Popo-Aguda, Isale Eko, Ereko, and Oko Faji. (See Figure 1). Additionally, the city's size has expanded, with more residential areas developing in the suburbs, particularly to the north and east of Lagos. Overall, the growth of metropolitan Lagos has seen larger built environments extending from the original city centre (Figure 1.10). The most significant development is found in the eastern and northern regions, as the presence of water bodies limits expansion to the south and west. New urban clusters around the city centre are often aligned with transportation connections.

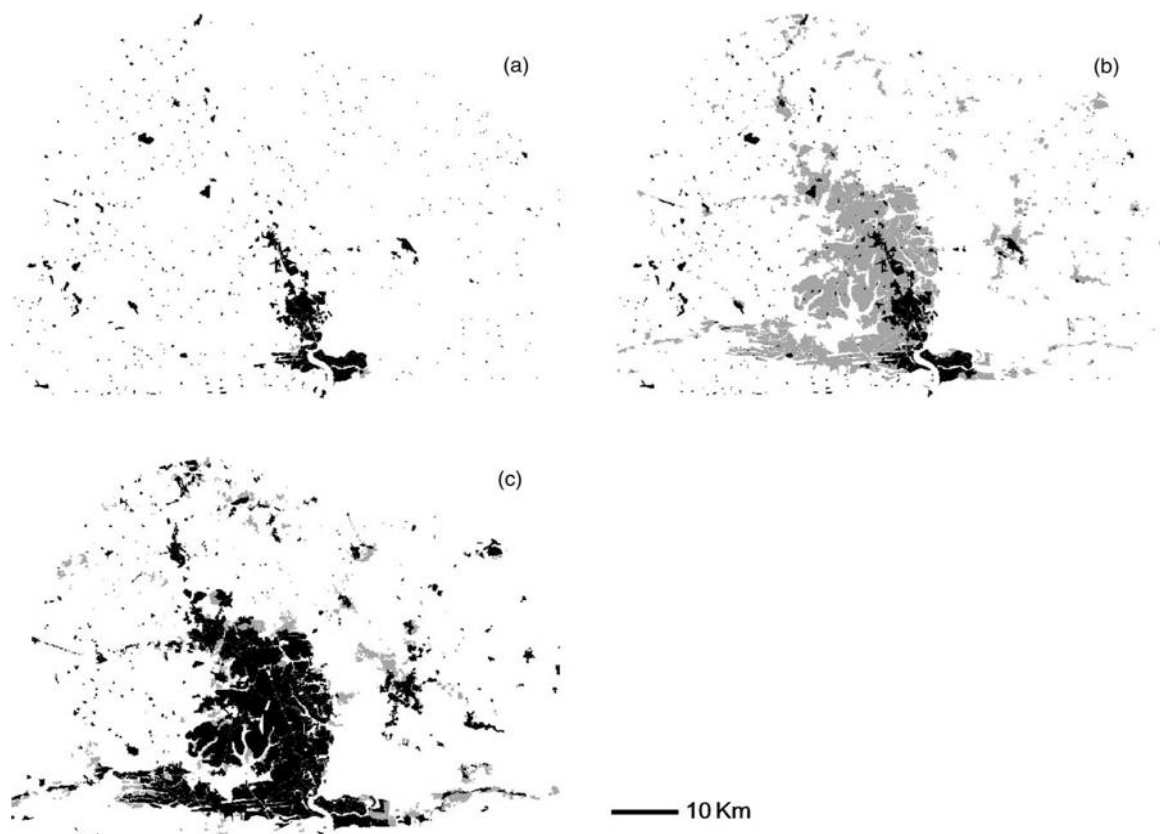


Figure 1.9 Evolution of urbanised areas in Lagos.

- (a) In black 1960, in grey 1970.
- (b) In black, 1970; in grey, 1984.
- (c) In black, 1984; in grey, 2000.

Source: Demicheli (2003)

Table 1.2: Showing the Evolution of Urbanised Areas in Lagos

	Population		Area (km ²)	
a	1960	1970	1963	1970
	763,000	1,242,000	69.9	112.7
b	1970	1995	1970	1995
	1,242,000	10,287,000	112.7	710
c	2000	2010	2000	2010
	13,427,000	20,192,100	818.7	1,085.9

Source: Fieldwork, 2025

Ajetumobi (2010) notes that the city's spatial growth was achieved through various land reclamation projects that occurred in three primary phases: from 1900 to 1929 (Okokomaiko-Oke-Ipa, Mekunwen, Okesuna, and Ago Elesin in Obalende), from 1930 to 1950 (Elegbeta, Idumagbo, Isale Gangan, Idunsagbe, and Oko Awo), and from 1951 to 1970 (regions near south-west Ikoyi, Victoria Island, and Iganmu), as illustrated in Figures 1.11 and 1.12.

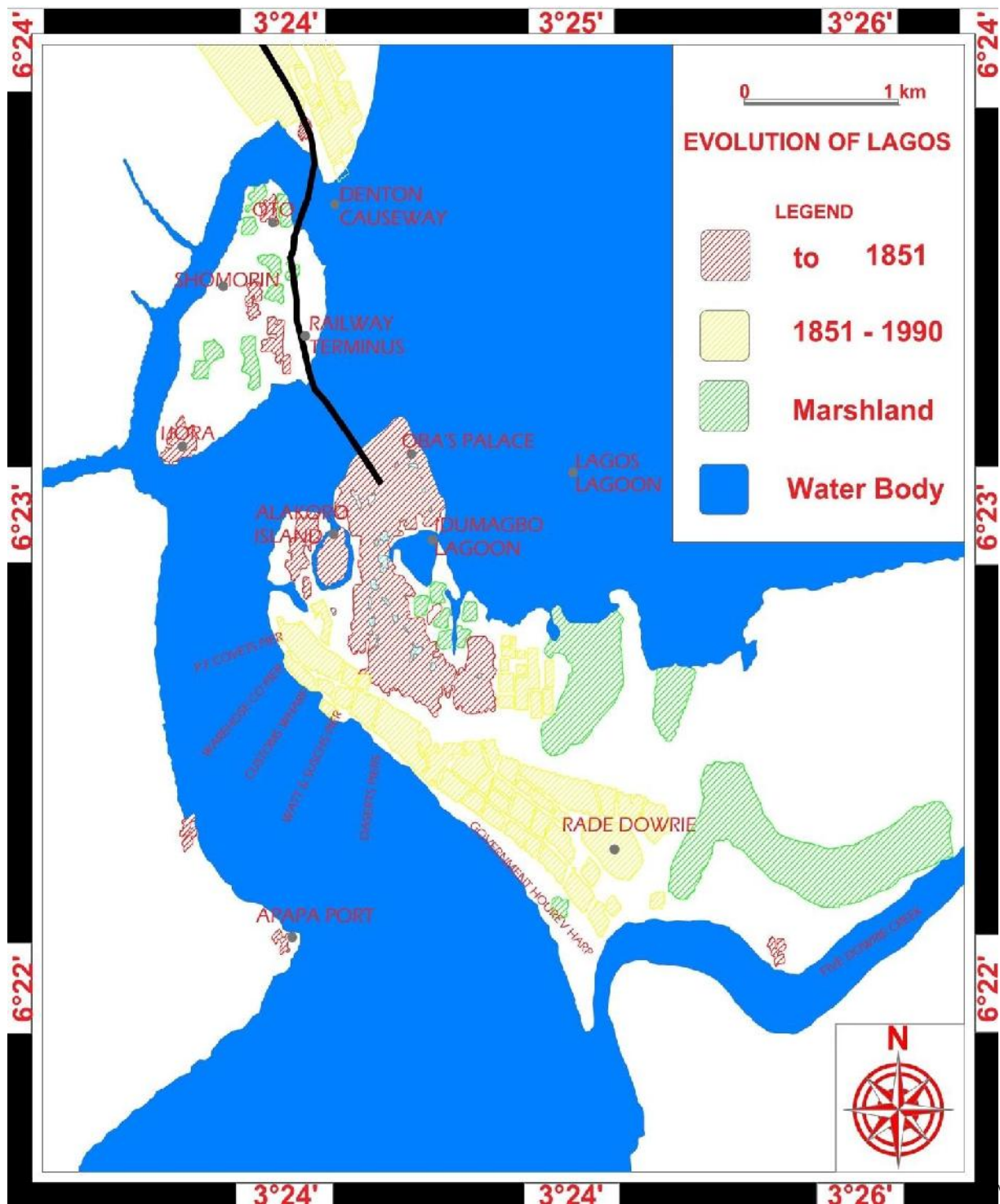


Figure 1.10 Built-up Area of Metropolitan Lagos in 1900

Source: Adapted from Mabogunje, 1968

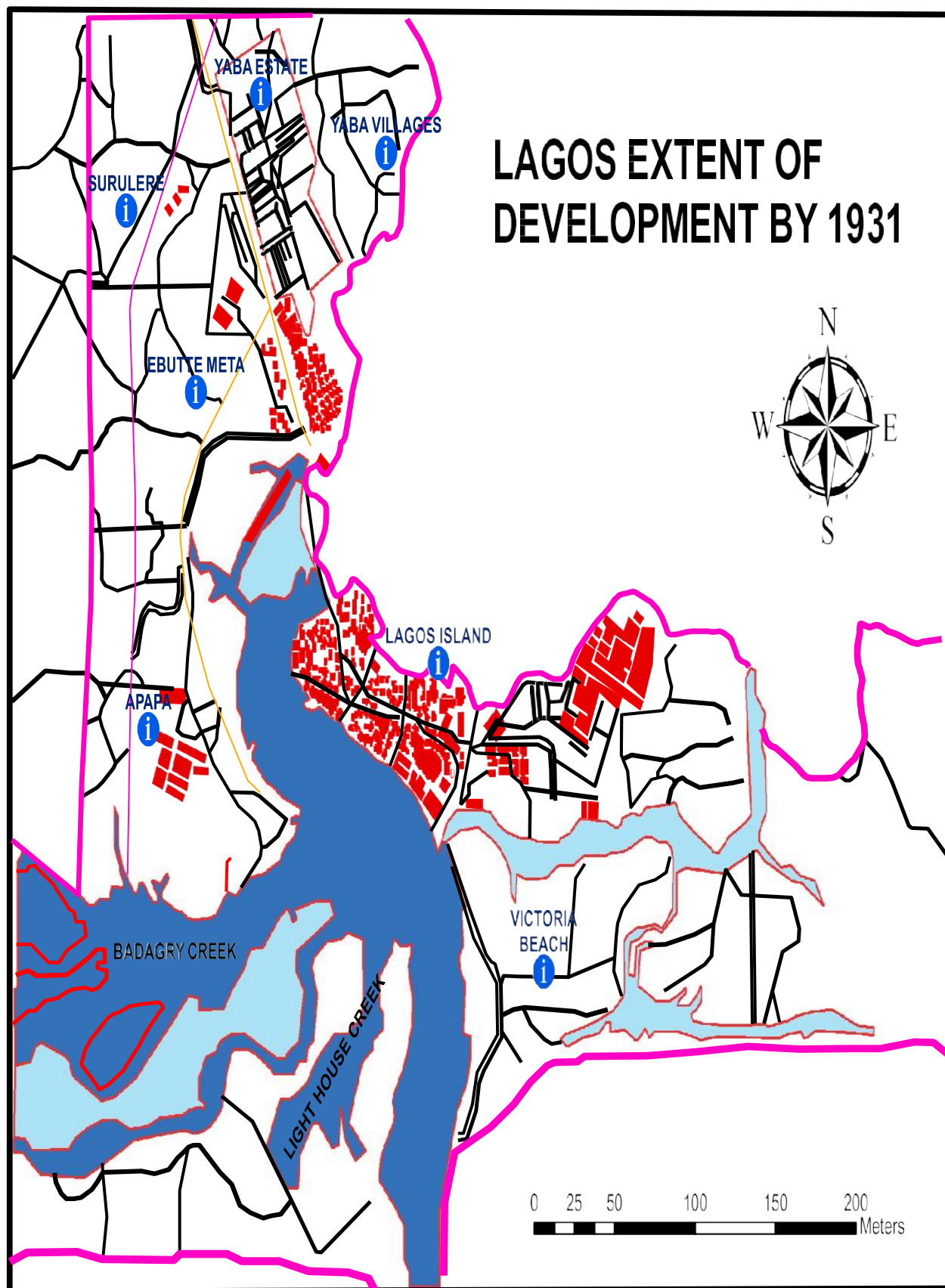


Figure 1.11 Built-up Area of Metropolitan Lagos in 1931

Source: Adapted from Aduwo, 1999

Table 1.3: Showing the Estimated Population Figures for Metropolitan Lagos

Name	Population Census 1991-11-26	Population Census 2006-03-21	Population Projection 2019-03-21
Agege	417,981	1,033,064	1,555,800
Ajeromi-Ifelodun	593,561	1,435,295	2,161,600
Alimosho	430,890	2,047,026	3,082,900
Amuwo-Odofin	225,823	524,971	790,600
Apapa	154,477	522,384	786,700
Eti-Osa	157,387	983,515	1,481,200
Ifako-Ijaye	233,341	744,323	1,121,000
Ikeja	203,383	648,720	977,000
Kosofe	412,407	934,614	1,407,600
Lagos Island	165,996	859,849	1,295,000
Lagos Mainland	273,079	629,469	948,000
Mushin	539,783	1,321,517	1,990,300
Ojo	215,837	941,523	1,418,000
Oshodi-Isolo	449,781	1,134,548	1,708,700
Shomolu	358,787	1,025,123	1,543,900
Surulere	462,261	1,274,362	1,919,200
Lagos	5,294,774	16,060,303	24,187,400

Source: National Population Commission of Nigeria. (2006) Lagos Bureau of Statistics (2021).

<https://www.citypopulation.de/en/nigeria/metrolagos/>

The population of the Local Government Areas (LGAs) of Metropolitan Lagos, according to census results and latest population projections (Figure 1.12). This process significantly expanded the metropolis after 1952, incorporating several small neighbouring areas, such as Mushin, Somolu, and Bariga, which were once part of the former Western Region and initial destinations for many migrants heading to Lagos. Between 1952 and 1963 (Figure 1.2), these small areas experienced substantial population growth. As the city expanded, it absorbed nearby settlements, including Ikeja, Somolu, Ketu, the Lekki Peninsula, and Ojo, thereby encroaching on Ikorodu and underscoring urban sprawl and peri-urban agglomerations. Consequently, metropolitan Lagos has evolved spatially from a core settlement of approximately 3.97 km² in 1851 into a sprawling metropolis of over 2,910 km². Currently, metropolitan Lagos accounts for approximately 37% of Lagos State, with 787 km² of this metropolis comprising water bodies, wetlands, and mangrove swamps (George, 2002). This vast aquatic landscape has led to metropolitan Lagos nearly transforming Lagos State into a city-state.

Figure 1.9 shows that in 1851, Lagos covered about 3.9 km² and had a population of 25,083. By 1950, the area surged to nearly 70 km², reflecting astonishing growth of around 1,750% in about 85 years (Figures 1.9-1.12). By 1976, the city had expanded to approximately 271.2 km² and had grown to 355 km² by 2000, as shown in Figures 1.13-1.15. In 2002, Lagos's extension soared to 845 km² within just 24 years, representing a significant increase of around 323% (Oyesiku, 2002).

The continuous influx of residents has spurred Lagos's expansion, creating new opportunities for socio-economic activities in the inter-urban area. This growth has also promoted the development and modernisation of business districts in the city centre while pushing some activities and residences to the outskirts.

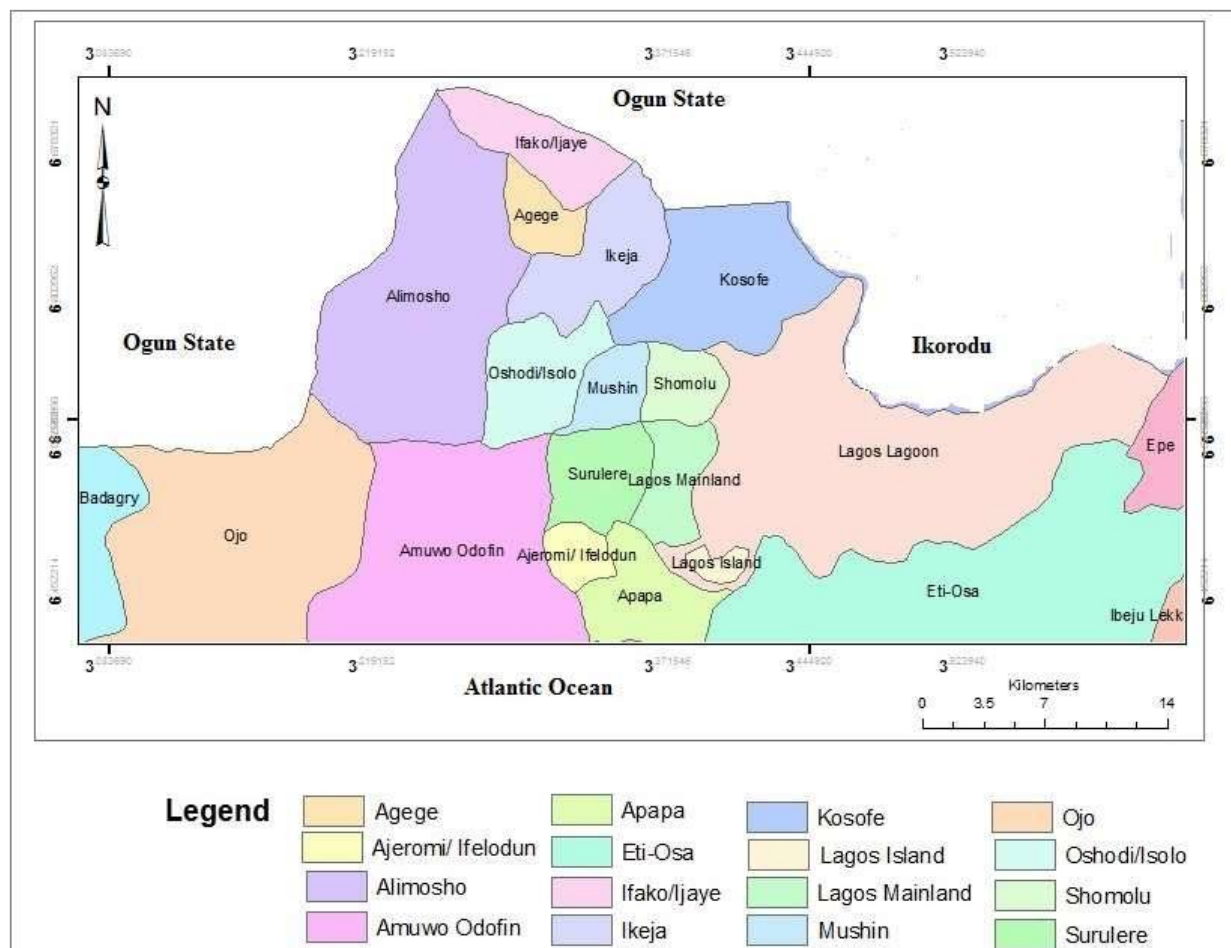


Figure 1.12 The 16 Local Government Areas (LGAs) of Metropolitan Lagos

Source: <https://www.citypopulation.de/en/nigeria/metrolagos/>

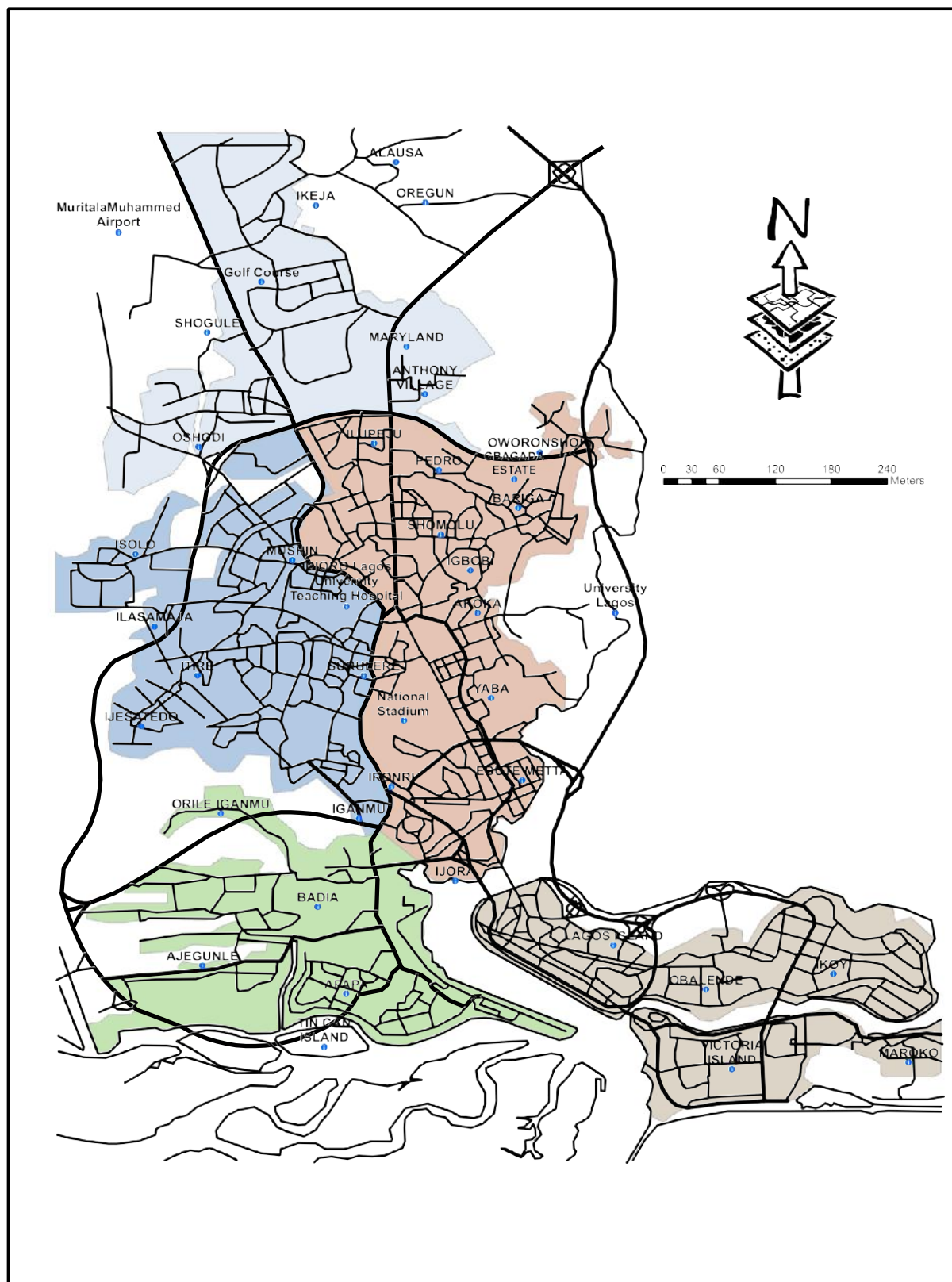


Figure 1.13 Built-up Area of Metropolitan Lagos in 2000

Source: Salau 2006

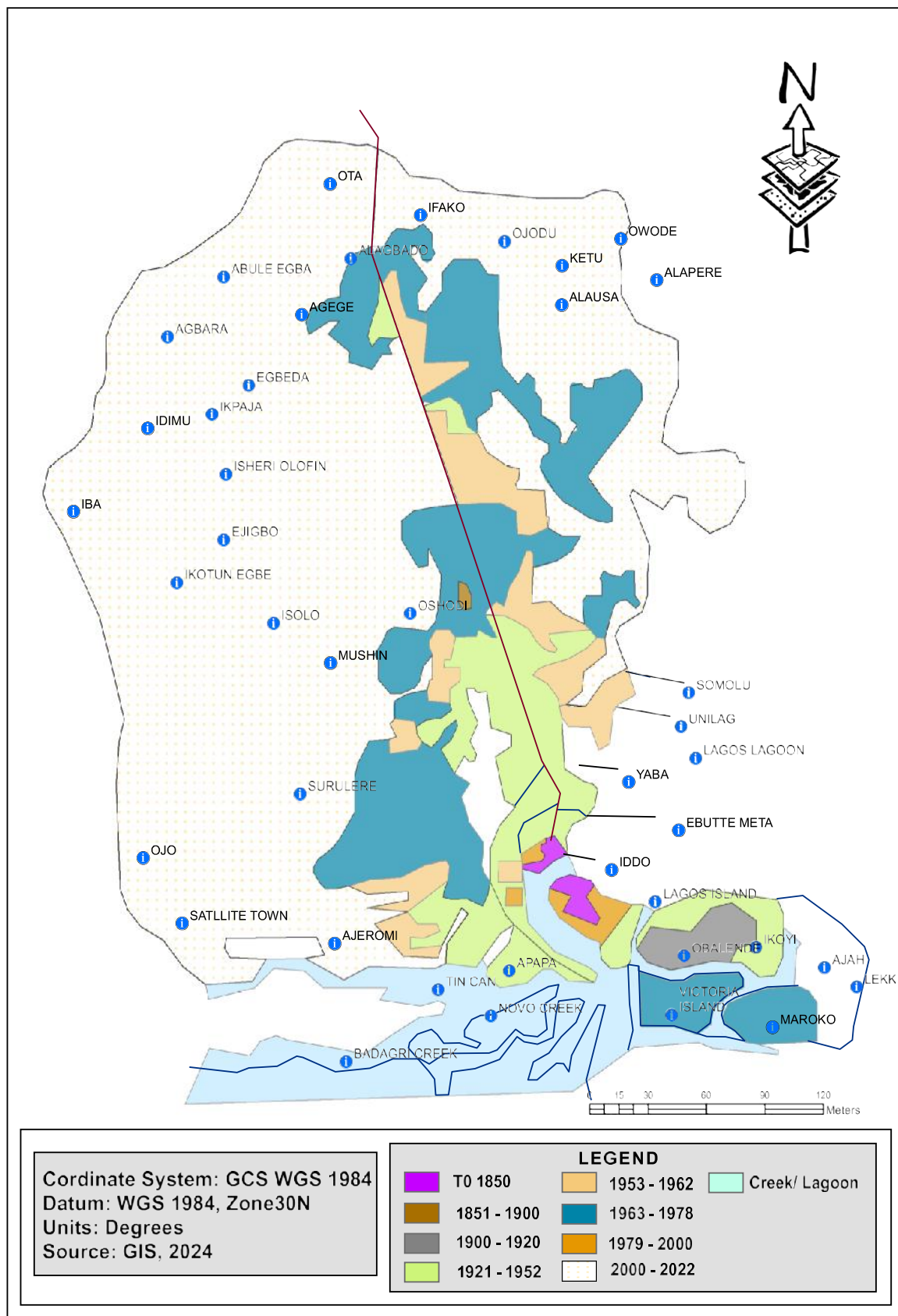


Figure 1.14 Built-up Area of Metropolitan Lagos in (1850-2022)

Source: Adapted from Oyesiku 2002

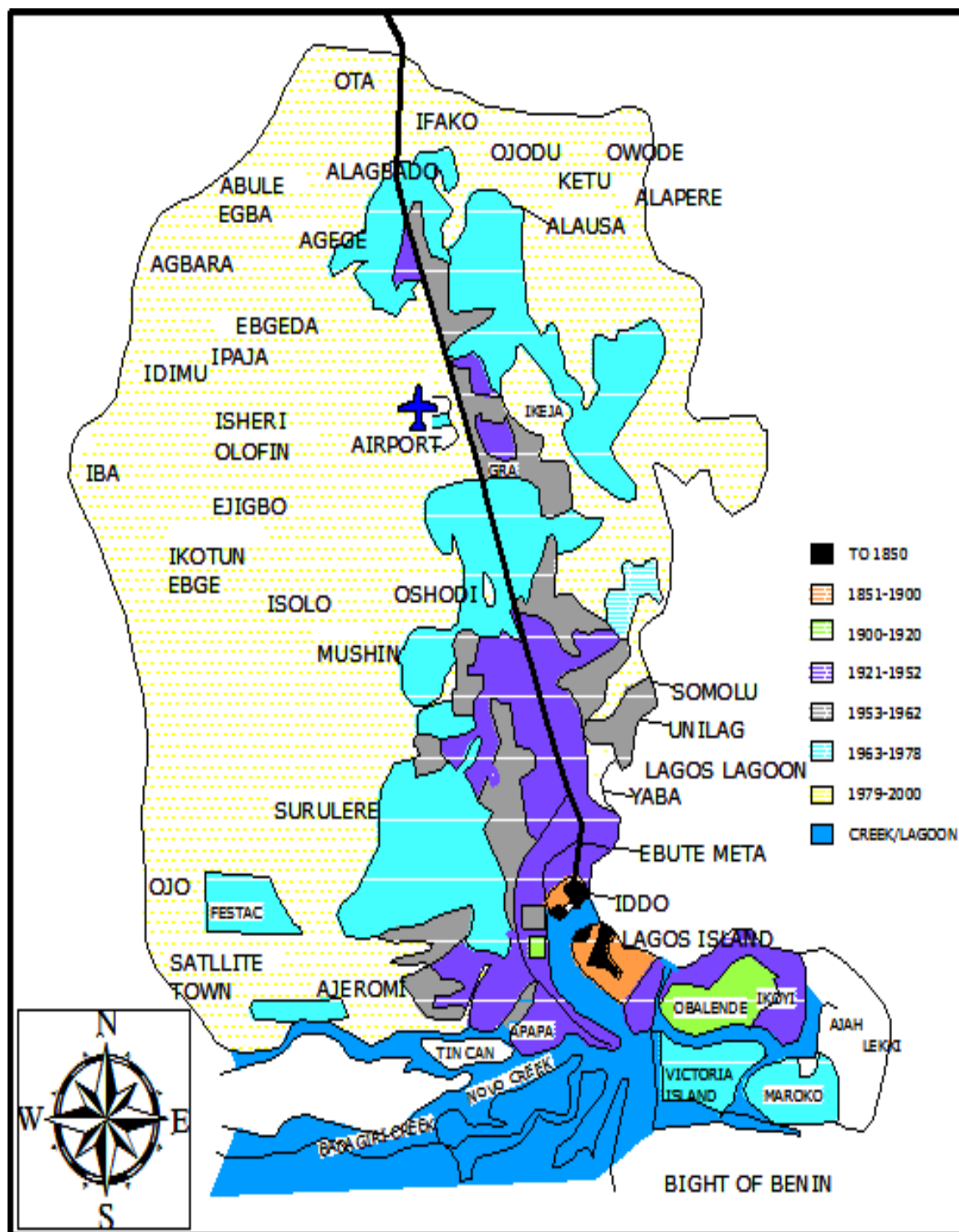


Figure 1.15 Built-up Area of Metropolitan Lagos in 2004

Source: Adapted from Oyesiku 2002.

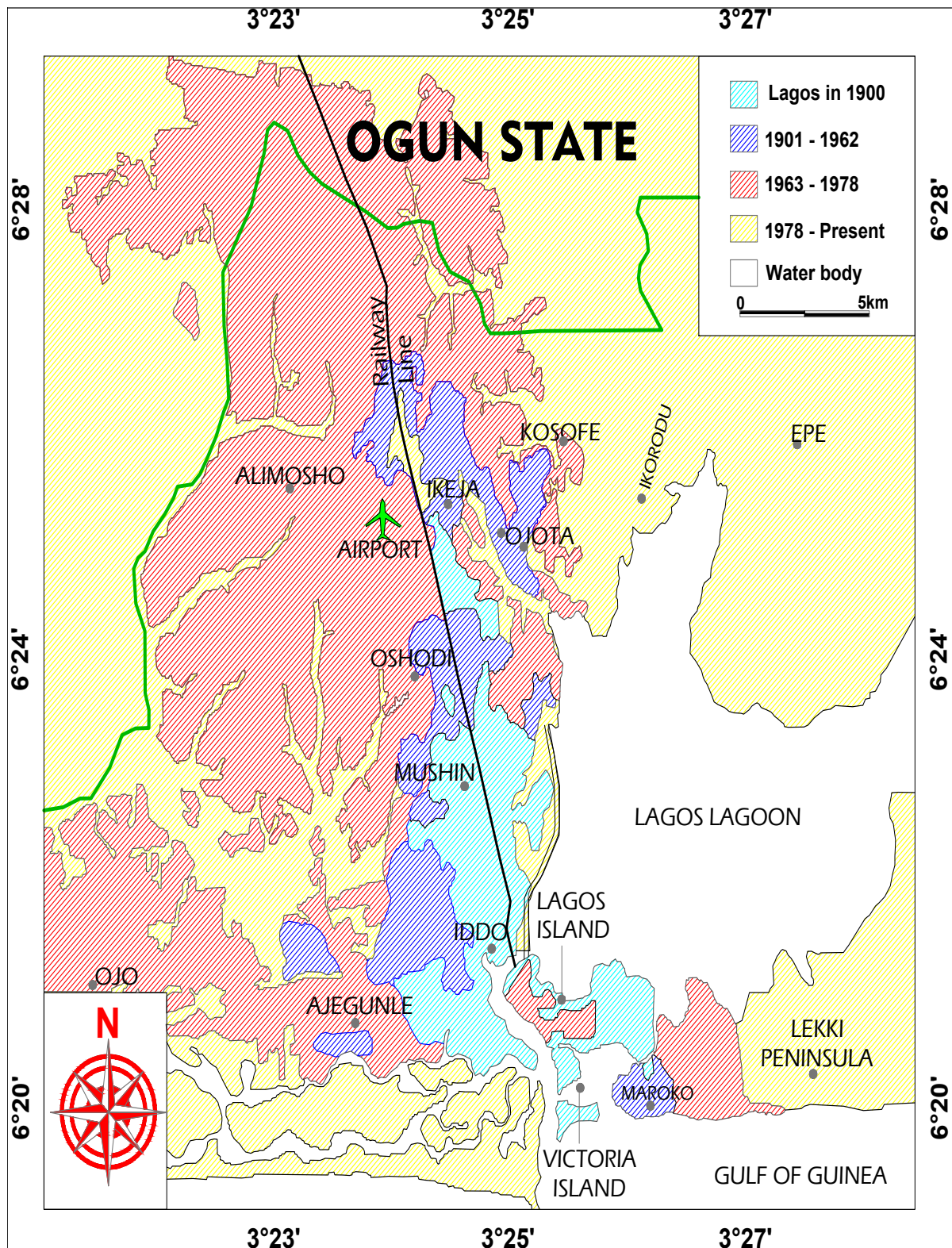


Figure 1.16 Built-up Area of Metropolitan Lagos in 2000

Source: Salau 2006

1.10.4.6 Economic Activities in Lagos State

The geographical and physical characteristics of Lagos at the start of its urban development are crucial to the evolution of its economic activities. Initially, Lagos was composed of isolated islands surrounded by swamps and lakes. Key indigenous industries included fishing, farming, blacksmithing, palm wine tapping, and various forms of trade (both local and long-distance). During the 18th and 19th centuries, the focus of the economy gradually shifted towards the slave trade, with Lagos emerging as a significant slave market. This shift attracted individuals from the interior, encouraging settlement and flourishing human trafficking during this era. (Ajetumobi, 2010).

By the early 20th century, the colonial economy had ushered in a new phase in Lagos's economic development. Consequently, Lagos became the hub of the colonial administration's economy. This status benefited Lagos and played a pivotal role in establishing numerous settlements throughout Lagos State, from its early history to the post-independence era of Nigeria.

1.10.4.7 The Lagos Metropolis

The Lagos Metropolis signifies the geographical growth of Metropolitan Lagos, which now reaches into Ogun State in several areas. Situated along the coastal lowlands next to the Atlantic Ocean, Metropolitan Lagos features dense mangrove swamps that comprise about 37% of the state's vibrant ecological landscape (LASG, 2004).

As Odumosu (2004) noted, Lagos transformed from a small fishing village into a rapidly growing metropolis. The extensive urban development pattern in Lagos is evident in the spatial expansion of the mainland, which encompasses large areas such as Agege, Egbeda, Idimu, Ajegunle, Ketu, Bariga, and Ejigbo Ikotun, as illustrated in Figures 1.9- 1.18

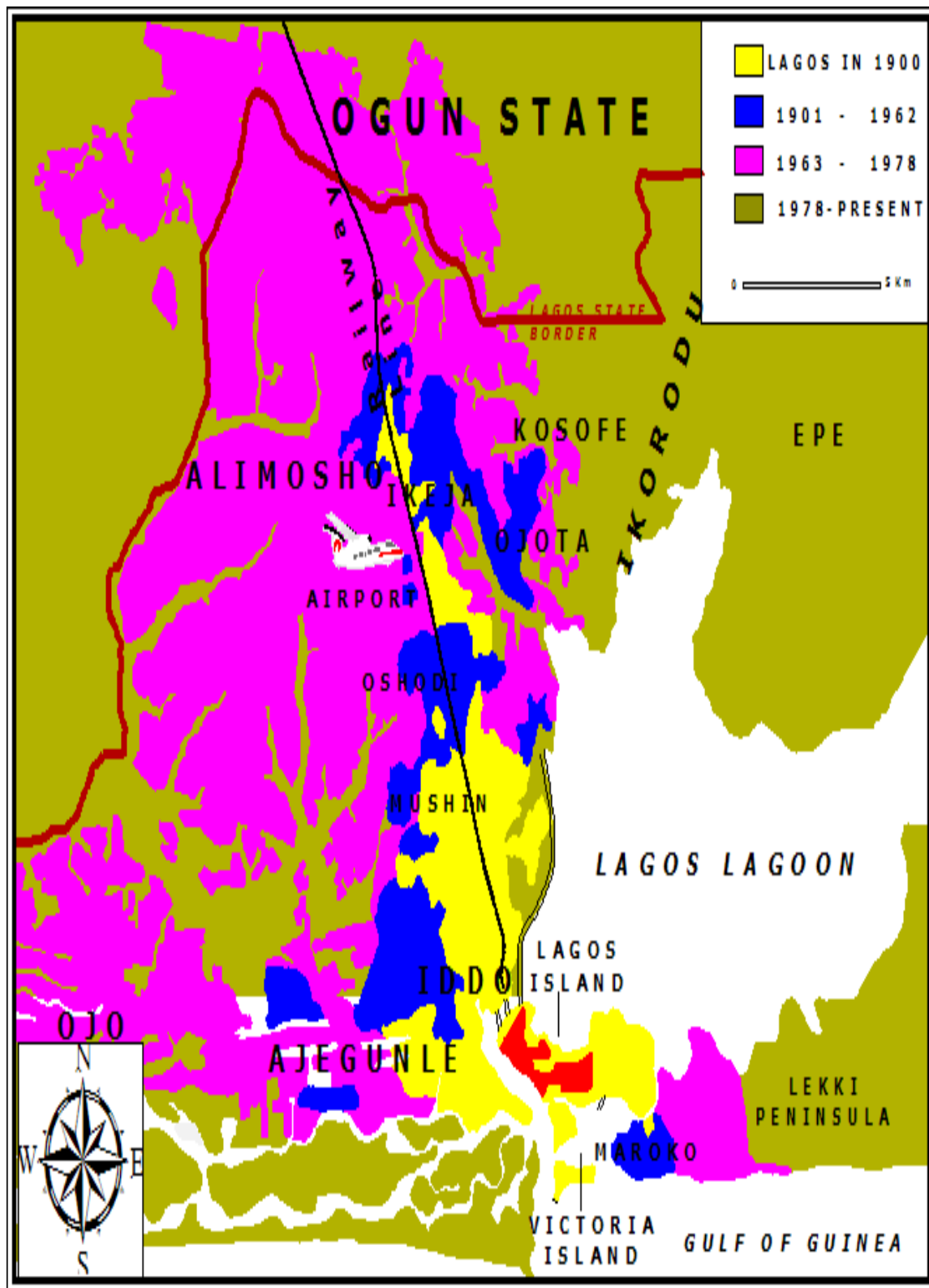


Figure 1.17 Spatial Growth of Metropolitan Lagos (1900 – 2005)

Source: Matthew Gandy, Learning from Lagos 2005

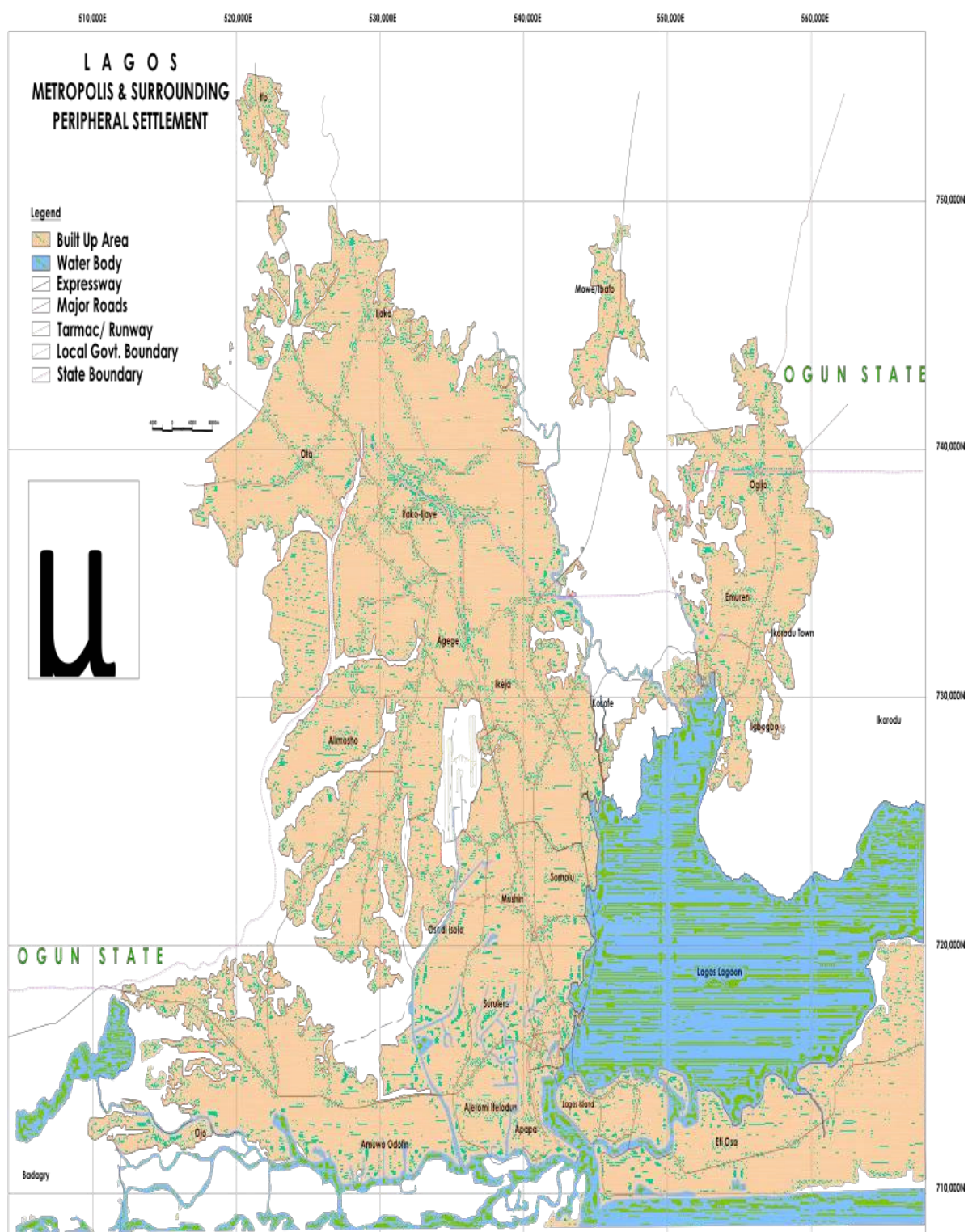


Figure 1.18 Built-up Area of Lagos Metropolis in 2006

Source: Lagos Megacity Report, 2006

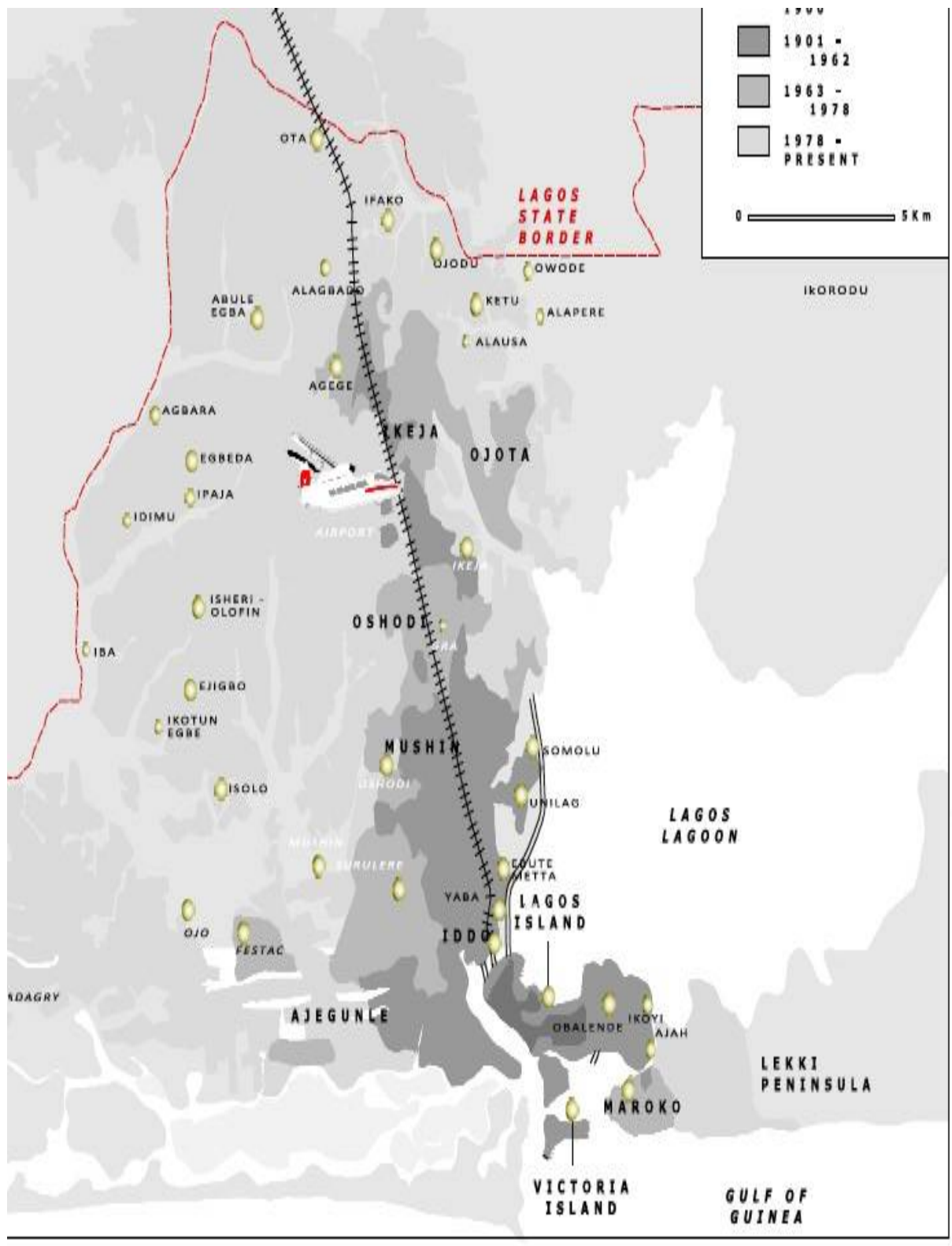


Figure 1.19 Built-up Area of Lagos Metropolis in 2012

Source: Adapted from Matthew Gandy, 2005

1.10.5 Summary

This chapter aims to provide additional context for the current study. It outlines metropolitan Lagos, our case study, by describing its geographical and demographic characteristics and socio-economic, political, and administrative contexts. Moreover, the chapter investigates Lagos's historical growth patterns to address knowledge gaps concerning the causes and trends of its expansion.

Additionally, this chapter provides crucial background information that clarifies the contextual factors relevant to this research. It primarily highlights issues concerning the core objectives of Lagos's development and growth, facilitating a thorough understanding of metropolitan Lagos's scope and features.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This literature review examines the complexities of the theoretical discussion of the concepts and empirical research on urban growth and expansion, and their similarities with malignant neoplasms to find a theoretical place within the broader idea of the growth effect in metropolitan areas. A reconciliation of various growth concepts regarding metropolitan development was formed to strike a balance between the growth and expansion of cities and the accompanying similarities and effects akin to malignant neoplasm. The relationship between these concepts was highlighted through a literature review of studies on urban growth, indicating that urbanisation and city growth have received considerable attention in the literature on urban studies (Ayogu, 2003). However, few, if any, of those studies have explored how cities grow in ways resembling the development of cancerous tumours or how large cities and cancer reflect an unexpected similarity.

Prior research has shown that most modern cities originated as small towns and subsequently expanded. As Isabella Capel-Timms et al. (2024) articulated, this study sheds light on how cities grow and why they evolve as they do. According to her, the study suggests that large cities, such as London and Sydney, grow strikingly similar to malignant tumours. The same fundamental factors that govern cancer growth also seem to influence the spread of urban spaces. This research paves the way for interdisciplinary collaboration in applying principles from oncology to urban planning, thereby delineating metropolitan expansion, growth, and decay.

A review of urban growth studies shows that urbanisation, city growth, and sprawl have received much attention in the literature on urban studies (Ayogu, 2003). However, few of these have dwelt on the malignancy of city expansion. Therefore, attention should be paid to balancing metropolitan growth, expansion, and the development of malignant neoplasms.

Ayogu (2003) suggests that a natural starting point in studies of urban growth is to understand the life cycle of cities: their emergence, development, and eventual decay. As cities function as hubs of economic activity, the rise of new towns and the decline of existing ones are interconnected with fluctuations in monetary fortunes. Hill et al. (2010) maintain that understanding urban growth involves physical expansion and further modifications. Urban development and urban morphology have captivated geographers and economists for decades (Clawson, 1962; Harvey & Clark, 1965;

Batty & Longley, 1988; Anas et al., 1998), and according to Seto (2005), urban form and function have been explored within contexts grounded in the spatial land-use models of von Thünen (1875), Park et al. (1925), Muth (1961), and Alonso (1964).

Aribigbola (2007) describes three fundamental theories of urban morphology: Burgess's concentric zone theory (1925), Hoyt's sector theory (1939), and Harris and Ullman's multiple nuclei theory (1964). These theories were developed to summarise the urban land use patterns in early industrial cities across the United States. Burgess's concentric zone model, introduced in 1925, posits that as a city expands, it grows outwards in concentric circles around the Central Business District (CBD). This model effectively illustrates how significant areas of Metropolitan Lagos emerge from similar outward growth.

A brief review of urban growth literature, including works by Fujita and Ogawa (1982) and Lucas and Rossi-Hansberg (2002), indicates that urban expansion can lead to suburbanisation and the emergence of multiple growth centres. These trends have gained significance owing to reduced transportation and commuting costs resulting from increased automobile use and investments in public infrastructure. According to Anas et al. (1998), urban growth correlates with sprawl.

Terms like explosive urbanisation, overurbanisation, and urbanisations without growth often appear in discussions about African cities (Bairoch, 1988; Fay & Opal, 2000). In contrast to developed nations, these terms imply that Africa's urban growth has not been fully aligned with economic development. The significant rise of our towns and cities has resulted in conurbations and metropolitan regions, creating various planning challenges such as traffic jams, slums, shantytowns, waste management, housing shortages, population issues, and poverty, among others (Aluko, 2007). Aluko (2007) pointed out that rural push factors and urban pull factors undeniably influence the rapid population growth in developing economies.

Research conducted by the United Nations Organisation indicates that the anticipated "high population growth in urban areas of less developed regions over the next thirty years is largely fueled by rural-urban migration" (UN, 2001). Clark (2003) points out a strong link between urban and population growth, defining urban growth as "the absolute increase in the urban population size." According to Henshall et al. (2019), over half of the global population resides in urban areas. By 2030, about 662 cities are projected to have at least 1 million inhabitants, reflecting a 30% increase since 2016 (Adams et al., 2017). This swift pace of urbanisation intensifies demands on urban environments and affects the health and well-being of residents. Consequently, city leaders

are becoming essential advocates for health promotion locally and are shaping the global urban health and development agenda (United Nations, 2016).

Oktay (2007) posits that urban growth reflects the land-use decisions made by all stakeholders in the urban system, including government entities, households from various socio-economic backgrounds, industries, and commercial interests. This growth symbolises the level of organisation or disorder characterising a city and the outcomes of how these decisions have been managed over time. Significantly, land acquisition and development form the basis of urban physical growth. From colonial times to today, access to urban land has been a contextual issue in Nigeria. In Nigeria's colonial and post-colonial periods, up until the early 1980s, urban growth was accompanied by large-scale public land acquisition primarily for residential development. Studies indicate that land delivery systems based on legal concepts and administrative frameworks have proven inadequate in addressing the demands of rapid urban growth (Ikpoki, 2005; Oruwari & Owei, 2006). Consequently, urban expansion across Nigerian cities primarily occurs unplanned, highlighting the need for increased services and infrastructure.

Urban expansion arises from various decisions that alter land use, whether directly or indirectly. To understand urban growth, it is crucial to explore who is instigating the changes, the locations, the timing, and the underlying motivations. Cheng (2003) emphasises that significant factors affect decision-making units and processes. Different decision-makers and stakeholders create distinct spatial and temporal patterns in urban growth. Cheng (2003) also argues that urban growth encompasses complex physical, social, economic, and ecological interactions. Hence, relying exclusively on qualitative insights to evaluate and interpret urban growth can be problematic. While environmental and physical elements impact landscape transformation, socioeconomic factors also play a pivotal role in altering land use. Therefore, a comprehensive understanding of urban growth necessitates examining physical and functional components through quantitative modelling.

Batty and Longley (1994) classify urban growth as either organic (natural) or planned (artificial). Wu (2000) further distinguishes between two types of urban growth: spontaneous and self-organising. Spontaneous growth is characterised by small-scale, scattered developments with random elements, whereas self-organising growth is marked by large-scale, high-density developments. Most cities combine both types, often featuring planned aspects amid organic

growth.

Supporting this view, Cheng (2003) explains that urban growth is a complex and often unclear concept, encompassing various types: sprawling or compact, dispersed (scattered) or clustered, continuous or leapfrog, spontaneous or self-organising, and planned or organic. It can include physical expansion and population growth, economic changes, and environmental shifts (both improvement and decline), although the physical dimension often receives the most attention. These classification systems vary according to their applications and inspire extensive debates within academic circles and the urban planning profession. The classifications emphasised here focus on the spatial patterns of physical growth (such as form, density, and distribution) and the spatial consequences of human activities (whether planned or self-organised).

According to UN-Habitat (2009) and Kaczorowska-Fudala (2010), the classifications align with the five categories of urban growth patterns outlined by Clarke et al. (1998). However, a key drawback of this framework is its lack of clear boundaries, resulting in some spatial overlap. It has traditionally been understood that growth stems from differences in regional size, development levels, infrastructure, and other contributing factors. Evidence indicates spillover effects occur between towns of similar sizes and development stages and between those that differ significantly in size and development (Isserman, 2005). Recognising the importance of spatial factors in growth processes emphasises the need for new theoretical frameworks. Anselin et al. (1997), Bottazzi et al. (2003), and Funke et al. (2005), among others, have investigated the effects of spatial spillover on growth and regional disparities.

In their study of urban growth, Hill et al. (2010) found that urban development has outpaced the capacity of planning authorities to manage its rapid expansion. They noted that most urban growth results mainly from natural increase (more births than deaths) rather than migration. Regardless of its source, the increase in urban areas impacts many vulnerable individuals. Overlooking this critical fact will hinder effective city planning for inevitable or substantial expansion (Reilly, 2007). This idea was supported by Akinbamijo (2007), who argued that early cities were compact and self-sufficient, consisting of a few administrative and religious towns supported by large rural populations and agricultural surpluses. Today, however, cities are much more diverse, spreading across land that was once rural and agricultural. The urgent concern is that this growth is associated with people living on the edge of survival.

In summary, urban expansion affects production efficiency and economic growth, playing a key role in how people engage with and occupy city spaces, thereby shaping social interactions and overall quality of life (Mills, 1991). Investigating its causes and effects has long been a focus for economists and should remain so moving forward. Urban growth often results in the rapid emergence of slums and illegal squatter settlements, created by families in urgent need of housing. Moreover, this trend has fueled the rise of mega-cities, characterised by populations that vastly surpass those of other cities and a high level of centrality, which reflects the city's economic dominance within the national urban framework.

Factors influencing local urban growth, including topography, transportation infrastructure, planning initiatives, and growth impediments, shape the spatial development pattern. Furthermore, spatial and thematic external factors also play a role. However, local variations offer critical insights into ongoing processes.

Although research on urbanisation and growth continues, a deeper understanding of the factors influencing urban dynamics is necessary. This gap remains, as Bekele (2005) points out, because urbanisation and urban growth are often treated as separate concepts in urban studies, a view echoed by Akinbamijo (2007) and Olujimi (2009). They define urbanisation as the increasing percentage of the population relative to the total population, highlighting its significant social impacts. According to Harpham et al. (1985), the primary drivers of urbanisation are still not clearly defined. However, the rapid expansion of cities is frequently linked to swift population growth, which puts pressure on the limited land available for urban development (Akinbamijo, 2007). While broader patterns in urbanisation, such as diffusion and coalescence, can be observed in spatial metrics, the specific local traits that influence changing spatial patterns are not fully understood. As a result, these traits might be seen as "distortions" of the theoretical relationships between two key elements of city systems.

Jaafar (2004) and Olujimi (2009) emphasised that urbanisation and growth present increasing challenges, as the trends linked to urbanisation significantly influence socio-economic development. Urbanisation is defined as the proportion of the national population residing in urban areas, while urban growth pertains to the physical expansion of these areas (Preston 1982, United Nations Population Division 2002, Olujimi 2009). Consequently, both urbanisation and the development of urban spaces arise from a natural increase in the urban population and net

migration to cities (Firoz, 2004). The United Nations-Habitat (2006) describes urbanisation as the rising concentration of populations in cities relative to rural areas. This trend results from social, economic, and political transformations that enhance urban density. The emergence of large cities involves changes in land use and a shift from rural to urban governance, predominantly represented by the expansion of developed regions and the conversion of valuable agricultural land for residential and industrial development.

Oludayo et al. (2011) emphasised that the growth and development of urban regions represent key global trends. This expansion has recently accelerated markedly in what is commonly referred to as the 'developing world'. Fadare et al. (2008) noted that urbanisation worldwide is advancing rapidly, with Africa being no exception. Aina (1992) observed that modern urbanisation is occurring significantly, leading to severe repercussions for these areas.

To clarify, the growth of the urban population can be analysed in two ways: independently, known as urban growth, and as part of the national population, where the term urbanisation is used (Oucho et al. 1993, UNCHS/UN-HABITAT 1994). Mabogunje (1985) described urban growth as a process of human clustering in multifunctional settlements of significant size, which has not advanced rapidly since cities first emerged. Meanwhile, Olujimi (2009) and Oyeleye (2013) argued that urbanisation is a process involving the spatial concentration of urban populations, driven by primary push and pull factors, collectively called urban transformation forces, which Agbola (2006) classified into three main processes: (a) natural population increase (the national growth rate or the ratio of births to deaths), (b) rural-urban migration, and (c) the annexation of cities into surrounding rural areas (a form of natural expansion).

Deblj (1996) contended that although urban growth relies on the natural increase of the urban population, this growth has a limited impact on the overall urbanisation process. As a result, the increase in the urban population is primarily due to transformative factors, such as rural-urban migration and urban expansion. These factors led to the evolution of settlements from villages to towns, cities, and ultimately mega-cities, fostering the creation of new settlements.

Meanwhile, Bockerhoff (1999) argued that demographers closely linked city growth rates to national population growth rates, implying that municipal authorities and planners had little power to influence the size of their cities (United Nations, 1980). These empirical studies supported Lipton's (1976) thesis of "urban bias," which states that the economic development policies of governments in low-income countries favour cities to such an extent that they hinder efforts to

control urban growth. In contrast to these rapid growth scenarios, the United Nations and urban scholars have cautiously concluded that urban and city development rates in the developing world have been slower than previously expected in recent decades (Satterthwaite, 1996; United Nations, 1998; Becker & Morrison, 1999).

The rapid urban growth rate in developing countries does not correspond to economic development, social change, or infrastructure development and provision. Furthermore, cities' unplanned and uncontrolled physical expansion dramatically exceeds available resources, posing economic, social, and environmental challenges (Hardoy, Mitlin, and Satterthwaite 2001). As such, terms such as explosive urbanisation, overurbanisation, or urbanisation without growth are expressions frequently found in the literature on African cities (Bairoch, 1988; Fay & Opal, 2000). They imply that African countries, unlike developed countries, have urbanised without consideration for their economic development. The phenomenal growth of towns and cities has given rise to conurbations and metropolitan areas, which have led to various planning problems, including traffic congestion, slums, inadequate waste management, housing shortages, population growth, poverty, and other issues due to insufficient infrastructure. (Aluko 2007).

As the urban population grows, will it be accommodated in many small cities, a few large cities, or a mix of city sizes? Conversely, Bhagat's (2005) study of urban growth by size and class of towns aids the understanding of the stages of urban development. Urban size is a crucial factor influencing population growth. Small and intermediate towns are expected to grow slowly compared to large cities during the early phases of urbanisation. In the subsequent phase, small towns are expected to increase due to congestion and crowding in larger and intermediate-sized cities.

The UN-Habitat's (2004) Meta-studies of urban land expansion have shown that over the last two decades, most cities in the world have become less dense, and a recent World Bank study shows that urban population growth is likely to result in the significant loss of non-urban land as built environments expand into their surroundings. Cities in developing countries are expected to triple their land area between 2005 and 2030, with each new city dweller converting an average of 160 metres of non-urban land to urban land (Kazungu, Gitau, and Gichuru, 2011). Every urban settlement influences its immediate surrounding area or areas beyond its boundary. In contrast, spatial areas along borders suffer from specific disadvantages related to their geographical

location, and conversely, cannot develop sustainably or capitalise on spatial economic opportunities.

The rapid urban growth rate in developing countries does not align with economic development, social change, and infrastructure provision. Furthermore, the unplanned and uncontrolled physical expansion of cities dramatically exceeds the available resources and poses economic, social, and environmental challenges to the adjoining peripheral settlements (Hardoy, Mitlin, and Satterthwaite 2001). Arising from this rapid urban growth are numerous problems in urban planning and management, including increasing urban poverty, the development of city regions, and metropolitanisation. Slums emerged as the dominant and distinct type of settlement in cities, the growth of the black economy, divided cities (social and economic exclusion) and poor living conditions without access to essential services.

Izueke and Eme (2013) noted that urban centres globally display remarkable diversity in characteristics, economic structures, infrastructure levels, historical backgrounds, growth patterns, and degrees of formal planning. However, the issues they encounter are notably similar. Shankar (2012) highlighted that the swift expansion of cities in India has led to a corresponding surge in travel demand, putting immense pressure on the already inadequate transport infrastructure.

Martine et al. (2010) argue that rapid urbanisation is a key force shaping social, economic, political, and demographic dynamics in low- and middle-income nations in the 21st century. This expanding urban population is closely linked to global development, poverty levels, and environmental challenges. An UN-HABITAT report (2006) highlights that sub-Saharan Africa leads in urban growth rates at 4.58%, followed by South-eastern Asia (3.82%), Eastern Asia (3.39%), and Western Asia (2.89%). In contrast, urban areas in developed countries experience much slower growth, averaging only 0.75% annually. Africa and Asia are expected to drive urban expansion through 2030 as the least urbanised regions worldwide. By 2020, it is projected that only four of the world's largest cities, or megacities, will be located outside developing areas, with twelve in Asia alone. If current trends persist, Nigeria's Lagos is forecast to become the world's third-largest city, surpassing 24 million residents by 2020 (UN-HABITAT, 2006; Dung-Gwom, Hirse, and Pwat, 2008).

Similarly, the population of people living in urban areas grew from 13% in 1900 to 49% in 2005, increasing from 220 million to 3.2 billion. By 2011, there were already 480 cities with over one million inhabitants, compared to 80 in 1950. More than half the world's population now resides in

cities, and over three billion people live in urban centres, a figure expected to rise to five billion by 2050. (UN-HABITAT 2006)

According to UN-Habitat (2004), Africa is urbanising at an alarming rate, with predictions suggesting that Africa will enter the urban age around 2030, when half of Africans will live in urban areas. The metropolitan population in Africa is growing faster than anywhere else on the continent. It is predicted that by 2030, approximately 5 billion people will be living in urban areas, primarily in less developed regions. (Habitat, 2004; Oluseyi, 2006) Accelerated urban growth has been a dominant trend over the past few decades in South America, where more than 75% of the population currently lives in cities, compared to 38% in Africa and 36% in Asia (UNPOP, 2000).

The Human Development Report (2004) records that 45.9% of Nigeria's 120.9 million (2002 estimates) substantial population resides in urban centres. According to Mabogunje (2002), in 1950, residents of urban centres in Nigeria made up less than 15% of the population. By 1975, this proportion had increased. According to the Human Development Report (2004), the urban population growth rate is 4.8% annually, with a projection that by 2015, more than half of the nation's population will be urban dwellers. According to Mabogunje (2002), the 1991 National Population Census recorded 359 urban settlements of at least 20,000 people in the country and estimated that the figure had risen to 450 by 2000.

In Nigeria, as in other developing countries, urban growth has outpaced the government's capacity to manage it; often, growth occurs so swiftly that officials lack the relevant statistics necessary for sustainable development. Consequently, development remains meagre and insufficient, disconnected from the required economic growth and effective redistributive measures to alleviate poverty and foster economic opportunities that enhance living standards and quality of life for the populace (Oyesiku, 2002; UN-Habitat, 2004; Shamaki & Dankani, 2012). Urban growth and development issues, such as environmental challenges, inadequate basic facilities and services, overcrowding, and traffic congestion, are dramatically affecting the people, resulting from the increasing demand for infrastructural services due to population influx (Shamaki & Dankani, 2012), particularly given that approximately 55% of the world's population is expected to be urban dwellers by 2015 (United Nations, 1996).

According to Asiyanbola (2007), urbanisation and city growth in developing countries are characterised by rapid urban expansion, with urbanisation outpacing industrialisation, and a high urban population growth rate resulting from natural increase and migration. He averred that urbanisation in Nigeria has a relatively long history of growth and development, as historical accounts show that extensive urban development in Nigeria predates the British colonial administration. This assertion was corroborated by Egunjobi (1999), who claimed that urbanisation has been dramatic, showing extraordinarily high rates of 5-10 per cent per annum.

As a result, the area of Nigerian cities has rapidly expanded, sometimes increasing tenfold in size from their original dimensions (Egunjobi, 1999, 2002; Ogunsanya, 2002; Oyesiku, 2002). A significant factor in this is that city growth and expansion in Nigeria have largely been uncontrolled (Egunjobi, 2002; Oyesiku, 2002; Olanrewaju, 2004). This unchecked growth exacerbates inadequate housing, slum developments, a lack of water supply, poor waste management, traffic congestion, and high unemployment rates. These conditions contribute to underdevelopment, poverty, crime, and various social problems (Rotimi, 2003; Dung-Gwom, Hirse, and Pwat, 2008).

Moreover, one of the most apparent and troubling aspects of urban areas in Nigeria is the deterioration of their infrastructure. Onibokun (1989) further emphasises this: "As urban populations grow and available resources decline, public infrastructure is degraded to the point where cities are seriously losing their capacity to operate as productive entities."

Correspondingly, basic infrastructure and services are rarely provided as urban growth proceeds haphazardly, threatening the well-being of people and society. Lagos, Nigeria, is one of the largest metropolitan areas in the developing world, and it is currently grappling with the challenges of urbanisation, especially in infrastructural development. (Akunnaya and Adedapo 2014)

Eyoh et al. (2012) posited that several variables contributed to the urban expansion of Lagos. They argued that distance to urban centres had the highest impact, indicating that urban growth tends to occur near the nearest urban area. Their predicted result obtained for 2030 produced a valuable insight that shows the spatial growth of Lagos in 2030 as a direct consequence of urban sprawl, as the Lagos metropolis tends to expand close to the nearest urban cluster, putting profound pressure on housing, infrastructure, and the environment, and competition for the use of land leading to urban growth. (Gutberlet and Hunter 2008; Ogundele and Jegede 2011). Urban sprawl in Lagos has extended beyond its border to the neighbouring Ogun State since 2000 (Onilude & Vaz, 2021). Rapid urban growth has expanded to some parts of Ogun State. Wang and Maduako reported that

about 50% of new artificial surfaces in Lagos were situated in the territory of Ogun State between 2000 and 2015.

Krishna (2007) challenged the earlier claims by asserting that the rising population in urban areas and the physical spread of developed land beyond city boundaries significantly drive the demand for more land and lead to changes in land use. This phenomenon of urbanisation extends beyond merely chaotic city expansion, resembling an amoeba's growth.

However, this viewpoint may be flawed. Swift urbanisation and unregulated city growth have caused various adverse effects, notably in developing nations where horizontal expansion is prevalent. Populations are relocating to informal settlements on the outskirts, encroaching on agricultural lands and regions of natural beauty (Lowton, 1997). For instance, Addis Ababa has seen rapid growth and primarily horizontal development throughout its history. The city's physical expansion has outstripped the municipal government's infrastructure and essential urban services.

Building on Lowton's observation (1997), Fadare and Oduwaye (2009) noted that urban areas naturally age, especially in a declining economy with insufficient infrastructure, resulting in further deterioration. Certain regions may become obsolete, making it crucial to manage urban sprawl. Urban sprawl impacts residents' quality of life and economic progress. A metropolitan area's effective functioning hinges on the quality of its infrastructure and organisation (Annan, 2004).

Tietz (2006) posited that as urban areas grow, the need for infrastructure development increases, and conversely, robust infrastructure promotes further urban expansion. Inadequate planning can lead to urban sprawl or a linear spread along key transportation routes, imposing significant costs on residents and city governments, as well as adverse environmental impacts. Salau et al. (2009) echoed this sentiment, noting that urban growth has consistently outstripped the ability of cities to deliver essential services effectively. Each year, cities draw in new migrants, and together with the rising local population, this trend leads to a higher incidence of informal settlements and shantytowns, exacerbating challenges related to urban safety and security while hindering infrastructure improvements and the provision of essential services (Salau, 2009).

Comparative analysis of urban growth patterns can yield empirical evidence regarding their impacts. This knowledge can help us understand the advantages and disadvantages of various urban growth strategies, as well as the factors driving these changes. It can also help integrate sustainability considerations into urban planning processes (Portnov, 2008).

Isserman (2005) noted that the academic literature is filled with vivid terms to describe the growth relationships among larger and smaller places, such as spread-backwash, generative-parasitic, and trickling-down polarisation (Gaile, 1980). There remains a need for systematic empirical studies and testing specific hypotheses about the relationship between urban growth patterns and expansion. Furthermore, assumptions concerning the connection between urban growth patterns and urban sprawl require inclusion to understand better the various contexts in which these growth patterns intersect. Growth and expansion are typically believed to stem from regional size, development levels, and disparities in infrastructure, among other factors. Evidence suggests that expansion occurs among towns of similar size and development levels, as well as between cities of vastly different sizes and levels of development (Isserman, 2005).

The literature on spread-backwash and core-periphery relations has strongly influenced the current understanding of the interaction between settlement expansion and growth. Isserman (2005) and Myrdal (1957), as quoted in Gaile (1980), provided the original statement of spread effects, claiming that "the whole region around a nodal centre of expansion should gain from the increasing outlets along the line." An urban centre of expansion may also have specific adverse influences and backwash effects on the development trajectory of nearby less-developed areas.

However, Konadu-Agyemang (2001), writing on the massive growth and expansion of Accra and Kumasi metropolitan areas, stated that both have entailed intensifying densities and sprawling on their fringes. He noted that several localities adjoining the Accra Metropolitan Area, which were rural in 1984, have now attained urban status, mainly because of the growth of the Accra Metropolitan Area (GSS 2002); cities of Accra and Kumasi witnessed massive urban growth (Yeboah, 2000; Konadu-Agyemang, 2001; Twum-Baah, 2002; Grant & Yankson, 2003). The enormous expansion of Ghana's large cities induced rapid growth and high demand for residential houses in these centres.

Urbanisation and urban growth are often discussed in urban studies literature (Bekele, 2005). However, urbanisation refers to the proportion of the national population living in urban areas. In contrast, urban growth refers to the proportionate development of the urban regions themselves,

that is, annual net additions to the urban population divided by the urban population size (Preston, 1982), independent of the rural population (United Nations Population Division, 2002). To clarify, "growth of the urban population can be looked at in two ways: on its own, in which it is described as urban growth, and as a proportion of the national population, in which the term urbanisation is used" (Oucho et al. 1993, UNCHS/HABITAT; 1994).

Urbanisation and growth represent a global phenomenon (Fadare et al., 2008; Olujimi, 2009). The urban growth rate worldwide is advancing rapidly, and the African continent is also experiencing this prevailing urban expansion (Fadare et al., 2008). Thus, Mabogunje (1985) defined urban growth as human agglomeration in sizable multifunctional settlements, which has slowed since cities emerged. Olujimi (2009) notes that urbanisation involves the spatial concentration of populations driven by primary push and pull factors, termed urban transformation forces. Thus, spatial growth is essential for accommodating a growing population; yet, it is often viewed as problematic. No Nigerian city escapes this stigma.

Agbola (2006) classified these into three major processes: (a) a natural increase in the population (national growth rate or the ratio of birth to death rates), (b) rural-urban migration, and (c) the annexation of cities into the surrounding rural areas (a natural expansion). Deblij (1996) posited that while urban growth relies on the natural increase of the existing urban population, the growth of the city population through natural increase has minimal effects on urbanisation. Consequently, the proportional increase in the population of urban dwellers primarily results from the transformational forces of rural-urban migration and areal expansion, leading to the growth of settlements from villages to towns, cities, and mega-cities, as well as an increase in the number of settlements through the establishment of new ones.

According to UN-HABITAT's report, *State of the World's Cities 2010/2011*, from 1970 to 2000, Guadalajara's surface area grew 1.5 times faster than its population. This trend is also observed in cities such as China, Antananarivo, Johannesburg, Cairo, and Mexico City. Yaakup (2007), in his study *Predicting and Simulating Future Land Use Patterns: A Case Study of Seremban District*, noted, "Towns and cities will continue to grow and expand to meet the increasing and complex demands of the population, as long as rapid urbanisation driven by natural population growth and rural-urban migration to urban fringe areas persists," as most major urban areas in the country are expanding, and signs of sprawling development are emerging. The uncontrolled and continuous

expansion of metropolitan regions, along with the ongoing demand for urban land, has led to haphazard development and significant changes in spatial patterns. This pattern is evident in urban developments that include residential, commercial, industrial, and other institutional developments on previously undeveloped land surrounding or on the fringes of significant cities. This phenomenon is expected to continue, especially as there is no indication that urban growth will slow down.

Ifatimehin et al. (2006), in "An Analysis of Urban Expansion and Loss of Vegetation Cover in Lokoja, using GIS Techniques", concluded the effects that urban sprawl brings to bear on the physical, economic, and social environments of urban centres. The results indicate unplanned and haphazard urban expansion and transformation. Fazal et al. (2011) argue that urban expansion has also led to environmental and ecological problems, including increased surface temperatures, erosion, and a significant reduction in vegetation cover.

Given that Nigeria's rate of urbanisation is among the fastest in the world (Cohen, 2004), it has become imperative to conduct studies that reveal the rate, extent, and consequences of our rapidly expanding urban centres. Over the past two decades, research by Gilbert et al. (2023) on Lagos's rapid urbanisation and population growth has led to significant changes in land use and cover. The study revealed that the expansion of urban built-up areas due to population growth was the primary driver of land use and cover changes in Lagos. This is one of the main issues that has failed successive governments in implementing land use plans effectively to accommodate population growth in an orderly and planned manner. The factors driving the demand for shelter and other facilities from Lagos's expanding population have led to unprecedented spatial urban expansion. The influx of people to Lagos has led to the development of shanty towns and villages, which have subsequently deteriorated into slums in modern Lagos (Gilbert et al., 2023).

Mabogunje (1968) examined the distribution and characteristics of residential areas in Lagos and Ibadan. He discovered that these cities evolved through both fusion and spatial expansion. He identified regions operating as districts in Lagos, classified into low, medium, and high-quality residential zones. Furthermore, the MOLAND project conducted a case study on Lagos's urban agglomeration, highlighting the growth of urbanised areas from 1962, 1967, 1984, and 2000. The area occupied by artificial structures has increased more than fivefold over the past 33 years, expanding from 117 km² to 682 km². The growth rate has decelerated over the last 16 years, but it remains significant. The city's area has grown by 157 km² (Abiodun, 1997).

This literature review investigates the complex dynamics of urban expansion, likening it to malignant growth. It aims to clarify theoretical discussions and empirical studies concerning urban development and the evolution of metropolitan regions, positioning urban malignant growth patterns within a broader theoretical context. There is an urgent demand for fresh theoretical viewpoints and increased awareness of space's role in expansion. However, the detrimental impacts of urban growth are increasingly acknowledged as a significant element of this issue.

The literature reviewed goes beyond merely identifying specific factors driving urban growth. It also offers empirical validation for crucial theoretical models of metropolitan areas. The idea of using biological systems to model urban growth is still in its infancy, requiring further research to refine these models and assess their applicability in various urban settings. The strong ties between theory and empirical studies have proven advantageous in previous research. They enable a more comprehensive analysis, extending beyond just measuring how city growth responds to a particular factor and allowing for the investigation of additional consequences of these theories.

Moreover, several potential factors driving urban growth remain to be explored. A significant oversight is the impact and similarities of malignant neoplasms on urban development. Furthermore, many empirical results need enhancement, and new empirical approaches should be established to bolster these findings. While a robust empirical framework that concurrently analyses all known drivers of urban growth, including the impacts and similarities of malignant neoplasms, is essential, specific explanations warrant special focus. Investigating the connections between urban development factors and malignant neoplasms is not only academically intriguing but may also be crucial for developing effective urban growth strategies.

The pursuit of understanding the factors driving urban growth in isolation is ambitious but ultimately lacking. Drawing a parallel between urban and tumour growth offers a compelling perspective for evaluating and planning city expansion. Utilising insights from oncology in urban planning can lead to development that is not only sustainable but also promotes the long-term vitality of urban spaces. This research paves the way for cross-disciplinary collaboration that could significantly change our approach to the environments we inhabit. By grasping these concepts, urban planners and environmentalists can develop effective strategies to sustain urban growth and mitigate its adverse effects. Metropolitan regions have been likened to malignant tumours to explore issues related to city growth and the factors influencing urban development, which adds

to the intrigue of this concept.

2.1.1 Malignancy Concept

Malignancy primarily refers to cancerous cells that can invade nearby tissues or metastasise to other parts of the body, causing damage. These cells develop into malignant tumours, characterised by rapid, uncontrolled growth and a tendency to breach surrounding tissues, which can lead to severe health issues or death. The term “malignancy” first appeared in the 16th century, originally meaning malicious intent or harmful traits. By the 17th century, it was used to describe damaging growths or tumours in a medical context. This term emphasises the seriousness of the disease, assisting in treatment planning and prognosis evaluation.

The concept of malignancy, illustrated in Table 2.1 below, persists despite all attempts at effective regulation until the host's demise, as tumours perpetuate growth even under starvation conditions (Ruddon, 1987). Urban expansion and the global ecosystem, alongside the supporting substrate, face destruction before malignancy is contained; they are fundamentally unstable and often lead to collapse. Consequently, this results in unchecked growth and potentially fatal population instability that devolves into figurative and literal chaos.

Table 2.1 Comparisons Between Malignant Tumours and Urban Populations

Malignant Tumors	Urban Expansion
Rapid, uncontrolled growth	Rapid, uncontrolled growth
Metastasis	Colonisation, urbanisation
De-differentiation	Adaptability through culture
Invasion & destruction of adjacent normal tissues	Ecological destruction by most human societies; now threatens global ecosystem
Grows in spite of host starvation until host dies	Grows in spite of host starvation until host decays and decrepitude

Source: Authors Analysis, 2025

In all these examples, the city's growth remains unregulated, with no signs of any entity attempting to control or limit it. Batty (2005) describes this phenomenon as a "spatial epidemic," where urban expansion attains a state of "self-organised criticality" (SOC), characterised by unconstrained fractal growth irrespective of size (Batty & Xie, 1999; Batty, 2005). The development of metropolitan Buffalo, New York, exemplifies this situation.

The rapid growth of cities today has a profound impact on their surrounding regions and significantly influences the global climate. Odum (1989) notes that cities are heterotrophic and parasitic ecosystems, consuming far more energy than they produce, thereby amplifying their impact on the global ecosystem. Molotch (1976) characterises the modern city as a "growth machine." However, rather than being a machine, it represents a bio-cultural adaptation to meet the survival needs of both humans and their members.

Tuul et al. (2019) argue that cities serve as natural laboratories for studying cancer evolution, reflecting their inherent complexities. This implies that a modern city is not inherently cancerous, as cities tend to share more similarities with nearby non-urban ecosystems than with each other. However, they do demonstrate characteristics of cancer within their surroundings. Research indicates that cities function as ecosystems, undergoing biological processes similar to those found in the development of malignant neoplasms. The literature suggests that these elements are linked to a higher probability of developing cancerous neoplasms, with studies showing a connection between urban expansion from urbanisation and related physiological changes associated with cancer.

Cancer functions as a complex (non-linear), dynamic (growing), space-consuming (topophagic) heterotrophic process marked by uncontrolled fractal growth, widespread colonisation, the invasion and degradation of surrounding natural ecosystems, and dedifferentiation (Hern, 2008). Examining histological cancer studies with satellite images of urban development reveals structural similarities between urban growth and key features of malignant neoplasms. Both suburban sprawl and cancer offer valuable insights that are often difficult to acquire through solely biological analyses.

Cancer and sprawl both symbolise a novel type of growth in a larger "organism." For example, in a neoplasm or "new growth," the characteristics and actions of the tumour cells are foreign to the individual. Invasiveness can be observed in various cells, such as immune cells, which are activated to combat infection. Tumours are distinct because they grow as clones of underdeveloped cells with atypical traits, such as extended survival and unregulated proliferation. Cancer represents a fundamentally different form of growth in the body's natural history.

Cancer metastasis, characterised by malignant tumours, exhibits invasive growth patterns through both local and long-range strategies. Various efforts have effectively curtailed or controlled sprawl, indicating that suburban growth patterns, like malignant neoplasms, may hinder connective tissue, limit access to blood or lymphatic vessels, and necessitate angiogenesis. This highlights the limitations of suburbanisation in undeveloped areas (Paduch, 2016), which can diverge from traditional urban development. Geography, road access, and urban services can constrain sprawl growth. Bielenberg (2015) argued that these similarities suggest the structural homology of metastasis and sprawl is more than coincidental and may stem from scale-invariant behaviours of an analogous pair. The closely matched fractal dimension measurements further suggest sprawl-styled growth.

Suburban sprawl follows a similar trajectory. Before the 1950s, urbanisation adhered to a conventional central model, steadily radiating outwards from established urban centres. Furthermore, the developmental strategy consistently integrated various land uses. Knudson (1971) notes that most tumours develop gradually over time due to the accumulation of mutations. Although the specific genetic changes vary among tumour types, a discernible pattern emerges. Initially, most tumours acquire a propensity for growth due to either an abundance of growth factors or alterations in cellular signaling pathways that convey growth factor signals to the cells. In both instances, the emerging cancer cells receive continuous support, enabling them to proliferate, persist, and invade surrounding tissues. Fares et al. (2020).

According to Fares et al. (2020), the invading tumour cell interacts with several proteins and cells as it travels to its target location. Understanding these interactions has enhanced our knowledge of the biological principles that influence the mobility and adaptability of metastatic cells. Interaction with the tumour microenvironment enables invading cancer cells to navigate stromal obstacles, establish themselves, and proliferate. Genetic and epigenetic changes within the tumour cell and its surrounding environment shape these characteristics of cancer cells.

The literature review involves thorough desktop research from relevant materials found in libraries and online sources. This comprehensive review searches multiple databases, including PubMed (Medline), Embase, Web of Science, and the Cochrane Library, for studies published in English between 1971 and 2024. The review begins with works from the 1960s and extends to more recent literature, supporting theoretical and conceptual discussions. Several key scientific journals were examined, including contributions from Anderson (1961), Perez-Tamayo (1961), Ruddon (1987), Tannock (1992), Frankhauser (1998), Hanahan (2000), Kansal et al. (2000), Deutsch (2001), Hern

(2001), Konadu-Agyemang (2001), Dormann et al. (2002), Frigyesi et al. (2003), Cohen (2004), Ifatimehin et al. (2006), Kitano (2007), Fazal et al. (2011), Hern (2011), Courtat et al. (2011), Sakieh (2016), Kuddus et al. (2020), Fares et al. (2020), Onilude et al. (2021), Enayatrad (2021), Bhatia et al. (2022), Oyalowo (2022), Gilbert et al. (2023), Angel (2023), Bayode (2024), and Graylings (2024). The review concentrates on urban expansion, malignant neoplasms, and metropolitan development issues to synthesise current evidence and identify ongoing gaps in knowledge.

A literature review identified several clear trends addressed by researchers; nonetheless, the insufficient representation of specific topics was interpreted not merely as involuntary omissions but as indicative of research-specific biases, particularly regarding malignant neoplasms. This review noted the literature's inadequate focus on urban growth and malignant neoplasms. It highlighted ongoing gaps in understanding the underlying causes of urban growth and disparities in cancer outcomes associated with malignant neoplasms (Flies et al., 2019; Kenneth et al., 2019; Lewis-Thames et al., 2022; Bhatia et al., 2022).

To address the persistent knowledge gaps regarding the drivers of urban growth and malignant neoplasms, the review highlighted existing literature deficiencies concerning the root causes of urban expansion and variations in cancer outcomes across major urban areas. It also delved into the issues surrounding urban growth and metropolitan development. Case studies detailing approaches to metropolitan growth offer valuable insights into the potential opportunities and challenges involved, citing notable contributions from Abiodun (1994), Rakodi (1996), Farunkanmi (2003), Agbola (2006), Salau (2006), Salako (2007), Tofowomo (2008), and Olujimi (2009).

Diverse perspectives provide valuable insights into urban growth and its development. As Yu Min Joo (2005) noted, differing views from various authors can enhance the understanding of a city's spatial development. However, these explanations require a more explicit and critical evaluation regarding the contexts that influence urban growth and malignant neoplasms. This gap complicates comparisons and obscures the primary factors determining the harmful growth associated with urban expansion and the connections between urban forms and malignant tumours. Furthermore, the current literature emphasises description over analysis, resulting in a lack of evaluative frameworks for examining urban growth and patterns of malignant lesions. Most contributions

remain theoretical and lack comprehensive analytical evaluations of real-world cases.

Vlahov and Galea (2002) identified three key concerns in urban health literature: features of the social environment, factors of the physical environment, and the availability of health and social services. While it is generally accepted that the risk of several cancers in humans is higher in urban areas, cancer is often regarded as an issue in societies with modern lifestyles. Within these categories, notable differences include the impacts of urbanisation, such as population ageing and diversification, and urbanicity, which covers socioeconomic status and crime.

Migration accounts for the majority of population growth in cities. Hostert et al. (2009) examined urban development and local livelihoods in megacity regions, revealing that urban growth and densification have a significant influence on environmental conditions. The overall quality of life in urban areas is affected by urbanisation processes and requires adaptation to urban conditions. These include, among other factors, increased exposure to various pollutants (e.g., chemicals, light, and noise), new types of food, and emerging infections. According to existing literature, all these factors are linked to a higher likelihood of developing cancerous neoplasms, connecting environmental changes from urbanisation to cancer-related physiological alterations.

Since the early 1900s, Lagos has experienced tremendous growth in both population and area. Key aspects of its infrastructure and built environment include transportation, water supply, electricity, telecommunications, environmental sanitation, and housing issues, driven by rapid expansion and initiatives to address them. The challenges to effective strategies were investigated to evaluate Lagos's economic vitality, its crucial role in the national economy, and continued growth, despite the frequent or total failure of many essential services and the associated difficulties for businesses and residents alike (Abiodun, 1994).

The study investigated the effects of the malignant growth linked to the expansion of metropolitan Lagos and examined the correlation between its urban forms and malignant neoplasms. It examines metropolitan Lagos with a focus on the factors driving its growth and concludes that the appearance and development patterns of urban settlements in Metropolitan Lagos, whether at a specific point in time or over a period, resemble the form and proliferation patterns of a malignant lesion.

Given this, the literature review examined various conceptual approaches to assessing urban growth and the malignant effects of settlements, alongside issues such as urban growth systems,

patterns of growth, and urban agglomerations. These elements relate to urban growth and a malignant lesion's form and growth patterns. The literature review findings indicate that diverse perspectives are employed to explain city growth and formation. At the same time, most previous studies have tended to pay less attention to evaluative frameworks that could be utilised to assess the development of urban growth and malignant growth.

This suggests that further literature is required on the subject. It was also discovered that most prior research underrepresented a specific topic, which may be seen as a lack of interest due to research bias. In this context, the relative underrepresentation of growth patterns of a malignant lesion and its effects on urban development in the literature has been noted and will be investigated.

2.2 THE DYNAMICS OF GROWTH AND METROPOLIS EXPANSION

2.2.1 Contemporary Literature on Urban Growth

In contemporary urban literature, several terms are often used interchangeably when discussing urban growth, including urban concentrations: agglomerations, conurbations, metropolitan areas, urban clusters, and so forth (Lowry, 1990). Agglomeration is the most frequently used term, although not the most inclusive. According to Storper (2004), agglomerations are formed around major cities, which serve as their cores, while a metropolitan area refers to the same phenomenon as agglomeration but is geo-functional; it implies both dependence on the metropolitan core and proximity to it (Fujita et al., 2001).

According to Portnov (2008), the term "urban clusters" refers to groups of urban settlements within commuting range of each other, including major cities and towns of comparable size. In densely populated core regions, specific urban clusters manifest as agglomerations and conurbations, where significant cities dominate mature urban settlements. The analysis by Weber (1909), Christaller (1933), Losch (1938), Isard (1956), and Beckmann supports Portnov's (2008) views on the concepts of clustering and aggregation in urban and industrial locations (1968).

Research has examined regional development challenges associated with urban clustering and aggregation, including the effects of spreading and backwash around major population centres and surrounding rural areas. As a result, Portnov (2008) proposed a framework for understanding how clustering influences urban growth. He argued that the effects of clustering can vary greatly, showing a positive relationship in low-density clusters and a negative one in high-density areas.

Furthermore, he noted that increased clustering does not necessarily lead to greater urban growth. While towns may initially perform better with more significant clustering, their performance declines as urban density rises. Nonetheless, Portnov (2008) concluded that urban clustering does impact urban development.

2.2.2 System of Urban Growth

Fadairo and Abraham (2009) explain that urban growth represents the physical manifestation of human activities throughout space, resulting in the formation of settlements. These settlements display unique characteristics that differentiate them from one another.

Consequently, cities arise from settlements with designated functions, and the activities of their inhabitants drive the ongoing growth of cities over time. This expansion often leads to the encroachment of surrounding settlements, resulting in sprawl into rural areas, as seen in Metropolitan Lagos, which has expanded haphazardly, suffering physical decline, rising costs and being unsafe.

2.2.3 City Expansion and Its Challenges

The rapid urban growth rate in developing countries does not align with economic development, social change, and technological advancement. Furthermore, the unplanned and uncontrolled physical expansion of cities significantly surpasses available resources, posing economic, social, and environmental challenges, and resulting in increased inequality, urban poverty, social deprivation, and lifestyle changes for the governments of the respective countries (Hardoy et al., 2001; Lewis-Thames et al., 2022). Bhatta (2010) stated that undesirable urban growth patterns or processes are vital for analysing urban expansion. The consequences or impacts of urban expansion, whether negative or positive, must also be understood and examined to achieve sustainable urban growth.

Hill and Lindner (2010) proposed that urban growth involves physical expansion and functional changes, which are essential for understanding its complex nature. The physical aspect refers to the conversion of land from non-urban to urban, while the functional aspect concerns the evolution of significant activities or land uses. Therefore, space and activity are crucial components of any framework to analyse urban expansion. It is important to note that urban expansion is not a uniform process with consistent attributes throughout the world; instead, it consists of diverse phenomena influenced by various cultural and historical factors unique to each region (Laurence & Edward, 1981; Cheng, 2003).

2.2.4 Urban Sprawl and Urban Growth

Mancebo (2008) differentiated urban sprawl from urban growth, stating that urban sprawl is a complex, ill-defined phenomenon and a process of functional and social differentiation from the town or city. This leads to increased individual mobility and the need for new transport infrastructure, while urban growth often appears as sprawl (Tofowomo, 2008). The traditional form of sprawl involves the development of suburban areas adjacent to cities, characterised by strong organic and structural ties that can sometimes integrate into the urban fabric. Urban sprawl poses a significant challenge to metropolitan expansion and development globally. Tofowomo (2008) pointed out that unchecked urbanisation has turned urban sprawl into a key characteristic of Nigerian cities, undermining efforts towards sustainable urbanisation. This predicament stems from poor planning, ineffective policies, and weak governance (Farunkanmi, 2003; Tofowomo, 2008; Olujimi, 2008, 2009).

Similarly, Mumford (1989) noted that the appeal of the suburbs diminished as urban growth encroached upon them. To avoid feeling responsible for the town's problems, those with the means to do so often withdraw to the urban fringe, seeking a more pleasant, greener, and peaceful environment. However, as more individuals move to the suburbs, the much-sought-after green spaces, privacy, and solitude often disappear. In contrast, Tofowomo (2008), who examined sprawl and urban growth in Akure, argued that various factors have contributed to sprawl, asserting that the real issue is not with those who chose to live in the suburbs but with those who remained behind.

Tofowomo (2008) further contended that the expansion of suburbs resulted from individuals fleeing the social challenges of urban areas, prompting them to seek refuge in socially well-regulated suburbs that offer a more desirable living environment. However, this viewpoint overlooks Brueckner's (2000) argument: Uncontrolled urban sprawl leads to unlimited suburban growth, reducing the incentive to redevelop land close to city centres and eventually causing downtown areas to decline due to population dispersal. Additionally, low-density suburban development hinders social interactions and weakens the connections essential for a vibrant community, as Tofowomo (2008) points out.

Despite this, Oktay's (2007) study on urban growth and quality of life supports these claims. The desire to improve living conditions motivates people to migrate to cities. Urban quality is integral

to the overall quality of life and has become a key factor in the global positioning of cities. Sustainable and positive urban development boosts a city's quality of life and standard of living. In contrast, urban sprawl represents the opposite of compact urban growth. Sprawling cities are characterised by empty spaces that reveal developmental inefficiencies and issues resulting from unregulated expansion. Ogunowo (2005) describes urban decay as urban blight or obsolescence, which reflects decline and deterioration linked to urban growth. This perspective is further supported by Okoye (1979) and Abumere (1987), who define urban decay as a state of overcrowding.

In his 2009 study on urban sprawl in Lokoja, Nigeria, Alabi (2023) describes urban sprawl as the spread of new developments across isolated patches of land, often separated by vacant spaces (Jothimani, 1977; Torrens & Albert, 2000; Brueckner, 2000; Lata et al., 2001; Slack, 2002; Adeboyejo & Olajoke, 2007). Monitoring urban growth is crucial to tackle the issues arising from this expansion. He highlights that urban sprawl differs between developed and developing countries, resulting in varied impacts. In Nigeria, a developing nation, urban growth and land use are mainly focused on the outskirts, with gradual infilling of intermediate areas with similar land uses, primarily fueled by rapid, often uncontrolled, population growth.

According to Adeboyejo and Olajoke (2007), many urban economists recognise that sprawl has certain negative traits related to urban growth. Nonetheless, they emphasise that the spatial growth of cities, which transforms rural or agricultural land into urban areas, is not inherently harmful; some urban expansion can be quite efficient. This study aligns with Brueckner (2000) and defines urban sprawl as the "excessive spatial expansion of cities," indicating inefficient outward growth. In essence, sprawl is a straightforward consequence of urban growth and development (Ifatimehin & Ufuah, 2006).

According to Owei, Ede, and Akarolo (2008), the pattern of urban sprawl development is characterised by multiple nuclei, which leapfrog over areas and leave agricultural enclaves along the urban fringe. For example, Adesina (2007) conceptualised the pattern of urban sprawl in the Federal Capital Territory (FCT), Abuja, and Port Harcourt as a dynamic process of physical and social transition occurring in two interlocking directions of growth: outward expansion from the existing core towards the fringes, and growth moving from the nuclei of development in towns and villages on the fringe towards the core.

2.2.5 Growth of Cities

Amati (2022) noted that biological metaphors for cities are a common phenomenon. For example, you might live near an “arterial” road or in the “heart” of a large city. Your workplace could be at one of the city’s “nerve centres,” or you might often exercise in a park described as the city’s “lungs.” These metaphors reveal a deep-rooted naturalism in how we perceive urban environments. Naturalism suggests that a single theory connects both natural and social systems. Key factors driving city growth include (i) Surplus Resources, (ii) Industrialisation and Commercialisation, (iii) Development of Transport and Communication, (iv) Economic Attraction of the City, and (v) Educational and Recreational Facilities.

“Like the origin of civilisation itself, the origin of the city is lost in the obscurity of the past,” said Gist and Halbert (2017). In every great civilisation, migration from villages to cities has occurred. The first cities emerged between 6000 and 5000 B.C., but they were small and complex, making it difficult to distinguish them from the surrounding landscape. By 3000 B.C., what may be called “true” cities existed. After that, there was a lull of approximately 2,000 years. It was not until the Greco-Roman period that cities began to emerge.

Interestingly, regions where urban life first originated saw their cities eventually decline, while new urban centres emerged elsewhere. Historically, cities in Mesopotamia, India, Egypt, Persia, Greece, and Rome fell due to their reliance on agricultural economies. Conversely, in Western Europe, urbanisation became more widespread, with steady growth over time. The nineteenth century sparked a genuine urban revolution, with rapid urbanisation since 1800 surpassing any previous period. The evolution of major cities globally has been shaped by various factors-geographical, economic, political, social, and technological. The interplay of these influences has driven the rise and development of major urban centres worldwide, each with a unique combination of factors shaping its growth. Exploring these influences provides valuable insights into current urbanisation trends and the dynamics of city life.

Bhatia et al. (2022) observed that Africa’s urbanisation is surpassing that of other regions, with more than 50% of the population expected to live in cities by 2035. However, this growth is characterised as “rapid, unplanned, and unmanaged,” with 62% of the urban population inhabiting informal settlements. These areas are often characterised by poor conditions, overcrowding, and makeshift housing, primarily constructed from substandard materials such as mud, salvaged wood,

or metal sheets.

What influences the growth of cities and towns? Are there any laws that shape the development patterns of urban areas? For decades, urban geographers like von Thünen (1875), Park et al. (1925), Muth (1961), Weber (1909), Christaller (1933), Losch (1938, 1954), Isard (1956), Alonso (1964), Mabogunje (1985), and Mumford (1989) have tried to answer these questions. Understanding why urban areas expand and the laws that govern this process involves comparing urban growth to the growth of malignant tumours, which is quite fascinating. It is generally believed that urban growth mirrors malignant growth. However, only a few studies by Fankhauser (1998), Hern (2008, 2011), Portugali et al. (2013), Fang (2017), Ali (2022), Bhatia et al. (2022), and Angel (2023) have examined the similarities between malignant tumours and urban expansion. A more detailed study of spatial factors is necessary to understand how malignancy impacts urban development, providing significant evidence for urban planning and design to enhance the built environment.

Ali's (2022) study on fractal parameters in Karachi's slum areas uncovered essential insights into their spatial structure and development patterns. Because these slums are proliferating, they are often described as an 'urban malignancy,' presenting numerous serious challenges. This fast urbanisation has led to disorganised and chaotic living environments both in the city centre and on the outskirts, negatively impacting the city's spatial arrangement.

The conceptual framework is recognised as intricate, emphasising interconnected yet essential strategies for addressing urban challenges, as noted by Hillier and Portugali (2013). A key theme in this analysis is viewing the city as a living organism, where simultaneous morphogenetic processes and the externalisation of societal memory take place. The city operates as a dynamic entity, evolving as an open system. It experiences phases of creation, growth, and recovery from conflicts and disasters, and sometimes faces partial or complete decline (Courtat et al., 2011). Both internal and external factors influence its development. Like a living being, it changes its physical structure and size as it progresses, reflecting an open and dynamic natural system. Regarding the urban question, one may ask whether city events, such as settlement patterns or, even further still, urban morphogenesis, are reducible to phenomena emerging purely from material vibrations or if they unfold at an even more complex level, where matter intersects with reflexivity or thought.

This study employs an interdisciplinary theoretical framework. It draws on literature that quantitatively compares urban growth with biological growth, using oncology models to predict and manage urban development. Unchecked growth and poor city planning contribute to the

emergence of informal settlements and slums, analogous to the unhealthy aspects of a city, much like malignant tumours create harmful conditions within the body.

Malignancy in Cities metaphorically depicts the harmful aspects of urban growth that can harm the city's environment, its residents, and its overall functioning. Similar to how biological malignancy describes uncontrolled cancer cell growth that harms the body, the harmful aspects of cities include various issues that can undermine the urban fabric and diminish the quality of life.

2.2.6 Malignant Nature in Cities

1. **Uncontrolled Growth:** Malignant tumours and cities can grow quickly and without restraint. Tumours form without the typical regulatory controls that manage cell growth, while cities typically require careful planning, often leading to urban sprawl.
2. **Invasion of Surrounding Areas:** Malignant tumours invade and destroy adjacent tissues. Similarly, cities can encroach upon and degrade natural landscapes, agricultural land, and rural areas, leading to environmental degradation and biodiversity loss.
3. **Creation of New Pathways:** Tumours develop new blood vessels to supply nutrients to their cells. Cities create new transportation networks, including roads and railways, to support their growth and connect different areas, often characterised by poor and inefficient roads.
4. **Resource Consumption:** Both malignant tumours and cities consume considerable resources. Tumours extract nutrients from the body, while cities require vast amounts of energy, water, and other resources to sustain their populations.
5. **Complex Adaptive Systems:** Cities, much like tumours, function as complex adaptive systems. They evolve and adapt to various factors, including economic changes, population growth, and technological advancements.

2.2.7 Examples of Cities and Their Malignant Nature

1. Lagos, Nigeria

- **Rapid and Uncontrolled Urbanisation:** Lagos has experienced significant population growth without adequate planning, resulting in sprawling urban development. This reflects how tumours develop without proper regulatory mechanisms, leading to uncontrolled expansion. An example of such unregulated growth in Lagos is the Makoko slum community, which has spread unchecked onto the shores of the Lagos Lagoon.
- **Resource Consumption:** Malignant tumours drain a significant portion of the body's

resources, comparable to how Lagos's rapid expansion strains its infrastructure and vital services, such as water, electricity, and waste management. This rapid growth has led to severe traffic congestion and environmental issues, including air, water, and land pollution, as well as a decline in green spaces. Lagos, Nigeria's fastest-growing city with an annual growth rate of approximately 5.8% and a population exceeding 14 million (Onilude & Vaz, 2021), faces ongoing challenges related to land use, infrastructure, and transportation.

- **Health Impacts:** Unregulated growth and malignant tumours can lead to serious health issues. In Lagos, factors such as air and water pollution, poor sanitation, and traffic congestion worsen the health problems faced by its residents. Moreover, the environmental impacts of uncontrolled expansion negatively affect the city's overall structure.
- **Inequality:** Malignant tumours can disrupt the body's balance, much like how unchecked urbanisation in Lagos has led to significant social and economic disparities. Many people (Aliu et al., 2021; Mutyambizi et al., 2020) reside in informal settlements that lack essential services. These conditions transform these settlements into hotspots for disease, increasing the risk of non-communicable diseases and other health issues as residents adopt an urban lifestyle without adequate health knowledge (Akinwale, 2018). This situation creates a cycle of difficulties that is hard to break, similar to the complexities caused by malignant tumours.

2. London

- **Uncontrolled Growth:** In the last 180 years, London has evolved from a compact core to an expansive metropolis, resembling the unchecked spread of tumours.
- **Resource Consumption:** The city's growth has led to a significant increase in resource use, which impacts the environment and strains the infrastructure.

3. Sydney

- **Environmental Impact:** The urban development of Sydney has led to environmental issues like pollution and habitat loss, similar to how tumours generate a harmful microenvironment.
- **Infrastructure Strain:** The city's rapid growth has put a strain on its infrastructure, leading to traffic congestion and inadequate public services.

4. Washington D.C.

- **Adaptability and Evolution:** Washington, D.C., has continually evolved to accommodate

the needs of its expanding population. This adaptability is akin to how cancer cells evolve to resist treatments.

- **Impact on Health:** The city's expansion has led to health challenges, including increased pollution and associated health risks.

5. Paris

- **Uncontrolled Growth:** Paris has experienced significant growth, driven by its robust transportation networks and high population density. This growth pattern closely resembles the process of angiogenesis in tumours.
- **Resource Consumption:** The city's development has resulted in significant resource consumption, which negatively impacts the environment and public health.

6. Tokyo

- **Health Challenges:** Tokyo's dense population and rapid urbanisation present considerable health challenges. Problems such as air pollution and the urban heat island effect are widespread, akin to how tumours create a detrimental environment for surrounding tissues.
- **Ageing Population:** The city also faces the challenges of an ageing population, necessitating careful planning and resource allocation.

7. Dubai

- **Uncontrolled Growth:** Over the past few decades, Dubai has transformed from a small trading port into a vast metropolis. This swift and often unchecked expansion has resulted in considerable urban sprawl, akin to how tumours grow uncontrollably.
- **Resource Consumption:** Dubai's development has resulted in high resource consumption, including water, energy, and construction materials. This mirrors how tumours consume significant amounts of nutrients and oxygen to sustain their growth.
- **Environmental Impact:** Dubai's rapid expansion has had a significant environmental impact, including habitat destruction, pollution, and the creation of artificial islands, such as the Palm Jumeirah. These changes can be likened to the way tumours create a toxic microenvironment.
- **Infrastructure Strain:** Dubai's expansion has put pressure on its infrastructure, resulting in challenges such as traffic congestion, waste management issues, and the need for ongoing construction to meet the population's demands.

2.2.8 Malignant Growth of Cities

2.2.8.1 Urban Expansion as a Cancerous Growth

The National Cancer Institute describes a benign tumour in urban growth as an abnormal tissue mass that doesn't serve a specific purpose, forming when cells rapidly divide and multiply. These tumours can develop anywhere in the body and have different traits depending on whether they are benign (non-cancerous) or malignant (cancerous). Similarly, cities expand unevenly, often unintentionally absorbing smaller towns during urban consolidation. In some areas, this urban expansion can be classified as benign or malignant (Hern, 2008). While benign city growth may seem harmless, it can lead to excessive expansion near other metropolitan areas, as Zeng et al. (2024) have indicated. This process can strain vital city infrastructure, much like the trachea or brain structures exert pressure on critical parts within the skull. Recent studies by Deng et al. (2024) show that benign urban expansion can still produce spillover effects in neighbouring cities, affecting land use efficiency and ecological health.

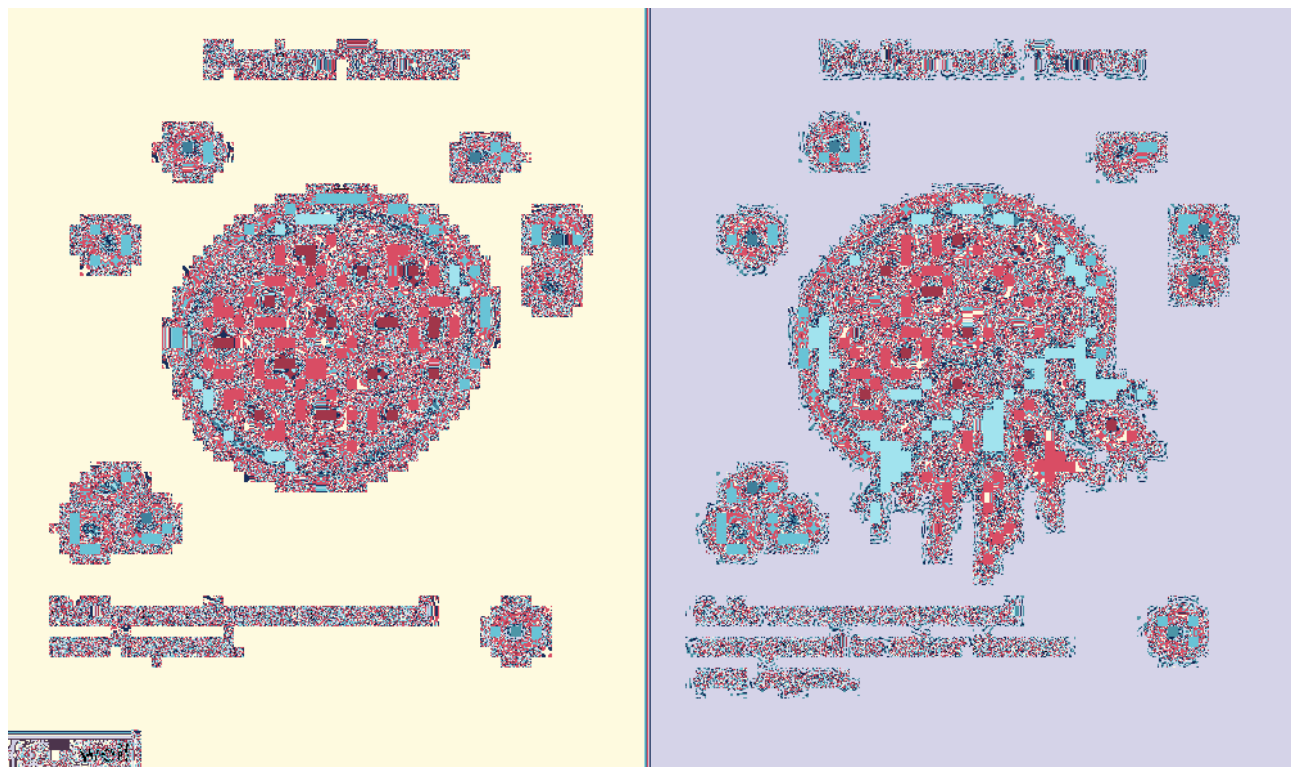


Figure 2.1 Benign Tumour and Malignant Tumour

Source: Seong (2023)

Malignant tumours consist of cancer cells that multiply quickly and invade nearby tissues, much like how expanding cities encroach on neighbouring areas. The town connects internally and with regions beyond its borders; this expansion often differs from the surrounding normal tissue. Splane (2023) contributes to the conceptual framework that compares urban morphology to biological

pathology, arguing that while cities tend to grow over time, their growth rates can vary significantly. As a city expands, similar to tumour growth, it occupies more space within the body, exerting pressure on adjacent structures and invading surrounding tissues. This process is called local invasion.



Figure 2.2 Representative Image of Urban Expansion through the Lens of Cancerous Growth
Source: Devdiscourse (2024)

Cancer Research UK (2023) explores a groundbreaking analogy, comparing unchecked urban expansion to cancerous tumours and emphasising the need for more sustainable, structured urban planning. Isabella Capel-Timms (2024) highlights that the factors influencing cancer development are also relevant to urban growth. The study suggests that insights from cancer research could aid in predicting and managing urban expansion, thereby fostering healthier and more sustainable cities. It draws a compelling parallel between city evolution and tumour growth, illustrating how unchecked urban sprawl mirrors the unregulated growth seen in tumours.

Figure 2.2 emphasises the urgent need for strategic and sustainable urban development. The research paper "Urban Metastasis: Drawing Parallels Between City Growth and Cancerous

Tumours" by Devdiscourse (2024) investigates similarities in growth patterns and their implications, proposing strategies for healthier urban expansion. Cassella (2024) argues that the same key factors influencing cancer growth also seem to affect the spread of metropolitan areas. Recognising this similarity could help us build better cities for the future, according to Isabella Capel-Timms (2024).

The metaphor of cities as biological entities, especially as malignant tumours, offers a compelling perspective for understanding the risks of unchecked urban growth. Urban morphology, when analysed alongside biological pathology, reveals how cities can either support life or harm ecosystems, depending on their planning and management. Urban morphology studies the spatial organisation of cities, including street patterns, building types, and land use. Key theorists like Muratori (1959), Conzen (1978), and Lynch (1960) highlighted the significance of historical layers and spatial consistency in shaping urban form. The book 'Cities in Transformation' (2020) explains how morphological analysis can aid sustainable urban planning and links morphological health to factors like connectivity, diversity, and resilience in urban systems.

Comparing urban morphology to biological pathology, particularly malignant tumour growth, offers a compelling framework for understanding the risks of uncontrolled urban expansion. This perspective allows planners and policymakers to identify harmful patterns and promote regenerative, sustainable development. Like biological systems that depend on balance and regulation, cities should also be developed thoughtfully, with coherence and consideration for the environment.

2.2.9 Urban Growth as Tumorous Expansion

Comparing urban growth to tumour expansion highlights their similar patterns: both exhibit rapid, uncontrolled development that ignores their surroundings. Like a tumour invading nearby tissues and depleting resources, often damaging the host, unchecked urban sprawl indiscriminately consumes land. This results in environmental harm, ecosystem degradation, and a decline in residents' quality of life.

Research from Devdiscourse (2024), Cassella (2024), and Isabella Capel-Timms (2024) shows that cities are expanding their borders, often encroaching on rural lands and green spaces without proper planning or infrastructure. This unregulated growth creates 'urban tumours': areas that expand without necessary services, leading to unsustainable communities. The studies suggest that examining how cancerous growth occurs through biomimicry may offer valuable lessons for

avoiding similar patterns in urban development.

Using oncology models to forecast and manage urban growth can pinpoint areas vulnerable to becoming 'urban tumours'. This approach facilitates the development of growth management strategies that account for the health of the entire urban 'organism' (Gilbert & Yishao Shi, 2023). The implication is a shift towards a more controlled method of urban expansion, resembling targeted cancer treatment; cities can evolve in ways that promote economic growth, ensure environmental sustainability, and enhance the quality of life, leading to the establishment of environmentally, economically, and socially sustainable urban areas (Perveen, 2017; Angel, 2023).

Viewing urban growth through the lens of tumorous expansion provides a compelling framework for evaluating and planning city development. By integrating oncology principles into urban planning, we can strive for development that is not only sustainable but also supports the long-term health and vitality of urban ecosystems. Zou & Wang (2023) emphasise the importance of green space morphology in maintaining urban ecological balance to achieve a healthy urban morphology, which includes regenerative mechanisms, akin to biological healing processes. The metaphor of malignant growth offers a diagnostic tool for recognising dysfunctional urban patterns. Using the metaphor of diagnosing urban pathology as malignant growth provides a way to identify problematic city development. Cities that expand without considering ecological boundaries, infrastructure capacity, or social cohesion display characteristics similar to tumours.

According to Moudon (1997), this research opens the door for interdisciplinary collaboration that could transform our perceptions and designs of our spaces. It encourages multidisciplinary cooperation between urban planners, ecologists, medical researchers, architects, and data scientists by viewing cities through the lens of biological systems, prompting us to rethink how we design urban spaces to be more resilient, adaptive, and healthy. This promotes regenerative design that mimics natural healing processes and opens up exciting possibilities for bio-inspired urbanism, where cities are viewed not just as machines, but as living, evolving organisms.

Grayling's (2024) work shows that major cities, such as London and Sydney, exhibit growth patterns strikingly similar to those of malignant tumours. He argues that the exact underlying mechanisms influencing cancer proliferation also govern urban expansion, causing cities to spread

like tumours. This finding hints at an innovative approach to urban planning inspired by medical principles, particularly the concept of vascularisation. There is a surprising and unsettling link between the seemingly unrelated realms of urbanisation and cancer. Recent findings suggest that the growth dynamics of cities like London and Sydney resemble those of malignant tumours, relying on infrastructure and population to expand into new areas. This insight could revolutionise urban planning by introducing medical-inspired strategies to address the more troubling aspects of urban growth. Grayling (2024) also emphasised that implementing policies to regulate the development of road, subway, and rail systems could help shape future urban growth patterns, similar to how techniques aimed at managing blood vessel formation and cell interactions can slow cancer progression.

Hern's seminal work explicitly compares cities to malignant tumours. In "Urban Malignancy" (2009), Hern applies fractal geometry to illustrate that cities and tumours exhibit similar growth patterns, including rapid, uncontrolled expansion, invasion of surrounding ecosystems, loss of differentiation (dedifferentiation), and metastasis, as well as urban sprawl into distant areas. In "Malignant Land Use/Cover Expansion" (2008), Hern further argues that cities like Brasília and Houston show pathological growth, consuming natural landscapes and disrupting ecological balance.

Salingaros (2005), Batty (2008), and Marshall (2009), experts in urban morphology, suggest that the study of city forms and structures is increasingly likened to biological systems, particularly unhealthy ones. They investigate the metaphor of cities as living organisms, employing the concept of malignant tumour growth to interpret unchecked urban expansion. Drawing on interdisciplinary sources from urban planning, fractal geometry, ecology, and pathology, they argue that specific urban development patterns are similar to invasive biological processes. These insights offer a valuable perspective for identifying urban problems and advancing sustainable planning.

Cities are dynamic systems influenced by human activity, environmental factors, and socio-economic forces. With urbanisation rapidly increasing worldwide, researchers often use metaphors to understand its effects better. A striking analogy likens urban growth to the development of a malignant tumour, emphasising qualities such as unrestrained expansion, invasion of neighbouring regions, and structural breakdown. This research examines the relationship between urban form and biological pathology, drawing on key literature to investigate how cities can evolve in ways that are either regenerative or detrimental.

2.3 METROPOLITAN LAGOS

This discussion focuses on metropolitan Lagos, Nigeria's most prominent city. The area has been extensively studied, but reviewing all available research would be unending and repetitive. Numerous studies, including those by Mabogunje (1960, 1968, 1974, 2002), Onakomaiya (1978), Ayeni (1974, 1978, 1984), Badejo (1982, 1985, 1990, 1999, 2002), Abiodun (1994), George (1999, 2010), Ayeni (1981, 2002), Egunjobi (2002), Oyesiku (2002), Barredo (2003), LASG (2004), Olanrewaju (2004), Gandy (2005, 2006), Ogunowo (2005), Abosede (2006), FGN (2006), Salau (2006), Afon (2007), Agunbiade (2007), Aluko (2007), Oduwaye (2007), Salako (2007), Lawanson (2008), Oresanya (2008), Ajayi (2009), Agbola and Agunbiade (2009), Salau and Lawanson (2009), Fadairo and Abraham (2009), Aluko (2010), Akinyode (2010), Ilesanmi (2010), Dekolo and Oduwaye (2011), Higgins (2011), Olokesusi (2011), Aderogba (2012), Filani (2012), Aliu, Akoteyon, and Soladoye (2020), Fatai (2021), Idowu and Zhou (2021), Koko and Bello (2023), Odeyemi and Adebayo (2023), Akosu and Malla (2024), Folorunso, Muhammed, Adekunle, and Raheem (2024), Gilbert and Shi (2024), Jayeola and Orlíková (2025), Odigie and Obayagbona (2025) and others demonstrate the broad range of research interests that make metropolitan Lagos a compelling case study.

2.3.1 Malignant Evolution of Lagos Metropolis

Lagos Metropolitan Area ranks among the fastest urbanising regions worldwide and is Nigeria's most populous area. Its development has been impressive, both in terms of population growth and land expansion; starting with roughly 25,000 residents in 1850, Lagos grew to 665,000 by 1963, spanning 69.9 km². The population exceeded ten million in 1995, qualifying it as a megacity (UNCHS, 1996). It was expected to be the third-largest megacity globally by 2015 (UNCHS, 1996). Today, its population is estimated at 17 million, according to National Geographic (2009).

Agbola (2007) notes that Lagos best exemplifies Nigerian cities, serving as the country's primary metropolitan hub. The Greater Lagos area, which was once Nigeria's capital, saw its population increase from 1.4 million in 1963 to 3.5 million in 1975. He estimates that Lagos's population now exceeds 20 million and is growing quickly. By 2050, it is expected to double in size, making Lagos the third-largest city in the world, although it still lags behind other global cities in terms of infrastructure. Covering 1,171.28 square kilometres (452.23 square miles), Lagos currently has a population density of about 6,871 residents per square kilometre (17,800 per square mile).

Lagos is an ancient Yoruba city, established in the 15th century, that has evolved into a central trade hub and seaport (Okusipe, 2003). Initially founded by the Awori subgroup of the Yoruba, it now has a diverse population due to significant migration from across Nigeria and neighbouring countries. While the Yoruba remain the largest ethnic group, there are also substantial Hausa, Igbo, and Fulani communities. Additionally, Lagos hosts smaller groups of Americans, British, East Indians, Chinese, white Zimbabweans, Greeks, Syrians, Lebanese, and Japanese. In the mid-1800s, communities of Afro-Brazilian and Afro-Cuban former slaves, along with immigrants from Sierra Leone, settled in Lagos, joining earlier ex-slaves from the Americas. These groups played active roles as missionaries and merchants in the city.

From the 1820s until it became a British colony, Lagos was heavily involved in the slave trade. This activity temporarily slowed local population growth, which picked up again after Lagos was ceded to Britain in 1861. Early residents included refugees fleeing slavery and conflict from the interior, freed enslaved people from Brazil, and colonial administrators and traders who settled near the port. By 1871, Lagos had grown into a village on an island with a population of 28,578 across 4 km² (George, 2010).

Several improvements in the economy, administration, social, and institutional spheres have made Lagos a significant destination for rural migrants. Lagos, Nigeria's busy commercial hub, is experiencing a major transformation. Once a small coastal town, it has grown into one of the world's fastest-expanding urban centres. In 2009, the Lagos State Government estimated a population of 17 million, overtaking cities like New York and Los Angeles. Projections for 2025 indicate Lagos will reach 24.4 million residents, ranking as the third-largest city after Tokyo and Mumbai. This swift urban growth presents significant opportunities along with notable challenges. To manage this sustainably, Lagos is adopting a comprehensive plan that focuses on urban development, infrastructure enhancement, and climate resilience.

Lagos has seen substantial growth over recent decades. Its urban development can be categorised into three main phases: the 19th century (pre-colonial, 1851–1900), a period of rapid expansion during colonial rule (1901–1950), and the metropolitan growth after independence (post-1951) (Olukoju, 2004; Afon, 2007). This expansion primarily results from rising population numbers. Such rapid growth often leads to chaotic and unplanned development, leaving many neighbourhoods and communities lacking essential infrastructure.

Pre-colonial Lagos developed as a fishing and farming community in the seventeenth century. Due to its geographical location as the only natural break along the West African coast for approximately 2,500 km, it became a key slave-exporting port in the eighteenth century. (Mehretu, 1983) With a population of around 25,000 in 1866 (Ayeni, 1981), Lagos was among the smaller settlements in Nigeria at that time. (Mabogunje, 1968).

In "Nigeria Cities in Historical Perspectives," Olukoju (2004) explored how the rise and decline of Nigerian urban centres relate to key events like the end of the trans-Atlantic slave trade, the conclusion of the Sokoto jihad, and various civil and inter-tribal conflicts. He observed that these urban areas mainly served colonial trade and administrative interests. Cities in southern Nigeria originated within the pre-19th-century Yoruba empires, acting as administrative hubs for the Yoruba kingdoms. Lagos, in particular, developed out of a need for defence (Jarwon, 1988). Situated strategically along the Atlantic coast for international trade, Lagos grew into a significant commercial centre due to its abundant natural resources, serving as a crucial distribution point for foreign nations (Jarwon, 1988). Throughout the pre-colonial and colonial periods, Lagos remained an essential administrative and institutional hub, serving as Nigeria's capital both before and after independence. Even after independence, Lagos retained its significance, hosting Nigeria's busiest ports (Tin Can Island and Apapa) and airports.

When people mention Lagos, they typically refer to the metropolitan areas, including the island and mainland suburbs of Lagos State. The mainland features neighbourhoods like Ikeja, Surulere, and Mushin. In the 1970s, Lagos saw a dramatic population increase due to an economic boom and significant rural migration driven by Nigeria's oil wealth. This surge in residents accelerated the growth of surrounding towns and communities, leading to the expansive metropolis we recognise today. Emerging from a small Yoruba city-state under two colonial administrations, Lagos has transformed into Nigeria's primary commercial and population hub.

Lagos is one of Africa's megacities along the western coast of southwestern Nigeria. Today, it functions as Nigeria's commercial and financial hub, spreading its influence throughout West Africa. Moreover, it is a significant educational centre and has historically been a leading city in Nigeria. It features urban amenities such as clean water, an extensive road and railway network, electricity, and job opportunities (Emordi & Osik, 2008). These factors have collectively established the city as a focal point of urbanisation.

Lagos exemplifies urbanisation in the global South, which faces a mounting crisis in essential services such as water, housing, and public transportation. A notable paradox exists: while the population has increased significantly over the past twenty years, the economy has declined sharply. This situation epitomises the modern African city, struggling yet full of vitality (Gandy, 2006). In-depth studies have examined the challenges facing Africa's largest city in sub-Saharan Africa. Its persistent problems are often attributed to the failures of colonial administrations to address issues such as overcrowding, disease, and inadequate urban infrastructure (Aderibigbe, 1959; Echeruo, 1977; Gale, 1979). Additionally, these difficulties have been worsened by a pattern of segregation that separates affluent neighbourhoods from a seemingly detached Indigenous populace (Home, 1983; Peil, 1991).

In geographical and urban studies, Marris (1961), Pullen (1966), and Ayeni (1977) highlight the chaotic post-colonial expansion of the city, noting a disconnect between available job opportunities and housing accessibility. In contrast, Gandy (2005, 2006) presents a broader perspective, situating Lagos within a global political framework. He describes the city as 'on an uncertain trajectory that diverges from known patterns of capitalist urbanisation, proliferating amid economic stagnation' (Gandy, 2006). Furthermore, Gandy (2005) argues that its development has primarily occurred outside the oversight of city planners, developing through a phenomenon he terms 'amorphous urbanism.'

Since the colonial era, Lagos has experienced significant growth, evolving into the country's administrative hub (Agbola & Agunbiade, 2009). This development has led to an increase in population and land reclamation from the sea (Owoade, 2007). Analysing the dynamics of Lagos's growth over the years reveals several contrasting scenarios. Akiyode (2010) observes that rapid urbanisation has resulted in a scarcity of clean drinking water. Conversely, Okuneye et al. (2007) highlight substantial developmental progress in Lagos, contributing to considerable biodiversity loss and environmental degradation. Filani (2012) noted that Lagos's physical expansion and urban development are linked to its increasing economic and political significance, driven by a rapid population rise. Part of this population surge can be traced to the resettlement of formerly enslaved individuals from Brazil. From 1891 to 1952, the city's population nearly doubled every decade. This rapid increase had a profound impact on infrastructure and social services, including housing, sanitation, educational facilities, traffic management, waste disposal, and urban planning. Additionally, it exposed deficiencies in land use planning and city management, alongside an escalating crime rate.

Ilesanmi (2010) describes Lagos as primarily an organic development characterised by a disjointed and gradual spread of structures across every available space. This phenomenon occurred within various historical, social, economic, and political contexts at local, regional, national, and metropolitan levels. George (2010) attributes the earlier planning initiatives in Lagos as a contributing factor. Consequently, due to this uncoordinated expansion, the city now exhibits a patchwork of slums and neglected areas in its older districts. These regions suffer from fragmented urban infrastructure, including inadequate roads, health facilities, police stations, electricity, water supply, drainage, and waste management systems. Lagos possesses some of the most incomplete building structures among major cities. It also faces profound issues such as rapid urban sprawl, property encroachment, and unplanned alterations to various land uses, which exemplify its problematic growth.

UN standards designated Lagos a megacity; nonetheless, it struggles with essential infrastructure and the institutional and legal frameworks needed to tackle related challenges. Paradoxically, Lagos is Nigeria's economic and financial hub, accounting for over 60 per cent of the country's economic activities (Adejana, 2008; Ilesanmi, 2010). As a result, the city's rapid evolution into a megacity poses significant challenges, and it is expected to continue grappling with considerable social, environmental, and economic issues common to large and fast-growing urban centres like Lagos (Abiola, 2012).

The development of the Lekki corridor, situated near the central business district of Lagos Island, alongside affluent areas such as Ikoyi and Victoria Island, has driven Lagos's growth in line with the Multiple Nuclei Theory, creating a wealth hub. However, while the Lekki Peninsula thrives, other parts of the city lag, leading to unplanned sprawl into areas such as Alimosho, Agege, Ifako-Ijaiye, Otta, Ojodu, and Mowe in Ogun State. These regions have expanded without sufficient planning or necessary infrastructure in place. As a result, Metropolitan Lagos is confronting severe human-environmental issues, including poor urban planning, widespread poverty, significant infrastructure shortages, land and housing pressures, overcrowding, and the emergence of informal settlements in vulnerable low-lying zones, levees, and flood-prone areas (Fasona & Wahab, 2011).

Davis (2004) highlighted that Lagos exemplifies how rapid expansion and economic decline have led to significant growth of slums. This increase in slum areas exerts substantial pressure on the land corridors along the Lagos-Ogun State border as the metropolis steadily advances, showing

minimal signs of actual infrastructural development. The World Resources Report (2019) states that Lagos is one of many cities expected to experience significant growth in population and land area over the next three decades. Recent projections suggest that the global urban land area might increase by 80 per cent from 2018 to 2030, given steady annual growth rates. When cities like Lagos expand horizontally rather than vertically, it can enhance spatial inequalities, further stressing economies and natural resources.

2.4 ISSUES FROM THE LITERATURE

This literature review examines the complex theoretical discussions surrounding concepts and empirical studies on urban growth, metropolitan expansion, and the similarities between malignant neoplasms and urban development. It seeks to establish a theoretical framework within the broader context of urban malignant growth models. Aside from unintentional omissions, the lack of focus on a specific topic was perceived as a consequence of editorial bias. Consequently, the relatively limited attention to malignant neoplasms in urban areas was acknowledged. Furthermore, the literature emphasised growth and related subjects in the medical field.

A literature review identified several clear patterns in how researchers have addressed urban growth and metropolitan expansion. Although evaluations have been somewhat limited, case studies on urban growth strategies for developing settlements and urban centres provide valuable insights into the potential benefits and drawbacks of these approaches. Notable examples include the works of Abiodun (1994), Rakodi (1996), Farunkanmi (2003), Agbola (2006), Salau (2006), Salako (2007), Tofowomo (2008), and Olujimi (2009). Various theories illuminate urban growth and development. Joo (2005) suggests that differing perspectives from different authors can enhance our understanding of a city's spatial economy. However, these theories often lack clear evaluation metrics and critical analyses of the relationships or contexts essential for examining the negative impacts of metropolitan growth.

The preference for descriptive over analytical methods has obstructed the development of evaluative frameworks in the literature to measure the impact and similarities of adverse effects on urban development. Although the theoretical contributions of these studies are significant, there is an urgent need for more in-depth analytical assessments of specific case studies.

The Sacramento Programme at the University of California, Berkeley, investigated the dynamics of urban and regional growth (IURD, 2002). This research addresses significant issues related to urban growth, including sustainable development, land use, suburbanisation trends, urban growth

regulation, and the revitalisation of central cities. In its report, *State of the World Cities 2010/2011: Bridging the Urban Divide*, UN-HABITAT examines Guadalajara, Mexico, as a case study. The findings reveal that from 1970 to 2000, the city's area expanded at a rate 1.5 times faster than its population. This trend is also evident in cities such as Antananarivo, Johannesburg, Cairo, Mexico City, and various locations in China. While Yaakup (2007), in "Predicting and Simulating Future Land Use Patterns: A Case Study of Seremban District," asserts that rapid urbanisation, driven by natural population growth and rural-to-urban migration, will persist, this trend will lead to the ongoing expansion of towns and cities to meet the diverse needs of their residents.

Major cities nationwide are witnessing significant growth characterised by clear signs of extensive development. The swift and continuous expansion of urban spaces, combined with a persistent demand for land, has led to chaotic development and notable shifts in spatial trends. These trends are evident in numerous urban initiatives, where new residential, commercial, industrial, and institutional structures are built on previously unused land near or on the peripheries of major cities.

With urban growth remaining unabated, this trend is poised to continue. The PADECO/World Bank (2008) study examined urban growth in three global metropolitan areas: Quito, Ecuador; Xi'an, China; and Hyderabad, India. These cities were pivotal for analysing the factors that drive urban expansion. The results revealed that urban growth has been notably land-intensive over the past 10 to 20 years, with demand for built space increasing at twice the rate of urban population growth. Historical trends suggest that between 2000 and 2030, while the urban population is expected to double, the urban land area is projected to grow threefold. Although the economic implications for infrastructure and environmental impacts have not been explored, this trend suggests that these cities may encounter challenges in meeting the rising demands for infrastructure investment.

Bilounga's (2009) study on land use changes in Yaoundé employed Landsat imagery to evaluate the city's growth and urbanisation trends. The results show that from 1973 to 1988, Yaoundé's urban area increased at an average annual rate of 8.1%, reaching an urbanised area of 12,848 hectares by 1988 and 16000 hectares by 2001. Bilounga (2009) identifies centripetal and centrifugal forces as key factors influencing this growth. The primary force behind centripetal expansion in Yaoundé is the economic opportunities linked to urban centres. Individuals are

moving from rural areas to cities in search of better living conditions, while natural population growth is intensifying densification in the urban core, leading to overcrowding. This situation creates centrifugal forces that motivate residents to relocate from the city centre to outlying areas, where land is more affordable and available. Moreover, these centrifugal forces also drive urban-to-rural migration due to inadequate infrastructure and declining urban quality of life standards.

In contrast, Barredo and Demicheli (2003) examined the spatial growth of Lagos, but the results of their 2020 simulation raised more questions than answers. They posited that population increases would directly drive Lagos's spatial expansion by 2020. As such, by 2020, it was anticipated that Lagos would transform into a densely populated region with 27 million residents across roughly 969 km², over three times the size of Paris. Nevertheless, Higgins (2011) illustrated how Lagos's size and population grew from 1990 to 2008, which contradicts the findings of Barredo and Demicheli (2003). Higgins (2011) analysed key features of the city's growth, which can inform projections of Lagos's future expansion and potential status in 2020. His findings revealed substantial growth in both land area and population; however, the increase in area outpaced population growth, diverging from the conclusions of Barredo and Demicheli. In support of this, Higgins (2011) noted that Lagos's population more than doubled during this period, rising from about five million in 1990 to over ten million in 2008, while the city's area nearly tripled during the same timeframe.

Higgins (2011) notes that numerous studies on urban growth have been carried out globally, focusing on areas such as Ouagadougou, Burkina Faso (de Jong et al., 2000), along the Islamabad highway in Pakistan (Naseem et al., 2000), Alexandria, Egypt (Azaz, 2001), and Al-Seeb Wilayat, Oman (Al-Awadhi & Azaz, 2003). These studies examined urban growth in locations with demographic patterns similar to those of Lagos's metropolis, aiming to identify trends and gain insights into essential parameters. Each monitored case has demonstrated significant urban growth over time. It was not surprising that the city has experienced growth over the years, as it represents a type of region that has grown the fastest in the world in recent decades, being an urban area in a developing country. Between 1975 and 2000, Lagos had the world's fourth-highest urban growth rate, with an annual population increase of approximately 61% (World Urbanisation Prospects 2001). Since then, although the city's growth rate has slowed in percentage terms, the actual increase in inhabitants has continued to rise (World Urbanisation Prospects 2008).

A study by Oriye (2013) similarly examined how urban growth affects land use in Ado-Ekiti. It employed remote sensing to assess the urban expansion rate in Ado-Ekiti from 1956 to 2030. The

results revealed that the city's area significantly increased and experienced rapid growth during the study period (1956-2006), with its built-up area expanding from 2.5 km² in 1956 to 6.7 km² in 2006, indicating a growth rate of approximately 8.73%.

Dankani (2013) explored the obstacles of physical planning in the Kano Metropolis. As one of Nigeria's most densely populated cities, Kano is experiencing significant urban growth, particularly at its outskirts. This expansion stems from rising population numbers and shifting activities throughout the metropolitan landscape. The swift population increase has overwhelmed many developing cities, exceeding their available resources.

Tofowomo (2008) highlighted that urban growth management challenges, which contribute to sprawl in Akure, indicate that urban growth is becoming increasingly dispersed and should be reflected in population censuses. The spread of urban land use into rural-urban fringes encourages more people to move to these areas. Despite Akure's slow growth rate, its metropolitan population soared from 230,000 in 1971 to 1.18 million in 1991 (NPC, 1991). Ongoing migration to cities is likely fueled by many rural inhabitants pursuing better opportunities in less economically developed regions.

According to Konadu-Agyemang (2001), the rapid growth of the Accra and Kumasi metropolitan areas has led to increased population densities and urban sprawl in surrounding regions, reinforcing the belief that urban population growth is primarily driven by migration. A report from the Ghana Statistical Service in 2002 highlighted that several areas adjacent to the Accra Metropolitan Area, which were rural in 1984, have since become urbanised, mainly due to Accra's expansion into neighbouring districts. Hostert et al. (2009) examined urban growth and local livelihoods in megacity areas, discussing how the intensification and spread of urban development significantly impact environmental quality and, subsequently, residents' quality of life in megacities.

Ifatimehin et al. (2006) investigated the relationship between urban expansion and vegetation loss in Lokoja through GIS methods, finding that urban sprawl notably affects cities' physical, economic, and social landscapes. Since Nigeria experiences one of the highest urbanisation rates in the world (Cohen, 2004), it is essential to perform studies that reveal the pace, scope, and consequences of urban sprawl in our swiftly developing urban regions.

Mabogunje (1968) investigated the residential area developments in Lagos and Ibadan. He found that the expansion and merging of these cities contributed to their growth. Additionally, the MOLAND project performed a case study on urban agglomeration in Lagos, tracking the development of urbanised areas in 1962, 1967, 1984, and 2000. Over the last 33 years, the land covered by artificial structures has more than quintupled, increasing from 117 to 682 km². While the growth rate has decelerated over the past 16 years, it remains substantial, with the city expanding by 157 km².

Since the early twentieth century, Lagos has experienced remarkable growth in both population and size. Key infrastructure elements and the built environment, including transportation, water supply, electricity, telecommunications, environmental sanitation, and housing, are crucial in meeting the demands of this rapid expansion and mitigating its effects. Effective strategies have been constrained when evaluating Lagos's economic vitality, critical role in the national economy, and continuous growth despite the frequent failures of essential infrastructure services, which pose challenges for businesses and residents alike (Abiodun, 1994).

The analysed case studies indicated that all examined areas have undergone swift urban growth due to the expansion of urban zones. This trend is due primarily to a substantial natural population increase resulting from high birth rates and urbanisation (Masek, 1996). Furthermore, as pointed out by Awodele et al. (2012), this prompts the consideration of whether the ongoing trend in urban growth is sustainable, especially in light of challenges such as unemployment, the emergence of slums, poverty, and environmental degradation, compounded by the uncontrolled pace of urban spatial expansion and the unpredictable nature of physical development (Odufuwa, 2006). As cities grow, the surrounding settlements become the focal point of direct impact (Cobbinah et al., 2014).

This research aims to create an empirical framework to analyse urban growth patterns and the emergence of malignant lesions while also addressing the limitations of current studies. Lupala (2002) notes that a considerable knowledge gap hinders the comprehension of urban development and the progression of malignant neoplasms, highlighting the necessity for more applicable theories and concepts. Moreover, a lack of adequate research has exacerbated the problem. Another related issue is metropolitan sprawl, which illustrates the insufficient understanding of urban expansion and its health-related consequences.

According to Farvacque-Vitkovic et al. (2008), Lagos's urbanisation is marked by notable physical growth, featuring moderate densification in the city centre alongside rampant, low-density

expansion on its periphery. This urban development challenges the limits of metropolitan areas. It highlights issues stemming from a poor understanding of urban growth and malignant neoplasms, which have remained theoretical, particularly in developing regions like the one examined in this case study. Therefore, there is an urgent requirement for more thorough analytical case studies. Malignant neoplasms (cancers) are defined by their rapid, uncontrolled growth, invasion into nearby tissues, metastasis (spread to distant sites), and dedifferentiation (loss of specialised structures). These traits are eerily similar to how cities expand, aggressively, invasively, and often destructively.

Therefore, the link between urban morphology and malignant neoplasms is an intriguing and thought-provoking analogy, as cities' growth patterns and cancerous tumours share notable structural similarities. Urban morphology studies concentrate on the physical form and structure of cities, including growth patterns, land use, and spatial organisation. These studies highlight challenges such as irregular and uncontrolled expansion, since modern cities often grow rapidly and unpredictably, resulting in sprawling edges and fragmented development that reduce differentiation. As cities expand, they tend to lose unique architectural or cultural identities, becoming homogenised urban landscapes. Invasive expansion and urban growth frequently encroach on natural ecosystems, farmland, and peri-urban areas, disrupting the balance of the environment. Using fractal geometry to analyse this, researchers assess the complexity and irregularity of urban shapes, uncovering patterns similar to those found in biological growth.

Studies of urban morphology, which analyse the form and structure of cities, have traditionally been a fundamental aspect of urban geography and planning. They investigate how cities expand, develop, and interact with their environment. In recent decades, a provocative analogy has emerged in the literature: the growth of towns resembles the behaviour of malignant neoplasms, or cancerous tumours. This comparison, though metaphorical, offers valuable insights into the nature of urban expansion and its consequences. By examining the structural, functional, and ecological similarities between urban morphology and malignant neoplasms, scholars have opened new avenues for understanding the pathology of modern urbanisation.

Cities, like living organisms, exhibit growth patterns that can be studied from both spatial and temporal perspectives. Urban morphology focuses on a city's physical form, including street layouts, building densities, and land use, as well as the evolution of these aspects. In fast-growing

cities, expansion tends to be sprawling and irregular, often neglecting environmental limits and sustainability. This unchecked growth causes fragmentation, erodes city identity, and puts more strain on natural ecosystems. (Moudon, 1997).

Fractal geometry has become an essential tool for analysing urban form. Researchers use fractal dimensions to evaluate the complexity of city boundaries, revealing patterns that are self-similar and scale-invariant, traits also observed in biological systems (Salingaros, 2005). The chaotic, invasive development of urban sprawl resembles the growth of malignant tumours, invading nearby tissues and disrupting normal functions. The comparison between urban morphology and malignant neoplasms is more than poetic; empirical evidence and mathematical models support this analogy. Both systems can be studied using fractal geometry, which captures their irregularity and complexity in growth. In cities, higher fractal dimensions indicate sprawling, chaotic expansion. Likewise, in tumours, such metrics reflect aggressive, invasive growth. (Hern, 2009)

Malignant neoplasms are characterised by rapid, uncontrolled cell proliferation, invasion into surrounding tissues, and metastasis to distant sites. These tumours lose their structural differentiation, forming disorganised masses that threaten the host's overall health. This process is similar to urban expansion, where cities grow aggressively, often without clear boundaries or planning, consuming resources and displacing communities.

Additionally, both cities and tumours show a breakdown of regulatory controls. In healthy tissues, growth is regulated by genetic and biochemical signals. Similarly, in well-planned cities, growth is managed through zoning laws, infrastructure development, and environmental policies. When these controls fail, it leads to pathological growth- cancer or urban sprawl. Therefore, comparing urban development and malignant neoplasms in academic discussions offers valuable insights into the behaviour of modern cities. By drawing parallels between biological and urban systems, researchers reveal underlying issues of unchecked growth and highlight the need for sustainable planning. Cities, like living organisms, require nurturing, regulation, and healing. Only then can urbanisation foster vitality instead of decay.

Research indicates that various theories explain urban growth and settlement. However, there is a notable gap in the literature regarding frameworks that evaluate urban expansion in relation to malignant neoplasms. Although the link between urban development and malignant neoplasms is acknowledged, more empirical evidence is required to understand how specific conceptual factors affect this relationship. Consequently, this study investigates Lagos's historical development and

the similar impact of malignant neoplasm occurrences.

Although there is growing interest in comparing urban expansion to malignant tumours, the literature still lacks in-depth analysis of this connection. Most existing research treats the analogy as a conceptual framework rather than an empirical approach. There is limited integration of urban morphology metrics, such as fractal dimensions and spatial entropy, with biomedical models of tumour growth to analyse the pathological features of urban sprawl. Additionally, few studies explore the implications of this analogy for urban planning, sustainability, and public health policies.

2.5 THEORETICAL/CONCEPTUAL FRAMEWORK

2.5.1 Conceptual Framework

While a perfect model for urban growth may not exist, several core principles underpin urban expansion and the development of metropolitan areas. This research focuses on understanding the complexities of urban growth and the necessary information for effective urban planning. To develop a conceptual framework that aids in comprehending the similarities and effects of malignancy on Lagos's growth and expansion, this study explores the concepts of urban fields, urban diffusion, and malignant neoplasms.

To establish a conceptual framework that underpins this study and facilitates an understanding of how settlements evolve spatially and temporally, it is crucial to analyse the connection between metropolitan growth and related urban issues, such as malignant neoplasms. To meet the study's goals, understanding the development of urban malignant neoplasms, recognising their main features, and comparing their progression with the expansion or contraction of metropolitan areas are essential.

2.5.2 The Conceptualisation of Malignant Neoplasms in Metropolitan Area Growth

The study explores the metaphor and similarities between cancer growth and urban expansion in metropolitan areas. Urban growth is often seen as a sign of progress, economic strength, and modernisation. However, behind this success, there is a complex and sometimes troubling reality; the uncontrolled expansion of cities can mirror the destructive behaviour of malignant tumours. The research examines the conceptual and analytical links between cancer development and urban sprawl, suggesting that viewing urban growth through the lens of malignancy offers valuable

insights into understanding the dynamics, impacts, and possible solutions for unsustainable urban development.

Malignant neoplasms exhibit several key traits: a) rapid and uncontrolled growth; b) invasion and destruction of nearby normal tissues (ecosystems); c) potential to metastasise (spread to distant sites); and d) de-differentiation, where they lose the distinctive features of specific cell and tissue types (Anderson, 1961; Perez-Tamayo, 1961; Ruddon, 1987; Tannock, 1992; Hanahan, 2000). Similarly, many urban forms resemble each other, reflecting this "de-differentiation." Major metropolitan areas show rapid, uncontrolled growth, expanding in both population and geographic size. Unchecked growth stands out as the most prominent harmful trait. While rare cases of entire human communities vanishing have occurred, human populations typically persist for thousands of years and often expand by transforming nearby natural habitats or farmland into urban areas. It is essential to provide evidence or examples illustrating a conscious effort to regulate this growth in metropolitan Lagos.

A relationship exists between the fractal dimension of urban forms and malignant tumours, with metropolitan Lagos displaying all four key traits of a malignant process. This is clear when examining city morphologies and growth patterns. For a doctor familiar with primary pathology, the traits and development of urban areas, whether at specific moments or over time, resemble those of malignant lesions (Anderson, 1961; Perez-Tamayo, 1961). Metastatic lesions generally exhibit more aggression and faster growth than the primary tumour. Studies aimed at understanding and characterising different types of malignancies have shown that irregular borders, especially in skin and solid tumours, are crucial signs of melanoma malignancy. This highly invasive pigmented skin cancer is distinguished by its irregular, invasive borders. Lee and Claridge (2005) observed that greater border irregularity correlates with increased malignancy.

The similarities between cities and cancers point to deeper connections. Yet, Anderson (1961) highlights four key features of a malignant process that appear at a superorganic level in towns, observable in their morphology and growth patterns over time. Tracada (2008) noted that, unfortunately, cities are expanding like malignant growths, primarily due to significant differentiation. Many urban areas now share similar forms and lack the distinct features of tribal or medieval walled settlements that mirror local culture. While comparing city growth to cancer might seem like a metaphor or overstatement, Hern (2001) likened satellite communities and their development to urban and malignant growth, describing this as a fast, uncontrollable process characterised by explosive expansion.



Plate 2.1 Showing Malignant Melanoma on the Skin.

Records indicate that urban expansion grew significantly in the early 19th century and surged dramatically throughout the 20th century (Thomas et al., 2007). This rapid city growth aligns with a notable increase in the global population. Urban areas have expanded into nearby rural lands, often resembling large, invasive masses. Similar to malignant cells, cities exhibit characteristics typical of a malignant neoplasm, especially in their physical expansion and growth behaviour.

Cities expand by merging with smaller communities that develop at specific locations outside the central area, much like malignant cells spread into tissues far from the tumour's core. In such instances, urban growth proceeds unchecked, without regulation or limits from authorities. The concept of “self-organised criticality” has also been applied to malignant tumours, suggesting that these tumours grow in fractal patterns that are unaffected by scale and typical growth controls (Frigyesi et al., 2003; Kitano, 2007; Kansal et al., 2000; Deutsch, 2001; Dormann et al., 2002). Features of self-organised criticality include scale-invariant behaviour in time and space, fractal structures, and power-law phenomena observed in malignant neoplasms (Waliszewski et al., 2001).

The rapid expansion of cities affects nearby regions and contributes to global climate change. Odum (1989) noted that cities operate as highly heterotrophic, parasitic ecosystems, consuming more energy than they produce, which amplifies their impact on the Earth's environment (Molotch,

1976). Lagos's shape reflects the irregular, invasive growth patterns observed in other urban areas within the metropolitan region, exemplifying "de-differentiation in a malignant process" (Warren, 1990). The emergence of satellite communities indicates both urban and malignant expansion. Vital questions arise: Are these settlements formed due to the increasing size and congestion of metropolitan Lagos? Or do they merge with and replace smaller communities established at specific nodes outside the city, following the "enslaving principle" described by Frankhauser (1998)?

Cheng (2003) emphasises that metropolitan growth involves complex physical, social, economic, and ecological processes. Assessing growth through qualitative data is challenging, as physical and environmental factors modify landscapes, while socioeconomic elements influence land use. Therefore, a comprehensive analysis of metropolitan growth requires examining its physical features and functional consequences, supported by quantitative modelling. Batty and Longley (1994) categorised metropolitan growth into two types: organic (or natural) and planned (or artificial). Wu (2000) expanded this classification by distinguishing between spontaneous and self-organising growth.

Spontaneous growth is characterised by dispersed, small-scale development with random elements, while self-organising growth involves large-scale, high-density development. Most cities typically exhibit a mix of these types, often combining planned development with organic growth. Oktay (2007) noted a consensus on classifying urban growth as either positive or negative. Positive growth involves organised, planned development, whereas negative growth refers to chaotic, uncoordinated expansion, commonly called sprawl. Indicators of unplanned urban growth are vital signs of an urban crisis. Ogu and Adeniji (1998) argue that the sustainability of human communities, particularly urban areas, depends on effectively managing these factors. Nonetheless, few studies have thoroughly examined the detrimental effects of metropolitan expansion. Similar to a malignant cell, this growth pattern shows accelerated cycles, genetic mutations, invasive behaviour, increased mobility, changes in cellular surfaces, and the secretion of lytic factors, among other characteristics.

Research on urban growth demonstrates that urbanisation, city expansion, and sprawl are extensively studied (Ayogu, 2003). However, only a limited number of studies focus on the growth of malignant cells and the harmful impacts of urban development. Malignant cells grow invasively and are capable of migration, causing damage through lytic factors and engulfing surrounding tissues. They mainly occupy existing spaces but can also generate new niches by damaging nearby

tissues. A negative correlation exists between cytokines and the cells' invasive ability; some phases emphasise proliferation, while others highlight invasive behaviour. Within malignant cell populations, different subpopulations and subclones develop, each showing varying levels of invasiveness and aggressiveness. The defining feature of malignancy is uncontrolled growth, akin to urban areas expanding by converting natural or agricultural lands into developments. No practical global efforts currently exist to contain this growth. As the worldwide urban population nears 50%, urban sprawl seems inevitable and uncontrollable.

Malignant neoplasms, or cancerous tumours, are characterised by uncontrolled cell division, invasion of surrounding tissues, and metastasis to distant parts of the body. These growths lose their structural differentiation and become aggressive, consuming resources and threatening the host organism. The parallels with urban expansion are striking. Cities often grow without clear boundaries, consuming land, displacing communities, and straining natural systems. The loss of planning control, the fragmentation of urban form, and the spread of informal settlements all reflect a kind of pathological urban behaviour.

Hern (2009) famously argued that cities exhibit malignant traits: rapid growth, invasion, loss of differentiation, and environmental harm. His work employs fractal geometry to reveal that city borders and tumours share similar mathematical qualities- irregularity, self-similarity, and scale invariance. This analogy is not merely poetic; it is grounded in empirical observation and rigorous analysis. Cancer, in living beings, is characterised by uncontrolled growth, invasion of nearby tissues, and metastasis to other organs (Hern, 2001). Most urban areas exhibit these features; however, cultural adaptations that utilise resources such as energy, food, and water often facilitate continual expansion.

A prominent feature of modern, especially newer, cities is their rapid outward spread into adjacent territories, often through invasion or colonisation, incorporating surrounding areas into the urban core (Frankhauser, 1998). Urban development typically begins by encroaching on untouched ecosystems, gradually replacing them with gardens, cleared land, or buildings, indicating a malignant growth pattern. The key hallmark of this malignancy is its unchecked expansion, mirroring the growth of human society. This process has persisted for centuries, transforming natural or cultivated lands into urban areas. In living organisms, the three main traits of cancer — uncontrolled growth, invasion of nearby tissues, and metastasis are reflected in nearly every human

community (Hern, 2011).

Cities act as complex systems that develop from grassroots initiatives, with their form and size governed by scaling laws driven by intense spatial competition (Batty, 2008). Like all modern human communities, cities exhibit traits similar to destructive processes, requiring us to understand them within this framework. A city is more than just a static entity; it is a living, adaptive system that continuously evolves. It is born, expands, faces challenges such as wars and natural calamities, and may eventually suffer partial or total decline (Courtat et al., 2011). Its growth is shaped by both internal dynamics and external influences, functioning like a living organism. As its physical form and extent change, it remains an open, ever-changing system.

The literature on urban health emphasises three primary concerns: the social environment, the physical environment, and the availability of health and social services. Each of these areas involves issues related to urbanisation- such as population ageing or diversity- and urbanicity, which includes socioeconomic status and crime, both crucial for understanding metropolitan dynamics. A metropolitan area comprises diverse urban and rural regions experiencing demographic growth, territorial expansion, and economic development, often due to their proximity to the city centre. One of the key features of urban life is the rapid expansion of cities, accompanied by significant spatial changes. Cities tend to expand outward from their centres, bringing benefits like increased economic opportunities, improved connectivity, and access to more advanced services. However, this growth also introduces challenges, such as environmental resource pressures (water and land), unregulated development, infrastructure strain, and diminished political influence. These adverse effects frequently cause conflicts between the core city and the surrounding areas (Singh 2019).

Viewing cities as potentially harmful entities has significant effects on urban planning. When metropolitan expansion is seen as a problematic process, planners are prompted to take on the role of healers, identifying issues, recommending solutions, and fostering renewal. This outlook encourages moving away from solely growth-focused development towards sustainable urbanism, emphasising ecological sustainability, social fairness, and long-term durability. This conceptual framework also benefits public health. Urban environments significantly impact health outcomes through factors such as pollution, stress, access to services, and exposure to diseases. Viewing cities as biological systems can help develop healthier, more livable areas that mitigate the risks associated with rapid urban growth.

Viewing malignant neoplasms as a metaphor for metropolitan growth isn't just illustrative; it encourages a re-evaluation of urban expansion processes. Comparing biological systems to cities helps researchers and planners identify fundamental issues and craft improvement strategies. Like living organisms, cities need nurturing, management, and care. Only with this perspective can urbanisation become a source of vitality instead of decline.

2.5.3 Conceptual Overlap: Urban Malignancy

Hern's (2009) work offers a compelling and insightful metaphor in urban studies: likening urban expansion to malignant tumours. He argues that Urban Malignancy establishes a direct link between city growth and cancerous growths. Hern suggests that cities can be viewed as harmful lesions on Earth, raising ethical and ecological issues due to unrestrained urbanisation. He notes that urban expansion displays traits of malignancy, including rapid growth, invasion, loss of differentiation, and environmental harm (Hern, 2009). From his perspective, cities are not merely human habitats, but pathological entities that endanger the planet's ecological stability.

This framework challenges traditional views of urban growth as a form of progress. Instead, it interprets expansion as a systemic dysfunction, akin to a biological disease. Hern's use of fractal geometry to compare city and tumour spatial patterns provides a quantitative basis for this analogy, making it more than just a metaphor; it becomes a diagnostic tool. This universality strengthens his argument that urban growth is not merely a social or economic phenomenon, but a biological-like pathology.

Hern's provocative comparison of urban growth to malignant tumours has generated both curiosity and scepticism in academic circles. His innovative use of fractal geometry to link urban forms with cancerous development is notable; however, several scholars have voiced concerns about its accuracy, implications, and limitations. Urban geographers and planners contend that Hern's analogy oversimplifies the complex nature of urban environments. Unlike tumours, cities are not solely destructive; they also offer potential opportunities, highlighting the need for more nuanced metaphors that capture both the risks and benefits of urban expansion.

Researchers such as Chen (2000), McAdams (2011), and Andersson et al. (2002) have created alternative models using entropy, agent-based simulations, and network theory to understand urban dynamics. This research indicates that cities can develop in resilient and regenerative ways,

countering Hern's more dystopian perspective.

Chen (2000) argues that urban expansion can be understood through adaptive, emergent behaviours rather than pathological analogies. His models emphasise self-organisation and resilience, offering a more optimistic view of urban dynamics. Chen's spatial entropy model and Hern's malignancy hypothesis of urban growth frameworks provide radically different perspectives for understanding cities; one highlights complexity and self-organisation, the other considers pathology and destruction. Chen's model treats cities as living systems that follow mathematical rules. His use of entropy does not imply chaos; instead, it measures diversity and distribution within urban space. Conversely, Hern's hypothesis offers a moral and ecological critique, viewing urbanisation as a symptom of human overreach, likening it to cancer that consumes resources and spreads uncontrollably.

Andersson (2002) and colleagues created a mathematically rigorous agent-based model that uses a modified Markov random field to simulate urban growth with realistic spatial patterns. They integrated concepts from diffusion-limited aggregation, cellular automata, and statistical physics to analyse phase transitions in urban development. The model offers valuable insights into how cities transition from compact settlements to expansive urban areas. It emphasises minimal assumptions about human interactions, making it applicable for both theoretical studies and policy development. This research bridges the gap between abstract theories and practical urban planning by demonstrating how bottom-up dynamics, including individual decisions and land-use interactions, can give rise to emergent urban forms. It is especially relevant for understanding urban sprawl, land-use efficiency, and sustainable settlements.

Andersson's agent-based urban settlement model and Hern's malignancy hypothesis approach urban growth from contrasting viewpoints, one emphasising simulation and emergence, the other focusing on pathology and ecological issues. Andersson's model is like watching a city evolve from the ground up, with agents interacting, spaces transforming, and patterns emerging. In contrast, Hern's hypothesis serves as a warning, comparing unchecked urban growth to a biological abnormality, much like cancer overtaking its host. Hern's work is more about moral reflection on the impacts of uncontrolled expansion than detailed modelling.

McAdams (2011) states that fractal geometry has become an essential tool in urban studies, enabling measurement of city growth and form complexity while avoiding problematic comparisons. He emphasises factors like geography, culture, and infrastructure. McAdams and

Warren Hern have utilised this approach in urban morphology, but with contrasting perspectives. McAdams employs fractal analysis to understand and influence urban development, whereas Hern argues that cities resemble malignant tumours.

In his study of Istanbul, McAdams (2011) employs fractal analysis to explore the city's spatial structure in a developing country. He utilises metrics like fractal dimension and lacunarity to evaluate the texture, density, and distribution of urban form. His aim is not to criticise urbanisation but to understand its dynamics, how historical, cultural, and infrastructural factors influence the city's growth. McAdams considers fractal geometry a neutral analytical tool to recognise patterns, compare urban shapes, and promote more efficient and sustainable city design. His research is rooted in spatial science, and despite acknowledging the challenges of rapid urbanisation, he does not see them as inherently harmful.

Hern (2008) uses fractal analysis to argue that cities are akin to malignant entities. He suggests urban growth shares traits with cancer, such as rapid expansion, invasion of neighbouring environments, loss of distinctiveness, and metastasis. Hern compares the fractal dimensions of city boundaries with those of cancerous tumours, noting notable similarities. He believes fractals are more than analytical tools- they serve as indicators of dysfunction. His work serves as a moral and ecological critique, warning that unchecked urban growth poses a threat to the planet's health. He views cities as pathological systems that deplete resources, disrupt ecosystems, and resemble biological diseases.

The contrast between McAdams and Hern underscores how fractal analysis serves two roles in urban studies. McAdams applies it to inform planning and deepen understanding, whereas Hern uses it to scrutinise the ethics and sustainability of urbanisation. Their work shows that the same mathematical approach can tell very different stories, depending on the researcher's perspective and goals. McAdams supports adaptive planning, while Hern advocates for a fundamental re-evaluation. One views cities as complex yet manageable; the other perceives them as risky and unsustainable.

2.6 THE CONCEPT OF URBAN GROWTH PROCESS

The process of urban growth involves the evolving expansion of cities through spatial, demographic, economic, and infrastructural changes. It is shaped by internal factors, such as

population increase and land use modifications, as well as external influences, including migration, globalisation, and environmental limitations. Urban growth encompasses the increase in size, population, and functional complexity of metropolitan areas, occurring through horizontal sprawl and vertical densification. These developments are driven by a combination of demographic, economic, political, and environmental factors.

Settlements grow primarily due to two interconnected factors: natural population increase and migration. These demographic trends not only drive urban development but also result from it. The population serves as both a catalyst and an outcome, attracting economic activities and investments eager to engage with the local community. This creates feedback loops that heighten pressure on spatial planning and infrastructure. As a result, there is increased demand for housing, services, and infrastructure. In cities like Lagos, high birth rates lead to densely populated urban centres and the spread of informal settlements. Migration, whether from rural areas or internationally, fuels urban sprawl, with migrants drawn by economic prospects, social networks, and access to services, often settling in peripheral or underdeveloped regions. These combined forces attract economic activities and investments, seeking to engage growing urban populations. This influx of capital and labour changes land use patterns, intensifying competition for space, and frequently leads to unregulated growth, which aligns with Hern's malignancy analogy. Understanding these drivers is crucial for diagnosing urban pathological issues and creating solutions that foster balanced, inclusive, and sustainable development.

Urban growth is inherently complex, adaptive, and often chaotic rather than linear. Well-organised cities control expansion through zoning, environmental reviews, and infrastructure planning. Conversely, rapidly growing cities like Lagos can experience unhealthy growth, similar to malignant tumours, characterised by uncontrolled expansion, invasion into surrounding areas, and a loss of organised structure. Hern's (2011) analogy compares city growth to biological disease, portraying urban development as a tumour consuming resources, invading ecosystems, and destabilising the environment. This view considers urban growth not merely a technical issue but a diagnostic challenge requiring systemic solutions.

As cities expand rapidly due to population growth, economic pressures, and infrastructure needs, understanding these patterns is crucial for addressing spatial issues, promoting sustainable planning, and grasping the more profound impacts of urban expansion. This study examines urban growth, its drivers, patterns, and theories, especially Hern's (2009) malignancy model and alternative frameworks by Chen (2000), McAdams (2011), and Andersson et al. (2002). Their

findings support Hern's malignancy hypothesis, particularly regarding how development pressures can lead to invasive urban behaviour, where cities exceed their ecological and infrastructural limits. However, the authors also recommend strategic planning measures, proposing that urban growth centres can be shifted towards sustainability through policy reforms and spatial management. Lagos epitomises this intense growth phase, with over 24 million residents, high birth and migration rates, encroachment into wetlands and forests, ecological damage, the proliferation of informal settlements, and infrastructure lagging behind demand, all of which lead to systemic stress.

Using Hern's (2009) framework, Lagos can be regarded as a malignant urban entity, while Chen (2000) and Andersson et al. (2002) provide diagnostic and modelling tools to better understand and potentially manage its growth. The concept of urban growth is complex, involving demographic, spatial, and systemic aspects. While Hern's malignancy hypothesis offers a critical perspective on the risks of uncontrolled expansion, models by Chen and Andersson provide analytical frameworks for understanding and guiding urban development. Together, these perspectives deepen our comprehension of cities as both living systems and possibly pathological structures, encouraging planners to balance growth with sustainability, resilience, and equity.

As urban areas expand, their impact intensifies, facing a range of external challenges. Urban planners, policymakers, city officials, and researchers work to strategically position these areas amidst global environmental changes (Mukwaya, 2004). Cities are often viewed as living organisms that can either thrive or decline. In many African countries, urban expansion happens without proper planning; land allocation and service provision are misaligned, resulting in insufficient and poorly maintained infrastructure. As resources become more available, cities become more attractive and expand outward. Surrounding villages merge with urban centres, while small towns provide housing for low-income migrants and residents facing high city rents. These people often commute from the outskirts to access key economic and social resources in the city centre.

Despite economic growth and population increases, social services remain inadequate, resulting in traffic congestion, pollution, slum development, crime, insecurity, and poverty. This situation causes some residents to move to the city's edges. Those who can afford it often settle further out, hoping for cleaner air, less congestion, and a quieter life. However, these outer areas usually lack

essential services; while necessary utilities like water and electricity are available, shopping centres may be limited. As a result, many who move to these areas eventually return to the city for essential services and amenities.

Taherkhani et al. (2009) examine the development pressures faced by urban growth centres, emphasising how rapid expansion often leads to spatial imbalance, ecological degradation, and infrastructural strain (Figure 2.3). Their study highlights several key themes, including unregulated expansion driven by population influx and economic centralisation, environmental stress due to land conversion, deforestation, and pollution, as well as planning challenges in managing growth sustainably while maintaining livability.

Integrating this study reinforces the argument that the pathological traits of urban growth are not unique to Lagos; instead, they are part of a broader global pattern, particularly in rapidly developing regions.

Figure 2.3 illustrates that development consistently impacts population dynamics, which in turn respond to changes in population. As a result, suburban cities can support larger populations and attract more investments if provided with suitable environments and resources for growth. These cities serve as service centres for nearby regions and drive rural-urban migration toward the core city. It highlights a key principle in urban studies: development and population trends mutually reinforce one another. As cities expand through infrastructure, housing, and economic opportunities, they attract and retain larger populations. In turn, population growth boosts the demand for further development, creating a feedback cycle that promotes urban expansion. This relationship is evident in cities like Lagos, where rapid growth in areas such as Lekki and Ikeja has led to significant population increases, putting pressure on existing infrastructure and often necessitating further expansion into environmentally sensitive areas.

The theoretical implication of this feedback loop aligns with both Chen's entropy model (which sees cities as adaptive systems responding to internal pressures) and Hern's malignancy hypothesis (which interprets unchecked feedback as pathological growth). The difference lies in framing: one sees potential for regulation; the other warns of collapse.

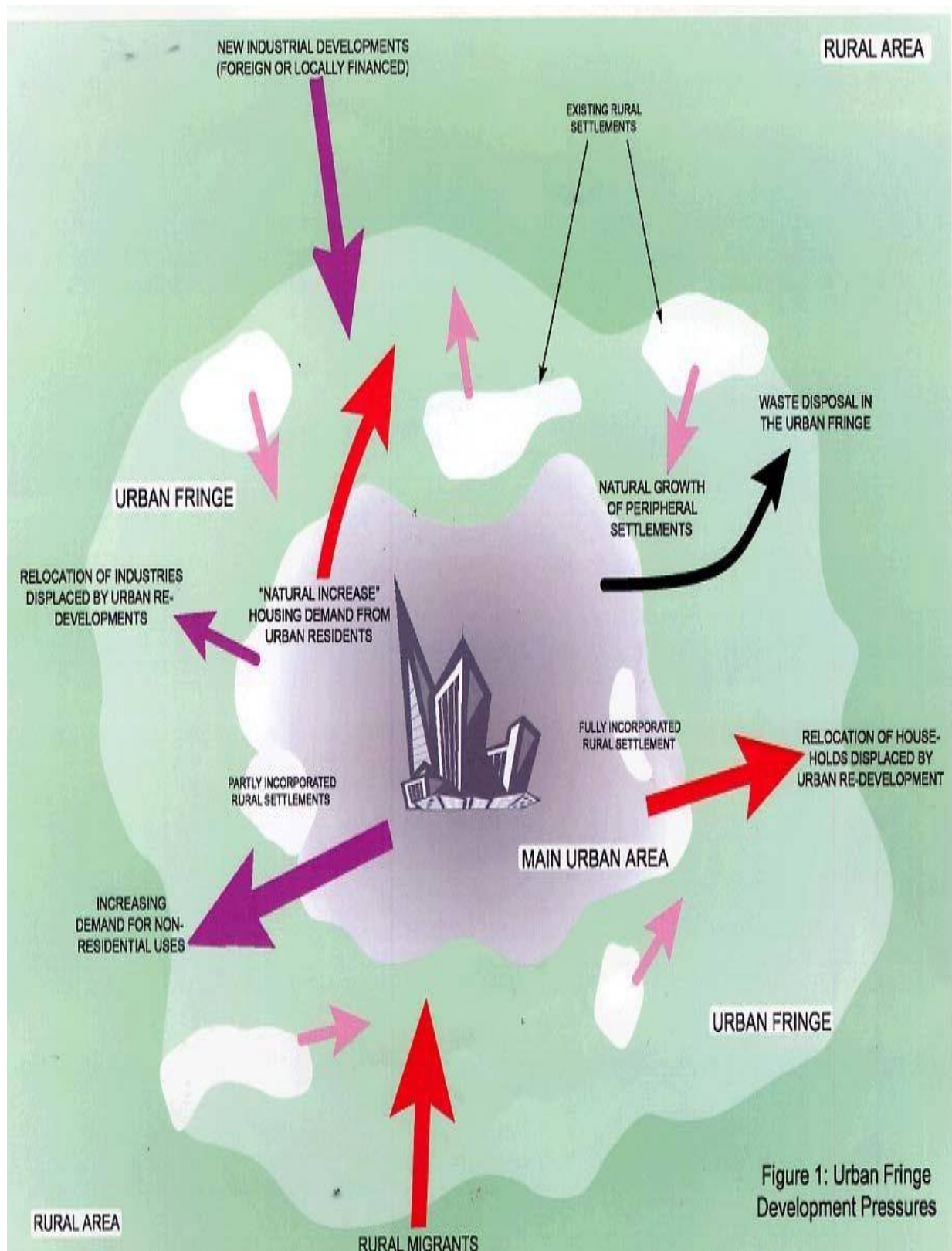


Figure 2.3 Development Pressures of the Urban Growth Centres

Source: Adapted from Taherkhani, Abdoreza, Eftekhari, Ali Akbar and Taghvace (2009)

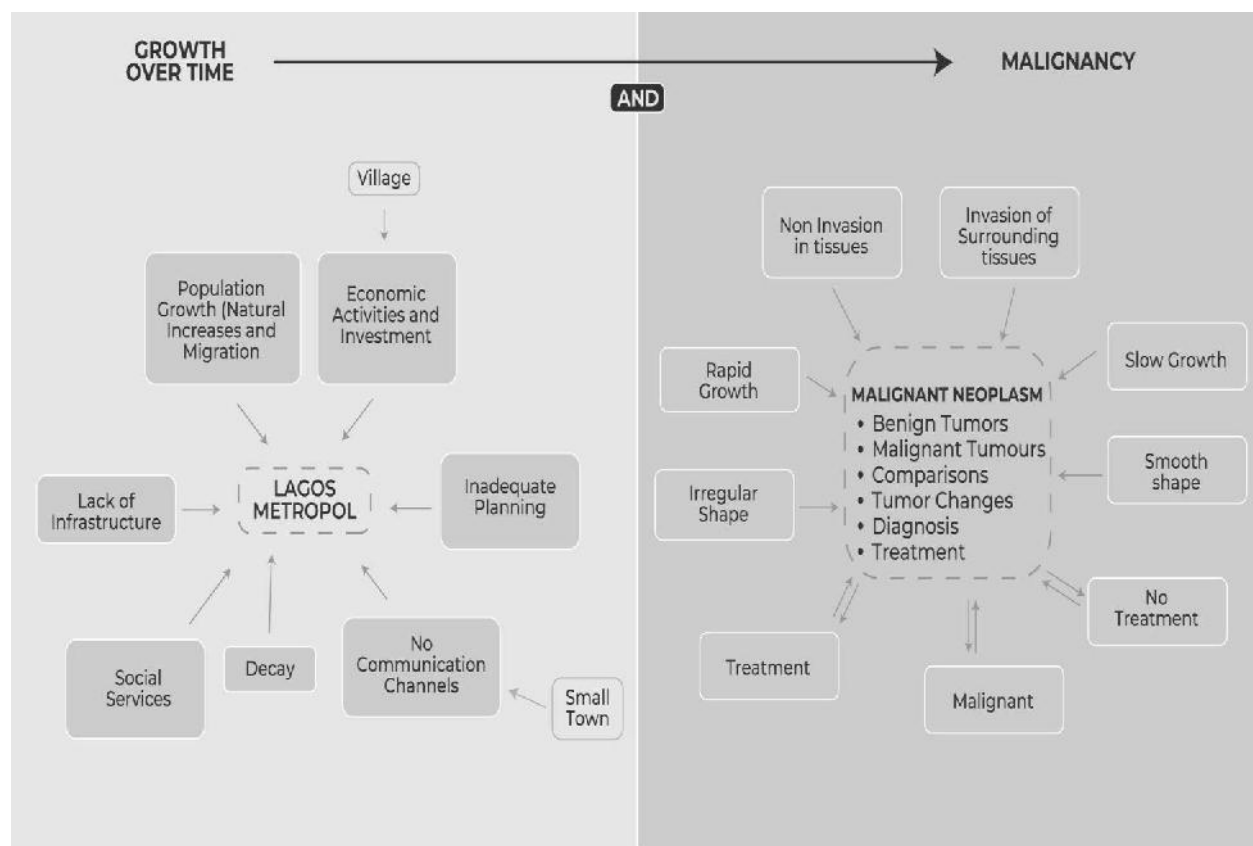


Figure 2.4 The Dynamics of City Growth

Source: Adapted from Eminsang (2011)

Urbanisation is often regarded as a symbol of progress, prosperity, and modernity. However, if left unchecked and unregulated, it can resemble the pathological growth of malignant tumours, rapid, invasive, and ultimately destructive. Drawing on Eminsang's (2011) framework on the dynamics of city growth and supported by the insights of Frankhauser (1998) and Friess (2008) on urban morphology, this study examines the dynamics of City Growth as depicted in Figure 2.4. It compares the expansion of Lagos Metropolis to the biological progression of neoplasms, a metaphor that highlights the risks of uncontrolled urban growth. The study explores the similarities between these phenomena, emphasising the implications for urban planning, governance, and sustainable development.

Eminsang (2011) states that city growth results from demographic pressures combined with economic incentives. Metropolitan Lagos, initially a small village, expanded into a large metropolis through natural population growth and waves of migration. These demographic changes created economic opportunities, attracted investments, and increased commercial activities. Biologically, this stage is similar to the formation of a benign tumour- growth that is

localised, slow, and non-invasive. At this point, both the city and the tumour appear manageable and even beneficial.

Eminsang's model stresses the importance of planning and infrastructure in managing urban dynamics. As Lagos continued to grow, the pace of development exceeded the capacity of its infrastructure and governance systems. The city expanded rapidly, often lacking sufficient foresight. Roads became congested, housing shortages worsened, and essential services, such as healthcare, education, and sanitation, began to struggle. This phase mirrors the transformation of a benign tumour into a malignant one, characterised by rapid growth, irregular shape, and invasion into surrounding tissues. Just as malignant cells disrupt the body's normal functions, Lagos's unregulated expansion began to diminish the quality of life for its residents.

The effects of this harmful urban growth are evident: social services falter, infrastructure declines, and communication networks fail. Informal settlements are increasing, environmental harm is intensifying, and inequality is deepening. These problems are similar to the invasive growth of malignant tumours, which spread uncontrollably and damage nearby tissues. In both biological and urban environments, rapid and unchecked expansion overwhelms the system.

In medicine, early diagnosis and intervention are crucial for controlling malignancies. Similarly, cities must adopt proactive planning, invest in infrastructure, and implement responsive governance to avoid urban decay. The metaphor suggests that Lagos, like a patient with a tumour, needs a thorough "treatment plan" that encompasses sustainable development, inclusive policies, and community involvement. Without these actions, the city could become more unlivable and dysfunctional over time.

Finally, comparing Lagos Metropolis to malignant neoplasms is more than just a clever analogy; it acts as a warning that highlights signs of unhealthy growth and calls for action before the damage becomes irreversible. Cities, like bodies, thrive when their growth is balanced, managed, and nurtured. Lagos's experience, viewed through the works of Eminsang (2011), Frankhauser (1998), and Friess (2008), serves as a stark reminder that urbanisation should be guided by both ambition and wisdom, with foresight and care. A significant feature of this expansion is its rapid pace, spreading into surrounding areas through invasion or distant colonisation. Nearby communities are absorbed into the expanding Lagos metropolis (Frankhauser, 1998). New urban expansions

surround previously isolated villages and settlements (Friess, 2008). The Lagos metropolis, characterised by steady growth, new communities in remote areas, and the transformation of natural and agricultural land into urban infrastructure, resembles satellite lesions, illustrating "rapid, uncontrolled growth," with population and land area expanding by 5 to 13% annually.

2.6.1 Conceptualisation of Malignant Neoplasms in Metropolitan Areas Growth: The Case of Lagos

Urban expansion is commonly seen as a symbol of progress and prosperity. However, when growth becomes unchecked and invasive, it can mirror the destructive nature of malignant tumours. This research examines the metaphorical and analytical parallels between cancerous growth and urban sprawl, with a focus on Lagos. This megacity has experienced rapid growth, underscoring the issues associated with unregulated urban development.

Urban morphology studies the shape and structure of cities, illustrating their development over space and time. Well-managed urban systems grow via controlled planning, infrastructure development, and environmental sustainability. In contrast, when these measures break down, cities tend to grow uncontrollably, leading to ecosystem fragmentation, strained infrastructure, and the displacement of vulnerable communities.

Malignant neoplasms, or cancerous tumours, share characteristics such as uncontrolled growth, infiltration into neighbouring tissues, and a loss of organised structure. Hern (2009) suggests that cities reflect these behaviours, especially when examined through fractal geometry, which uncovers the irregular, self-similar patterns seen in both tumours and urban expansion. Fractal geometry and spatial analysis provide valuable tools for measuring the complexity of Lagos's urban form. These approaches, adapted from oncology, help identify areas experiencing rapid growth, infrastructural strain, and ecological risks. Viewing the city as a biological system enables planners to diagnose issues effectively and implement focused solutions.

The idea of viewing malignant neoplasms as a metaphor for urban growth provides a compelling way to understand cities like Lagos. By identifying the pathological features of urban sprawl, we can craft strategies that promote healing rather than damage. Lagos isn't merely a megacity; it functions like a living organism, and its future hinges on our understanding and care for its complex structure.

2.7 THEORETICAL FRAMEWORK

2.7.1 Urban Field Concept

The Urban Field Concept typically refers to the spatial and functional relationships between urban centres and their surrounding areas, emphasising how cities exert influence beyond their formal boundaries. An excerpt from Bontje (2000) adds valuable theoretical depth to the study. It introduces three key urbanisation concepts: Urban Field, Poly-nucleated Urban Regions, and the Network City.

These concepts illustrate how global economic and societal shifts shape urban growth patterns. Bontje (2000) discusses three urbanisation models: the urban field, poly-nucleated urban regions, and the network city. These models illustrate how evolving urbanisation trends reflect broader global economic and societal shifts. They shed light on Lagos's growth in terms of spatial, functional, and systemic aspects, influencing planning, governance, and sustainability. The Urban Field Concept, as described by Bontje (2000), explains how cities extend their influence beyond formal boundaries, incorporating surrounding communities into their functional area. Supporters of these ideas often cite changes in cities' physical characteristics and those of the surrounding regions. Indicators such as expanding built-up land, shrinking open spaces, and the merging of separate urban zones signal increasing urbanisation. A central question remains whether continuous development necessarily creates a single, functionally integrated urban region.

The concept of the urban field, introduced by Friedman & Miller (1965), provides a broader perspective on urban growth. It is described as the mix of metropolitan and non-metropolitan areas within about a two-hour drive (or 100 miles/150 kilometres) from the city centre, representing the functional reach of a city beyond its formal borders. In practice, the urban field is typically smaller, usually ranging from 50 to 100 kilometres. This zone includes commuter towns, peri-urban areas, and rural communities that are socially and economically connected to the central city. The urban field emphasises connectivity, showing how infrastructure, transportation, and economic activities link these various areas into a unified urban system. Closely related is the idea of the poly-nucleated urban region, which differs from traditional single-centre models. Instead, it comprises multiple urban centres, each with its own focal point of development, yet interconnected through transport, labour markets, and regional planning.

Therefore, understanding urban growth by examining urban fields and poly-nucleated regions has significant implications for transportation planning. It highlights the importance of regional transit systems that connect multiple nodes, housing policies that promote balanced development to avoid overconcentration in a single core, environmental management supporting sustainable land use over a broader area, and economic strategies that foster regional cooperation and shared infrastructure investment.

In summary, urban expansion no longer confines itself to a single city core. As metropolitan regions evolve into intricate networks of interconnected spaces, frameworks like the urban field and poly-nucleated urban regions become essential tools for understanding and guiding this transformation, helping to navigate the opportunities and challenges of urbanisation in the 21st century. Bontje (2000) also highlights poly-nucleated urban regions, cities with multiple activity centres, and network cities, which are interconnected urban nodes forming part of a broader system.

Lagos increasingly exhibits these patterns, with decentralised hubs emerging across its metropolitan area. Without coordinated planning, however, these nodes risk becoming fragmented, inefficient, and unsustainable, like metastasis in cancer, where multiple growths develop independently without systemic integration. As one moves through this landscape, Metropolitan Lagos appears as a region that has grown over time, characterised by the loss of open land and the absorption of nearby settlements into its structure. Physical links and the outward expansion of built environments, including various settlements, define this area. Lagos exemplifies this pattern by integrating formerly isolated villages and transforming peripheral zones into urban sprawl, much like malignant tumours invading surrounding tissues and disrupting ecological and social systems. The concepts of the Urban Field and Poly-Nucleated Region underscore the importance of managing not only the city centre but also its peripheral and interconnected zones, comparable to a patient with a tumour.

2.7.2 Urban Diffusion

The Urban Diffusion framework describes how cities expand from a historic centre, forming new hubs and eventually merging into larger urban regions. This process supports the notion of problematic expansion and aligns with earlier ideas of urban fields and poly-nucleated regions. Urban Diffusion involves developing multiple new urban centres, including the original core and neighbouring areas. Lagos illustrates this pattern by integrating surrounding villages and towns into its growing urban network. While diffusion is a natural phenomenon, uncontrolled spread can

resemble the invasion of harmful cells, disruptive, invasive, and damaging to the environment.

Cities typically develop spatially in accordance with a broad conceptual pattern. Urban growth starts from a historical core and extends outward, branching into new development centres. This diffusion follows a natural pattern of outward expansion. Over time, this process leads to the merging of separate urban areas, mainly occurring in the open spaces between the central core and surrounding centres. As growth continues, the system nears saturation. The final agglomeration then serves as a primary urban core for further expansion, albeit on a broader, less detailed scale (Herold et al., 2007).

Diffusion and coalescence can each be divided into two distinct phases. The first diffusion phase involves establishing new development centres around the original core. The second diffusion phase designates the development of various new urban areas, including both the core and peripheral centres, within the emerging urban framework. The coalescence phase begins when previously separate urban patches merge into larger, continuous regions, continuing the system's progression of urbanisation (Herold, Hemphill, Dietzel, and Clarke 2005). Lagos increasingly reflects this pattern, with decentralised hubs merging into a sprawling metropolitan fabric. Without strategic planning, this merging process can lead to fragmentation, inefficiency, and systemic stress, similar to metastasis in cancer, where multiple growths develop without integration or control. This facilitates the distinction between the diffusion and coalescence phases.

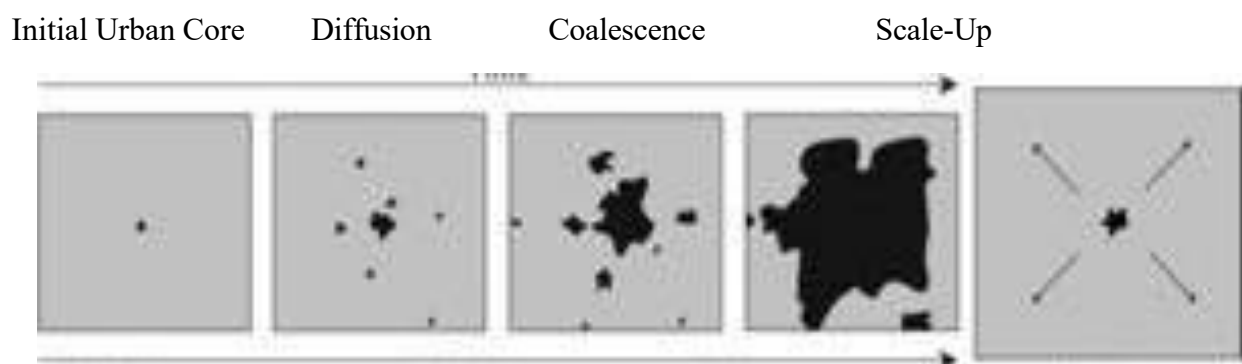


Figure 2.5: Conceptual sequence of the spatial evolution adapted from (Herold et al., 2005)

The sequence of urban growth stages- Initial Urban Core, Diffusion, Coalescence, and Scale-Up- aligns well with the conceptual frameworks in Figure 2.5. It provides a spatial story that echoes both the biological metaphor of malignancy and the models from Herold et al. (2005), Bontje (2000), and others. Biologically, this stage is akin to a benign tumour that is localised, slow-

growing, and non-invasive. Visually, this is shown by the Initial Urban Core, a small, centralised urban area surrounded by undeveloped land. The diffusion phase involves establishing nearby development centres around the original core, as depicted in Figure 2.5. The next stage, diffusion, results in several new urban areas forming around the original core and nearby development centres within the expanding urban system. Coalescence occurs when these urban areas begin to merge. During the Scale-Up phase, urban areas expand quickly, covering large parts of the landscape.

The final phase of urban growth, marked by outward-pointing arrows, indicates continuous, unchecked expansion. This mirrors the aggressive growth of malignant tumours, which overwhelm the host and resist containment. These urbanisation theories shed light on the spatial, functional, and systemic aspects of Lagos's development, with important implications for planning, governance, and sustainability. Urban diffusion describes how cities expand from a historical centre, branching into new development areas. This natural spread leads to the merging of previously separate metropolitan regions. Lagos began as a small village, growing through natural population increase and migration. This early stage resembles a benign tumour, localised, slow-growing, and seemingly controllable. Spatially, this is represented by the initial urban core, a dense centre surrounded by undeveloped land.

Economic opportunities and investments rapidly fuelled further growth, initiating the diffusion phase where development centres expanded around the original core. In Lagos, this process resulted in the merging of nearby villages and towns into interconnected urban zones. Although diffusion is a normal process, if left unchecked, it can resemble the spread of malignant cells, uncontrolled, invasive, and disruptive to the environment. This thesis explores this analogy and its significance in the context of Lagos's metropolitan expansion.

2.8 SUMMARY

This chapter outlines the methodological approach employed to analyse urban growth dynamics in the Lagos Metropolis, based on the conceptual framework from Chapter 2. This framework integrates the malignancy metaphor (Anderson, 1961; Hern, 2009, 2011), spatial evolution theory (Herold et al., 2005), urban morphology (Frankhauser, 1998), and regional urbanisation models (Bontje, 2000). The methodology utilises both quantitative and qualitative techniques to thoroughly examine spatial patterns, ecological effects, and governance responses associated with rapid urban expansion.

This chapter introduces and elaborates on the conceptual framework of the thesis. It explains how the framework was developed and why it is necessary. The chapter emphasises the importance of a comprehensive framework that transcends individual disciplines or theories when analysing urban growth and its effects, comparing it to neoplastic processes in metropolitan development. The framework comprises four core elements characteristic of malignant growth: rapid, uncontrolled expansion; invasion and destruction of neighbouring tissues or ecosystems; metastasis, or distant colonisation; and differentiation (Anderson, 1961).

This chapter operationalises the conceptual framework introduced earlier, allowing for a multidimensional analysis of urban growth in Lagos Metropolis. By combining spatial modelling, demographic analysis, and qualitative inquiry, it offers a thorough understanding of the aggressive nature of urban expansion. The framework demonstrates both direct and indirect links between harmful growth patterns and urban development. It serves as the foundation for the research design, literature review, data collection, analysis, and interpretation of findings.

To grasp the dynamics and outcomes of its expansion, the study synthesises essential conceptual and theoretical frameworks that explore the spatial, ecological, and systemic aspects of urban development. It also employs the metaphor of malignancy, inspired by Anderson (1961) and Hern (2009, 2011), which compares urban growth to cancerous behaviour. This metaphor provides a robust conceptual framework for identifying urban issues and guiding research design, data collection, and analysis.

Lagos's spatial development follows the pattern described by the Urban diffusion model. Supported by Herold et al. (2005), this illustrates how cities evolve spatially and how unchecked growth can cause systemic overload. Using these frameworks demonstrates that urban development is more than just simple physical expansion; it is a complex, multifaceted process that requires analysis from spatial, ecological, and systemic perspectives. The malignancy metaphor is not just illustrative but diagnostic, highlighting signs of harmful growth and irreversible damage.

Lagos's experience acts as both a warning and a call to action. Using these frameworks, stakeholders can develop interventions that foster sustainability, fairness, and resilience, ensuring that urban growth becomes a driver for development rather than decline. The combination of

conceptual and theoretical frameworks outlined in this paper demonstrates that urban growth is a complex process that requires thorough analysis and strategic planning. The malignancy metaphor provides a compelling perspective for understanding the dangers of uncontrolled expansion, while spatial and morphological theories offer practical tools for analysis and planning. Lagos's experience serves as both a warning and a call to action. By applying these frameworks, urban stakeholders can craft policies that encourage sustainability, fairness, and resilience amidst the rapid pace of urbanisation.

2.9 MODELS

2.9.1 Shannon's Entropy Model

Shannon, C. E. (1948), developed the Shannon entropy model through his research in information theory. This model effectively measures the level of disorder within a system. In the context of urban growth, a higher Shannon entropy index for an urban centre signifies a greater degree of disorganisation. Using Shannon entropy to analyse urban growth relies on the idea that landscape entropy, or disorder, increases with sprawl. Urban land use disturbs and fragments the previously uniform rural landscapes, resulting in disorganisation (Oloyede, 2009). Shannon entropy functions as a tool to evaluate and monitor sprawl in urban areas, assisting in determining whether developments are concentrated or dispersed within a city.

The Shannon Entropy Model is stated below in equation (1)

$$H_n = -\sum P_i \ln P_i \quad 1$$

Where:

H_n : the Shannon Entropy index

P_i : The Ratio of the built-up area in zone I to the sum of the built-up areas in all the zones. N: The number of zones

The Shannon entropy index for any year always lies between $0 \leftrightarrow \ln(n)$. A Shannon entropy index value of 0 indicates a very compact urban development, whereas values closer to $\ln(n)$ indicate a more spatially distributed metropolitan area.

To measure the relative spatial distribution of an urban centre, the Shannon Entropy index for the two years was subtracted. A positive result indicates that the urban centre has undergone spatial dispersion, whereas a negative result signifies spatial concentration between the subject years.

$$\Delta H_n = H_n(t+1) - H_n(t)$$

Where

ΔH_n : Relative Shannon Entropy

: Shannon entropy Index for year t

$H_n(t + 1)$: Shannon Entropy index for year t+1

2.10 OPERATIONAL SYNTHESIS OF THE CONCEPTUAL FRAMEWORK

2.10.1 Spatial Model of Urban Growth

The operational synthesis of the spatial model of urban growth conceptual framework emphasises the malignancy metaphor and spatial evolution. This approach enables a structured examination of Lagos Metropolis's urban dynamics, supporting both empirical research and policymaking. This section integrates the conceptual metaphor of malignant tumours with the actual realities of metropolitan growth, using Lagos as a case study. The synthesis transforms abstract elements into measurable indicators and practical insights to aid urban analysis and planning.

The model (Figure 2.6), as described by Ali and Varshney (2012), illustrates how an urban centre gradually evolves into a larger one and emphasises its role in socio-economic development. A small urban centre evolves into a more prominent entity by strategically providing amenities and services, attracting migrants from surrounding rural areas who seek better opportunities. This influx of people adds to a rising population, driving the spatial growth of the urban centre. The model by Ali and Varshney (2012) complements spatial and morphological frameworks by focusing on the socio-economic transformation of urban areas. It demonstrates how a small urban core evolves into a large metropolitan region, propelled by demographic shifts, investment trends, and institutional development.

Ali and Varshney's (2012) urban growth model highlights how small city centres, initially modest, can evolve into major metropolitan areas. This change is driven by demographic factors, such as population growth and migration, which draw people to urban cores, thereby increasing the demand for housing, services, and infrastructure. This includes investments from both public and private sectors in transportation, education, and industry, which promote urban expansion and economic diversification. Furthermore, institutional development takes place through the creation of governance structures, planning agencies, and civic organisations aimed at supporting sustainable urban growth and management.

Their model underscores the dynamic relationship between spatial growth and socio-economic

development. It also stresses the importance of strategic planning to promote inclusive and regionally balanced growth. This integration ensures that the study addresses not only the physical aspects of urban expansion but also its socio-economic effects, supporting the goals of sustainable urban development. Consequently, the urban centre continues to grow. As towns expand, new infrastructure is built to meet human needs and improve living conditions, attracting more residents from nearby rural areas. This process continues until urbanisation reaches its optimal level. Figure 2.6 illustrates that as the number of facilities increases, the city's functional importance rises, broadening its reach and influence.

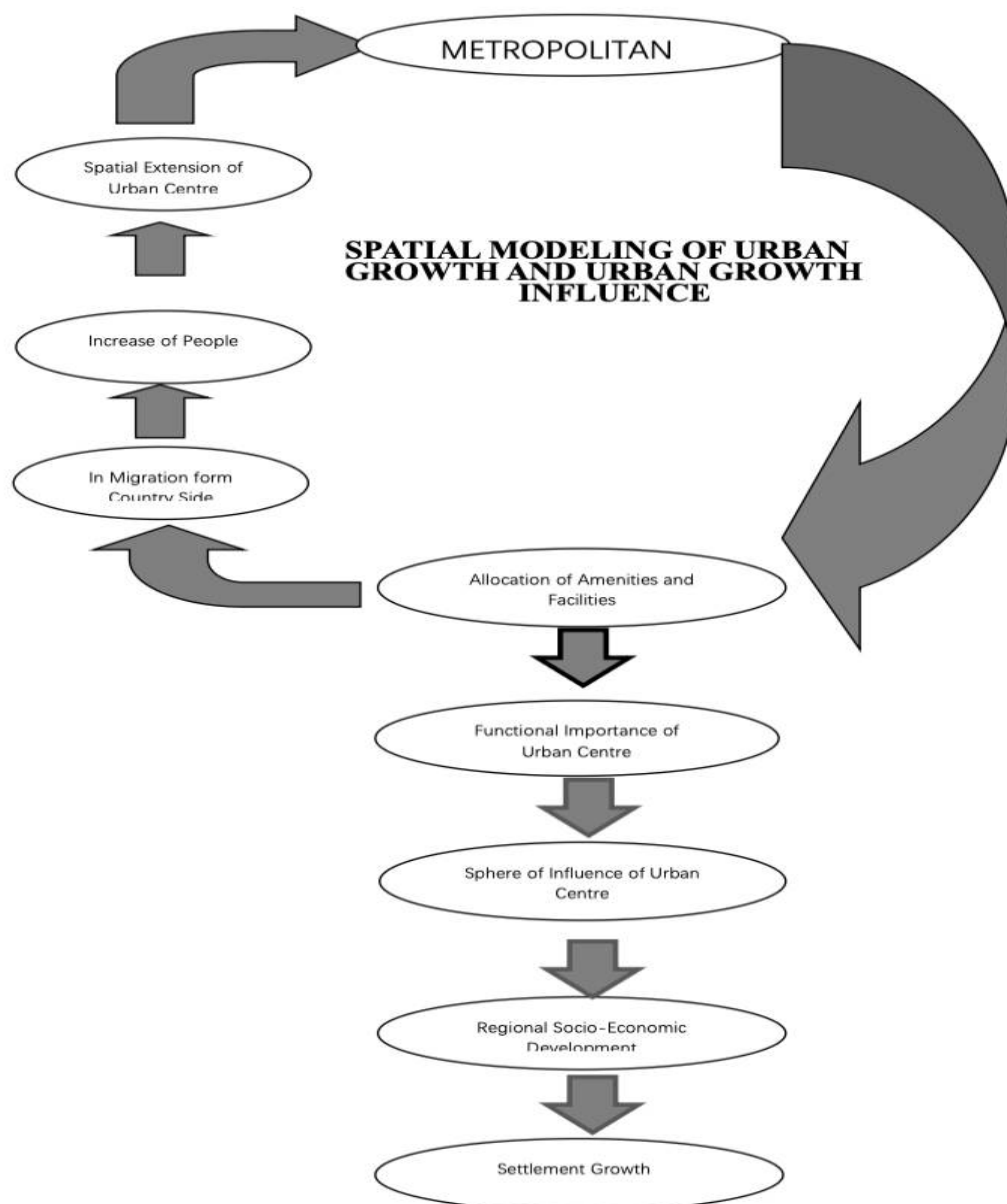


Figure 2.6 - Spatial Modelling of Urban Growth

Source: Ali and Varshney (2012)

As a result, this process leads to socio-economic shifts in settlements, significantly impacting the development of nearby communities. Lagos, Nigeria's economic centre, exemplifies the challenges of rapid urbanisation. Over the past twenty years, the city's growth has been characterised by spatial disorder, environmental degradation, and pressure on its infrastructure. The operational synthesis of the conceptual framework converts metaphor into a practical method. By correlating pathological traits with urban indicators, this approach provides a fresh perspective for diagnosing and addressing the complexities of metropolitan growth, shifting from mere descriptive narratives to actionable insights and strategic solutions.

2.10.2 Spatial Modelling of Urban Growth and Similarity to Malignant Lesion

This study examines the structural and functional similarities between urban growth and its potential to lead to urban decay and malignant lesions. Employing a systems biology perspective, it demonstrates how both processes experience cyclical decline, triggered by initial factors and sustained by feedback mechanisms. This analogy offers valuable insights into understanding disruptions within complex systems.

Urban growth and malignant lesions, though rooted in vastly different fields, urban planning and cellular biology, exhibit remarkably similar systemic behaviours. This study examines the analogy between these two phenomena, emphasising how both follow cyclical patterns of decline driven by initiating disruptions and sustained through feedback loops (Figure 2.7). By analysing the structural and behavioural similarities between urban and biological systems, the study provides insights into how complex systems fail and how interdisciplinary thinking can inform strategies for resilience and recovery. Urban systems and biological tissues are both dynamic, adaptable structures. When disrupted, they can enter self-reinforcing cycles of decay. The study, therefore, draws a conceptual parallel between urban growth (decay) and malignant neoplasms, revealing common patterns of dysfunction.

Cities and biological tissues are complex, adaptable systems that rely on internal regulation, structural stability, and functional cooperation to thrive. Disruptions in these systems can lead to self-sustaining cycles of decline. In cities, this shows as depopulation, infrastructure breakdown, and social issues. In biological systems, it manifests as cancer invasion, tissue damage, and metabolic failure. This research draws a conceptual analogy between urban growth and malignant lesions, emphasising common dysfunction patterns and providing a fresh perspective on systemic

collapse.

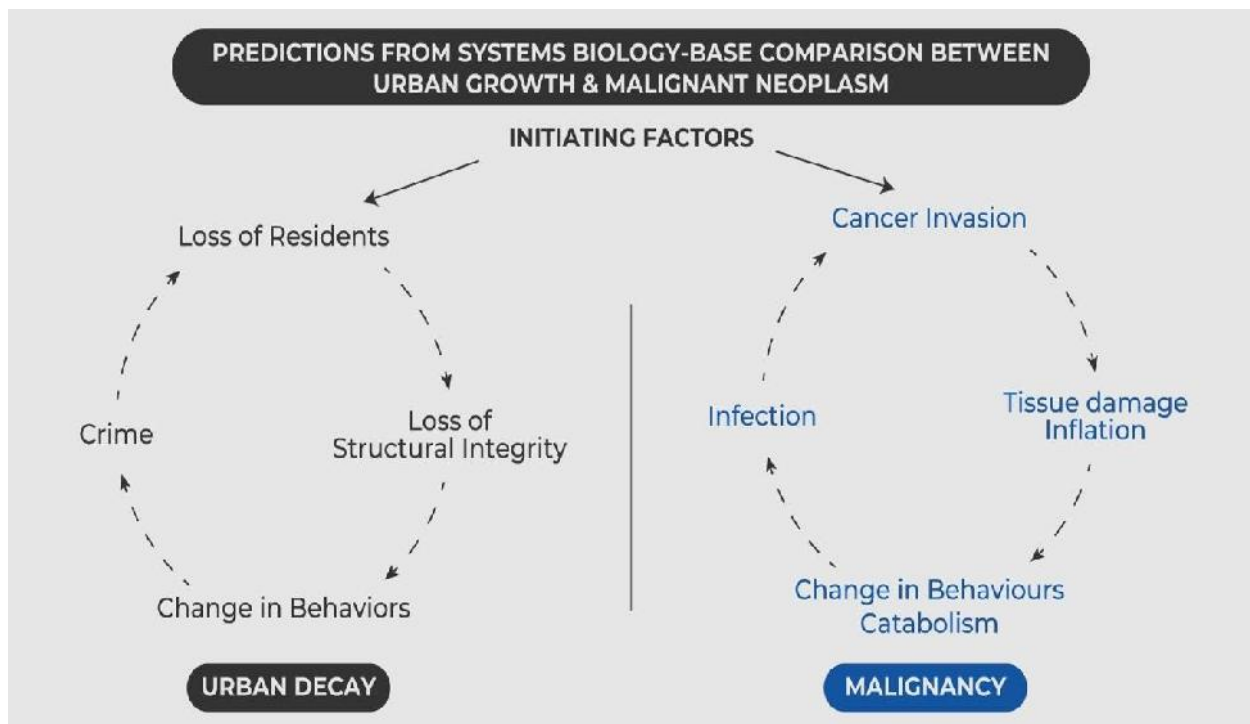


Figure 2.7 Spatial Modelling of Urban Growth and Similarity to Malignant Lesion

Sources: Hern, W. M. (2009)

The cycle of urban decay, shown in Figure 2.7, typically starts when residents relocate due to economic downturns, environmental issues, or social unrest. As fewer people live in the area, local businesses and services suffer from reduced funding. This decline causes buildings, roads, and utilities to deteriorate, often due to neglect and a lack of investment. In reaction, community behaviours change, with social norms shifting towards survivalist or antisocial activities, such as informal economies, vandalism, and disengagement from civic duties. These behavioural changes often lead to increased crime, which both reflects and fuels further deterioration. Crime drives residents to leave, deepening urban decline and creating a vicious cycle of decay.

The cycle of malignancy in biological systems begins with cancer invasion, where abnormal cells infiltrate healthy tissue, disrupting cellular architecture and triggering pathological growth. This leads to tissue damage and inflammation, which activate immune responses and weaken structural integrity. As the cancer advances, cells undergo catabolic processes and behavioural changes, altering their metabolism and communication, thereby disrupting systemic balance and wasting resources. The compromised tissue environment becomes more susceptible to infection, as opportunistic pathogens exploit the weakened system. These infections worsen tissue damage and facilitate further cancer invasion, perpetuating the cycle of malignancy shown in Figure 2.7.

Both urban growth (or decay) and malignancy are governed by feedback loops- self-reinforcing mechanisms that perpetuate dysfunction. In cities, crime and depopulation feed into each other, while in cancer, inflammation, and metabolic issues accelerate disease progression. These loops illustrate how complex systems, once destabilised, can spiral out of control without targeted interventions. The analogy also underscores a loss of homeostasis. Healthy cities and tissues sustain balance through regulation and cooperation; when disrupted, they lose this equilibrium, becoming more susceptible to external stressors. This understanding encourages interdisciplinary strategies for resilience, where biological insights can inform urban planning and vice versa.

Urban growth is frequently viewed as a sign of progress, but unchecked expansion can be destructive. Uncontrolled sprawl consumes natural landscapes and damages ecosystems, much like cancer cells invading healthy tissue. The flow of resources from rural areas to cities weakens wider socio-economic systems. These disruptions, such as increased inequality and displacement, mirror the behaviours seen in malignancy.

The comparison of urban decay to malignancy goes beyond mere metaphor; it illustrates how complex systems, whether biological or social, can exhibit similar patterns of failure and breakdown. There is a correlation between urban development patterns and the emergence of tumours, emphasising the universal nature of systemic failure. Recognising these common patterns across different fields allows researchers and policymakers to develop more effective strategies for managing urban growth, avoiding socio-spatial decline, and fostering resilient communities. This interdisciplinary perspective enhances both urban theory and systems biology, offering a deeper insight into how complex systems fail and potential ways they might recover.

CHAPTER THREE

3.0 PROFILE OF STUDY AREAS AND RESEARCH METHODOLOGY

3.1 DATA AND METHODOLOGY

This chapter provides a detailed overview of metropolitan Lagos, with a specific focus on the city's historical development and spatial growth over the past century. It examines how Lagos has transformed from a modest urban centre into a sprawling metropolis, highlighting the factors behind its expansion. In addition to providing this contextual background, the chapter outlines the methodological framework used in the research. It details how the boundaries of Lagos Metropolis were defined for the study, explains the structure and approach of the research design, and describes the sampling strategies employed to select relevant data points. Furthermore, it identifies the various sources from which data were collected and elaborates on the techniques used to analyse and present the findings in a clear and meaningful way.

This study focuses on the negative impacts of rapid urban growth in Lagos, given the numerous challenges related to the research topic. It compares the city's quick expansion to neoplastic growth, highlighting uncontrolled and potentially harmful urban sprawl. To comprehensively examine this issue, the study employs a structured three-phase methodology designed to systematically investigate and address all relevant concerns (see Figure 3.1).

3.2 THE RESEARCH DESIGN

The study adopts a case study approach, which is particularly effective for uncovering distinct characteristics within a population, constructing detailed profiles, and gaining a nuanced understanding of the research context. As noted by Agbola (2007), this method offers a structured and systematic pathway for exploring and interpreting complex phenomena. It involves analysing specific events, gathering relevant data, interpreting subtle patterns, and presenting well-rounded findings. This approach enables researchers to delve into underlying causes and identify key areas that warrant further investigation. In alignment with the study's objectives and its conceptual framework, insights from medical science and developmental theory support the use of a research design that draws parallels between urban development and the behaviour of malignant tumours, suggesting a metaphorical comparison that highlights the potentially destructive nature of unchecked urban growth.

This study examines the phenomenon of urban growth in Lagos, a major city in Nigeria and the West African region. It aims to measure and critically analyse the impacts of rapid urban

expansion, drawing a conceptual analogy between the city's growth and the aggressive spread of malignant tumours. As shown in Figure 3.1, the methodology begins with a thorough review of the theoretical literature on urban development, encompassing research from Africa and other parts of the world. This review examines the various factors that influence urban growth in different settings. Additionally, the study considers a range of theoretical models related to urban expansion and medical concepts of tumour growth, creating a multidisciplinary approach to understanding Lagos's urban transformation.

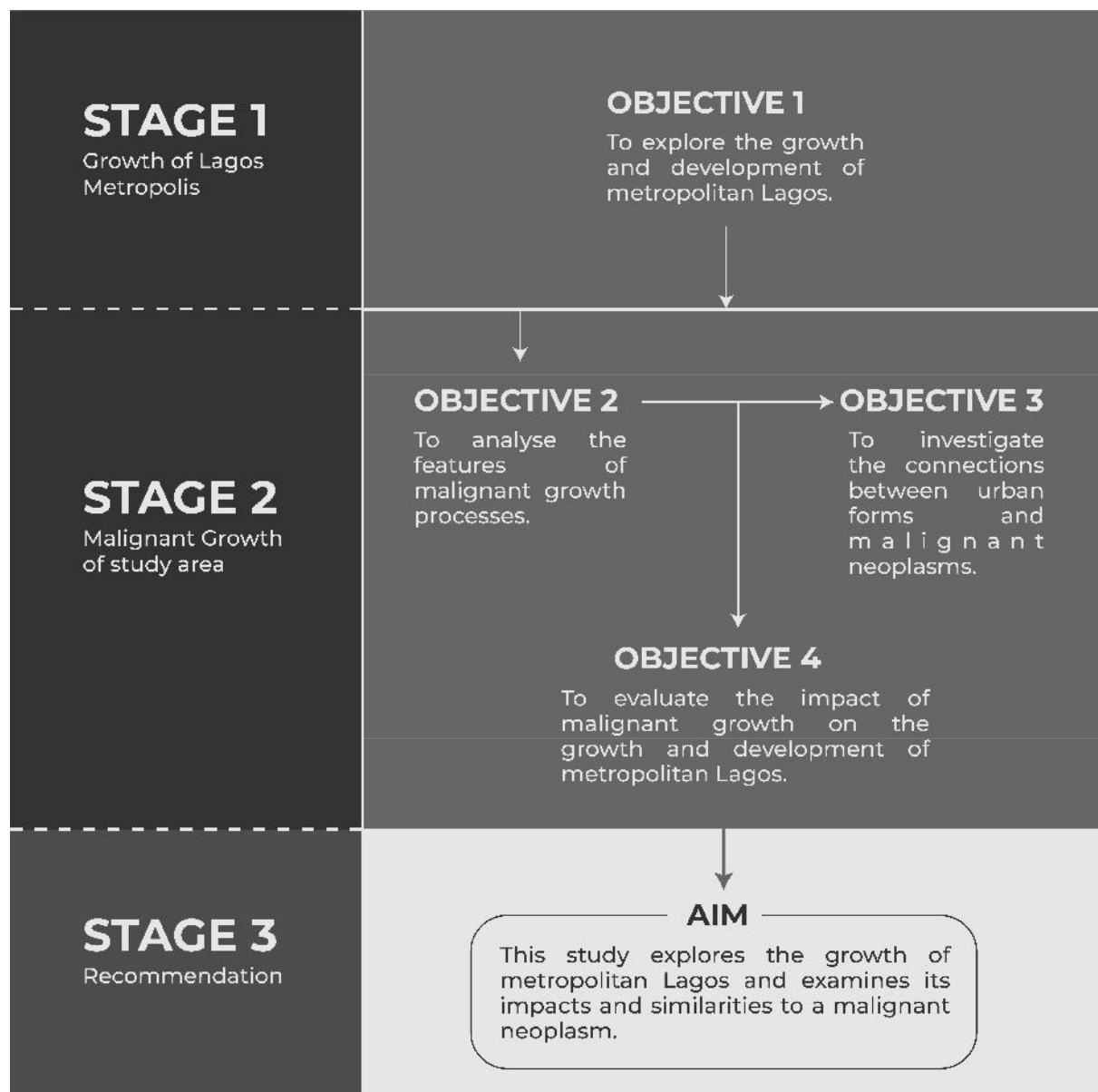


Figure 3.1 Overview of the Research Design

Source: Author's Work 2024

This study critically examines the urban transformation of Lagos, a metropolis whose rapid growth raises urgent concerns about sustainability, planning, and spatial health. Structured in three progressive stages, the research seeks to understand both the trajectory of Lagos's expansion and the broader implications of its development patterns, using a provocative analogy to malignant tumours.

This section details the research methodology employed in the study (see Figure 3.1). It outlines the criteria for defining metropolitan Lagos, incorporating empirical field data from diverse sources, and describes the sampling and data collection techniques used, such as interview guides and questionnaires, as well as the data analysis methods. The first phase involved analysing the growth and expansion of metropolitan Lagos, including its growth patterns and interactions, as depicted in Stage 1 of Figure 3.1. The study utilises mixed methodologies derived from a qualitative research design. Utilising Google Earth images from 2005 to 2022, a comprehensive description of Lagos's expansion was prepared. This included mapping, interpreting aerial photographs and satellite images, utilising GIS, image processing, detecting land use changes, and applying the Shannon entropy model. In Stage One, the study begins by tracing the historical and contemporary growth of metropolitan Lagos. This foundational phase aims to uncover the forces driving the city's expansion, including demographic pressures, infrastructural development, and socio-economic dynamics. By mapping out the evolution of Lagos's urban form, the study establishes a baseline for understanding its current state.

In Stage 2, the field survey focused on objectives 2, 3, and 4. The aim was to identify the underlying mechanisms and empirically analyse the growth of malignancies in relation to urban forms in the study areas. Key factors driving urban expansion, malignant neoplasms, and their impact on Lagos's metropolitan growth were examined. This stage adopts a more conceptual and diagnostic approach, investigating features of malignant growth, such as uncontrolled proliferation, invasiveness, and systemic disruption, and how these traits are reflected in Lagos's urban structure. A comparative analysis was conducted to highlight structural and functional similarities between urban sprawl and neoplastic behaviour, illustrating how specific development patterns can resemble the pathology of malignant tumours. Additionally, this phase assesses the long-term effects of such growth on the city's sustainability, infrastructure, and quality of life. The study is organised into three distinct stages, each with specific objectives that collectively aim to investigate the urban growth of metropolitan Lagos and its conceptual resemblance to malignant neoplasms:

Stage 3 of the methodology, shown in Figure 3.1, summarises findings and offers recommendations to achieve the study's objectives. Additionally, ground observations were carried out to validate the spatial distribution and extent of the identified classes, while collecting both qualitative and quantitative data through interviews, focus group discussions, and surveys.

Finally, in stage three, the study synthesises its findings to present informed recommendations. The aim is to develop a nuanced understanding of how Lagos's urban expansion resembles malignant neoplastic growth and to suggest strategic interventions that can promote healthier, more sustainable urban development. By framing urban growth through a medical pathology perspective, the study challenges traditional planning paradigms and opens new pathways for interdisciplinary research and policy innovation. The overarching goal is to understand how Lagos's urban expansion mirrors malignant neoplastic growth and to propose strategies to mitigate its adverse effects.

3.3 NATURE AND SOURCE OF DATA

The sources of data for this study consisted of secondary and primary data.

3.3.1 Secondary Data Source

Secondary data was used alongside primary data in this study. It involved analysing secondary data and interpreting aerial photographs to track Lagos's gradual spatial expansion over time. Land use change detection and the Shannon entropy model were used to measure the extent of growth. Maps of metropolitan Lagos, created from Google Earth images between 2005 and 2022, were collected and updated regularly. The study also reviewed the historical context and growth patterns of Lagos metropolis, as detailed in the figures (See Figures 1.10 - 1.16).

This study examines the spatial growth of Lagos over time through the analysis and interpretation of secondary data and aerial photographs. Land use change detection techniques, combined with the Shannon entropy model that measures spatial dispersion and urban sprawl, are used to evaluate the city's development patterns. A series of maps of metropolitan Lagos, created using Google Earth imagery from 1934 to 2024, visually depict the city's growth. These maps were meticulously updated to reflect current conditions and support analysis. The study also includes a comprehensive review of Lagos's historical and developmental background, which is key to understanding the observed trends. References to figures 1.10 through 1.16 further illustrate these findings.

3.3.1.1 Review of Relevant Reports, Policy Documents and Other Literature

A thorough review of reports, policy documents, and extensive scholarly literature established a foundation for analysing how the growth of metropolitan Lagos affects surrounding settlements. This review enabled the study to examine the impact of urban expansion on nearby communities, focusing on infrastructure, demographics, and socio-economic factors. Additionally, historical texts and digital sources provided essential insights into the cultural setting, emphasising the beliefs, norms, and values that shape residents' experiences and guide the methodological choices in data collection. These cultural elements were crucial for ensuring that the research approach was grounded in the local context and responsive to community realities.

3.3.1.2 Study of Existing Maps and Inventory of Infrastructure

Lagos Metropolis's spatial growth phases were illustrated using the Federal Surveys maps from 1963 and 1983, alongside the book *Lagos State in Maps* (Odumosu, eds; Balogun & Ojo, 1999). Metropolitan Lagos's current growth patterns are derived from the Lagos megacity report, satellite imagery from the Lagos State Physical Planning Permit Authority's GIS Unit, and Google Earth images from 2005 to 2022. Data from the Federal Surveys maps detailing the spatial development of Lagos was utilised. At the same time, comprehensive fieldwork also contributed to mapping and defining the spread and extent of the Lagos Metropolis, drawing upon additional research, such as Census Data maps and satellite images, which illustrated the growth of the metropolis and its surrounding settlements.

3.3.1.3 Interviews with Government Officials

The expansion of Lagos Metropolis was mapped through a multi-phase study utilising both historical and current data sources. Key insights were derived from Federal Surveys maps from 1963 and 1983, as well as the publication *Lagos State in Maps* (edited by Odumosu, with contributions from Balogun and Ojo, 1999). To analyse recent growth, the study incorporated data from the Lagos Megacity Report, satellite imagery from the GIS Unit of the Lagos State Physical Planning Permit Authority, and Google Earth images spanning the period from 2005 to 2022.

These sources offered a comprehensive overview of Lagos's spatial growth. The Federal Surveys maps supplied historical context, while extensive fieldwork provided on-the-ground insights into the city's changing footprint. Additional data, such as Census Data maps and satellite images, were used to precisely map and delineate the boundaries of Lagos Metropolis and nearby settlements, illustrating both the scale and progression of urban sprawl.

3.3.2 Primary Data

The study focused on different aspects of growth and development in metropolitan Lagos. It evaluated current growth trends, urban interactions, and the quality and distribution of infrastructure across the city. Demographic details were analysed, along with residents' and stakeholders' perceptions and engagement levels. These findings helped assess how the city's expansion influences its socio-economic environment. The study concentrated on economic interactions, giving a detailed overview of the case study region. It provided essential insights into the socio-economic characteristics of metropolitan Lagos, including residential types, the state of workplaces, and the reasons why people choose to live in the city.

Additionally, the study examined key socio-cultural factors that influence urban life. To support this analysis, data on the locations and geographical distribution of the metropolitan corridors were collected. The primary data were gathered through a combination of direct field observations, structured questionnaires, and interviews with government officials involved in urban planning and development. These methods ensured a well-rounded and comprehensive understanding of the dynamics shaping metropolitan Lagos.

3.3.2.1 Pilot Survey

A pilot survey was conducted in the Lagos metropolis to evaluate the reliability and practicality of the questionnaire. This initial step aimed to assess the effectiveness of the survey tool and gather respondents' feedback on the interview duration and structure. The pilot also provided valuable observational insights into key aspects of urban life, including the physical features of different settlements, the layout and functionality of transportation networks, demographic profiles, and economic and social activities. Special attention was paid to how settlements are organised and the quality of the environment. These observations were crucial for understanding current urban conditions and identifying emerging trends that would inform the larger study.

3.3.2.2 On-the-Spot Data Capture

Photographic documentation served as a supplementary tool to enhance participatory research methods and offer a visual overview of the current conditions in the study area. These images illustrated the state of infrastructure, emphasising both existing provisions and the challenges faced by residents. They also captured key aspects of economic and social amenities, along with the spatial organisation and structural layout of the settlements. This visual evidence was crucial in

enriching the analysis and anchoring the study in observable realities.

3.3.2.3 Research Areas

This study reveals that metropolitan Lagos comprises 16 of the 20 Local Government Areas, accounting for roughly 85% of the state's population. It features diverse semi-rural regions that face various challenges and opportunities due to the city's expansion. Five corridors were intentionally selected from these 16 Local Government Areas because of their strong connections within Lagos that extend northward into Ogun State. The chosen study areas were classified based on administrative boundaries, accessibility, spatial layout, historical development patterns, infrastructure quality, and socioeconomic factors.

The study focuses on metropolitan Lagos, which comprises 16 of the 20 Local Government Areas (LGAs) and accounts for approximately 85% of the state's population. These LGAs combine urban and semi-rural zones that are undergoing significant change due to the city's swift growth. While this growth presents numerous opportunities, it also poses challenges, particularly in areas where infrastructure and services are under strain.

The selected research corridors are situated within these 16 LGAs because of their strong connectivity to Lagos's wider urban network, including key links extending north into Ogun State. The study areas were chosen based on criteria such as administrative boundaries, accessibility, spatial distribution, historical growth patterns, infrastructure condition, and socioeconomic factors. This method yielded a diverse and representative sample of metropolitan Lagos, reflecting the complexity and variation across different zones.

3.4 THE CASE STUDY AREAS

3.4.1 The Case Study Settlements of Metropolitan Lagos

For this study, five case study settlements within metropolitan Lagos were identified: the southwest corridor of Apapa-Iganmu, the southeast axis along the Lekki-Epe corridor, the mainland corridor of the metropolis, the northwest corridor along the Alimosho-Igando-Iba-Lasu axis, and the Ikeja corridor, north of Lagos State. To facilitate a comprehensive analysis of urban growth and development in metropolitan Lagos, the study selected five key case study settlements, each situated along a distinct corridor or axis within the city. These sites were chosen to capture the spatial diversity and developmental patterns across various parts of the metropolis. These corridors were selected to ensure a balanced representation of metropolitan Lagos's spatial, socioeconomic, and infrastructural characteristics (See Figure 3.1).

- (a) Southwest Corridor – Apapa-Iganmu: A historically industrial and port-focused zone, this corridor offers insights into infrastructure challenges and economic activity tied to maritime trade.
- (b) Southeast Axis: Known for rapid urbanisation and upscale residential development, this axis highlights the pressures of expansion into previously undeveloped coastal areas.
- (c) Mainland Corridor: Representing the heart of Lagos’s traditional urban fabric, this area provides a lens into long-established residential and commercial zones.
- (d) Northwest Corridor – Alimosho-Igando-Iba-Lasu Axis: A densely populated and expanding suburban region, this corridor illustrates the challenges of managing growth in peri-urban settlements.
- (e) Ikeja Corridor – Northern Lagos: As the administrative and commercial capital of Lagos State, Ikeja offers a view into governance, infrastructure planning, and economic centrality.

In metropolitan Lagos, settlement corridors are systematically classified to identify areas for case studies. This classification considers various factors, including administrative boundaries, accessibility, spatial and geographic arrangements, historical urban growth trends, infrastructure standards, and socioeconomic characteristics. These criteria serve to highlight the diversity and complexity of urban development throughout the metropolis.

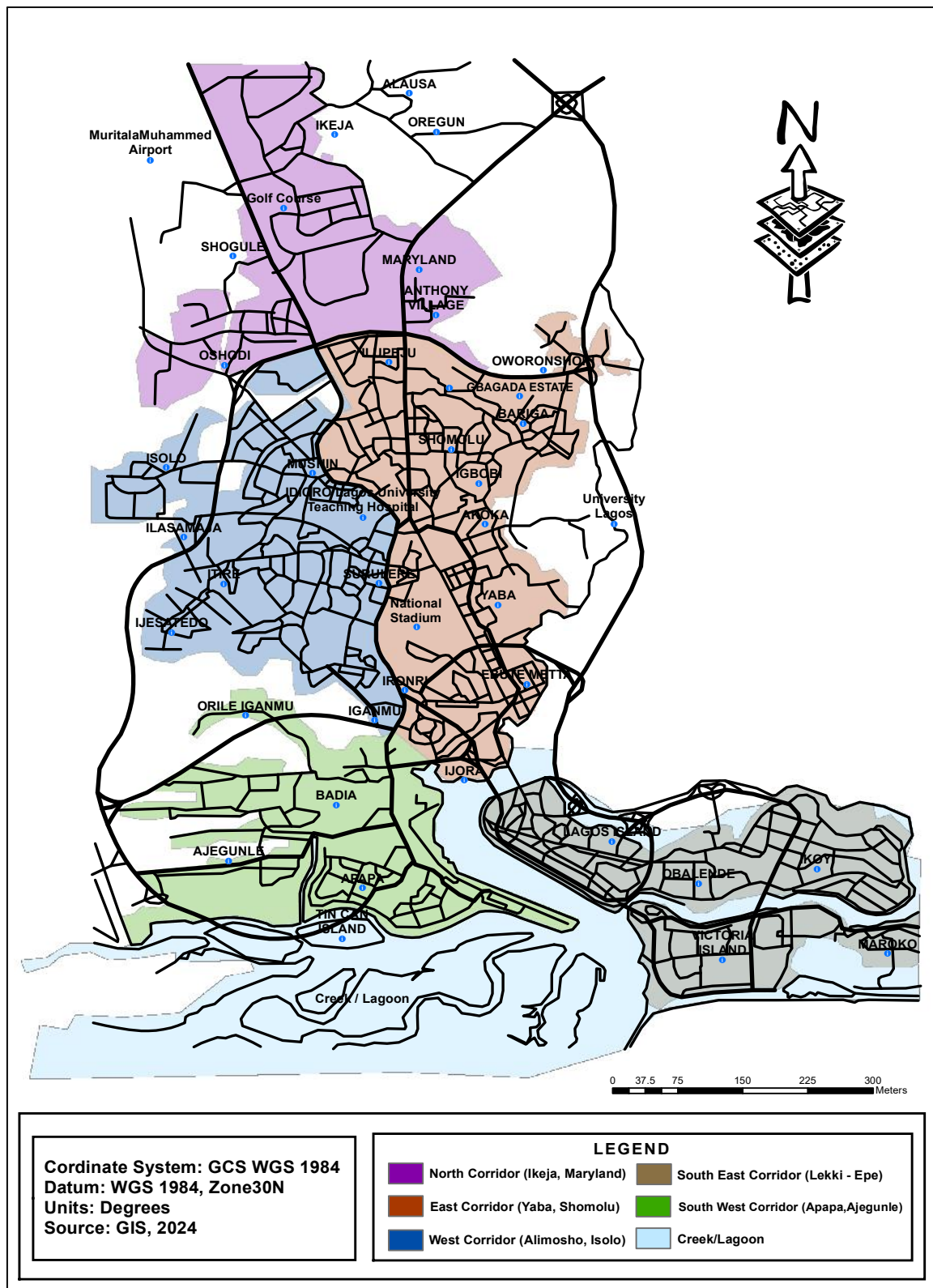


Figure 3.2 Metropolitan Lagos Settlements Corridor 2025

Source: Salau (2006)

Northwest Corridor (Alimosho–Igando–Iba–Lasu Axis)

This corridor has become increasingly integrated into Lagos's urban landscape, especially around the Ojo area. Although development is uneven, districts such as Amuwo Odofin, Ajeromi/Ifelodun, and Apapa are experiencing rapid growth, particularly away from Badagry. Despite facing significant challenges, such as infrastructure gaps and planning restrictions, urbanisation continues to advance rapidly. The corridor is characterised by swift informal growth and greater integration into the metropolitan framework. It has strong local economic activity and expanding infrastructure, although development remains uneven. Its accessibility to regions outside Lagos, particularly Ogun State, enhances its strategic importance for regional planning.

Southwest Corridor (Apapa–Iganmu Axis)

This corridor demonstrates significant potential for expansion and is well integrated into the metropolitan network. It facilitates informal economic activities and benefits from clear administrative boundaries. Its accessibility and spatial configuration make it an ideal candidate for targeted development, though infrastructure and socio-economic conditions may vary. Situated south of the city centre, this corridor exhibits a similar pattern of integration into the urban fabric. Nonetheless, development progresses at different rates across neighbourhoods, with some advancing faster than others.

Mainland Corridor (Kosofe–Shomolu–Lagos Mainland–Surulere)

As Lagos's traditional urban centre, the Mainland corridor performs well across nearly all criteria. It features strong connectivity, lively informal markets, and extensive administrative presence. Its infrastructure is relatively advanced, and its socio-economic diversity underscores its pivotal role in the city's identity and functioning. This corridor embodies the densely populated, highly developed core of Lagos, encompassing important administrative and commercial areas that have superior infrastructure and higher population densities, making them crucial to the city's urban landscape.

Southeast Corridor (Lekki–Epe Axis)

The Southeast corridor, particularly the Lekki-Epe segment, exhibits strong growth potential and is characterised by rapid urban development. It is well-connected to Lagos and benefits from an advantageous geographic and spatial location. Its historical progression alongside emerging infrastructure makes it a promising area for future investments, particularly in luxury residential

and commercial developments. Extending southward from Lagos Island and Eti-Osa, this corridor encompasses prominent districts such as Victoria Island and Ikoyi. It is undergoing rapid growth toward Lekki, opening new opportunities for both residential and commercial projects. This route underscores Lagos's expansion into previously untouched coastal regions, driven by both public and private investments.

Ikeja Corridor (Ikeja, Oshodi-Isolo, Agege, Ifako Ijaiye, Mushin axis)

The Ikeja axis is significant for its administrative and infrastructural importance. It is easily accessible and well-organised across space and geography. Its historical growth and socio-economic profile underscore its role as a hub for commerce and government, making it a key route for coordinated urban development. The corridor extending north into Ogun State includes Ikeja, Oshodi/Isolo, Agege, Ifako Ijaiye, and Mushin. It is heavily populated and serves as a centre for trade, transportation, and residential expansion. Ikeja, the capital of Lagos State, is home to major institutions, technology parks, and government offices. While Mushin Oshodi/Isolo, Agege, Ifako-Ijaiye, and Agege are mainly residential areas, they have seen growth in informal sector activities, small industries, and real estate development.

TABLE 3.1 SETTLEMENTS AND INFLUENCING FACTORS

	SOUTHWEST CORRIDOR	SOUTHEAST AXIS	MAINLAND CORRIDOR	IKEJA CORRIDOR	NORTHWEST CORRIDOR
Potential for expansion	•	•			•
Strong interconnection within metropolitan Lagos	•	•	•	•	•
Strong local growth for informal activities	•	•	•	•	•
Administrative divisions	•	•	•	•	•
Accessibility to outside Lagos Metropolis	•	•		•	•
Spatial distribution	•	•	•	•	•
Geographic distribution	•	•	•	•	•
Historical growth pattern	•	•	•	•	•
Status of Infrastructural facilities	•	•	•	•	•
Socio-economic characteristics	•	•	•	•	•

Source: Field Survey 2024

Lagos, Nigeria's vibrant economic centre, is a city marked by contrasts, where rapid urban growth conflicts with infrastructural issues and diverse communities form a mosaic of settlements. This study explores corridor settlements within the Lagos metropolis, focusing on their socio-economic

makeup, geographic significance, and infrastructural conditions. It identifies and ranks the five main settlement corridors in Metropolitan Lagos according to their influence, as summarised in Table 3.1. This assessment reveals the strengths, growth potential, and strategic value of each corridor, offering valuable insights for urban planning and policymaking. A detailed analysis of these corridors provides a comprehensive understanding of the socioeconomic and developmental factors in metropolitan Lagos. These corridors are the main settlements across the 16 local government areas that comprise Metropolitan Lagos, which were created due to the city's outward expansion. The criteria for choosing these five corridors for field research are outlined below.

Administrative Divisions

As illustrated in Table 3.1, Lagos's administrative complexity can pose challenges for corridor settlements. Many of these areas span multiple local government jurisdictions, resulting in fragmented governance and uneven service delivery. Effective planning across these boundaries is essential to unlock their full potential.

Potential for Expansion

Table 3.1 indicates that corridor settlements in Lagos have significant growth potential. As the city's population rises, these zones provide largely undeveloped land suitable for new housing, commercial activities, and infrastructure development. Nonetheless, without adequate planning, this growth could lead to disorderly expansion, resulting in overcrowding and environmental harm.

Interconnection Within Metropolitan Lagos

One of the key strengths of corridor settlements is their strong connection with the wider Lagos metropolis. As shown in Table 3.1, these areas act as vital arteries, linking outlying zones to central business districts and industrial hubs. This connectivity promotes economic integration and enhances mobility for residents, making them more attractive for both informal and formal development.

Growth of Informal Activities

Informal economic activities thrive in corridor settlements. From roadside vendors to small artisans, these areas pulse with entrepreneurial spirit. This expansion supports livelihoods and stimulates the local economy, yet it also calls for regulatory measures to ensure safety, sanitation, and fair labour standards.

Socio-Economic Composition

Corridor settlements in Lagos are primarily occupied by subsistence and informal settlers, as well as urban middle-class migrants. Many residents originate from nearby Ogun State, drawn by Lagos's economic opportunities and urban lifestyle. This mix of low-income individuals and upwardly mobile residents creates a vibrant socio-economic landscape, where informal businesses thrive and social mobility presents both advantages and challenges (See Table 3.1). The socio-economic makeup of these settlements is diverse, comprising low-income families, informal workers, and middle-class migrants, which results in a complex social fabric. This diversity presents both opportunities and obstacles for inclusive development, emphasising the need for targeted policies that reduce inequality and promote upward mobility.

Geographic Significance

Strategically located, these settlements serve as entry points into Lagos from other regions of Nigeria. Positioned along key transportation routes, they function as vital centres for movement and commerce. These zones act as transitional areas, both physically and socially, linking rural hinterlands with the urban core. Their geographical placement also makes them attractive to new migrants aiming to access the city while avoiding the high costs associated with central Lagos.

Spatial and Geographic Distribution

Corridor settlements usually follow a linear arrangement along main roads and transit routes. This pattern affects land use, traffic movement, and service distribution. Understanding their geographic distribution is essential for designing efficient transportation systems and ensuring fair urban service provision.

Status of Infrastructural Facilities

Despite their strategic importance, many corridor settlements lack adequate infrastructure. Roads are often in disrepair, drainage systems are insufficient, and access to electricity and clean water is limited. These areas frequently lack basic amenities, such as a water supply, sanitation, roads, and waste management, or these services are poorly maintained. Such deficiencies diminish residents' quality of life, exacerbate poverty, threaten livelihoods, and hinder environmental management.

Accessibility to Outside Lagos Metropolis

Corridor settlements often serve as entry points into Lagos from neighbouring states, especially Ogun. Their strategic locations enhance migration, trade, and cultural exchange. This accessibility

makes them essential components of regional growth but also exerts pressure on infrastructure and public services.

Accessibility and Research Relevance

The study areas were selected because they are accessible in metropolitan Lagos and have existing secondary data. This makes them ideal for investigating urban growth, migration patterns, and socio-economic changes on the city's outskirts. Their proximity enables a detailed analysis of how urban pressures impact settlement development and community resilience.

Historical Growth Pattern

Historically, corridor settlements have emerged due to migration and urban growth. Their development reflects broader trends in Lagos's expansion, often occurring naturally without formal planning. Understanding these patterns enables planners to predict future growth and address long-standing challenges, such as land tenure and infrastructure gaps.

3.5 SAMPLE FRAME AND SAMPLE SIZE

3.5.1 Sample Frame

The research sample for this study was drawn from 16 Local Government Areas (LGAs) within metropolitan Lagos, categorised into five distinct corridors to reflect the city's spatial and administrative diversity. Each corridor was selected to represent a distinct segment of the metropolis, providing insights into varying urban dynamics and population characteristics, as outlined in Table 3.1.

The Southwest Corridor, which includes Apapa, Ajeromi-Ifelodun, Amuwo-Odofin, and Ojo, is home to about 5,156,900 residents. It features both industrial areas and fast-developing communities. The Southeast Corridor, comprising Eti-Osa and Lagos Island, is renowned for its upscale development and coastal expansion, with an estimated population of 2,776,200. Meanwhile, the Mainland Corridor, encompassing Shomolu, Lagos Mainland, and Kosofe, supports around 3,899,500 people and is the traditional urban centre of Lagos. The Northwest Corridor, encompassing Oshodi-Isolo, Mushin, Surulere, and Alimosho, is densely populated, with approximately 8,701,100 residents, making it the most populous corridor in Lagos. Lastly, the Ikeja Corridor in northern Lagos State, which includes Ikeja, Ifako-Ijaiye, and Agege, has a population of approximately 3,653,800 and functions as a key residential, administrative, and

commercial hub, also supporting informal activities.

To obtain a representative sample, questionnaires were distributed through systematic random sampling. This method involved selecting a random starting point and then choosing respondents at regular intervals, ensuring everyone had an equal chance of participation. The survey collected essential data on residents' socio-economic status, views on urban expansion, and their engagement in local development activities.

3.5.2 Sample Size

To ensure statistical reliability and representativeness, the study employed a structured approach to determine the appropriate sample sizes for each of the five settlement corridors in metropolitan Lagos. Three guiding principles were considered, including the widely accepted framework by Krejcie and Morgan (1970), which recommends a minimum precision level of a 0.05 margin of error and a sample size of at least 5% for educational and social research contexts. Building on this foundation, the study used a mathematical formula from Eminsang (2011) to determine the sample sizes for each corridor. This formula includes:

- n = sample size
- N = sample frame (total population)
- α = margin of error
- 1 = constant

Using this equation, the sample sizes were derived based on the projected population figures for each of the five corridors, ensuring that the sampling was proportionate and statistically sound. This method allowed the researchers to maintain consistency across diverse population groups while capturing meaningful insights into urban development patterns, socio-economic conditions, and resident perceptions.

$$n = \frac{N}{1 + N(\alpha)^2}$$

Sample Size for Southwest Corridor =	$\frac{5,156,900}{1 + 5,156,900 (0.05)^2}$	= 399.96
Sample Size for Southeast Axis =	$\frac{2,776,200}{1 + 2,776,200 (0.05)^2}$	= 399.94
Sample Size for Mainland Corridor =	$\frac{3,899,500}{1 + 3,899,500 (0.05)^2}$	= 399.96
Sample Size for Ikeja Corridor =	$\frac{3,653,800}{1 + 3,653,800 (0.05)^2}$	= 399.96

$$\text{Sample Size for Northwest Corridor} = \frac{1+3,653,800 (0.05)^2}{1+8,701,100 (0.05)^2} = 399.98$$

Table 3.2: Distribution of the Sampled Population Across the Five Settlement Corridors of Metropolitan Lagos

S/No	Metropolitan Lagos corridors	Population of Corridors	Sample Size
1	Southwest Corridor	5,156,900	399.96
2	Southeast Axis	2,776,200	399.94
3	Mainland Corridor	3,899,500	399.96
4	Ikeja Corridor	3,653,800	399.96
5	Northwest Corridor	8,701,100	399.98
Total		1,880	

Source: Authors' field Survey, 2024

The study employed a robust sampling method to achieve proportional representation across Lagos's various settlement corridors. A total of 1,880 respondents were selected from 16 Local Government Areas (LGAs), representing approximately 5% of the estimated population (399.96) across the five designated corridors. This sample size was determined to satisfy statistical standards for social research, guaranteeing both precision and inclusiveness. The five corridors included in the study are:

- Southwest Corridor (Apapa–Iganmu)
- Southeast Corridor (Lekki–Epe)
- Mainland Corridor (central Lagos metropolis)
- Northwest Corridor (Alimosho–Igando–Iba–Lasu)
- Ikeja Corridor (northern Lagos State)

Table 3.2 summarises the overall distribution of the sample size, confirming that 1,880 respondents were included across these corridors. Additional details in Tables 3.3 to 3.7 present the population figures for each of the 16 LGAs, which were used to determine the sample ratio and guide the distribution of questionnaires within each corridor. This method ensured that the data captured the demographic and spatial diversity of metropolitan Lagos, forming a robust basis for analysing urban growth patterns and socio-economic dynamics.

Table 3.3: Population Distribution of the Sample Group in the Mainland Corridor of Metropolitan Lagos

S/N	LGA	2019 Projected Population
1.	Shomolu	1,543,900
2.	Lagos Mainland	948,000
3.	Kosofe	1,407,600
Total		3,899,500

Authors' field survey, 2024

Table 3.4: Population Distribution of the Sample Group in the Northwest Corridor of Metropolitan Lagos

S/N	LGA	2019 Projected Population
1.	Oshodi-Isolo	1,708,700
2.	Mushin	1,990,300
3.	Surulere	1,919,200
4.	Alimosho	3,082,900
Total		8,701,100

Authors' field survey, 202

Table 3.5: Population Distribution of the Sample Group in the South-Western Corridor of Metropolitan Lagos

S/N	LGA	2019 Projected Population
1.	Apapa	786,700
2.	Ajeromi-Ifelodun	2,161,600
3.	Amuwo-Odofin	790,600
4.	Ojo	1,418,000
Total		5,156,900

Authors' field survey, 2024

Table 3.6: Population Distribution of the Sample Group in the South-Eastern Corridor of Metropolitan Lagos

S/N	LGA	2019 Projected Population
1.	Eti-Osa	1,481,200
2.	Lagos-Island	1,295,000
Total		2,776,200

Authors' field survey, 2024

Table 3.7: Population Distribution of the Sample Group in the Ikeja Corridor of Metropolitan Lagos

S/N	LGA	2019 Projected Population
1.	Ikeja	977,000
2.	Ifako Ijaiye	1,121,000
3.	Agege	1,555,800
Total		3,653,800

Authors' field survey, 2024

3.6 SAMPLING PROCEDURE AND TECHNIQUE

3.6.1 Sampling Procedure

The study employed a systematic random sampling approach to collect data on various facets of urban growth, including social, economic, environmental, and infrastructural development. Data was gathered via Google Forms, allowing for efficient and widespread participation throughout the city. To ensure a thorough and inclusive analysis, the study engaged a diverse group of stakeholders. Participants included traditional authorities such as chiefs and elders, property owners and residents, local and community leaders, Lagos State Government officials, representatives from development agencies, and staff from other relevant government bodies. This wide range of participants provided valuable perspectives on lived experiences, governance, and development issues in the metropolis.

For analytical clarity, the 16 Local Government Areas (LGAs) within metropolitan Lagos were divided into five distinct corridors. This corridor-based framework facilitated targeted interviews and thematic analysis, offering a detailed understanding of the spatial and socio-political forces that influence the city's expansion.

3.6.2 Sampling Technique

The study employed a mixed sampling method, combining non-probability and probability techniques to achieve both depth and representativeness in analysing metropolitan Lagos. The research used purposive sampling within the non-probability approach to select specific units with distinct features. Metropolitan Lagos was chosen as the primary focus due to its crucial role as a nodal city in Nigeria and West Africa. Five strategic corridors in the town were identified based on factors like geographic distance, connectivity, population density, spatial location, and their level of integration into the urban fabric. These corridors offered a varied cross-section of the city's development.

To add qualitative insights to the study, interviews were conducted with various stakeholders, including residents, community leaders, and local government officials. These discussions provided valuable insights into Lagos's historical development over the past century, its current urban landscape, and emerging trends. Additionally, a probability sampling technique was implemented to maintain statistical accuracy. Specifically, systematic random sampling was employed to select respondents from the identified corridors, ensuring that participants from

diverse demographic and geographic backgrounds had an equal chance of inclusion. This method enhanced the diversity and reliability of the collected data.

3.7 RESEARCH INSTRUMENT

The study employed a mixed-methods approach, combining qualitative and quantitative techniques to enhance the depth, reliability, and contextual relevance of its findings. Strauss and Corbin (1990) describe qualitative research as any inquiry that provides insights beyond the scope of statistical or numerical data. This approach is naturally rooted in real-world contexts, aiming to understand phenomena in their authentic, environment-specific settings. Patton (1990) highlights the importance of qualitative methods in capturing the richness and complexity of human experiences and social interactions. In contrast, quantitative research emphasises causal analysis, prediction, and generalisation. It relies on experimental designs and statistical tools to test hypotheses and produce measurable results. This approach is particularly effective for identifying patterns, validating theories, and drawing broad conclusions from data.

Acknowledging the strengths of both paradigms, the study adopted a mixed-methods approach guided by Patton and Strauss & Corbin. This combination allowed for a detailed exploration of urban development in Lagos alongside the generation of statistically reliable insights. By leveraging the complementary nature of qualitative and quantitative methods, the research achieved a more thorough and rigorous understanding of the core issues.

3.8 DATA ANALYSIS TECHNIQUES

The study employed both qualitative and quantitative analytical tools to analyse and interpret the collected data. By using various models, the research uncovered significant relationships among variables and revealed emerging trends in the study area. This combined method strengthened the analysis and offered a thorough understanding of urban dynamics in metropolitan Lagos.

3.8.1 Quantitative research

The research employed a robust quantitative framework to evaluate spatial development and population distribution throughout the Lagos metropolitan area. Descriptive statistics played a key role, enabling the effective summarisation and interpretation of extensive datasets. Visual representations such as maps, tables, graphs, charts, and diagrams illustrated patterns, distributions, and relationships in the data. To deepen the analysis, the study applied techniques like cross-tabulation and measures of central tendency (mean, median, and mode), which helped identify trends, compute averages, and derive insights into user satisfaction, facility coverage, and

Lagos's urban growth success.

Drawing on Hancock (1998), the study emphasised key features of its quantitative methodology:

1. Focus on measurable data: The research prioritised information that could be quantified and assessed objectively.
2. Statistical analysis: Data were analysed using statistical tools to ensure accuracy and reliability.

Structured data collection: Primary data were collected using Google Forms questionnaires, structured observation schedules, and systematic record analysis.

In addition to primary data, the study incorporated secondary sources such as literature reviews, policy documents, official reports, and interviews with government agencies, traditional leaders, and community members. These sources offered valuable context and aided in recognising trends related to population growth, expansion, and distribution throughout the city.

3.8.2 Qualitative research

The study's qualitative data were carefully analysed using methods like interpretation, inference, and cross-referencing with secondary sources and institutional data. This triangulation was essential for verifying the accuracy and consistency of information obtained from various stakeholders and organisations.

Empirical field data were gathered from diverse sources to support findings on the growth of metropolitan Lagos and its resemblance to malignant neoplasms. These insights emerged through interviews and questionnaires, which revealed nuanced perspectives from residents, community leaders, and institutional representatives. Combining direct observations with secondary data contributed to developing a comprehensive and contextually grounded understanding of the city's expansion.

3.9 SUBJECT MATTER OF THE RESEARCH PROJECT

The study employed a comparative research methodology that included explorative, descriptive, and evaluative elements to investigate the intricate growth patterns of metropolitan Lagos and their conceptual similarities to malignant neoplasms.

The Explorative Component was guided by Strauss & Corbin (1990); the study utilised qualitative methods to explore areas with limited prior research. Structured and semi-structured questionnaires were used to identify the underlying challenges, developmental pressures, and socio-spatial dynamics of Lagos's urban expansion. These tools provided insights into the needs, concerns, and lived experiences of residents and stakeholders, helping to frame the city's growth as a phenomenon with pathological traits.

The descriptive component is based on Hart (1998), where the research employed descriptive techniques to analyse deficiencies in urban growth and their similarities to malignant processes. Descriptive statistics summarised quantitative data, with visual aids such as maps, tables, graphs, charts, and diagrams illustrating spatial trends and infrastructure distribution.

To strengthen the analysis, the study utilised various analytical tools, including multiple statistical methods:

- Cross-tabulation to examine relationships between variables
- Spearman correlation to assess the strength and direction of associations
- Chi-square tests to evaluate categorical data
- Regression analysis to identify predictors and model urban growth patterns

Additionally, the evaluation component critically examined how malignancy-like growth affects the development of Lagos Metropolis. It investigated the structural and functional similarities between cancerous growth and urban expansion, reviewing government policies and planning initiatives. The analysis explored the potential application of oncological models to forecast, control, and mitigate uncontrolled urban growth.

3.10 RESEARCH STRATEGY: CASE-STUDY APPROACH

The study employs various qualitative research methods commonly used in the social sciences, each with distinct strengths and limitations tailored to the specific research context. These include ethnographic studies, which provide deep cultural insights through researchers immersing themselves in participants' daily lives. They are useful for understanding social norms, behaviours, and community dynamics. Originating from anthropology, ethnographic research examines cultural aspects within communities (Babbie & Mouton, 2001). These studies typically involve interviews and participant observations, often conducted over extended periods, sometimes spanning several years. Consequently, this approach can be demanding in terms of time and funding.

Action research emphasises collaboration between researchers and participants to address real-world problems, often employed in community development and policy evaluation. Action research is a dynamic and iterative process that involves identifying a problem, applying interventions, evaluating results, and refining strategies through continued cycles. It is particularly useful for addressing localised issues and can be flexible regarding time limitations. While experiments are less commonly used in qualitative research, they can be employed to test specific interventions or behavioural responses in a controlled environment. Nonetheless, this approach may be less effective because it does not directly measure cause-and-effect relationships. Hancock (2002) notes that experiments can reveal causal connections by comparing intervention and control groups, but they often struggle to capture the complex, context-specific aspects of urban phenomena. In this study, experimental methods were recognised but not prioritised because of their limitations in statistically quantifying nuanced cause-and-effect interactions.

Case studies provide detailed, context-rich examinations of specific locations, events, or groups, making them ideal for exploring complex phenomena in real-world settings. Babbie and Mouton (2001) define a case study as a comprehensive analysis of a single unit, which could be individuals, groups, families, communities, organisations, or entire nations. Several reasons support this approach. First, it provides a deeper understanding of issues within specific contexts, such as urban development in particular areas. The experiences of the communities studied will differ significantly from those in other parts of Lagos. Referencing scholars such as Babbie & Mouton (2001) and Hancock (2002), the study emphasises both the theoretical foundations and practical applications of these methods. Specifically, it employed a case study to explore urban growth and its parallels to malignant neoplasms. This method enabled a thorough analysis of spatial expansion, infrastructure challenges, and socio-economic dynamics across selected city corridors.

This approach was selected for its capacity to provide rich, contextual insights into urban development, particularly in Lagos areas. The case study method allowed the researchers to examine the lived experiences, challenges, and growth patterns of specific communities, recognising that these realities may vary significantly from other parts of the city. By focusing on distinct settlement corridors, the study uncovered localised dynamics and development pathways, offering a detailed understanding of how urban expansion unfolds across diverse Lagos contexts.

The research focused on five specific case study areas within Lagos State, each illustrating a different metropolitan corridor. These corridors were chosen due to their distinct features, showcasing different growth patterns, infrastructure, and socio-economic trends across the city. Examining multiple corridors instead of just one improves the reliability and applicability of the results. This method offers a clearer understanding of Lagos's wider urban and geographical landscape. To further strengthen the reliability of the research, the study integrated multiple data sources, including:

- Interviews with stakeholders and residents
- Field observations of infrastructure and settlement patterns
- Document analysis of policy reports and historical records
- Stakeholder input from government agencies, community leaders, and development organisations

By employing multiple qualitative techniques, the study managed to explore both the lived experiences of residents and the structural forces influencing Lagos's development, providing a nuanced understanding of the city's transformation. This triangulation of data offered a rich, multidimensional perspective on urban expansion in Lagos and its conceptual similarities to malignant neoplasms, emphasising the unchecked, invasive nature of growth and its implications for planning and sustainability.

3.11 METHODS OF DATA COLLATION AND ANALYSIS

To rigorously analyse the survey data collected for this study, the study used Statistical Package for the Social Sciences (SPSS) version 22, a well-known tool in social science research. The software enabled both descriptive and inferential statistical analyses, supporting a thorough investigation of the research questions. Descriptive Analysis. The data were initially subjected to frequency analysis and cross-tabulation, which helped summarise responses and identify patterns across various demographic and spatial categories. These techniques offered a clear overview of respondent characteristics and their perceptions of the growth and expansion of Metropolitan Lagos.

Inferential Analysis was used to test hypotheses and examine relationships between variables. The study employed a comparative method. This approach enabled the researchers to assess how different factors interacted and influenced one another within the context of metropolitan Lagos. The theoretical framework was further evaluated using descriptive regression analysis to model and predict urban growth patterns, the Spearman correlation to measure the strength and direction of associations between ranked variables and Chi-square analysis to test for statistical significance

in categorical data.

Table 3.8: Showing the Methods of Data Collation and Analysis for the Study

Research Objectives	Required Data	Statistical Tools
To explore the growth and development of metropolitan Lagos	Census Data maps, federal survey maps and satellite imageries of spatial growth and development of Lagos Metropolis from 1851 to 2014.	GIS and Image processing, change detection of land use cover change, Shannon Entropy
To analyse the features of malignant growth processes	malignant growth processes and development patterns, and Questionnaire administration and oncological study	GIS and Image processing, descriptive analysis
To investigate the connections between urban forms and malignant neoplasms	Questionnaire administration and oncological study	Descriptive analysis, (frequency) Inferential Analysis (Correlation& regression)
To evaluate the impact of malignant growth on the growth and development of metropolitan Lagos	Questionnaire administration (Socio-economic, physical and environmental factors) of malignant development in metropolitan Lagos	Descriptive analysis, (frequency) Inferential Analysis (Correlation),

Source: Field Survey, 2024

These analytical tools, summarised in Table 3.8, offered substantial evidence to underpin the study's findings and confirmed the conceptual connection between urban expansion and malignant growth processes.

3.11.1 Shannon Entropy Model

Shannon entropy measures the dispersion or concentration of built-up areas and is an index for assessing their distribution within a specific spatial unit (Jat et al., 2007). This metric helps define the layout of built-up zones and indicates the trajectory of urban growth (Shashikant et al., 2015). The study examined the factors contributing to the growth of the Lagos metropolis, including its scale, shape, and characteristics of urban sprawl. Previous research by Yeh and Li (2001), Torrens and Alberti (2000), Singh (2014), and Shashikant, Sharma, and Vyas (2015) has linked the spatial dimensions and metrics of sprawl to built-up areas obtained from remote sensing, using entropy

and built-up density as indicators.

Entropy values near zero denote a compact urban growth distribution, whereas values approaching 'log n' suggest a more dispersed sprawl pattern. Higher entropy values indicate the spread of built-up areas, highlighting urban growth and diverse land uses. Shannon's entropy has been utilised to analyse urban development patterns and assess the level of spatial concentration or dispersion (homogeneity) of a geophysical variable (built-up area) across 'n' spatial units/wards (Singh, 2014). The Relative Entropy (E_n) has the formula: $E_n = \sum (P_i \log (1/P_i)) / \log(n)$.

Here, P_i is calculated as $x_i / \sum x_i$, where x_i represents the density of land development. X_i is determined by dividing the built-up area of the i th zone by the total area of that zone, considering all n zones. This study focuses on the growth and expansion of metropolitan Lagos.

3.11.2 Statistical Analysis and Test of Hypothesis

Table 3.9 outlines the study's design and analytical framework. A range of statistical methods was employed to examine the data and test the research hypotheses rigorously. These included:

- Spearman's Correlation Analysis: Used to evaluate the strength and direction of relationships between ranked variables, especially applicable for non-parametric data.
- Chi-Square Tests: Used to assess relationships between categorical variables and establish statistical significance.
- Regression Analysis: Used to model the relationships between dependent and independent variables, aiding in outcome prediction and identifying key factors influencing the results.
- Descriptive Statistics: Including frequency distributions, which summarise the data and reveal patterns across demographic and spatial categories.
- Comparative Statistics: Used to compare findings across various corridors and respondent groups, enriching the depth of analysis.

These quantitative techniques offered a strong foundation for hypothesis testing, allowing the study to draw meaningful conclusions about urban development trends and spatial dynamics in metropolitan Lagos.

Table 3.9: Presenting the Stated Hypotheses for the Study

Hypothesis	Statistical Tools
Ho: Malignant growth patterns do not have a significant effect on urban forms	Spearman's Correlations Analysis, Chi-Square
Hi: Malignant growth patterns have a significant effect on urban forms	Spearman's Correlations Analysis, Chi-Square
Ho: Similarity of pattern with malignancy does not significantly affect the city's physical form and growth	Spearman's Correlations Analysis
Hi: Similarity of pattern with malignancy significantly affects the city's physical form and growth	Spearman's Correlations Analysis
Ho: That cities (urban forms) have no characteristics in common with a malignant neoplasm	Regression Analysis
Hi: That cities (urban forms) exhibit all the significant characteristics of a malignant neoplasm	Regression Analysis

Source: Field Survey, 2024

CHAPTER FOUR

4.0 CONTENTS AND RESULTS

4.1 MORPHOLOGY OF METROPOLITAN LAGOS

This section explores the spatial growth and morphological development of Metropolitan Lagos, highlighting how physical expansion connects with socio-economic dynamics across five key settlement corridors. Using data from 399 respondents, the study examines various features of Lagos's urban fabric, illustrating how zoning, population density, economic activities, and environmental changes uniquely influence each corridor. It evaluates the extent of structural changes over time and links residents' profiles- such as occupation, income, and ethnicity- to the spatial realities of their neighbourhoods.

Focusing on the Southwest, Southeast, Mainland, Ikeja, and Northwest corridors, the analysis uncovers local impacts of urban expansion, offering a corridor-by-corridor assessment of spatial issues, growth potential, and socio-spatial resilience. These findings support the broader view that Lagos's morphology is shaped not only by geography but also by lived experiences, economic forces, and planning challenges.

Data Characteristics: The data for this objective are quantitative, focusing on the character and socio-economic features of the Lagos metropolitan settlement corridors. The datasets provide details on the profile and characteristics of the settlement corridors. Data from residents in these corridors include gender, age, marital status, educational attainment, occupational status, household income, nationality, place of work, and ethnic background. Additional information includes years of residency and motivations for living within the settlement corridors. The data also explores interactions within the settlement corridors of the Lagos metropolis, as well as the potential for growth in these areas within the context of Lagos's urban expansion.

4.2 GENERAL CHARACTERISTICS OF MEROPOLITAN LAGOS RESPONDENTS

This study employs a mixed-methods approach, combining descriptive statistics to identify patterns in population density, housing types, income levels, and access to services. It uses cross-tabulation, basic percentages, charts, and tables to analyse the adverse effects of urban expansion in Metropolitan Lagos, focusing on spatial dysfunction and harmful growth trends. The study visualises issues like overcrowding, informal land use, and transport challenges.

Data was collected from five strategically selected settlement corridors that reflect diverse socio-spatial dynamics, including age, gender, occupation, education, and location, providing context for different groups' experiences with urban expansion. Qualitative insights from interviews and open-ended survey responses highlight lived experiences such as flooding, traffic congestion, and displacement. The corridors identified are:

- Southwest Axis: Apapa, Ajeromi-Ifelodun, Amuwo-Odofin, Ojo
- Southeast Axis: Eti-Osa, Lagos Island
- Mainland Corridor: Shomolu, Lagos Mainland, Kosofe
- Ikeja Axis: Ikeja, Ifako-Ijaiye, Agege
- Northwest Axis: Oshodi-Isolo, Mushin, Surulere, Alimosho

A total of 399 structured questionnaires were administered within these corridors to assess resident perceptions, urban challenges, and the metaphor of malignant neoplasm linked to spatial development patterns.

This methodology presents a district-level analysis of Lagos Metropolis, focusing on population growth, spatial expansion, and proximity to the city's historic core, which enables a spatially distributed understanding of dysfunction across Lagos's urban geography, while facilitating comparison between high-growth and relatively stable districts. Insights gleaned from this analysis underpin the formulation of curative and preventive strategies tailored to corridor-specific needs.

4.2.1 Socioeconomic/Demographic of Respondents

Table 4.1 displays the respondent demographics, indicating that in all five metropolitan corridors, Southwest, Southeast, Mainland, Ikeja, and Northwest, the majority of participants were males. Male participation ranged from 62.3% to 71.2% across each corridor, averaging 65.6%. Females made up 34.4%. This suggests that males were either more accessible or more actively involved in civic and community activities in Lagos, leading to higher participation rates. The data also highlights a concentration of respondents in the middle-aged and senior adult groups. The largest group was those aged 51–60 years at 30.6%, followed by the 41–50 years group at 22.8%. Young adults aged 21–30 years accounted for 18.7%, with the 18–20 years group comprising only 1.8%. This age distribution indicates the sample predominantly includes experienced adults, likely possessing more insight and opinions on urban growth and

city expansion. Individuals under 18 are less involved in urban planning or city development issues, making their input less relevant for this study. The ethnic composition reveals a clear dominance of the Yoruba group, constituting 68.5% of all respondents. The Igbo make up 18.4%, the Hausa account for 9.5%, and other ethnic groups collectively account for 3.6% as shown in Table 4.1 above.

Table 4.1 Respondents' Demographics

			Metropolitan Corridor					
Variables			Southwest	Southeast	Mainland	Ikeja	Northwest	Total
	Options							
Gender	Male	Count	34	42	47	55	43	221
		% within Corridor	63.0%	71.2%	66.2%	65.5%	62.3%	65.6%
	Female	Count	20	17	24	29	26	116
		% within Corridor	37.0%	28.8%	33.8%	34.5%	37.7%	34.4%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Age at your last birthday	18-20years	Count	1	1	1	0	3	6
		% within Corridor	1.9%	1.7%	1.4%	0.0%	4.3%	1.8%
	21-30years	Count	12	18	15	6	12	63
		% within Corridor	22.2%	30.5%	21.1%	7.1%	17.4%	18.7%
	31-40years	Count	12	9	11	8	6	46
		% within Corridor	22.2%	15.3%	15.5%	9.5%	8.7%	13.6%
	41-50years	Count	11	11	13	22	20	77
		% within Corridor	20.4%	18.6%	18.3%	26.2%	29.0%	22.8%
	51-60years	Count	13	13	20	38	19	103
		% within Corridor	24.1%	22.0%	28.2%	45.2%	27.5%	30.6%
	61years and above	Count	5	7	11	10	9	42
		% within Corridor	9.3%	11.9%	15.5%	11.9%	13.0%	12.5%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Ethnicity	Yoruba	Count	26	27	54	72	52	231
		% within Corridor	48.1%	45.8%	76.1%	85.7%	75.4%	68.5%
	Hausa	Count	10	9	6	1	6	32
		% within Corridor	18.5%	15.3%	8.5%	1.2%	8.7%	9.5%
	Igbo	Count	16	21	9	7	9	62
		% within Corridor	29.6%	35.6%	12.7%	8.3%	13.0%	18.4%
	Others	Count	2	2	2	4	2	12
		% within Corridor	3.7%	3.4%	2.8%	4.8%	2.9%	3.6%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Given Lagos's location in a Yoruba-speaking region, this predominance is expected. Nonetheless, the notable presence of various other ethnic groups affirms the city's status as a multi-ethnic urban centre. This diversity fosters a vibrant atmosphere, promoting social interaction and mutual understanding among different communities. The active presence and engagement of these groups strengthen Lagos's reputation as a hub attracting diverse populations.

In summary, the findings offer essential baseline demographic insights into the respondents involved in the study of Lagos' urban growth. The demographic bias towards males, middle-aged adults, and Yoruba speakers may influence the perceptions and experiences expressed in the rest of the study. These patterns also reflect the social dynamics, resource needs, and urban pressures typical of a rapidly expanding metropolitan city like Lagos. The rapid expansion creates patterns that reflect the pressures of an expanding city region.

The data indicate a centrifugal movement from the metropolis outward, driven by economic opportunities and lifestyle fluidity. This trend supports the concept of Lagos as a polycentric urban fabric, where growth is less concentrated in the centre and more focused on nodal expansion. These transitional corridors serve as socioeconomic buffers, absorbing labour inflows while dispersing urban pressure.

4.2.2 Educational Attainment and Occupation of Respondents

Table 4.2 displays the educational attainment and occupation of respondents in this study. The results show that a large majority of respondents, almost 79%, have achieved a tertiary education. This high proportion was especially notable in areas such as the Ikeja corridor, where over 95% of respondents reported having tertiary qualifications, followed closely by the Mainland corridor and the Northwest corridor, both with above 75% representation at the tertiary or highest level. In contrast, very few respondents across all corridors had only a primary education. For example, the number of individuals with only primary education never exceeded 10% in any corridor. In some areas, such as the Northwest corridor, no respondent reported having only a primary education.

Secondary education accounts for roughly 2% in the Ikeja corridor and just over 15% in the Southeast corridor. Notably, technical and vocational education has a slightly higher presence than primary and secondary levels in most corridors, although it remains relatively low overall

at just under 9%. This suggests that vocational and practical training programmes have not been widely adopted or prioritised among Lagos's urban residents, possibly due to the high value placed on formal tertiary education or the structure of the urban job market.

Table 4.2 Respondents' Education and Occupation

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Highest educational level	Primary	Count	5	3	1	1	0	10
		% within Corridor	9.3%	5.1%	1.4%	1.2%	0.0%	3.0%
	Secondary	Count	8	9	5	2	7	31
		% within Corridor	14.8%	15.3%	7.0%	2.4%	10.1%	9.2%
	Technical/vocational	Count	10	6	5	1	8	30
		% within Corridor	18.5%	10.2%	7.0%	1.2%	11.6%	8.9%
	Tertiary	Count	31	41	60	80	54	266
		% within Corridor	57.4%	69.5%	84.5%	95.2%	78.3%	78.9%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Occupational status	Public Employee	Count	15	14	24	30	21	104
		% within Corridor	27.8%	23.7%	33.8%	35.7%	30.4%	30.9%
	Private Employee	Count	21	21	19	24	12	97
		% within Corridor	38.9%	35.6%	26.8%	28.6%	17.4%	28.8%
	Retired	Count	6	10	8	6	10	40
		% within Corridor	11.1%	16.9%	11.3%	7.1%	14.5%	11.9%
	Self-employed	Count	11	13	18	24	23	89
		% within Corridor	20.4%	22.0%	25.4%	28.6%	33.3%	26.4%
	Unemployed	Count	1	1	2	0	3	7
		% within Corridor	1.9%	1.7%	2.8%	0.0%	4.3%	2.1%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

As shown in Table 4.2, public employment was the most prevalent form of occupation, accounting for approximately 31% of all respondents. It was closely followed by private sector jobs, comprising nearly 29%. This suggests that formal employment, whether with the government or private companies, is the primary source of livelihood in metropolitan Lagos. Self-employment was also significant, with over 26% of respondents working for themselves,

reflecting Lagos's reputation as a commercial and entrepreneurial hub. The highest self-employment rates were observed in the Northwest corridor, where about one-third of respondents were identified as self-employed. Retirees made up a smaller portion, roughly 12%, with slightly higher numbers in the Southeast and Northwest. Unemployment was the least common status, at just over 2%, with some corridors, such as Ikeja, reporting no unemployed individuals at all. The Northwest had the highest unemployment, although it was still relatively low.

The findings highlight a city with a highly educated population. With most residents holding at least a tertiary degree, the data indicates a strong connection to a formal, skill-based urban economy. This prevalence of higher education may also mirror the city's role as a hub for educated migrants or its numerous academic institutions and professional opportunities. The occupational distribution supports the education data, showing that most individuals are employed in public service, private sectors, or self-employment.

This mixture of formal and informal economic participation indicates a dynamic labour market, characterised by both institutional employment and Entrepreneurial activities. The relatively low levels of technical, primary, or secondary education, combined with low unemployment, suggest that individuals without higher qualifications are underrepresented in the sampled population. This influences our understanding of inequality in urban access, as the views of less educated or more vulnerable residents might not be fully captured in the data.

In summary, the findings highlight that respondents residing within Lagos's metropolitan corridors are generally educated and economically active. The high occurrence of tertiary education and formal employment reflects Lagos's aspirations and its emphasis on development as a modern urban centre. However, the underrepresentation of individuals with lower education levels and those who are unemployed indicates potential inclusion gaps that future research may need to explore.

Table 4.3 Motivation to Live and Work in Metropolitan Lagos

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Do you reside in this area?	Yes	Count	43	52	64	74	65	298
		% within Corridor	79.6%	88.1%	90.1%	88.1%	94.2%	88.4%
	No	Count	11	7	7	10	4	39
		% within Corridor	20.4%	11.9%	9.9%	11.9%	5.8%	11.6%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
How long have you lived in the area?	Less than 1 year	Count	0	2	1	0	1	4
		% within Corridor	0.0%	3.8%	1.6%	0.0%	1.5%	1.3%
	1-4 years	Count	12	18	13	11	12	66
		% within Corridor	27.9%	34.6%	20.3%	14.9%	18.5%	22.1%
	5-10 years	Count	13	15	8	16	10	62
		% within Corridor	30.2%	28.8%	12.5%	21.6%	15.4%	20.8%
	11-15 years	Count	10	4	12	3	13	42
		% within Corridor	23.3%	7.7%	18.8%	4.1%	20.0%	14.1%
	Above 15 years	Count	8	13	30	44	29	124
		% within Corridor	18.6%	25.0%	46.9%	59.5%	44.6%	41.6%
Total		Count	43	52	64	74	65	298
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
What motivates you to live in the area?	Social Ties	Count	10	7	10	10	16	53
		% within Corridor	23.3%	13.5%	15.6%	13.5%	24.6%	17.8%
	Economic Benefits	Count	22	23	25	23	17	110
		% within Corridor	51.2%	44.2%	39.1%	31.1%	26.2%	36.9%
	Availability	Count	4	12	22	28	19	85

	of Infrastructure and Services	% within Corridor	9.3%	23.1%	34.4%	37.8%	29.2%	28.5%
	Land Availability	Count	6	6	2	5	8	27
		% within Corridor	14.0%	11.5%	3.1%	6.8%	12.3%	9.1%
	Other Reasons	Count	1	4	5	8	5	23
		% within Corridor	2.3%	7.7%	7.8%	10.8%	7.7%	7.7%
Total		Count	43	52	64	74	65	298
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

4.2.3 Motivation to Live and Work in Metropolitan Lagos

Table 4.3 presents the reasons respondents gave for choosing to live in metropolitan Lagos. The data reveal that most participants live in the area where they were surveyed. Specifically, 79.6% are in the Southwest corridor, 88.1% in the Southeast corridor, 90.1% on the Mainland, 88.1% in the Ikeja corridor, and 94.2% in the Northwest corridor. In total, 88.4% of all respondents are residents of their surveyed corridor. This high percentage indicates that the survey mainly captures the views of long-term and current residents, rather than those of transient or non-resident groups such as traders, students, or informal workers who commute daily but live elsewhere, or individuals residing temporarily due to displacement, migration, or economic shifts, or those using the corridor intensively without being included in planning metrics.

When examining the length of time residents have lived in their current area, the data reveals a significant concentration of long-term occupancy. Respondents who have lived in the area for more than 15 years form the largest group, making up 41.6% of all respondents. Those with 5 to 10 years of experience follow at 20.8%, while those in the 1- to 4-year category account for 22.1%. A smaller segment, 14.1%, reported living in the area for between 11 and 15 years, and only 1.3% of respondents had lived in the area for less than a year. These figures indicate that most residents are well-established within their local communities. Long-term residents are likely the most familiar with the historical development, infrastructural changes, and social shifts in their environment. Their lived experience provides them with embedded knowledge:

they remember when roads were paved, drainage systems failed, and transport options changed. They also recall demographic shifts, migration patterns, changes in community cohesion, and the rise or fall of local institutions. This deep familiarity makes them valuable sources of insight into how their environment has evolved.

Respondents were asked about what motivates their choice of current corridor. Their answers reveal key factors impacting residential decisions in Lagos, involving a mix of economic, social, and infrastructural considerations. The main reason, cited by 36.9% of respondents, is economic benefits, which include proximity to workplaces, business opportunities, and affordable transportation. The availability of infrastructure and services was the second most cited factor, mentioned by 28.5%. This includes access to roads, electricity, water, healthcare, and other urban utilities; Social ties, such as family networks or community belonging, motivated 17.8% of the respondents; land availability influenced 9.1%, indicating that some residents settled in their corridor due to the potential for building or affordable rent while other reasons were cited by 7.7%, a category likely encompassing safety, aesthetics, proximity to schools, or personal preferences.

In Ikeja and the Mainland corridors, service availability was a key attraction, whereas in the Southwest and Northwest corridors, social connections and land access played a larger role. Economic reasons were consistent across all corridors but were more significant in the Southwest and Southeast corridors.

In summary, the study reveals that what motivates respondents to live in the corridors confirms that economic factors primarily drive residential patterns in Lagos. Still, they are also affected by infrastructure, social ties, and land availability. Nearly nine out of ten respondents are long-term residents, many having lived in their areas for over a decade, emphasising the importance of understanding Lagos's urban growth from the perspective of stable, economically active, and socially connected individuals. These patterns are vital for explaining why people choose to settle in different parts of metropolitan Lagos. A complex interaction of personal preferences, socio-economic constraints, and urban structural factors shapes residential location choices. In Lagos, a city experiencing rapid growth and infrastructural stress, these choices are often limited by affordability, proximity to work, and access to basic services.

As the study indicates, long-term residents provide valuable insights into the historical development of their neighbourhoods, offering a grounded understanding of urban change

through their familiarity with infrastructural and social shifts. However, focusing only on long-term residents overlooks the dynamic nature of Lagos's population, which includes transient individuals, commuters, informal workers, displaced persons, and new migrants. Their housing decisions may be temporary, informal, or driven by survival rather than preference. However, they still influence traffic flow, housing demand, and service use, often beyond the scope of traditional planning models.

4.2.4 Respondents' Economic Activities in Metropolitan Lagos

Table 4.4 details the economic activities and locations of respondents within Metropolitan Lagos. The data indicate that services constitute the largest sector across the five metropolitan corridors, Southwest, Southeast, Mainland, Ikeja, and Northwest, accounting for 32.9% of all respondents. This sector was especially prominent in Ikeja and the Northwest corridors, where it represented 40.5% and 40.6%, respectively. These figures underscore Lagos's status as a service-driven economy, with numerous opportunities in finance, health, education, retail, ICT, and logistics. Closely following is the civil service, which accounts for 27.9% of the total economic activity. This was most prominent in the Ikeja corridor (33.3%) and the Northwest corridor (29.0%), reflecting a significant presence of government or administrative offices, consistent with expectations given Ikeja's role as the state capital, home to many ministries and public institutions.

Agricultural activities were reported by 13.1% of respondents, with the highest concentrations in the Southwest and Southeast corridors (both above 13%). Although Lagos is heavily urbanised, this figure suggests that small-scale or peri-urban farming persists, particularly in the outer zones of the city. Commercial or trading activities were also represented by 13.1% of respondents, with notable participation in the Southwest (18.5%) and Southeast (18.6%) corridors. These corridors include some of Lagos's well-known market districts, which explains the higher percentages. While industrial employment made up only 6.5% of all economic activity, this relatively low proportion may reflect the decline or relocation of manufacturing hubs away from residential corridors, the rise of more dominant service-oriented employment, or the category of people who participated in the survey. Finally, 6.5% of respondents fell into the "others" category, likely comprising creative industries, artisans, or gig economy roles that often operate outside traditional employment structures but are strongly connected to the city's cultural and economic life.

Table 4.4 data shows that 70.6% of respondents work within their residential corridors. This percentage is particularly high in the Southeast corridor (81.4%) and Ikeja corridor (78.6%), where employment hubs are closely integrated with residential areas. Both the Mainland and Southwest corridors have 64.8% of respondents working locally, while 29.4% work outside their corridors. The Northwest corridor has the highest proportion of commuters at 37.7%, possibly due to limited local job opportunities or a greater dependence on nearby urban centres like Ikeja or the Island for employment.

Table 4.4 Respondents' Economic Activities and their Locations within Metropolitan Lagos

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
What economic activity do you engage in?	Civil Service	Count	13	14	19	28	20	94
		% within Corridor	24.1%	23.7%	26.8%	33.3%	29.0%	27.9%
	Agriculture	Count	13	8	8	6	9	44
		% within Corridor	24.1%	13.6%	11.3%	7.1%	13.0%	13.1%
	Industrial	Count	5	5	3	6	3	22
		% within Corridor	9.3%	8.5%	4.2%	7.1%	4.3%	6.5%
	Commerce	Count	10	11	12	6	5	44
		% within Corridor	18.5%	18.6%	16.9%	7.1%	7.2%	13.1%
	Services	Count	10	18	21	34	28	111
		% within Corridor	18.5%	30.5%	29.6%	40.5%	40.6%	32.9%
Others	Count	3	3	8	4	4	22	
	% within Corridor	5.6%	5.1%	11.3%	4.8%	5.8%	6.5%	
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0 %	100.0%	100.0%	100.0 %	100.0%	100.0 %
Where do you engage in your economic activity?	Within the corridors	Count	35	48	46	66	43	238
		% within Corridor	64.8%	81.4%	64.8%	78.6%	62.3%	70.6%
	Outside the Corridors	Count	19	11	25	18	26	99
		% within Corridor	35.2%	18.6%	35.2%	21.4%	37.7%	29.4%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0 %	100.0%	100.0%	100.0 %	100.0%	100.0 %

Source: Fieldwork, 2025

Focusing mainly on the service and public sectors, with most economic activities occurring locally, the city demonstrates both economic specialisation and spatial concentration. This

duality underscores the importance of corridor-level infrastructure, economic diversification, and urban planning that encourages balanced growth and facilitates easy access to jobs across Lagos's growing metropolitan corridors.

Table 4.5 Metropolitan Lagos Growth Process

Variables		Metropolitan Corridor					Total
		Southwest	Southeast	Mainland	Ikeja	Northwest	
Economic, financial, and commercial hub	Count	41	40	56	69	54	260
	% within Corridor	15.2%	13.7%	11.3%	12.5%	11.9%	12.6%
Attraction for both local and international migrants	Count	19	27	48	51	43	188
	% within Corridor	7.0%	9.3%	9.7%	9.2%	9.5%	9.1%
Job opportunities and a higher standard of living	Count	24	26	48	57	36	191
	% within Corridor	8.9%	8.9%	9.7%	10.3%	7.9%	9.3%
Surge in the population	Count	29	24	47	48	42	190
	% within Corridor	10.7%	8.2%	9.5%	8.7%	9.3%	9.2%
Strain on Infrastructure	Count	20	25	40	43	35	163
	% within Corridor	7.4%	8.6%	8.1%	7.8%	7.7%	7.9%
Unplanned development and resource overexploitation	Count	17	23	30	34	30	134
	% within Corridor	6.3%	7.9%	6.1%	6.1%	6.6%	6.5%
Rapid growth exacerbates social inequalities	Count	19	18	36	30	31	134
	% within Corridor	7.0%	6.2%	7.3%	5.4%	6.8%	6.5%
Encroachment on agricultural land and wetlands	Count	17	20	25	29	30	121
	% within Corridor	6.3%	6.9%	5.1%	5.2%	6.6%	5.9%
Informal settlements and slums	Count	14	25	37	34	33	143
	% within Corridor	5.2%	8.6%	7.5%	6.1%	7.3%	6.9%
Significant expansion to the mainland	Count	17	7	24	26	21	95
	% within Corridor	6.3%	2.4%	4.8%	4.7%	4.6%	4.6%
Urban sprawl, with unplanned and haphazard development	Count	16	25	35	31	29	136
	% within Corridor	5.9%	8.6%	7.1%	5.6%	6.4%	6.6%
Hub for innovation and entrepreneurship	Count	18	15	33	44	31	141
	% within Corridor	6.7%	5.2%	6.7%	8.0%	6.8%	6.8%
Melting pot of different ethnic groups and cultures	Count	19	16	36	57	39	167
	% within Corridor	7.0%	5.5%	7.3%	10.3%	8.6%	8.1%
Total	Count	270	291	495	553	454	2063
	% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

4.2.5 Metropolitan Lagos Growth Process

Table 4.5 illustrates how respondents view the growth of metropolitan Lagos. The most common description across all corridors is that Lagos is an economic, financial, and commercial hub, accounting for 12.6% of responses. This perception is strongest in the Southwest corridor (15.2%) and weakest in the Mainland corridor (11.3%). This indicates that many residents recognise Lagos's role as Nigeria's economic engine, driving investments and business activity. Additionally, 9.3% of respondents overall identified “job opportunities and a higher standard of living” as key aspects, with the Ikeja corridor leading at 10.3%. This supports the common idea that residents link the city’s growth to better employment opportunities and improved living conditions. The phrase “attraction for both local and international migrants” closely follows, accounting for 9.1% of all responses. This indicates a high level of inward migration driven by Lagos’s economic and social prospects. The Mainland and Northwest corridors each recorded 9.7% and 9.5%, respectively, reinforcing this notion.

A surge in population was also a commonly recognised feature, cited by 9.2% of all respondents. Mainland and Ikeja corridors again exhibited higher awareness of this trend, with both corridors reporting around 9.5%. This indicates that population pressure is a visible aspect of daily life for many residents, likely linked to overcrowding and housing strain. Strain on infrastructure was mentioned by 7.9% of respondents. This concern is fairly evenly spread across all corridors, suggesting a shared experience of inadequate roads, power, water, and other essential services. It underscores the pressures caused by unregulated urban expansion. The perception of unplanned development and resource overexploitation accounts for 6.5% of responses. Residents in the Southeast and Northwest corridors were slightly more likely to observe this, at 7.9% and 6.6%, respectively.

Similarly, 6.5% reported that rapid growth worsens social inequalities, especially in the Mainland and Northwest corridors. This indicates that some residents’ link city growth with increasing disparity, possibly due to unequal access to housing, services, or jobs. Other responses include encroachment on agricultural land and wetlands (5.9%), informal settlements and slums (6.9%), and urban sprawl with unplanned and haphazard development (6.6%), all highlighting environmental and spatial management issues. However, descriptions such as “hub for innovation and entrepreneurship” (6.8%) and “melting pot of different ethnic groups and cultures” (8.1%) reflect positive, though less common, recognition of Lagos’s diversity, inclusivity, and creativity.

Therefore, the findings illustrate a complex view of Lagos's growth, characterised by rapid urbanisation, promising economic prospects, and significant social issues. Many residents see the city as an economic hub and a magnet for migrants and job seekers. At the same time, many also recognise negative aspects such as infrastructure pressure, unplanned development, environmental challenges, and social inequality. These results suggest that although growth creates opportunities, it also brings substantial challenges to urban management. A balanced planning approach is essential to ensure that Lagos's rapid expansion remains economically advantageous and socially and environmentally sustainable.

4.2.6 Rating the Metropolitan Growth Process and Its Impact on Growth

Table 4.6 displays an evaluation of the growth process in metropolitan Lagos, focusing on its ratings and their effects on spatial development. The findings reveal that, across all corridors, 18.1% of respondents reported being fully satisfied with the growth process. This rating was highest in the Southwest corridor, where 31.5% expressed complete satisfaction. In contrast, only 9.5% of respondents from the Ikeja corridor reported complete satisfaction, the lowest among all areas. A larger portion, 34.1% overall, indicated they were only satisfied, showing they recognised positive aspects but still believed improvements were needed. This view was prevalent in the Ikeja corridor, with nearly 47.6% of respondents sharing it. Other corridors, such as Southeast (37.3%) and Mainland (28.2%), also showed moderate satisfaction levels. Indifference was present in 21.1% of respondents, with the Southwest corridor noting the highest indifference at 25.9%, followed by the Northwest at 24.6%.

This may indicate a lack of strong personal interest in urban governance issues, where individuals might be unaware of or uninterested in the processes and decisions that shape their urban environment. Such indifference could result in ineffective urban governance due to low participation in public consultations, disinterest in local politics, or a general sense of powerlessness regarding urban planning and development.

Regarding dissatisfaction, 22.8% of respondents expressed dissatisfaction with the metropolitan growth process. This was notably higher in the Mainland corridor, where 32.4% of respondents were unhappy, and in the Northwest corridor, at 26.1%. Additionally, 3.9% of total respondents were completely dissatisfied, with the highest rates in the Northwest (5.8%) and Southeast (5.1%) corridors, indicating a small but significant segment that finds the current growth trajectory entirely unsatisfactory.

Table 4.6 Rating the Metropolitan Growth Process and Its Impact on Growth

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
How do you rate the metropolitan Lagos growth process?	Fully Satisfied	Count	17	11	13	8	12	61
		% within Corridor	31.5%	18.6%	18.3%	9.5%	17.4%	18.1%
	Only Satisfied	Count	15	22	20	40	18	115
		% within Corridor	27.8%	37.3%	28.2%	47.6%	26.1%	34.1%
	Indifferent	Count	14	13	13	14	17	71
		% within Corridor	25.9%	22.0%	18.3%	16.7%	24.6%	21.1%
	Dissatisfied	Count	7	10	23	19	18	77
		% within Corridor	13.0%	16.9%	32.4%	22.6%	26.1%	22.8%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
What is your assessment of how growth impacts the quality of life amid the	Excellent	Count	15	15	8	4	7	49
		% within Corridor	27.8%	25.4%	11.3%	4.8%	10.1%	14.5%
	Very Good	Count	14	14	16	19	14	77
		% within Corridor	25.9%	23.7%	22.5%	22.6%	20.3%	22.8%
	Good	Count	19	17	18	33	24	111
		% within Corridor	35.2%	28.8%	25.4%	39.3%	34.8%	32.9%
	Average	Count	5	6	17	21	19	68
		% within Corridor	9.3%	10.2%	23.9%	25.0%	27.5%	20.2%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

These corridors may be experiencing more evident issues related to urban expansion, such as overcrowding or inadequate infrastructure. These challenges arise from rapid population growth that outpaces the capacity of existing systems, leading to strain on housing, transportation, utilities, and public services, as discussed earlier.

Respondents' views on how growth affects quality of life in metropolitan Lagos show that overall, 14.5% rated the impact as excellent, with the highest approval in the Southwest (27.8%) and Southeast (25.4%) corridors. In contrast, only 4.8% of respondents in the Ikeja corridor believed growth was producing excellent quality-of-life outcomes. The "very good" rating was given by 22.8% of respondents across the city, with a fairly even distribution, ranging from 20.3% in the Northwest to 25.9% in the Southwest. The most common rating, "good," was selected by 32.9%, with Ikeja (39.3%) and the Northwest (34.8%) corridors showing the highest appreciation. This suggests that, although enthusiasm may be moderate, many acknowledge genuine improvements in urban life. Meanwhile, 20.2% rated the impact as average, mainly in the Northwest and Ikeja corridors, where about one in four respondents shared this view. Finally, 9.5% gave poor ratings, with the Mainland corridor having the highest proportion at 16.9%, suggesting some dissatisfaction with urban living conditions there.

Thus, the findings highlight a mixed perception of Lagos's metropolitan growth process. In contrast, a fair proportion of residents are satisfied or optimistic, particularly in corridors like the Southwest and Ikeja, where a significant number express dissatisfaction or apathy, especially in the Mainland and Northwest corridors. In terms of quality of life, most residents perceive the impact of growth as positive but moderate, with "good" and "very good" being the most common responses. However, the combined levels of dissatisfaction and average ratings reveal underlying tensions and expectations for better-managed urban development. These insights suggest that while Lagos is advancing, its growth must become more inclusive, balanced, and people-centred to enhance satisfaction and quality of life across all metropolitan corridors.

4.2.7 The Effects of the Growth Process of Metropolitan Lagos

Table 4.7 shows the effects that the respondents believe are caused by growth in metropolitan Lagos. The most common effect across all corridors was environmental issues, cited by 16.3% of respondents. This concern was consistently high, especially in Ikeja and the Northwest corridors. The focus on ecological problems highlights visible issues such as pollution, flooding, deforestation, and loss of green spaces. Health concerns were reported by 10.3% of respondents overall, likely due to overcrowding, poor sanitation, and strained healthcare in rapidly developing areas. These health impacts were most noticeable in Ikeja and the Northwest corridors. Housing issues accounted for 12.2% of responses, with respondents in the Mainland

and Ikeja corridors highlighting rising rents, housing shortages, and the growth of informal settlements or slums as significant challenges.

Furthermore, 12.2% of respondents expressed security concerns, especially in the Mainland and Northwest corridors. Rapid urban expansion often leads to increased crime and overburdened law enforcement, as the growing population, combined with inadequate infrastructure and social services, creates conditions conducive to crime and strains police resources. Regarding population growth, 12.6% of respondents cited it as a major impact, particularly in Ikeja and Mainland, where urbanisation has significantly increased density and migration. Respondents also highlighted effects on the workforce (9.3%) and productivity (10.5%), pointing to both opportunities and challenges in employment. Although new economic zones could enhance labour engagement, infrastructure problems and congestion may lower overall productivity.

7.8% of respondents highlighted poverty as a concern, with the Mainland corridor showing the highest level of worry. While economic growth may lead to increased disparities by displacing lower-income populations or excluding them from services and housing, land issues were cited by 8.9%, particularly in the Northwest and Ikeja corridors. These issues highlight conflicts over land ownership, the loss of community lands, and contested development rights as urban land becomes more valuable. Such conflicts lead to competing claims, unclear boundaries, and unequal access to resources, which can escalate disputes into violence as individuals and communities fight for control and development rights.

Therefore, environmental degradation, housing challenges, a rising population, and concerns about health, security, and land access are the main consequences of metropolitan growth in Lagos. While expansion offers opportunities, residents across different corridors face multifaceted social and spatial pressures. These insights emphasise the urgent need for integrated urban planning, environmental safeguards, and inclusive policies to manage the impacts of ongoing city growth. These measures aim to provide equal opportunities for inhabitants, regardless of their location, and to address territorial disparities while supporting economic efficiency alongside social and environmental considerations.

Table 4.7 The Effects of the Growth Process of Metropolitan Lagos

		Metropolitan Corridor					Total
		Southwest	Southeast	Mainland	Ikeja	Northwest	
Environment	Count	37	39	53	59	56	244
	% within Corridor	18.0%	17.1%	15.5%	15.3%	16.6%	16.3%
Health	Count	23	27	31	39	34	154
	% within Corridor	11.2%	11.8%	9.1%	10.1%	10.1%	10.3%
Workforce	Count	22	19	29	38	31	139
	% within Corridor	10.7%	8.3%	8.5%	9.9%	9.2%	9.3%
Productivity	Count	27	27	32	37	34	157
	% within Corridor	13.2%	11.8%	9.4%	9.6%	10.1%	10.5%
Poverty	Count	18	20	31	21	27	117
	% within Corridor	8.8%	8.8%	9.1%	5.5%	8.0%	7.8%
Security	Count	21	28	43	48	42	182
	% within Corridor	10.2%	12.3%	12.6%	12.5%	12.5%	12.2%
Land	Count	15	25	29	31	33	133
	% within Corridor	7.3%	11.0%	8.5%	8.1%	9.8%	8.9%
Housing	Count	22	24	46	49	41	182
	% within Corridor	10.7%	10.5%	13.5%	12.7%	12.2%	12.2%
Population	Count	20	19	47	63	39	188
	% within Corridor	9.8%	8.3%	13.8%	16.4%	11.6%	12.6%
Total	Count	205	228	341	385	337	1496
	% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

4.2.8 Significance of the Considered Effects of the Growth Process

Table 4.8 evaluates how residents perceive the importance of the effects of metropolitan Lagos's growth, focusing on key factors such as the environment, health, workforce, housing, and security across all five corridors. The findings reveal that a majority of respondents in all corridors consider the environmental impacts of city expansion to be significant. For instance, in Ikeja and the Mainland corridors, over 94% of residents reported ecological degradation resulting from urban growth. Even in corridors like the Southwest and Northwest, where responses were somewhat less intense, over 83% still regarded environmental impact as a critical issue. This reflects common concerns about pollution, loss of green spaces, drainage problems, and insufficient waste management in the rapidly urbanising Lagos.

Regarding health, the pattern stays consistent. Most corridors saw between 85% and 97% of respondents viewing the health effects of urban growth as significant. For instance, the Ikeja

corridor had almost universal concern. Conversely, the Northwest corridor had a lower, yet still high, percentage, with about 75% agreeing on its importance. These health issues may stem from overcrowding, limited access to medical care, and environmental exposure.

Almost all respondents from the Mainland and Ikeja corridors agreed that urban growth has significantly impacted the workforce. The Southeast and Northwest corridors also showed high agreement, suggesting that urban expansion has strained labour conditions and transformed employment patterns. This likely reflects rising unemployment or underemployment in densely populated urban areas, as well as increased competition for jobs, particularly in informal sectors, which can exacerbate existing inequalities. Additionally, there appears to be a preference for service-sector and skilled roles over traditional industries.

Similarly, the effect on productivity was widely recognised, although not as strongly as on the workforce or the environment. Still, more than four in five respondents across all corridors rated this impact as significant, indicating concern that congestion, stress, and inadequate infrastructure might be reducing efficiency and output. A substantial majority also highlighted issues in the housing sector. For example, in the Mainland and Ikeja corridors, over 90% of respondents considered housing challenges such as rising rent, shortages, and slum proliferation to be a significant consequence of city growth. Even in the Southwest and Southeast corridors, around 80% or more shared this concern.

Regarding security, a similar trend is clear. Most residents believe that growth has significantly impacted safety and policing. This was especially evident in Ikeja and the Mainland, which have higher population densities and more reported incidents of insecurity. Furthermore, effects related to population growth were considered significant by over 85% of respondents across the city, especially in Ikeja and the Southeast corridors.

Land issues, such as displacement, acquisition disputes, and increases in land value, also emerged as major concerns in most areas, with the Mainland and Northwest corridors being the most affected. At the same time, Poverty, although not the most dominant response, was still considered a significant effect by at least 70% of respondents in all corridors, reflecting widespread acknowledgement of inequality and financial exclusion in the face of expanding urban wealth.

Table 4.8 Significance of the Considered Effects of the Growth Process

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Environment	Significant	Count	31	37	50	57	48	223
		% within Corridor	83.8%	94.9%	94.3 %	96.6%	85.7%	91.4%
	Insignificant	Count	6	2	3	2	8	21
		% within Corridor	16.2%	5.1%	5.7%	3.4%	14.3%	8.6%
Total		Count	37	39	53	59	56	244
		% within Corridor	100.0 %	100.0 %	100.0 %	100.0 %	100.0%	100.0%
Health	Significant	Count	21	23	30	38	26	138
		% within Corridor	91.3%	85.2%	96.8 %	97.4%	76.5%	89.6%
	Insignificant	Count	2	4	1	1	8	16
		% within Corridor	8.7%	14.8%	3.2%	2.6%	23.5%	10.4%
Total		Count	23	27	31	39	34	154
		% within Corridor	100.0 %	100.0 %	100.0 %	100.0 %	100.0%	100.0%
Workforce	Significant	Count	20	16	29	38	29	132
		% within Corridor	90.9%	84.2%	100.0 %	100.0 %	93.5%	95.0%
	Insignificant	Count	2	3	0	0	2	7
		% within Corridor	9.1%	15.8%	0.0%	0.0%	6.5%	5.0%
Total		Count	22	19	29	38	31	139
		% within Corridor	100.0 %	100.0 %	100.0 %	100.0 %	100.0%	100.0%
Productivity	Significant	Count	24	21	30	36	29	140
		% within Corridor	88.9%	77.8%	93.8 %	97.3%	85.3%	89.2%
	Insignificant	Count	3	6	2	1	5	17
		% within Corridor	11.1%	22.2%	6.3%	2.7%	14.7%	10.8%
Total		Count	27	27	32	37	34	157
		% within Corridor	100.0 %	100.0 %	100.0 %	100.0 %	100.0%	100.0%
Poverty	Significant	Count	14	15	30	19	26	104
		% within Corridor	77.8%	75.0%	96.8 %	90.5%	96.3%	88.9%
	Insignificant	Count	4	5	1	2	1	13
		% within Corridor	22.2%	25.0%	3.2%	9.5%	3.7%	11.1%
Total		Count	18	20	31	21	27	117
		% within Corridor	100.0 %	100.0 %	100.0 %	100.0 %	100.0%	100.0%
Security	Significant	Count	18	28	40	46	40	172
		% within Corridor	85.7%	100.0 %	93.0 %	95.8%	95.2%	94.5%
	Insignificant	Count	3	0	3	2	2	10
		% within Corridor	14.3%	0.0%	7.0%	4.2%	4.8%	5.5%
Total		Count	21	28	43	48	42	182
		% within Corridor	100.0	100.0	100.0	100.0	100.0%	100.0%

			%	%	%	%		
Land	Significant	Count	13	23	27	31	28	122
		% within Corridor	86.7%	92.0%	93.1%	100.0%	84.8%	91.7%
	Insignificant	Count	2	2	2	0	5	11
		% within Corridor	13.3%	8.0%	6.9%	0.0%	15.2%	8.3%
Total		Count	15	25	29	31	33	133
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Housing	Significant	Count	21	19	40	43	37	160
		% within Corridor	95.5%	79.2%	87.0%	87.8%	90.2%	87.9%
	Insignificant	Count	1	5	6	6	4	22
		% within Corridor	4.5%	20.8%	13.0%	12.2%	9.8%	12.1%
Total		Count	22	24	46	49	41	182
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Population	Significant	Count	18	18	45	61	32	174
		% within Corridor	90.0%	94.7%	95.7%	96.8%	82.1%	92.6%
	Insignificant	Count	2	1	2	2	7	14
		% within Corridor	10.0%	5.3%	4.3%	3.2%	17.9%	7.4%
Total		Count	20	19	47	63	39	188
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

The findings reinforce a widespread agreement among Lagos residents that the effects of urban growth are both real and highly impactful across multiple sectors. Key concerns include environmental damage, housing challenges, and increased pressure on health systems, workforce dynamics, and security. These perceptions emphasise the need for Lagos's policymakers to develop inclusive, balanced, and well-regulated urban planning strategies that address immediate issues like sprawl and infrastructure deficits, as well as systemic problems such as social inequality and environmental decline.

4.2.9 Satisfaction with the Metropolitan Lagos Growth Setting

Table 4.9 above examines the factors influencing residents' satisfaction with Lagos's metropolitan growth across five corridors. The findings show that conditions such as climate, accessibility, and basic service provision accounted for 14.6% of the total reasons respondents gave for their satisfaction. This was most prominent in the Southwest and Northwest corridors. The physical and environmental condition of urban areas significantly influences people's perceptions of the growth setting. Public facilities, including hospitals, schools, roads, and other amenities, were mentioned by 17.2% of respondents. Ikeja corridor recorded the highest

percentage, indicating a stronger availability or visibility of infrastructure and services in that corridor. These facilities are vital for enhancing the livability of expanding urban spaces.

The spatial pattern of growth was noted by 12.2% of respondents, with the Northwest and Southeast corridors expressing the highest levels of satisfaction on this basis. Respondents appreciated the distribution and relationships of planned layouts and road connectivity in certain areas, pointing to the value of organised development. These organisations reveal whether they are clustered, dispersed, linear, or follow other patterns. The locational setting was a significant factor for 18% of respondents. Mainland, Ikeja, and Northwest corridors had the strongest recognition of this factor. People tend to associate their satisfaction with the locational setting's characteristics and how well-positioned their neighbourhoods are to work, commercial areas, and transport hubs, such as their proximity to resources, infrastructure, or markets.

Table 4.9 Satisfaction with the Metropolitan Lagos Growth Setting

		Metropolitan Corridor					Total
		Southwest	Southeast	Mainland	Ikeja	Northwest	
Conditions	Count	30	24	23	36	30	143
	% within Corridor	18.1%	15.7%	11.6%	14.7%	14.0%	14.6%
Spatial Pattern	Count	19	22	21	26	31	119
	% within Corridor	11.4%	14.4%	10.6%	10.6%	14.4%	12.2%
Locational settings	Count	20	29	43	42	42	176
	% within Corridor	12.0%	19.0%	21.7%	17.1%	19.5%	18.0%
Public facilities	Count	26	20	38	49	35	168
	% within Corridor	15.7%	13.1%	19.2%	20.0%	16.3%	17.2%
Shopping	Count	27	18	29	32	28	134
	% within Corridor	16.3%	11.8%	14.6%	13.1%	13.0%	13.7%
Recreation	Count	27	27	26	37	25	142
	% within Corridor	16.3%	17.6%	13.1%	15.1%	11.6%	14.5%
Housing type	Count	17	13	18	23	24	95
	% within Corridor	10.2%	8.5%	9.1%	9.4%	11.2%	9.7%
Total	Count	166	153	198	245	215	977
	% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Furthermore, 13.7% of residents identified shopping facilities as a key factor in their satisfaction, underscoring the significance of retail access and commercial convenience in daily urban life, particularly along the Ikeja and Mainland corridors. Recreational options such as parks, social clubs, and leisure spaces were valued by 14.5% of respondents, with the Southwest and Southeast corridors showing particularly strong appreciation, highlighting a link

between quality of life and access to relaxation areas. Housing quality, layout, and comfort were concerns for 9.7% of respondents, with the Northwest corridor expressing the highest level of concern, indicating growing dissatisfaction with housing design and living standards in some areas.

Thus, the results show that a combination of infrastructure quality, urban layout, location advantages, access to social amenities, and physical living conditions influences satisfaction with Lagos's metropolitan growth environment. Public facilities and locational settings emerged as the main contributors to satisfaction, followed closely by accessibility to recreational and shopping areas. Although the factors vary slightly across corridors, they collectively emphasise that effective urban development in Lagos must address both functional needs and the quality of life for its diverse residents.

4.2.10 Dissatisfaction with the Growth of Metropolitan Lagos

Table 4.10 illustrates residents' dissatisfaction with the ongoing growth of metropolitan Lagos, based on responses from the five corridors. The study shows that the most cited reason for dissatisfaction was traffic congestion, reported by 20% of respondents across the city. This issue was pervasive in Ikeja, where 21.4% of residents mentioned it, followed closely by Mainland (20.1%) and Southwest (20.3%). These figures demonstrate that traffic delays and crowded roads are significant concerns for residents throughout Lagos, hindering movement and daily activities.

Additionally, 13.3% of respondents identified traffic management as a concern. The Southeast corridor experienced the highest dissatisfaction at 15.4%, followed by Ikeja and Northwest corridors at 13.9% and 13.4%, respectively. These findings suggest that, beyond congestion, issues such as ineffective control, poor signage, and enforcement are also seen as contributing factors. Noise pollution was reported by 14.5% of respondents, with similar concerns across the five corridors. Ikeja and Mainland had the highest reports at 15.7% and 15.0%, respectively. Likewise, 13.2% of respondents noted a decline in air quality, with the Southeast corridor showing the most concern at 14%. These environmental issues are likely driven by factors such as rising urban density, unregulated commercial activities, and traffic congestion typical of large cities like Lagos.

Concerns about poor urban setting and design, referred to as “poor setting out,” were raised by 9.6% of respondents. The Mainland corridor had the highest percentage, at 11%, showing dissatisfaction with disorganised layouts or planning flaws in building placements, road networks, and public spaces. Poor alignment was also noted by 8.9%, mainly in the Mainland and Ikeja corridors. This may indicate issues with structural planning, mismatched development patterns, or inconsistent zoning. Blight, or urban decay, was reported by 8.2% of respondents overall. The Northwest and Mainland corridors stood out with 9.7% each, indicating visible signs of neglect, such as derelict buildings, unclean public areas, or deteriorating infrastructure in those areas.

Table 4.10 Reasons for Dissatisfaction with the Growth of Metropolitan Lagos

		Metropolitan Corridor					Total
		Southwest	Southeast	Mainland	Ikeja	Northwest	
Traffic Congestion	Count	43	40	64	72	55	274
	% within Corridor	20.3%	18.7%	20.1%	21.4%	19.0%	20.0%
Poor setting out	Count	20	21	35	29	27	132
	% within Corridor	9.4%	9.8%	11.0%	8.6%	9.3%	9.6%
Blight	Count	16	18	31	20	28	113
	% within Corridor	7.5%	8.4%	9.7%	5.9%	9.7%	8.2%
Noise	Count	29	27	48	53	42	199
	% within Corridor	13.7%	12.6%	15.0%	15.7%	14.5%	14.5%
Air quality	Count	25	30	46	43	37	181
	% within Corridor	11.8%	14.0%	14.4%	12.8%	12.8%	13.2%
Traffic management	Count	32	33	32	47	39	183
	% within Corridor	15.1%	15.4%	10.0%	13.9%	13.4%	13.3%
Poor alignment	Count	22	19	26	29	26	122
	% within Corridor	10.4%	8.9%	8.2%	8.6%	9.0%	8.9%
Decay	Count	17	21	27	31	28	124
	% within Corridor	8.0%	9.8%	8.5%	9.2%	9.7%	9.0%
Others	Count	8	5	10	13	8	44
	% within Corridor	3.8%	2.3%	3.1%	3.9%	2.8%	3.2%
Total	Count	212	214	319	337	290	1372
	% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Thus, the findings show that traffic congestion, poor environmental quality, and inadequate urban planning are the leading causes of dissatisfaction with metropolitan Lagos’s development. Residents across all corridors consistently cited traffic problems, both congestion and poor management, as major obstacles. Environmental degradation in the form of noise and

air pollution also significantly affects people's experiences. Additionally, concerns about the city's physical layout, such as poor alignment, planning issues, and urban decay, highlight structural weaknesses in the current growth pattern. These results emphasise the need for strategic transport planning, environmental regulation, and coordinated urban design as crucial components for enhancing public satisfaction with the city's growth trajectory.

4.2.11 Factors that Affect the Growth of Lagos Metropolis

Table 4.11 assesses residents' perceptions of how various key infrastructure and socioeconomic factors influence Lagos's growth across five corridors. The study reveals that just over half of the respondents (51%) believe their area's electricity supply has improved. The Ikeja corridor reports the highest improvement (56%), while the Northwest corridor reports the lowest (46.4%). Conversely, about 39% think electricity has worsened, mainly in the Northwest and Mainland corridors. The remaining 10% see no noticeable effect on Lagos's growth. Perceptions of the water supply are even more critical; nearly half (49.6%) believe it has deteriorated, especially in the Southeast and Northwest corridors. Only about 33% believe the water supply has improved, with the Southwest corridor being most optimistic. Around 18% perceive no effect, a significantly higher neutral rate than for electricity.

Security was viewed positively in the dataset. Over half of the respondents (54%) indicated that security had improved, especially in Ikeja and the Mainland corridors. Conversely, 36% felt it had worsened, and only 10% saw no change. This suggests that despite ongoing challenges, there is a mostly optimistic outlook on how security improvements are supporting urban development. Regarding drainage infrastructure, opinions are more divided. About 42% believed the drainage had improved, while over 51% thought it had deteriorated, particularly in the Mainland, Ikeja, and Southeast corridors. Only 6.5% of respondents considered drainage to be unimportant or unchanged, highlighting its visibility and importance as a key issue.

More than 55% of respondents reported declining rent prices, indicating a persistent downward trend, especially in Ikeja and the Mainland corridors. In contrast, only 39.5% believed rents had improved, and just 5.3% saw no change. On land values, the outlook was more optimistic, with nearly 55% indicating an increase, mainly in the Mainland and Ikeja corridors. About 39.2% felt land values had decreased, while 5.9% reported stability. Perceptions of crime trends were mixed: slightly over 41% said security had improved, notably in Ikeja and Southwest corridors, but 48.1% observed rising crime rates, particularly in the Mainland and Southeast

corridors. Only 10.4% reported no significant change.

Table 4.11 Factors that Affect the Growth of Lagos Metropolis

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Electricity effect on the growth of Lagos metropolis	Improved	Count	27	29	37	47	32	172
		% within Corridor	50.0%	49.2%	52.1%	56.0%	46.4%	51.0%
	Worsened	Count	22	23	28	28	30	131
		% within Corridor	40.7%	39.0%	39.4%	33.3%	43.5%	38.9%
	No Effect	Count	5	7	6	9	7	34
		% within Corridor	9.3%	11.9%	8.5%	10.7%	10.1%	10.1%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Water supply effect on the growth of Lagos metropolis	Improved	Count	24	18	26	24	18	110
		% within Corridor	44.4%	30.5%	36.6%	28.6%	26.1%	32.6%
	Worsened	Count	25	34	30	40	38	167
		% within Corridor	46.3%	57.6%	42.3%	47.6%	55.1%	49.6%
	No Effect	Count	5	7	15	20	13	60
		% within Corridor	9.3%	11.9%	21.1%	23.8%	18.8%	17.8%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Security effect on the growth of Lagos metropolis	Improved	Count	28	30	38	52	34	182
		% within Corridor	51.9%	50.8%	53.5%	61.9%	49.3%	54.0%
	Worsened	Count	24	22	25	23	27	121
		% within Corridor	44.4%	37.3%	35.2%	27.4%	39.1%	35.9%
	No Effect	Count	2	7	8	9	8	34
		% within Corridor	3.7%	11.9%	11.3%	10.7%	11.6%	10.1%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of travel effect on the growth of Lagos metropolis	Improved	Count	29	20	23	25	23	120
		% within Corridor	53.7%	33.9%	32.4%	29.8%	33.3%	35.6%
	Worsened	Count	19	34	41	53	39	186
		% within Corridor	35.2%	57.6%	57.7%	63.1%	56.5%	55.2%
	No Effect	Count	6	5	7	6	7	31
		% within Corridor	11.1%	8.5%	9.9%	7.1%	10.1%	9.2%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Traffic flow effect on th growth of Lagos metropolis	Improved	Count	32	26	35	40	26	159
		% within Corridor	59.3%	44.1%	49.3%	47.6%	37.7%	47.2%
	Worsened	Count	15	26	34	36	34	145
		% within Corridor	27.8%	44.1%	47.9%	42.9%	49.3%	43.0%
	No Effect	Count	7	7	2	8	9	33
		% within Corridor	13.0%	11.9%	2.8%	9.5%	13.0%	9.8%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Land value effect on	Improved	Count	32	27	43	47	36	185
		% within Corridor	59.3%	45.8%	60.6%	56.0%	52.2%	54.9%
	Worsened	Count	16	31	25	33	27	132

the growth of Lagos metropolis		% within Corridor	29.6%	52.5%	35.2%	39.3%	39.1%	39.2%
	No Effect	Count	6	1	3	4	6	20
		% within Corridor	11.1%	1.7%	4.2%	4.8%	8.7%	5.9%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Rent value effect on the growth of Lagos metropolis	Improved	Count	24	24	26	31	28	133
		% within Corridor	44.4%	40.7%	36.6%	36.9%	40.6%	39.5%
	Worsened	Count	24	33	42	53	34	186
		% within Corridor	44.4%	55.9%	59.2%	63.1%	49.3%	55.2%
	No Effect	Count	6	2	3	0	7	18
		% within Corridor	11.1%	3.4%	4.2%	0.0%	10.1%	5.3%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Crime effect on the growth of Lagos metropolis	Improved	Count	29	20	23	40	28	140
		% within Corridor	53.7%	33.9%	32.4%	47.6%	40.6%	41.5%
	Worsened	Count	20	32	40	36	34	162
		% within Corridor	37.0%	54.2%	56.3%	42.9%	49.3%	48.1%
	No Effect	Count	5	7	8	8	7	35
		% within Corridor	9.3%	11.9%	11.3%	9.5%	10.1%	10.4%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Drainage effect on the growth of Lagos metropolis	Improved	Count	32	20	28	34	26	140
		% within Corridor	59.3%	33.9%	39.4%	40.5%	37.7%	41.5%
	Worsened	Count	19	34	39	48	35	175
		% within Corridor	35.2%	57.6%	54.9%	57.1%	50.7%	51.9%
	No Effect	Count	3	5	4	2	8	22
		% within Corridor	5.6%	8.5%	5.6%	2.4%	11.6%	6.5%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Meanwhile, travel costs were reported to have worsened by over half of the respondents (55.2%), especially in Ikeja and Mainland corridors. Only 35.6% reported an improvement, while just 9.2% observed no change. Regarding traffic flow, 47.2% believed there had been an improvement, particularly in Southwest and Mainland corridors. However, 43% still said it had worsened, and a small proportion (9.8%) noticed no significant effect.

Other indices include economic measures, such as investment and job creation; the human development index, particularly life expectancy, education, and income levels; infrastructural development, including roads and canals; an integrated transportation system; and physical planning. Additionally, there is the presence of Agberos (Area boys/touts) and pollution.

Thus, the findings reveal that infrastructure and services have a significant influence on residents' perception of urban growth in Lagos. The quality of infrastructure and essential

services, such as electricity, drainage, water, and security, as well as the cost of living (including rent), significantly impact residents' perception of the growth process. The inadequacy or poor management led to dissatisfaction and a negative view of the city's development, even amidst economic growth.

While improvements are observed in areas such as electricity and security, challenges remain, especially in water supply, rent escalation, drainage issues, and transportation costs. These indicators offer clear insights into both the progress and ongoing difficulties of Lagos's metropolitan growth, highlighting the importance of balanced infrastructural investment and responsive urban governance.

4.2.12 Social Opportunities in Metropolitan Lagos

Table 4.12 illustrates social opportunities within Lagos's expanding metropolitan region. These opportunities encompass the chances for individuals to improve their lives through access to services, resources, and meaningful social interactions. They form the core of a thriving community, equipping people with the tools to grow, connect, and contribute, reflecting how cities provide these advantages. The study reveals perceptions of the availability and adequacy of social opportunities across Lagos's five corridors. It shows that 44.8% of respondents believe these opportunities are sufficient, with the highest confidence in the Ikeja corridor (52.4%) and the Mainland corridor (45.1%). Additionally, 23.4% of respondents across all corridors found social opportunities very adequate, with similar figures in the Southwest, Southeast, and Mainland corridors (each around 28%).

However, a substantial group of residents (17.5%) reported being indifferent, which may suggest either disengagement from civic life or inconsistent experiences with social infrastructure. The Southeast and Northwest corridors recorded the highest levels of indifference, both above 24%. Dissatisfaction with social opportunities was also noted: 5.9% rated them as very inadequate, and another 8.3% considered them inadequate, resulting in a total of over 14% explicit dissatisfaction. Ikeja recorded the highest rate of dissatisfaction (15.5% labelled it as inadequate and 7.1% as very inadequate), indicating uneven distribution or accessibility of social amenities in that corridor.

This indicates that while general satisfaction is common, deep satisfaction is less frequent. Conversely, 20.5% of respondents were indifferent to social opportunities, aligning with their

earlier views on the adequacy of these opportunities. Regarding dissatisfaction, 12.5% of respondents expressed dissatisfaction, and 2.4% were very dissatisfied, with the Ikeja and Northwest corridors recording the highest levels of dissatisfaction.

Table 4.12 Social Opportunities in Metropolitan Lagos

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Respondents' view on the social opportunities in metropolitan	Very Adequate	Count	15	17	20	11	16	79
		% within Corridor	27.8%	28.8%	28.2%	13.1%	23.2%	23.4%
	Adequate	Count	26	21	32	44	28	151
		% within Corridor	48.1%	35.6%	45.1%	52.4%	40.6%	44.8%
	Indifferent	Count	7	15	10	10	17	59
		% within Corridor	13.0%	25.4%	14.1%	11.9%	24.6%	17.5%
	Very Inadequate	Count	3	2	5	6	4	20
		% within Corridor	5.6%	3.4%	7.0%	7.1%	5.8%	5.9%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Respondents' satisfaction with the available social opportunities	Very Satisfied	Count	14	14	13	6	11	58
		% within Corridor	25.9%	23.7%	18.3%	7.1%	15.9%	17.2%
	Satisfied	Count	25	22	32	51	30	160
		% within Corridor	46.3%	37.3%	45.1%	60.7%	43.5%	47.5%
	Indifferent	Count	9	14	17	13	16	69
		% within Corridor	16.7%	23.7%	23.9%	15.5%	23.2%	20.5%
	Dissatisfied	Count	5	6	7	14	10	42
		% within Corridor	9.3%	10.2%	9.9%	16.7%	14.5%	12.5%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Thus, the findings indicate that while a majority of Lagos residents perceive social opportunities as adequate and are generally satisfied, significant gaps remain in perception and access. The Ikeja and the Mainland corridors demonstrate the highest satisfaction and adequacy levels, likely reflecting the presence of administrative centres and service infrastructure. However, notable indifference and dissatisfaction, especially in the Northwest and Southeast,

indicate that not all populations experience social development equally. These figures suggest a need for more inclusive and equitable planning to ensure that all residents benefit from the social and civic opportunities that accompany metropolitan growth.

4.2.13 Environmental Quality Perception

Table 4.13 presents how respondents perceived air quality and the frequency of occurrence. The study reveals that most respondents (55.2%) across the five metropolitan corridors (Southwest, Southeast, Mainland, Ikeja, and Northwest) believe the air quality is harmful. This concern was strongest in the Mainland corridor, where 63.4% of respondents described the air quality as harmful, followed by Ikeja and Northwest at 59.5% and 58.0% respectively. Conversely, 30.6% of all respondents thought the air quality was acceptable. This positive perception was more common in the Southwest and Southeast corridors, where over 40% of respondents rated the air as acceptable. However, these optimistic views were less common in more urbanised corridors, such as the Mainland and Ikeja. A smaller portion of the population (14.2%) indicated they were unsure how to assess air quality, with this uncertainty most noticeable in the Northwest and Ikeja corridors.

Regarding the frequency of poor air quality, 35% of respondents reported that it occurs often, and 30.9% stated that it happens constantly. These frequent reports were widespread in the Mainland, Ikeja, and Northwest corridors, where nearly 40% of residents experienced persistent poor air quality. Only 11% noticed poor air mostly in the morning, 8.3% in the afternoon, and just 1.8% at night. Interestingly, 13.1% hardly noticed poor air quality at all, mainly in the Ikeja and Southwest corridors.

In addition to the severity of perceived pollution, 60.2% of respondents rated the air quality as light, while 22% considered it heavy. The heaviest air pollution perception was found in the Mainland corridor, where 28.2% of respondents described the air as heavy, followed by the Northwest and Ikeja corridors. Another 17.8% characterised the air as pungent, meaning it had a sharp or unpleasant smell. This was reported most frequently in the Southeast and Ikeja corridors, both above 20%.

Thus, the majority of Lagos residents perceive air quality as harmful, especially in densely populated and commercial corridors such as the Mainland and Ikeja corridors. Many people frequently or constantly experience air pollution, and a considerable number also perceive it as

heavy or pungent, which raises concerns about their respiratory health and overall well-being. These results underscore the need for enhanced urban air management, encompassing emission control, green space development, and stricter regulation of transport and industrial pollutants in metropolitan Lagos.

Table 4.13 How Respondents Perceived Air Quality and the Frequency of Occurrence

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
How do you perceive the air	Fine	Count	23	24	19	20	17	103
		% within Corridor	42.6%	40.7%	26.8%	23.8%	24.6%	30.6%
	Harmful	Count	23	28	45	50	40	186
		% within Corridor	42.6%	47.5%	63.4%	59.5%	58.0%	55.2%
	Don't know	Count	8	7	7	14	12	48
		% within Corridor	14.8%	11.9%	9.9%	16.7%	17.4%	14.2%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Frequency of occurrence	Often	Count	12	19	30	32	25	118
		% within Corridor	22.2%	32.2%	42.3%	38.1%	36.2%	35.0%
	All time	Count	20	20	21	23	20	104
		% within Corridor	37.0%	33.9%	29.6%	27.4%	29.0%	30.9%
	Morning	Count	10	7	6	4	10	37
		% within Corridor	18.5%	11.9%	8.5%	4.8%	14.5%	11.0%
	Afternoon	Count	6	5	4	6	7	28
		% within Corridor	11.1%	8.5%	5.6%	7.1%	10.1%	8.3%
	Night	Count	0	1	0	3	2	6
		% within Corridor	0.0%	1.7%	0.0%	3.6%	2.9%	1.8%
Hardly notice	Count	6	7	10	16	5	44	
	% within Corridor	11.1%	11.9%	14.1%	19.0%	7.2%	13.1%	
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Severity of air quality	Pungent	Count	6	12	12	17	13	60
		% within Corridor	11.1%	20.3%	16.9%	20.2%	18.8%	17.8%
	Light	Count	39	36	39	49	40	203
		% within Corridor	72.2%	61.0%	54.9%	58.3%	58.0%	60.2%
	Heavy	Count	9	11	20	18	16	74
		% within Corridor	16.7%	18.6%	28.2%	21.4%	23.2%	22.0%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

4.2.14 Source of Noise

Table 4.14 shows the sources of noise and their intensity as experienced by residents of Lagos. The study reveals that vehicular noise was identified as the most significant source, accounting for 31.1% of total noise-related responses. It was highest in the Southeast corridor with 35.3%, followed closely by the Mainland corridor (31.4%) and Ikeja corridor (30.8%). This indicates that traffic and transportation activities, including the sounds of car horns, engines, and commercial buses, are the primary contributors to urban noise in Lagos. Religious institutions were the second primary source, making up 22.8% of reported noise sources. The effect was most notable in the Mainland and Ikeja corridors, each showing a 26.3% increase. This emphasises the frequent and often loud religious gatherings or the use of sound systems in places of worship as contributors to the city's noise environment. Industrial noise was the third most common source, accounting for 18.4% of responses.

Table 4.14 Source of Noise (Decibels)

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Source type of noise	Vehicular	Count	40	47	61	69	54	271
		% within Corridor	29.9%	35.3%	31.4%	30.8%	29.2%	31.1%
	Industrial	Count	29	25	31	43	32	160
		% within Corridor	21.6%	18.8%	16.0%	19.2%	17.3%	18.4%
	Machinery	Count	24	22	26	30	31	133
		% within Corridor	17.9%	16.5%	13.4%	13.4%	16.8%	15.3%
	Record stores	Count	17	15	25	23	28	108
		% within Corridor	12.7%	11.3%	12.9%	10.3%	15.1%	12.4%
	Religious institutions	Count	24	24	51	59	40	198
		% within Corridor	17.9%	18.0%	26.3%	26.3%	21.6%	22.8%
Total		Count	134	133	194	224	185	870
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
The volume of noise	Very High	Count	10	16	18	21	17	82
		% within Corridor	18.5%	27.1%	25.4%	25.0%	24.6%	24.3%
	High	Count	35	35	41	52	45	208
		% within Corridor	64.8%	59.3%	57.7%	61.9%	65.2%	61.7%
	Light	Count	9	7	11	11	6	44
		% within Corridor	16.7%	11.9%	15.5%	13.1%	8.7%	13.1%
	Low	Count	0	1	1	0	1	3
		% within	0.0%	1.7%	1.4%	0.0%	1.4%	0.9%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

The Ikeja corridor, a well-known industrial hub, recorded a slightly above-average response rate of 19.2%, reinforcing the idea that factory operations and industrial machinery are familiar sources of high-volume noise, especially in commercial zones. Machinery, as a separate category, contributed 15.3% of the overall noise environment. These include noise from construction equipment, power generators, and similar devices used in both residential and commercial activities. The Northwest corridor reported this source more frequently than others, at 16.8%. Record stores and entertainment outlets accounted for 12.4% of all noise complaints. The Northwest again ranked highest with 15.1%, indicating a strong presence of music shops, street vendors with loudspeakers, or open-air events in that area.

Respondents rated the volume or intensity of noise as high, at 61.7%. This was particularly true in the Northwest (65.2%) and the Southwest (64.8%), indicating that most areas experience loud background noise regularly. Very high noise levels were reported by 24.3% of respondents across the city, with the Southeast corridor leading at 27.1%. This suggests the presence of intense, potentially overwhelming noise environments in specific high-density areas. A smaller proportion, 13.1%, described the noise as light, with slightly higher figures reported in the Mainland corridor. Only 0.9% of all respondents perceived the noise levels as low, confirming that for most residents, noise is not only present but also intrusive and frequently disruptive.

In brief, the study reveals that vehicular traffic, religious activities, and industrial operations are the primary sources of noise pollution in metropolitan Lagos. Most residents rate the volume of these noises as either high or very high, underscoring a persistent environmental challenge that affects urban comfort and liveability. The data emphasises the need for stronger noise control policies, urban zoning enforcement, and community-level regulation, particularly around the transportation hubs, places of worship, and commercial areas, to reduce exposure to harmful noise levels and enhance environmental quality.

4.2.15 Environmental Problems

Table 4.15 presents an analysis of environmental issues and challenges associated with growth in Metropolitan Lagos. The study shows that flooding is the most commonly mentioned problem, with 21.2% of respondents across all corridors citing it. It was especially prominent in the Ikeja corridor, where 23.8% of residents identified flooding as a primary concern, followed by the Northwest corridor at 22.3%. This highlights the widespread vulnerability to flooding across the expanding urban area, exacerbated by blocked drainage, inadequate urban

planning, and rapid construction on drainage channels.

The loss of wetlands was the second most frequently reported issue, with 18.9% of respondents choosing it. The Southeast corridor showed the highest concern here, at 22.2%, suggesting that this area may have experienced a more noticeable transformation of ecological zones within the developed land. The land use and land classification analysis (see Table 4.33) confirmed this observation.

Table 4.15 Environmental Issues and Problems Associated with the Growth of Lagos

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Environmental issue is related to the growth of the Lagos Metropolis	Loss of wetlands	Count	36	37	45	47	40	205
		% within Corridor	20.7%	22.2%	18.1%	17.5%	17.9%	18.9%
	Occupation of environmentally sensitive land	Count	29	29	50	43	39	190
		% within Corridor	16.7%	17.4%	20.1%	16.0%	17.4%	17.5%
	Hazard-prone areas	Count	23	20	34	27	26	130
		% within Corridor	13.2%	12.0%	13.7%	10.0%	11.6%	12.0%
	Loss of natural sites	Count	22	22	38	46	36	164
		% within Corridor	12.6%	13.2%	15.3%	17.1%	16.1%	15.1%
	Erosion	Count	24	23	27	37	29	140
		% within Corridor	13.8%	13.8%	10.8%	13.8%	12.9%	12.9%
	Flooding	Count	35	33	48	64	50	230
		% within Corridor	20.1%	19.8%	19.3%	23.8%	22.3%	21.2%
Others	Count	5	3	7	5	4	24	
	% within Corridor	2.9%	1.8%	2.8%	1.9%	1.8%	2.2%	
Total		Count	174	167	249	269	224	1083
		% within Corridor	100.0 %	100.0 %	100.0 %	100.0%	100.0%	100.0%
Environmental problems associated with the expansion of the Lagos Metropolis	Change in land use	Count	39	45	56	61	54	255
		% within Corridor	24.5%	24.6%	23.4%	22.3%	25.0%	23.8%
	Use of natural resources	Count	18	27	26	29	27	127
		% within Corridor	11.3%	14.8%	10.9%	10.6%	12.5%	11.9%
	Waste generation	Count	34	39	53	65	48	239
		% within Corridor	21.4%	21.3%	22.2%	23.7%	22.2%	22.3%
	Parking on the roads	Count	33	31	53	53	41	211
		% within Corridor	20.8%	16.9%	22.2%	19.3%	19.0%	19.7%
	Construction Trucks	Count	16	23	24	25	20	108
		% within Corridor	10.1%	12.6%	10.0%	9.1%	9.3%	10.1%
Construction Activities	Count	19	18	27	41	26	131	
	% within Corridor	11.9%	9.8%	11.3%	15.0%	12.0%	12.2%	
Total		Count	159	183	239	274	216	1071
		% within Corridor	100.0 %	100.0 %	100.0 %	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

The occupation of environmentally sensitive land was closely followed by 17.5% of responses. The Mainland and Northwest corridors showed slightly higher levels of concern, each contributing around 20% of the total. These results reflect the pressure of housing and commercial development encroaching on ecologically sensitive areas. Another primary concern was the loss of natural sites, noted by 15.1% of all respondents. In the Ikeja corridor, this figure reached 17.1%, indicating that even administrative and commercial centres are vulnerable to environmental depletion. Erosion was cited by 12.9% of participants.

While consistently reported across all corridors, the Ikeja corridor again stood out with a higher level of concern, suggesting soil destabilisation and surface degradation linked to construction and poor land-use practices. Hazard-prone areas, such as landslide zones or regions susceptible to industrial hazards, were highlighted by 12% of respondents, particularly in the Mainland and Southwest corridors. Only 2.2% of respondents raised other concerns, showing that the key environmental challenges are well recognised and focused on a few specific issues.

4.2.16 Metropolitan Development and Perception

Table 4.16 examines residents' experiences and observations regarding urban migration patterns, including the influx of people into different parts of Lagos, the frequency of such movements, and the origins of these migrants. The analysis is based on responses from five corridors: Southwest, Southeast, Mainland, Ikeja, and Northwest. The study shows that a large majority of respondents, 92.9%, reported that new people are moving into their area. This trend was most prominent in the Southeast corridor, where 98.3% of respondents noted new arrivals. Even in regions like Ikeja and the Mainland corridors, over 90% confirmed noticeable migration activity.

This consistent pattern shows that all corridors are experiencing significant population pressure, confirming that Lagos's metropolitan expansion is ongoing and dynamic throughout the entire city. Additionally, when respondents were asked how often new people move into their communities, 49.5% of respondents said it happens often, while another 33.2% reported it as occurring very often. These two categories alone make up more than four in every five residents, indicating a steady and noticeable pattern of population growth across the metropolis.

The Ikeja corridor had the highest percentage of respondents reporting frequent migration at 60.3%, with the Mainland corridor next at 44.6%. A smaller share of respondents was

indifferent (9.9%) or reported fewer or no new arrivals (a combined total of 7.3%). This suggests that only a small minority in the community perceived minimal in-migration, highlighting that urban growth in Lagos is extensive and widespread, as the majority of them think otherwise.

The study also examined the origins of the new residents; 38.1% were reported to have moved from within Lagos itself. These intra-urban movers may have been due to factors such as housing, jobs, or lifestyle preferences. Additionally, 36.0% of the newcomers came from outside Lagos, showing the city's regional appeal and economic attractiveness to migrants from other Nigerian towns and cities. Finally, 25.9% moved in from neighbouring states, highlighting Lagos's magnetic pull in the southwest geopolitical zone and its role as a national economic and social hub.

There is, therefore, evidence that Lagos is experiencing sustained, corridor-wide metropolitan expansion, driven primarily by population influx from both within and outside the city. The movement of people into various urban districts is not only frequent but increasingly complex in its sources. This pattern tends to show Lagos's dual identity as both a national destination for opportunity and a city under constant internal transformation. The findings suggest that any planning or development efforts must consider these consistent demographic pressures and provide infrastructure, housing, and services that can accommodate a growing, mobile population.

Across the entire sample, 86.4% of respondents agreed that metropolitan development positively influences the overall growth and transformation of Lagos. The Southwest corridor showed significantly strong agreement, with 90.7% affirming the role of metropolitan development. Similarly, high agreement was noted in the Northwest (89.9%), Southeast (89.8%), and Ikeja (85.7%) corridors. Even in the Mainland corridor, where responses were somewhat more reserved, a substantial 77.5% recognised the developmental impact of metropolitan features. Conversely, only 13.6% of all respondents disagreed that metropolitan presence contributes to the city's growth. The Mainland corridor had the highest proportion of disagreement, with 22.5% of respondents expressing a contrary view. This suggests that residents in this corridor may be more critical of how metropolitan development is carried out or how its benefits are shared.

Table 4.16 Metropolitan Development and Perception

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Are new people moving into your area?	Yes	Count	51	58	65	76	63	313
		% within Corridor	94.4%	98.3%	91.5%	90.5%	91.3%	92.9%
	No	Count	3	1	6	8	6	24
		% within Corridor	5.6%	1.7%	8.5%	9.5%	8.7%	7.1%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
How frequent do people move into your area?	Very often	Count	22	23	21	21	17	104
		% within Corridor	43.1%	39.7%	32.3%	27.6%	27.0%	33.2%
	Often	Count	20	26	29	42	38	155
		% within Corridor	39.2%	44.8%	44.6%	55.3%	60.3%	49.5%
	Indifferent	Count	6	8	8	4	5	31
		% within Corridor	11.8%	13.8%	12.3%	5.3%	7.9%	9.9%
	Not often	Count	3	1	7	8	3	22
		% within Corridor	5.9%	1.7%	10.8%	10.5%	4.8%	7.0%
	Never	Count	0	0	0	1	0	1
		% within Corridor	0.0%	0.0%	0.0%	1.3%	0.0%	0.3%
Total		Count	51	58	65	76	63	313
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
From where people move from?	Within Lagos Metropolis	Count	28	32	45	42	41	188
		% within Corridor	40.0%	36.0%	39.8%	35.0%	40.2%	38.1%
	Outside Lagos Metropolis	Count	28	37	33	46	34	178
		% within Corridor	40.0%	41.6%	29.2%	38.3%	33.3%	36.0%
	Neighbouring States	Count	14	20	35	32	27	128
		% within Corridor	20.0%	22.5%	31.0%	26.7%	26.5%	25.9%
Total		Count	70	89	113	120	102	494
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Presence effects on the growth and development of a metropolis?	Yes	Count	49	53	55	72	62	291
		% within Corridor	90.7%	89.8%	77.5%	85.7%	89.9%	86.4%
	No	Count	5	6	16	12	7	46
		% within Corridor	9.3%	10.2%	22.5%	14.3%	10.1%	13.6%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

This demonstrates that a large majority of Lagos residents consider metropolitan development a key driver of urban growth. The strong consensus across most corridors indicates widespread recognition that features such as infrastructure, economic hubs, urban institutions, and administrative centrality are essential, considering metropolitan development a key driver of urban growth. The strong consensus across most corridors indicates widespread recognition that features such as infrastructure, economic hubs, urban institutions, and administrative centrality are essential in shaping the spatial and functional dynamics of the cities.

4.2.17 Migrant Contributions to the Growth of Metropolitan Lagos

Table 4.17 presents the migrants' contributions to the growth of metropolitan Lagos. The study finds that a large majority of respondents, 87.8%, believe that migrants contribute to some of the problems facing the Lagos metropolis. This view is significantly strong in the Northwest corridor, where 94.2% expressed agreement. In other corridors, such as the Mainland and the Southwest, more than 85% of residents also shared this view.

The perception reflects a widely held belief that the increasing influx of people is linked to growing urban challenges caused by factors such as better job opportunities and access to services, which put pressure on infrastructure, exacerbate social inequalities, and lead to environmental problems, including overcrowding, inadequate infrastructure, and environmental degradation. Only 12.2% of all respondents did not see migrants as contributing to urban issues. The lowest dissenting opinion was from the Northwest corridor, where just 5.8% disagreed with the majority view.

There are specific problems attributed to them, among which is traffic congestion, which was the most cited, accounting for 20.9% of total mentions. Respondents in Ikeja and the Southeast recorded the highest percentages, at 22.5% and 22.2%, respectively, indicating that mobility and transportation infrastructure are perceived to be under pressure due to rising population numbers. Noise pollution followed closely, making up 15.9% of responses.

The issue was most prevalent in the Ikeja corridor, where 17.8% of respondents reported it, likely due to the proximity of residential, commercial, and informal sector activities. Additionally, traffic management issues were a significant concern, with rates ranging from 11.7% to 14.3% across the corridors. This highlights public concern over the inadequacy of traffic management systems to regulate and streamline growing traffic volumes, resulting in congestion, delays, and negative impacts on quality of life and the economy.

11.6% of respondents reported worsening air quality, underscoring the environmental impact of rising vehicle emissions and congestion in crowded urban areas. Poor physical planning, or "poor setting out," was mentioned by 10% of respondents, rising to 11.9% in regions like the Mainland corridor, reflecting land-use conflicts and irregular building developments. Urban blight, characterised by physical decay and deterioration of built environments, was identified by 9.2% of respondents. Although less common, it remains a significant urban problem. Other,

less frequently mentioned issues included poor alignment of development projects, structural decay, and an “others” category, collectively representing a small share of responses.

Table 4.17 Migrant Contributions to the Growth of Metropolitan Lagos

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Contribution to some of the problems of the metropolis?	Yes	Count	47	50	62	72	65	296
		% within Corridor	87.0%	84.7%	87.3%	85.7%	94.2%	87.8%
	No	Count	7	9	9	12	4	41
		% within Corridor	13.0%	15.3%	12.7%	14.3%	5.8%	12.2%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
How do they contribute to some of the problems of the metropolis?	Traffic Congestion	Count	36	42	51	62	50	241
		% within Corridor	20.0%	22.2%	20.2%	22.5%	19.5%	20.9%
	Poor setting out	Count	17	18	30	24	26	115
		% within Corridor	9.4%	9.5%	11.9%	8.7%	10.2%	10.0%
	Blight	Count	20	19	22	22	23	106
		% within Corridor	11.1%	10.1%	8.7%	8.0%	9.0%	9.2%
	Noise	Count	24	30	42	49	38	183
		% within Corridor	13.3%	15.9%	16.7%	17.8%	14.8%	15.9%
	Air quality	Count	24	23	29	29	29	134
		% within Corridor	13.3%	12.2%	11.5%	10.5%	11.3%	11.6%
	Traffic management	Count	21	27	27	34	34	143
		% within Corridor	11.7%	14.3%	10.7%	12.4%	13.3%	12.4%
	Poor alignment	Count	14	11	22	23	23	93
		% within Corridor	7.8%	5.8%	8.7%	8.4%	9.0%	8.1%
	Decay	Count	15	14	19	24	20	92
		% within Corridor	8.3%	7.4%	7.5%	8.7%	7.8%	8.0%
	Others	Count	9	5	10	8	13	45
		% within Corridor	5.0%	2.6%	4.0%	2.9%	5.1%	3.9%
Total		Count	180	189	252	275	256	1152
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

The findings show that while migration significantly contributes to Lagos's population increase, residents widely perceive it as exacerbating urgent urban problems. People view migrants as contributing to worsening traffic, overburdening infrastructure, and exacerbating environmental issues such as noise and air pollution. Notably, the data highlight more than just attitudes toward migrants; it reveals deeper flaws in urban planning, infrastructure, and governance that cannot keep pace with rapid growth. Instead of blaming migration alone, the results suggest that a sustainable future depends on inclusive urban development, better traffic and environmental regulation, and expanded services to support Lagos's ongoing expansion.

4.2.18 Metropolitan Interaction

Table 4.18 shows the results of respondents' metropolitan interactions. The study reveals that the most common form of interaction was work-related, making up 28.2% of all responses. This was especially prominent in the Ikeja corridor, where 42.9% of residents identified their primary connection to the metropolis as work. The Mainland and Southwest followed, with 29.6% and 18.5% respectively.

Additionally, trading activity was reported by 14.5% of respondents, with the Southwest and Northwest corridors experiencing the most notable trading-related interactions at 29.6% and 18.8%, respectively. This highlights the importance of informal commerce and markets as a key component of urban livelihoods in these areas. Social and cultural interactions were cited by 10.1% overall. Ikeja and the Mainland corridors recorded the highest values in this category, highlighting the significance of cultural events, family networks, and community life as channels through which residents interact with the metropolis.

Meanwhile, other categories such as infrastructure, education, health, and affiliations had smaller percentages, ranging from 0.9% to 3.3%. For instance, infrastructural interaction was highest in the Northwest corridor at 8.7%, while education- and health-related interactions peaked slightly in the Mainland and Ikeja corridors. These lower values may reflect limited access or specialised relevance rather than the absence of importance. Only a tiny portion of respondents, 1.8% in total, reported having no interaction with the Lagos metropolis, confirming that metropolitan influence is virtually universal across the surveyed corridors.

Table 4.18 Respondents' Interactions with Metropolitan Lagos

			Metropolitan Corridor					Total
			South west	South east	Main land	Ikeja	North west	
What is the nature of your interaction with the metropolitan area of Lagos?	Political	Count	14	18	9	13	8	62
		% within Corridor	25.9%	30.5%	12.7%	15.5%	11.6%	18.4%
	Trading	Count	16	10	3	7	13	49
		% within Corridor	29.6%	16.9%	4.2%	8.3%	18.8%	14.5%
	Housing	Count	8	12	17	9	16	62
		% within Corridor	14.8%	20.3%	23.9%	10.7%	23.2%	18.4%
	Social-cultural interactions	Count	3	2	9	12	8	34
		% within Corridor	5.6%	3.4%	12.7%	14.3%	11.6%	10.1%
	Work	Count	10	13	21	36	15	95
		% within Corridor	18.5%	22.0%	29.6%	42.9%	21.7%	28.2%
	Infrastructural facilities	Count	1	0	1	2	6	10
		% within Corridor	1.9%	0.0%	1.4%	2.4%	8.7%	3.0%
	Affiliations	Count	0	0	1	2	0	3
		% within Corridor	0.0%	0.0%	1.4%	2.4%	0.0%	0.9%
	Education	Count	1	2	4	2	2	11
		% within Corridor	1.9%	3.4%	5.6%	2.4%	2.9%	3.3%
	Health	Count	0	1	3	1	0	5
		% within Corridor	0.0%	1.7%	4.2%	1.2%	0.0%	1.5%
	None	Count	1	1	3	0	1	6
		% within Corridor	1.9%	1.7%	4.2%	0.0%	1.4%	1.8%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
How often do you interact with Lagos Metropolis?	Daily	Count	20	31	49	57	40	197
		% within Corridor	37.0%	52.5%	69.0%	67.9%	58.0%	58.5%
	Weekly	Count	11	15	2	8	8	44
		% within Corridor	20.4%	25.4%	2.8%	9.5%	11.6%	13.1%
	Monthly	Count	10	7	8	7	10	42
		% within Corridor	18.5%	11.9%	11.3%	8.3%	14.5%	12.5%
	Occasionally	Count	8	4	7	10	7	36
		% within Corridor	14.8%	6.8%	9.9%	11.9%	10.1%	10.7%
	Quarterly	Count	2	0	3	0	1	6
		% within Corridor	3.7%	0.0%	4.2%	0.0%	1.4%	1.8%

	Seldom	Count	3	2	2	2	3	12
		% within Corridor	5.6%	3.4%	2.8%	2.4%	4.3%	3.6%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Where do you interact from?	Other States	Count	12	8	4	8	6	38
		% within Corridor	22.2%	13.6%	5.6%	9.5%	8.7%	11.3%
	Within Lagos Metropolis	Count	25	32	49	54	48	208
		% within Corridor	46.3%	54.2%	69.0%	64.3%	69.6%	61.7%
	Outside Lagos Metropolis	Count	10	12	7	6	6	41
		% within Corridor	18.5%	20.3%	9.9%	7.1%	8.7%	12.2%
	Work	Count	6	5	6	12	4	33
		% within Corridor	11.1%	8.5%	8.5%	14.3%	5.8%	9.8%
	Own House	Count	1	2	5	4	5	17
		% within Corridor	1.9%	3.4%	7.0%	4.8%	7.2%	5.0%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

This indicates that employment remains the primary reason people engage with the city, thereby strengthening Lagos's role as an economic hub. Political interaction was another significant category, representing 18.4% of responses. The Southeast corridor recorded the highest level of political engagement at 30.5%, followed by the Southwest at 25.9%. These figures may reflect political mobilisation, community governance, or resident involvement in metropolitan decision-making. Housing-related interactions also contributed 18.4% of total responses, most notably in the Mainland and Northwest corridors, both of which exceeded 23%, highlighting the strong link between urban residential life and the city's broader development and the overall urban landscape.

Thus, this shows that economic activity, particularly work, dominates how residents interact with metropolitan Lagos, followed closely by political, housing, and trading engagements. While social, cultural, and service-related interactions are present, they play a relatively minor role. This pattern confirms that Lagos functions as a multifaceted urban hub, where people's connections to the city are primarily defined by their livelihood and residence. For

policymakers, this highlights the need to enhance infrastructure and service delivery in alignment with the city's economic role in the lives of its residents.

To better understand metropolitan interaction, a question was asked about how often residents engage with the Lagos metropolis, revealing contact levels across five corridors. The most common response was daily interaction, with 58.5% of respondents reporting they engage with the Lagos metropolis every day. This trend was especially noticeable in the Mainland and Ikeja corridors, where 69.0% and 67.9% respectively, indicated daily contact. These numbers emphasise Lagos's central role in residents' daily routines, including work, transportation, trade, and services. The Northwest and Southeast corridors also showed high daily engagement rates, both over 50%, while the Southwest corridor showed a lower rate at 37.0%. This variation reflects differences in proximity to core metropolitan areas or land use and settlement patterns.

Following daily interactions, the most reported frequencies were weekly and monthly. Weekly interactions made up 13.1% of the total, with the Southeast corridor having a notably high share at 25.4%. Monthly engagement was indicated by 12.5% of respondents across the city. This pattern may reflect those who commute for specific reasons, such as market visits, social events, or less frequent access to specialised services like healthcare or education. Less common patterns include occasional, quarterly, and seldom interactions. Occasional interactions were recorded by 10.7% of the sample, with a fairly even distribution across corridors. Quarterly and seldom interactions accounted for only 1.8% and 3.6% respectively. These low figures suggest that only a small minority of residents have minimal engagement with the core metropolitan area, possibly due to factors such as remoteness, age, occupation, or lifestyle.

This suggests that most residents of Lagos interact with the metropolis daily, underscoring the high level of interdependence between individuals and the urban system. Daily interaction is especially prominent in commercial and administrative centres such as the Ikeja and the Mainland corridors. Even in areas slightly removed from the city centre, frequent interaction remains customary. These findings support the need for ongoing investment in urban mobility, transport infrastructure, and service delivery, as the city must cater to a population that heavily depends on continuous physical and functional access to its metropolitan core.

Table 4.18 offers further insights into how respondents engage with metropolitan Lagos, providing a view of interaction patterns based on geographic location. The study reveals that the most significant proportion of respondents, 61.7%, report that their interactions with Lagos come from within the city itself. This indicates a population that is mainly urban-based and interacts with the city from areas directly within its administrative and physical boundaries. Within this group, the Mainland and Northwest corridors have the highest concentration of local interaction, with rates of 69% and 69.6%, respectively. Ikeja corridor also demonstrates a strong urban engagement rate of 64.3%. These figures reflect the fact that these areas are deeply woven into the city's social and economic fabric. A smaller segment, 12.2%, states that their interactions occur from outside the Lagos metropolis. The Southeast corridor has the highest proportion in this category at 20.3%, followed by the Southwest corridor with 18.5%.

This suggests that, despite being physically located outside the core of the metropolis, residents in these areas still maintain some connection to urban Lagos, likely for work, commerce, or family reasons. Respondents from other states account for 11.3% of the total. The Southwest corridor makes the most significant contribution in this category at 22.2%, followed by the Southeast corridor at 13.6%. This suggests a substantial level of cross-border interaction with Lagos, especially from areas close to the metropolis where economic and social ties remain strong.

Work-based interactions constitute 9.8% of respondents, with the Ikeja corridor having the highest share at 14.3%, likely due to its commercial and administrative functions. The Mainland, Southwest, and Southeast corridors follow closely, each contributing approximately between 6% and 11%. A smaller group, 5%, reports that their interactions are based on property ownership, specifically owning a house in Lagos. The Northwest and Mainland corridors report the highest figures in this category, each exceeding 7%, indicating a moderate level of homeownership among those who engage with the city from a more permanent or investment perspective.

Table 4.19 Cities' Morphologies and Growth Patterns Similar to Malignant Processes

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Are cities' morphologies and growth patterns similar to malignant processes?	Yes	Count	44	54	61	64	58	281
		% within Corridor	81.5%	91.5%	85.9%	76.2%	84.1%	83.4%
	No	Count	10	5	10	20	11	56
		% within Corridor	18.5%	8.5%	14.1%	23.8%	15.9%	16.6%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cities' morphologies and growth patterns similar to malignant processes	Rapid, uncontrolled growth	Count	39	44	56	61	49	249
		% within Corridor	48.1%	42.3%	48.3%	55.0%	44.5%	47.7%
	Invasion and destruction of adjacent normal tissues	Count	21	33	34	32	41	161
		% within Corridor	25.9%	31.7%	29.3%	28.8%	37.3%	30.8%
	Metastasis (distant colonisation)	Count	14	20	17	12	13	76
		% within Corridor	17.3%	19.2%	14.7%	10.8%	11.8%	14.6%
	De-differentiation	Count	7	7	9	6	7	36
		% within Corridor	8.6%	6.7%	7.8%	5.4%	6.4%	6.9%
Total		Count	81	104	116	111	110	522
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

4.2.19 Cities' Morphologies and Growth Patterns Similar to Malignant Processes

Table 4.19 indicates that perceptions of city growth in Lagos resemble aggressive, cancer-like processes. A notable 83.4% of respondents across five corridors agreed, suggesting they view Lagos's growth as similar to the behaviour of malignant cells. This perception is strongest in the Southeast corridor, where 91.5% agreed, followed by the Mainland and Northwest corridors, both of which have over 84% agreement. Only 16.6% disagreed, with Ikeja corridor showing the highest dissent at 23.8%, possibly reflecting more optimistic attitudes towards development or less awareness of its negative impacts.

The second part of Table 4.19 highlights specific ways respondents perceive city growth as cancerous behaviour, with rapid and uncontrolled expansion identified as the most common

trait, cited by 47.7% of all respondents. This was especially evident in the Ikeja corridor, where 55.0% noted fast urbanisation and development. The metaphor of invasion and destruction of neighbouring tissues, representing encroachment into adjacent communities, ecosystems, or green spaces, was mentioned by 30.8%. The Northwest corridor recorded the highest concern at 37.3%, showing strong awareness of how expansion can threaten established areas. Metastasis, symbolising the spread of development to distant or disconnected locations, was noted in 14.6% of cases, especially in the Southeast and Southwest corridors, where developments often leap over natural boundaries or extend beyond coherent urban patterns. De-differentiation, indicating the loss of urban identity, structure, or planning coherence, was cited by 6.9%, reflecting concerns about Lagos losing its distinct planning, heritage, or functional zoning due to chaotic growth.

These highlight a widespread belief that most residents perceive Lagos's urban development as akin to damaging biological processes. Key features include swift, unregulated expansion, encroachment into established neighbourhoods, and inconsistent planning. These points underscore growing concerns about the city's growth trajectory and highlight a lack of strategic direction. Many respondents view their city's growth as urban pathology rather than progress, metaphorically comparing urban issues to ailments of a living organism. This view examines how rapid or uncontrolled growth can lead to social, economic, and environmental challenges, often stemming from hasty and unplanned urban expansion. Consequently, it calls for urgent reforms in urban growth management, emphasising sustainability, regulation, and spatial justice.

4.2.20 Physiological Malignant Growth and Urban Growth

Table 4.20 explores how respondents across metropolitan corridors interpret urban expansion, especially its comparison to malignant growth. The metaphor highlights the uncontrolled, harmful, and disruptive nature of development in Lagos, as experienced by residents. The study finds that urban sprawl was the most frequently cited indicator, comprising 12.2% of all responses. The highest mentions came from the Southeast corridor, with 15.4%, followed by the Southwest and Mainland corridors. This suggests residents see the city's growth as dispersed, unregulated, and spreading across landscapes in a way that resembles the unchecked growth of cancer cells. Crime was another major concern, reported by 10.7% of respondents. The Ikeja corridor recorded the highest crime rate at 12.6%, indicating that residents there strongly link increasing insecurity to uncontrolled growth. Closely related is irregular and

haphazard development, noted by 10.2% of respondents, with higher figures again in the Mainland and Ikeja corridors. This indicates that the uneven, uncoordinated expansion of infrastructure and settlements is increasingly seen as harmful, with negative, disease-like traits outweighing positive, healthy, or developmental aspects. It reflects a focus on decline, deterioration, or dysfunction rather than progress, improvement, or growth.

Additionally, rapid urban growth was reported by 10.0% of respondents, with the Mainland corridor showing the highest level of concern. Similarly, poverty accounted for 9.1% of responses, most notably in the Northwest and Ikeja corridors. These responses highlight the link between rapid expansion and socioeconomic decline, as unchecked growth often surpasses the capacity of the economy and social systems to accommodate it, creating challenges that hinder overall development. Loss of structural integrity, referring to the deterioration or neglect of physical infrastructure such as roads, buildings, or drainage systems, was noted by 9.6% of participants.

Residents in the Ikeja corridor reported this most often, indicating that infrastructure decay exists even in more developed areas. Respondents also identified behavioural changes (9.3%) and loss of residents (7.9%) as signs of unhealthy urban growth. These signs may indicate migration driven by deteriorating living conditions, social fragmentation, or displacement caused by economic pressures and insecurity. A diminished sense of place, mentioned by 5.6% of respondents, suggests an erosion of identity, community values, or cultural continuity due to rapid physical transformation. Meanwhile, less frequently mentioned issues included irregular urban shapes (4.8%) and slow growth (2.8%). The latter may seem contradictory, but can be understood as areas within the metropolis, where development stalls or lags amid overall over-expansion.

Residents perceive the expansion of metropolitan Lagos as similar to malignant biological processes. They see urban sprawl, crime, poverty, and structural instability not just as effects of growth but as signs of deeper systemic issues. The similarities between urban development and biological malignancy include uncontrolled expansion and invasive capacity, creating a strong metaphor of illness. This imagery reflects public frustration with a growth model viewed as destructive rather than developmental. These insights underscore the need for a shift toward planned, inclusive, and regulated urban development, aiming for growth that is not only rapid but also healthy, sustainable, and beneficial for both society and the environment.

Table 4.20 Opinion of Respondents on Physiological Malignant Growth and Urban Growth

		Metropolitan Corridor					Total
		Southwest	Southeast	Mainland	Ikeja	Northwest	
Loss of residents	Count	25	25	23	17	33	123
	% within Corridor	10.7%	9.8%	6.4%	4.5%	10.2%	7.9%
Sense of Place	Count	20	16	25	11	15	87
	% within Corridor	8.5%	6.3%	6.9%	2.9%	4.6%	5.6%
Change in behaviours	Count	17	22	33	36	37	145
	% within Corridor	7.3%	8.7%	9.1%	9.5%	11.4%	9.3%
Loss of structural integrity	Count	21	29	34	40	26	150
	% within Corridor	9.0%	11.4%	9.4%	10.5%	8.0%	9.6%
Poverty	Count	22	22	29	35	33	141
	% within Corridor	9.4%	8.7%	8.0%	9.2%	10.2%	9.1%
Urban sprawl	Count	32	39	41	43	35	190
	% within Corridor	13.7%	15.4%	11.3%	11.3%	10.8%	12.2%
Crime	Count	25	24	36	48	34	167
	% within Corridor	10.7%	9.4%	9.9%	12.6%	10.5%	10.7%
Inordinate and haphazard development	Count	18	24	40	46	30	158
	% within Corridor	7.7%	9.4%	11.0%	12.1%	9.2%	10.2%
Rapid Growth	Count	24	21	42	38	31	156
	% within Corridor	10.3%	8.3%	11.6%	10.0%	9.5%	10.0%
Slow growth	Count	8	5	8	10	12	43
	% within Corridor	3.4%	2.0%	2.2%	2.6%	3.7%	2.8%
Irregular shape	Count	9	11	21	19	14	74
	% within Corridor	3.8%	4.3%	5.8%	5.0%	4.3%	4.8%
Invasion of surrounding tissues/places	Count	13	16	30	37	25	121
	% within Corridor	5.6%	6.3%	8.3%	9.7%	7.7%	7.8%
Total	Count	234	254	362	380	325	1555
	% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

4.2.21 Spatial Evolution in the Growth of Lagos Metropolitan Area

Table 4.21 presents respondents' awareness of Lagos's metropolitan expansion. The data reveal that a significant number of participants are either "Very Aware" or "Aware" of the growth beyond Lagos's original core. In the Mainland corridor, 32.4% identified as "Very Aware," and 28.2% as "Aware," showing that more than half of the respondents in this region are familiar with Lagos's historical and spatial development. Similarly, the Southeast corridor also

demonstrates high awareness, with 30.5% indicating "Very Aware" and 39.0% indicating "Aware."

Similar trends are observed in the Southwest and Northwest corridors, where 25.9% and 20.3% are "Very Aware," and 42.6% and 34.8% are "Aware," respectively. In the Ikeja corridor, 20.2% reported being 'Very Aware,' and 45.2% were 'Aware', the highest proportion in that category. These data emphasise a widespread, though varying, understanding of the city's spatial development, particularly in the more central corridors.

Respondents who were somewhat aware made up 25.5% of the total. This group was most prominent in the Northwest corridor (34.8%) and the Ikeja corridor (26.2%). This suggests that, although many are not fully informed, they do recognise aspects of the core's transformation. The Unaware group accounted for 9.2% of the overall population, with slightly higher percentages in the Mainland corridor (11.3%). The Southeast represented 9.2% of the total population, with small increases in the Mainland corridor (11.3%) and the Southwest corridor (10.2%). Only 1.8% of all respondents across the city admitted to being Very Unaware. This very low awareness was most common in the Northwest corridor at 2.9%, and least in Ikeja at 1.2%.

The findings indicate that most Lagos residents are aware or very aware of developments in the city's original core, reflecting a strong urban consciousness across all corridors. This awareness is especially prominent in the Mainland, Southeast, and Ikeja areas, which are either close to or historically part of Lagos's initial urban zone. Conversely, places such as the Northwest and Southwest corridors show a slightly higher level of partial or limited awareness, likely due to their more recent development or peripheral position relative to the city centre. This suggests a shared understanding of urban history and spatial awareness among residents, although a significant portion remains only partially informed or uninformed. These results underscore the importance of public education and community engagement in urban planning, particularly in relation to heritage conservation, spatial redevelopment, and overall city development strategies.

Table 4.21 Spatial Evolution in the Growth of Lagos Metropolitan Area

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
What is your level of awareness on Development of the Original Core on spatial evolution of the Lagos metropolis?	Very Aware	Count	14	18	23	17	14	86
		% within Corridor	25.9%	30.5%	32.4%	20.2%	20.3%	25.5%
	Aware	Count	23	23	20	38	24	128
		% within Corridor	42.6%	39.0%	28.2%	45.2%	34.8%	38.0%
	Somewhat aware	Count	10	11	19	22	24	86
		% within Corridor	18.5%	18.6%	26.8%	26.2%	34.8%	25.5%
	Unaware	Count	6	6	8	6	5	31
		% within Corridor	11.1%	10.2%	11.3%	7.1%	7.2%	9.2%
	Very Unaware	Count	1	1	1	1	2	6
		% within Corridor	1.9%	1.7%	1.4%	1.2%	2.9%	1.8%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
What is your level of awareness on Diffusion on spatial evolution of the Lagos metropolis?	Very Aware	Count	13	17	18	12	10	70
		% within Corridor	24.1%	28.8%	25.4%	14.3%	14.5%	20.8%
	Aware	Count	21	26	24	35	28	134
		% within Corridor	38.9%	44.1%	33.8%	41.7%	40.6%	39.8%
	Somewhat aware	Count	15	8	17	25	21	86
		% within Corridor	27.8%	13.6%	23.9%	29.8%	30.4%	25.5%
	Unaware	Count	5	7	11	11	8	42
		% within Corridor	9.3%	11.9%	15.5%	13.1%	11.6%	12.5%
	Very Unaware	Count	0	1	1	1	2	5
		% within Corridor	0.0%	1.7%	1.4%	1.2%	2.9%	1.5%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
What is your level of awareness on Coalescence on spatial evolution of the Lagos metropolis?	Very Aware	Count	11	16	13	11	10	61
		% within Corridor	20.4%	27.1%	18.3%	13.1%	14.5%	18.1%
	Aware	Count	21	29	22	33	29	134
		% within Corridor	38.9%	49.2%	31.0%	39.3%	42.0%	39.8%
	Somewhat aware	Count	12	7	20	31	18	88
		% within Corridor	22.2%	11.9%	28.2%	36.9%	26.1%	26.1%
	Unaware	Count	9	5	16	8	11	49
		% within Corridor	16.7%	8.5%	22.5%	9.5%	15.9%	14.5%

	Very Unaware	Count	1	2	0	1	1	5
		% within Corridor	1.9%	3.4%	0.0%	1.2%	1.4%	1.5%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
What is your level of awareness on Urban Aggregation on spatial evolution of the Lagos metropolis?	Very Aware	Count	12	17	19	12	15	75
		% within Corridor	22.2%	28.8%	26.8%	14.3%	21.7%	22.3%
	Aware	Count	22	25	26	40	28	141
		% within Corridor	40.7%	42.4%	36.6%	47.6%	40.6%	41.8%
	Somewhat aware	Count	12	10	12	21	16	71
		% within Corridor	22.2%	16.9%	16.9%	25.0%	23.2%	21.1%
	Unaware	Count	8	5	12	10	9	44
		% within Corridor	14.8%	8.5%	16.9%	11.9%	13.0%	13.1%
	Very Unaware	Count	0	2	2	1	1	6
		% within Corridor	0.0%	3.4%	2.8%	1.2%	1.4%	1.8%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

The study of coalescence awareness in Lagos's spatial growth, as revealed in Table 4.21, shows that all respondents across all corridors are aware of coalescence as a factor. Awareness was notably highest in the Southeast corridor at 49.2%, followed by Ikeja at 39.3%, and Northwest at 42.0%. The Southwest and Mainland corridors reported awareness levels of 38.9% and 31.0%, respectively. Additionally, 18.1% of respondents were very aware of the concept citywide, with the Southeast leading at 27.1%, demonstrating a strong understanding of coalescence as a spatial phenomenon. The Southwest and Mainland corridors also showed a reasonable level of awareness at 20.4% and 18.3%. About 26.1% reported being somewhat aware, with notable differences across regions: Ikeja at 36.9%, Mainland at 28.2%, and Northwest at 26.1%. Unawareness was noted in 14.5% of the sample, highest in Mainland at 22.5%, followed by Southwest at 16.7%, while the Southeast had the lowest unawareness at 8.5%. Very unaware made up 1.5%, with the highest share in Southeast at 3.4%, and none in the Mainland.

Regarding residents' awareness of urban aggregation, a process where separate settlements or built-up areas merge into larger, more continuous urban zones, this phenomenon is particularly relevant to Lagos's evolving structure. Due to rapid growth, infrastructure connections, and

urban sprawl, formerly distinct urban nodes have combined. The study shows that 41.8% of respondents across all metropolitan corridors are aware of urban aggregation. Awareness is highest in the Ikeja corridor at 47.6%, while the Southeast and Northwest corridors also demonstrate strong awareness at 42.4% and 40.6%, respectively. In the Southwest and Mainland corridors, awareness levels are 40.7% and 36.6%, indicating widespread understanding across Lagos. Additionally, 22.3% of the overall population reported being very aware of urban aggregation, with the highest levels in the Southeast corridor (28.8%), followed by the Mainland (26.8%) and Southwest corridors (22.2%), reflecting a significant concentration of respondents with in-depth knowledge of spatial consolidation. Another 21.1% identified as somewhat aware.

The Ikeja corridor had the largest share in this category at 25.0%, closely followed by the Northwest corridor at 23.2%. This indicates that while some residents may not fully understand the technical term “urban aggregation,” they recognise its practical effects in their environment, such as increased building density or community merging. Despite the high awareness levels, 13.1% of respondents reported being unaware of urban aggregation. The Mainland (16.9%) and Southwest (14.8%) corridors recorded the highest shares in this category. A small group, 1.8%, admitted to being very unaware, with the Southeast corridor reporting the highest at 3.4%.

The findings demonstrate that urban aggregation is a well-recognised concept among Lagos residents, with most expressing varying degrees of awareness. The strongest awareness levels are concentrated in central and rapidly developing areas, such as Ikeja, the Southeast, and the Mainland corridors, where the effects of spatial consolidation are most evident. These insights suggest that residents of Lagos are highly perceptive of the physical evolution of their city. Urban planners should leverage this broad awareness to encourage community involvement and promote more informed, integrated growth strategies. Public familiarity with spatial trends, such as aggregation, can be a valuable asset in shaping informed and sustainable urban development policies.

4.2.22 Characteristics of the Expansion Process of Lagos Metropolis

Table 4.22 outlines the characteristics, factors, and reasons behind the expansion of Lagos metropolis. The study emphasises that demographic growth is the most commonly identified feature of Lagos’s expansion. Specifically, 46.3% of respondents cited “demographically” as

the main characteristic, with the Northwest corridor reporting the highest at 52.2% and the Southeast corridor the lowest at 40.7%. This suggests that population growth and migration are considered the primary drivers of the city's physical expansion.

Table 4.22 Characteristics of the Expansion Process of Lagos Metropolis

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Which of these typifies the Lagos Metropolis expansion process	Demographically	Count	27	24	33	36	36	156
		% within Corridor	50.0%	40.7%	46.5%	42.9%	52.2%	46.3%
	Spatially	Count	19	21	18	15	20	93
		% within Corridor	35.2%	35.6%	25.4%	17.9%	29.0%	27.6%
	Economic	Count	8	14	20	33	13	88
		% within Corridor	14.8%	23.7%	28.2%	39.3%	18.8%	26.1%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
What factors do you believe contribute to the growth of metropolitan areas in Lagos?	Socio-economic development	Count	46	42	62	74	50	274
		% within Corridor	33.8%	28.2%	28.7%	31.4%	24.6%	29.1%
	Strategically allocating amenities and services	Count	20	23	34	38	31	146
		% within Corridor	14.7%	15.4%	15.7%	16.1%	15.3%	15.5%
	Migrating from surrounding settlements	Count	25	34	46	51	48	204
		% within Corridor	18.4%	22.8%	21.3%	21.6%	23.6%	21.7%
	Growing population	Count	29	34	46	48	47	204
		% within Corridor	21.3%	22.8%	21.3%	20.3%	23.2%	21.7%
	Functional significance	Count	16	16	28	25	27	112
		% within Corridor	11.8%	10.7%	13.0%	10.6%	13.3%	11.9%
Total		Count	136	149	216	236	203	940
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
What are your reasons for the spatial expansion of	Is infrastructure developed	Count	27	24	38	43	39	171
		% within Corridor	14.5%	13.6%	14.2%	14.0%	14.9%	14.3%
	Improved living standards	Count	26	27	34	41	40	168
		% within Corridor	14.0%	15.3%	12.7%	13.4%	15.3%	14.0%

	Accessibility	Count	33	32	43	48	39	195
		% within Corridor	17.7%	18.1%	16.1%	15.6%	14.9%	16.3%
	Political and Economic Opportunities	Count	30	38	45	56	43	212
		% within Corridor	16.1%	21.5%	16.9%	18.2%	16.4%	17.7%
	Population Increase	Count	26	25	46	50	41	188
		% within Corridor	14.0%	14.1%	17.2%	16.3%	15.6%	15.7%
	Technology	Count	24	16	32	38	34	144
		% within Corridor	12.9%	9.0%	12.0%	12.4%	13.0%	12.0%
	Education	Count	20	15	29	31	26	121
		% within Corridor	10.8%	8.5%	10.9%	10.1%	9.9%	10.1%
	Total	Count	186	177	267	307	262	1199
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Next, 27.6% of respondents identified spatial expansion, which was especially notable in the Southwest corridor (35.2%) and the Southeast corridor (35.6%), indicating a clear shift in land use and urban growth likely driven by infrastructural and residential developments spreading into previously undeveloped areas. Additionally, economic expansion was reported by 26.1% of responses, mainly in the Ikeja corridor (39.3%) and the Mainland corridor (28.2%), where rising commercial activities and investments are visibly transforming the urban landscape.

Respondents primarily linked Lagos's metropolitan expansion to socio-economic development, with 29.1% citing this as the main reason. The Ikeja and Southwest corridors showed the highest percentages in this area, highlighting the role of commercial activities, job opportunities, and income-driven migration. Furthermore, migration from nearby settlements and overall population increase were mentioned by 21.7% of respondents.

Lagos's growth mainly stems from migration from nearby towns and rural areas, often driven by job opportunities or improved living conditions. The mention of a 15.5% strategic allocation of amenities and services emphasises the importance of improved access to public infrastructure like healthcare, education, and transportation in attracting residents.

Meanwhile, 11.9% highlighted Lagos's functional importance, including its administrative, economic, and symbolic roles, showing that its reputation and utility contribute to its rapid

growth. Regarding the reasons for spatial expansion, respondents mainly pointed to accessibility (16.3%), political and economic opportunities (17.7%), and population growth (15.7%)- factors illustrating the push-pull dynamics between existing urban infrastructure and the rising demand from new residents and economic activities. Other factors noted include infrastructure development (14.3%), improved living standards (14.0%), and technology (12.0%), emphasising the influence of social aspirations and modern innovations. Education was cited by 10.1%, underlining its secondary yet significant role in urban expansion.

Lagos's growth is primarily shaped by demographic pressures, particularly migration and population growth. Residents see the city's development as being fueled not only by population growth but also by strategic efforts in economic opportunities, infrastructure, and urban significance. Moreover, elements like accessibility, technology, and education demonstrate a growing recognition that modern urban growth involves multiple factors. Strategic policy involving a comprehensive planning approach that integrates population management, spatial development, economic policies, and social services to foster sustainable growth in Lagos.

4.2.23 Major Growth Factors of Lagos Metropolis

Table 4.23 shows how different factors affect growth in the Lagos metropolitan area. The data indicate that the majority of respondents (65.9%) reported rising house rents. The Mainland corridor had the highest increase at 78.9%, followed by the Ikeja corridor at 69.0%, and the Northwest corridor at 66.7%. A smaller portion (23.4%) reported that rents remained stable, primarily in the Southwest and Southeast corridors. Only 10.7% noted a decline in rent, highlighting that rent increases are widespread urban areas across the metropolis.

Regarding infrastructure development, 60.8% observed an increase, especially in the Southwest and Northwest corridors where over 70% agreed. About 23.7% reported infrastructure stability, while 15.4% saw a decline, mainly in the Mainland (23.9%) and Ikeja corridors (17.9%). When evaluating travel costs, 55.2% felt it has worsened, particularly in Ikeja (63.1%) and Mainland (57.7%) corridors. Only 35.6% reported improvements, mostly in the Southwest corridor. The remaining 9.2% saw no significant change. Regarding traffic flow, 47.2% experienced improvements, primarily in the Southwest (59.3%), while 43.0% believed it had worsened, particularly in the Mainland and Northwest corridors. A small proportion (9.8%) reported no change.

Land value was reported by 71.8% of all respondents, with the Northwest corridor at 79.7% and the Mainland corridor at 77.5%. This indicates an increase in urban land value, driven by demand and limited land availability. Only 20.2% reported stable land values, and just 8.0% noted a decrease, primarily in the Ikeja and Mainland corridors. The investigation also looked into how land value impacts urban growth, with 54.9% saying it has improved, particularly in the Mainland corridor (60.6%).

Table 4.23 Growth Factors of Lagos Metropolis

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
House rent	Increased	Count	29	33	56	58	46	222
		% within Corridor	53.7%	55.9%	78.9%	69.0%	66.7%	65.9%
	Stable	Count	19	21	7	15	17	79
		% within Corridor	35.2%	35.6%	9.9%	17.9%	24.6%	23.4%
	Reduced	Count	6	5	8	11	6	36
		% within Corridor	11.1%	8.5%	11.3%	13.1%	8.7%	10.7%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Land value	Increased	Count	36	38	55	58	55	242
		% within Corridor	66.7%	64.4%	77.5%	69.0%	79.7%	71.8%
	Stable	Count	15	18	12	14	9	68
		% within Corridor	27.8%	30.5%	16.9%	16.7%	13.0%	20.2%
	Reduced	Count	3	3	4	12	5	27
		% within Corridor	5.6%	5.1%	5.6%	14.3%	7.2%	8.0%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Traffic intensity	Increased	Count	35	35	46	52	50	218
		% within Corridor	64.8%	59.3%	64.8%	61.9%	72.5%	64.7%
	Stable	Count	15	18	18	16	15	82
		% within Corridor	27.8%	30.5%	25.4%	19.0%	21.7%	24.3%
	Reduced	Count	4	6	7	16	4	37
		% within Corridor	7.4%	10.2%	9.9%	19.0%	5.8%	11.0%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Population growth	Increased	Count	37	38	52	66	53	246
		% within Corridor	68.5%	64.4%	73.2%	78.6%	76.8%	73.0%
	Stable	Count	15	18	12	9	12	66
		% within Corridor	27.8%	30.5%	16.9%	10.7%	17.4%	19.6%
	Reduced	Count	2	3	7	9	4	25
		% within Corridor	3.7%	5.1%	9.9%	10.7%	5.8%	7.4%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
House density	Increased	Count	33	41	51	61	52	238
		% within Corridor	61.1%	69.5%	71.8%	72.6%	75.4%	70.6%
	Stable	Count	19	15	14	11	11	70
		% within Corridor	35.2%	25.4%	19.7%	13.1%	15.9%	20.8%

	Reduced	Count	2	3	6	12	6	29
		% within Corridor	3.7%	5.1%	8.5%	14.3%	8.7%	8.6%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Urban growth rate	Increased	Count	34	40	56	66	58	254
		% within Corridor	63.0%	67.8%	78.9%	78.6%	84.1%	75.4%
	Stable	Count	16	14	10	11	7	58
		% within Corridor	29.6%	23.7%	14.1%	13.1%	10.1%	17.2%
	Reduced	Count	4	5	5	7	4	25
		% within Corridor	7.4%	8.5%	7.0%	8.3%	5.8%	7.4%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Urban crime rate	Increased	Count	33	33	37	42	47	192
		% within Corridor	61.1%	55.9%	52.1%	50.0%	68.1%	57.0%
	Stable	Count	14	21	19	17	13	84
		% within Corridor	25.9%	35.6%	26.8%	20.2%	18.8%	24.9%
	Reduced	Count	7	5	15	25	9	61
		% within Corridor	13.0%	8.5%	21.1%	29.8%	13.0%	18.1%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Urban sprawl	Increased	Count	38	42	49	51	48	228
		% within Corridor	70.4%	71.2%	69.0%	60.7%	69.6%	67.7%
	Stable	Count	11	15	15	15	13	69
		% within Corridor	20.4%	25.4%	21.1%	17.9%	18.8%	20.5%
	Reduced	Count	5	2	7	18	8	40
		% within Corridor	9.3%	3.4%	9.9%	21.4%	11.6%	11.9%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Land availability	Increased	Count	35	32	38	46	42	193
		% within Corridor	64.8%	54.2%	53.5%	54.8%	60.9%	57.3%
	Stable	Count	12	19	15	11	12	69
		% within Corridor	22.2%	32.2%	21.1%	13.1%	17.4%	20.5%
	Reduced	Count	7	8	18	27	15	75
		% within Corridor	13.0%	13.6%	25.4%	32.1%	21.7%	22.3%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Environment and health	Increased	Count	34	37	37	45	49	202
		% within Corridor	63.0%	62.7%	52.1%	53.6%	71.0%	59.9%
	Stable	Count	16	15	19	17	11	78
		% within Corridor	29.6%	25.4%	26.8%	20.2%	15.9%	23.1%
	Reduced	Count	4	7	15	22	9	57
		% within Corridor	7.4%	11.9%	21.1%	26.2%	13.0%	16.9%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Infrastructure	Increased	Count	38	36	32	50	49	205
		% within Corridor	70.4%	61.0%	45.1%	59.5%	71.0%	60.8%
	Stable	Count	10	15	22	19	14	80
		% within Corridor	18.5%	25.4%	31.0%	22.6%	20.3%	23.7%
	Reduced	Count	6	8	17	15	6	52
		% within Corridor	11.1%	13.6%	23.9%	17.9%	8.7%	15.4%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Meanwhile, 39.2% reported a decrease in land value, most notably in the Southeast corridor. Only 5.9% observed no change. Regarding rent, 55.2% believed it had declined, especially in the Mainland corridor (59.2%) and Ikeja corridor (63.1%). Conversely, 39.5% thought rent had improved, mainly in the Southwest corridor, with just 5.3% noting no change. In terms of crime, 48.1% felt it had worsened, particularly in the Mainland and Southeast corridors. About 41.5% reported an improvement, while 10.4% saw no change.

The study showed that rising house and land prices, increased travel costs, and worsening rent conditions are key challenges affecting Lagos's growth. Although infrastructure enhancements and traffic patterns have shown mixed outcomes, some corridors are improving. However, many residents indicated that affordability and access are getting worse. These trends emphasise the need for targeted urban policies focusing on affordable housing, reduced transportation costs, and effective land-use management. Urban expansion in Lagos results not only from physical growth but also from complex socioeconomic factors that demand coordinated, sustainable development efforts.

Most respondents across the five metropolitan corridors reported experiencing increased urban growth, with the Mainland corridor (78.9%), Ikeja corridor (78.6%), and Northwest corridor (84.1%) reporting the highest perceived growth. Overall, 75.4% of respondents acknowledged a rise, while 17.2% considered the rate stable, and 7.4% believed it had decreased; urban sprawl was identified by 67.7% of respondents as a factor contributing to the increased growth. Perceptions of growth were high in the Southeast (71.2%) and Southwest (70.4%) corridors.

Meanwhile, 20.5% according to Table 4,23, believed that sprawl remained stable, and 11.9% saw a decrease. The Ikeja corridor had the highest percentage (21.4%) of respondents who thought sprawl had lessened. Opinions on population growth were even more decisive, with 73.0% reporting an increase, led by the Ikeja (78.6%) and Northwest (76.8%) corridors. A smaller portion (19.6%) viewed population levels as stable, while only 7.4% noted a decline, mainly in the Mainland and Ikeja corridors. Perceptions of house density showed a similar trend, with 70.6% reporting an increase. The Northwest (75.4%) and Ikeja (72.6%) corridors experienced a trend, with 70.6% reporting an increase. The Northwest (75.4%) and Ikeja (72.6%) corridors experienced the most growth. Meanwhile, 20.8% saw density as stable, and 8.6% believed it had decreased. The most significant decline in house density was observed in the Ikeja corridor (14.3%).

4.2.24 Respondents' Perception of the Impact of Metropolitan Lagos Expansion on Health and Well-being

Table 4.24 shows residents' views on the expansion of Lagos metropolis and its impact on community health and well-being along its corridors. The study indicates that the most commonly mentioned impact was related to economic well-being, with 40.1% of respondents identifying it. This was particularly notable in the Ikeja corridor, where 41.7% considered economic impacts most significant, followed by 45.8% in the Southeast corridor and 48.1% in the Southwest corridor. These results suggest that residents perceive urban growth as presenting both opportunities and challenges related to income, employment, and the cost of living.

The social impact was the second most recognised dimension, mentioned by 32.6% of respondents. The Northwest corridor led in this regard, with 39.1% of residents acknowledging that urban expansion influences their social well-being, likely relating to community relations, social integration, or access to services such as healthcare, education, and recreation. The Southeast and Mainland corridors also showed significant awareness of social impacts at 35.6% and 32.4%, respectively.

Table 4.24 The Impact of Metropolitan Lagos Expansion on Health and Well-being

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
How do you think the expansion of the Lagos	Social	Count	17	21	23	22	27	110
		% within Corridor	31.5%	35.6%	32.4%	26.2%	39.1%	32.6%
	Economic	Count	26	27	23	35	24	135
		% within Corridor	48.1%	45.8%	32.4%	41.7%	34.8%	40.1%
	Physical	Count	8	9	12	13	12	54
		% within Corridor	14.8%	15.3%	16.9%	15.5%	17.4%	16.0%
	Mental	Count	2	2	11	13	5	33
		% within Corridor	3.7%	3.4%	15.5%	15.5%	7.2%	9.8%
	Spiritual	Count	1	0	2	1	1	5
		% within Corridor	1.9%	0.0%	2.8%	1.2%	1.4%	1.5%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

In Table 4.24, 16.0% of respondents across metropolitan corridors acknowledged impacts on physical health, with the Mainland and Northwest corridors reporting slightly higher percentages, indicating concerns about environmental stressors, housing, or access to clean air and water as the city grows. Mental health impacts were noted by only 9.8% overall, but this was significantly higher in the Mainland and Ikeja corridors, where 15.5% of respondents identified mental health as affected by urban expansion. This suggests a growing awareness of psychological stress associated with city life, possibly stemming from traffic congestion, overcrowding, or rising living costs. Only 1.5% of respondents mentioned that spiritual well-being was impacted, with the Southeast corridor reporting no mentions, suggesting spiritual concerns are less prominent in residents' perceptions of urbanisation consequences.

4.2.25 Character of Lagos Metropolitan Growth

Table 4.25 describes the key features of the growth of the Lagos metropolitan area. The study finds that the two most recognised characteristics of Lagos's metropolitan expansion are population growth and economic activities and investments, each mentioned by over one-fifth of respondents. Specifically, population growth was most emphasised in the Mainland (23.3%) and Ikeja (24.5%) corridors, while economic activities received slightly more focus in the Southwest (23.9%) and Ikeja (24.2%) corridors. This indicates that Lagos's expansion is driven not only by demographic pressures but also by increasing commerce, investment opportunities, and industrial activity.

The interaction between the increasing urban population and economic activity is key to the city's current dynamics. Many respondents also highlighted the lack of infrastructure and social services, especially in the Southeast (16.9%) and Northwest (14.2%) corridors. This issue is closely linked to concerns about insufficient planning, which was most frequently noted in the Southeast (15.4%) and Northwest (13.8%) corridors. These figures suggest that the public perceives Lagos as growing faster than its institutions and infrastructure can keep pace with.

The two indicators, lack of services and poor planning, highlight a pattern of uneven growth. The city's physical expansion outstrips the development of essential support systems, leading to overcrowding, utility shortages, traffic congestion, and strain on social services, which in turn causes unplanned development.

Respondents also perceived that indiscriminate and haphazard development is a key feature of Lagos's urbanisation. This view was perceived in the Mainland (16.2%) and Southeast (13.8%) corridors, indicating that the city's expansion is perceived as disorganised and poorly regulated. Additionally, 10.4% of respondents in the Southwest corridor and 10.2% in the Northwest corridor reported issues with weak communication channels, reflecting shortcomings in government engagement, information dissemination, and inter-agency coordination. A smaller but significant number of respondents also expressed concerns about urban decay, particularly in the Northwest (8.1%) and Ikeja (6.9%) corridors.

Table 4.25 Character of Lagos Metropolitan Growth

		Metropolitan Corridor					Total
		Southwest	Southeast	Mainland	Ikeja	Northwest	
Population growth	Count	37	39	59	68	50	253
	% within Corridor	22.7%	20.0%	23.3%	24.5%	20.3%	22.3%
Economic activities and investments	Count	39	38	57	67	48	249
	% within Corridor	23.9%	19.5%	22.5%	24.2%	19.5%	22.0%
Inadequate Planning	Count	19	30	30	31	34	144
	% within Corridor	11.7%	15.4%	11.9%	11.2%	13.8%	12.7%
Lack of infrastructure and social services	Count	23	33	28	37	35	156
	% within Corridor	14.1%	16.9%	11.1%	13.4%	14.2%	13.8%
Poor communication channels	Count	17	12	16	15	25	85
	% within Corridor	10.4%	6.2%	6.3%	5.4%	10.2%	7.5%
Inordinate and haphazard development	Count	16	27	41	37	29	150
	% within Corridor	9.8%	13.8%	16.2%	13.4%	11.8%	13.2%
Decay	Count	9	13	18	19	20	79
	% within Corridor	5.5%	6.7%	7.1%	6.9%	8.1%	7.0%
Others	Count	3	3	4	3	5	18
	% within Corridor	1.8%	1.5%	1.6%	1.1%	2.0%	1.6%
Total	Count	163	195	253	277	246	1134
	% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

These concerns may relate to ageing infrastructure, neglected neighbourhoods, or environmental degradation caused by unplanned urban growth. Furthermore, less than 2% of responses highlighted issues such as land allocation, economic and physical development, housing shortages, inadequate planning, lack of information, rising crime rates, and related problems.

4.2.26 The Positive and Negative Growth Processes of Metropolitan Lagos.

Table 4.26 displays how respondents described the growth of metropolitan Lagos, emphasising both its positive and negative aspects. The study shows that a majority (63.5%) perceived this growth positively, while 31.5% see it negatively, and 5% offer alternative descriptions. These opinions vary slightly by region but follow overall consistent patterns. Regarding positive perceptions, 25.7% describe Lagos as organised, with the Southeast corridor leading this perception at 42.4%, followed by the Northwest corridor at 26.2%. Planned development is recognised by 22.9%, particularly in Ikeja and the Mainland corridors, where 25% and 25.6% of respondents, respectively, mention it. Additionally, 19.2% consider the city livable, with more substantial support in the Northwest corridor (26.2%) and Ikeja corridor (20%).

Sustainability is mentioned by 9.8% of respondents, mainly in the Southwest corridor (19.4%) and Ikeja corridor (11.7%), but is not noted in the Southeast corridor. Resilience concerns 22.4%, with the Mainland corridor highlighting it most at 37.2%. These results indicate that positive views are mostly based on perceptions of better organisation, strategic development, and adaptability.

On the negative side, 31.5% of respondents have an unfavourable view of Lagos's growth, and 39.6% see it as uncoordinated. The strongest negative opinions come from the Southwest and Mainland corridors, with 44.4% and 44% respectively, expressing concern. Additionally, 34% of respondents link growth to chaotic expansion, especially in the Southwest corridor (44.4%) and the Northwest corridor (34.8%). Furthermore, 14.2% believe development is poorly planned, a view more common in the Ikeja corridor (23.5%) and Southeast corridor (21.7%). Finally, 11.3% describe the development process as malignant, particularly in the Northwest corridor, where the figure rises to 21.7%, while a small 0.9% used other negative descriptors.

The findings suggest that the growth of the Lagos metropolitan area is characterised by rapid expansion. On one hand, the city exhibits rapid population expansion and economic progress, signalling vitality and opportunity. On the other hand, challenges such as inadequate infrastructure, poor planning, unregulated development, and communication issues reveal systemic weaknesses that must be addressed. This duality highlights the need for strategic urban management, aiming to maximise growth benefits while minimising structural and social problems. A proactive focus on infrastructure, inclusive planning, and transparent governance will be essential to sustain Lagos's ongoing development.

Table 4.26 The Positive and Negative Growth Processes of Metropolitan Lagos.

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
How can you describe metropolitan Lagos's growth process?	Positive	Count	36	33	43	60	42	214
		% within Corridor	66.7%	55.9%	60.6%	71.4%	60.9%	63.5%
	Negative	Count	18	23	25	17	23	106
		% within Corridor	33.3%	39.0%	35.2%	20.2%	33.3%	31.5%
	Others	Count	0	3	3	7	4	17
		% within Corridor	0.0%	5.1%	4.2%	8.3%	5.8%	5.0%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
You have described the metropolitan Lagos' growth process as POSITIVE. Identify the positivity	Organised	Count	8	14	9	13	11	55
		% within Corridor	22.2%	42.4%	20.9%	21.7%	26.2%	25.7%
	Planned developm ent	Count	9	7	11	15	7	49
		% within Corridor	25.0%	21.2%	25.6%	25.0%	16.7%	22.9%
	Livable	Count	7	7	4	12	11	41
		% within Corridor	19.4%	21.2%	9.3%	20.0%	26.2%	19.2%
	Sustainab le	Count	7	0	3	7	4	21
		% within Corridor	19.4%	0.0%	7.0%	11.7%	9.5%	9.8%
	Resilienc e	Count	5	5	16	13	9	48
		% within Corridor	13.9%	15.2%	37.2%	21.7%	21.4%	22.4%
Total		Count	36	33	43	60	42	214
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
You have described the metropolitan Lagos' growth process as NEGATIVE. Identify the negativity	Uncoordi nated	Count	8	9	11	6	8	42
		% within Corridor	44.4%	39.1%	44.0%	35.3%	34.8%	39.6%
	Chaotic expansion	Count	8	6	8	6	8	36
		% within Corridor	44.4%	26.1%	32.0%	35.3%	34.8%	34.0%
	Malignant	Count	1	3	2	1	5	12
		% within Corridor	5.6%	13.0%	8.0%	5.9%	21.7%	11.3%
	Poorly planned	Count	1	5	3	4	2	15
		% within Corridor	5.6%	21.7%	12.0%	23.5%	8.7%	14.2%
	Others	Count	0	0	1	0	0	1
		% within Corridor	0.0%	0.0%	4.0%	0.0%	0.0%	0.9%
Total		Count	18	23	25	17	23	106
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

4.2.27 The Perception of Lagos's Metropolitan Growth Process and Key Indicators

Table 4.27 illustrates how respondents perceive the growth of metropolitan Lagos, specifically whether they view it as an urban crisis and the indicators supporting this perspective. A large majority, 78.3%, believe Lagos's expansion indicates an urban crisis. This sentiment is most strongly expressed in the Southeast corridor, with 88.1% agreement, followed by the Southwest at 83.3%. Even in Ikeja and the Northwest corridors, where this view is less prevalent, 70.2% and 73.9% of respondents, respectively, still link Lagos's growth to an urban crisis.

Conversely, 21.7% disagree, with the highest disagreement in the Ikeja corridor (29.8%) and Northwest corridor (26.1%). Several key themes emerge concerning the indicators cited by respondents that support viewing Lagos's growth as an urban crisis.

Table 4.27 The Perception of Lagos's Metropolitan Growth Process and Key Indicators

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Can the Lagos growth process be interpreted as an urban crisis?	Yes	Count	45	52	57	59	51	264
		% within Corridor	83.3%	88.1%	80.3%	70.2%	73.9%	78.3%
	No	Count	9	7	14	25	18	73
		% within Corridor	16.7%	11.9%	19.7%	29.8%	26.1%	21.7%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
What would you consider to be the key indicators of that crisis	Aggressive malignant growth	Count	30	32	39	40	40	181
		% within Corridor	19.6%	17.9%	17.9%	18.1%	19.6%	18.6%
	Functional consequences	Count	17	29	20	24	18	108
		% within Corridor	11.1%	16.2%	9.2%	10.9%	8.8%	11.1%
	Urban sprawl	Count	21	35	31	34	32	153
		% within Corridor	13.7%	19.6%	14.2%	15.4%	15.7%	15.7%
	Ageing or diversification of the population	Count	18	17	23	12	15	85
		% within Corridor	11.8%	9.5%	10.6%	5.4%	7.4%	8.7%
	Socioeconomic status	Count	27	19	26	30	29	131
		% within Corridor	17.6%	10.6%	11.9%	13.6%	14.2%	13.4%
	Crime	Count	17	19	30	34	30	130
		% within Corridor	11.1%	10.6%	13.8%	15.4%	14.7%	13.3%
	Urban living conditions	Count	16	20	37	36	26	135
		% within Corridor	10.5%	11.2%	17.0%	16.3%	12.7%	13.8%
	Cultural adaptations	Count	7	8	12	11	14	52
		% within Corridor	4.6%	4.5%	5.5%	5.0%	6.9%	5.3%
Total		Count	153	179	218	221	204	975
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Aggressive malignant growth, mentioned by 18.6% of responses stood out as the major concern. This suggests that many perceive the city's expansion as unchecked and potentially harmful. Urban sprawl is a close second, referenced by 15.7%, reflecting widespread concerns about low-density, dispersed development that strains infrastructure and services.

Socioeconomic issues are also prominent, cited by 13.4%, highlighting problems such as inequality, poverty, and economic displacement as signs of a crisis-level urban growth. Crime is reported at a rate of 13.3%, indicating an increase in insecurity associated with urban expansion. Slightly higher, 13.8%, mention poor urban living conditions, including overcrowding, inadequate housing, and lack of public services. Growth's functional impacts, such as traffic congestion and pressure on utilities, are pointed out by 11.1%. Demographic changes, such as ageing or diversification, are acknowledged by 8.7%, showing awareness of these shifts. Lastly, 5.3% refer to cultural adaptations, viewing social norm changes or cultural integration as indicators of urban stress.

4.2.28 The Growth of Metropolitan Lagos as a Malignant Neoplasm

The findings also indicate that most residents perceive Lagos's rapid and extensive growth not only as development but also as a sign of crisis. The focus on malignant growth, sprawl, and declining living standards highlights a shared concern that current urban trends are unsustainable and are causing various socioeconomic and environmental issues.

Table 4.28 The Growth of Metropolitan Lagos as a Malignant Neoplasm

		Metropolitan Corridor					Total
		Southwest	Southeast	Mainland	Ikeja	Northwest	
Unchecked growth	Count	39	41	47	48	39	214
	% within Corridor	40.2%	40.2%	45.2%	42.5%	34.8%	40.5%
No potential for control	Count	19	22	25	33	29	128
	% within Corridor	19.6%	21.6%	24.0%	29.2%	25.9%	24.2%
Growth unaffected by scale	Count	28	27	15	13	27	110
	% within Corridor	28.9%	26.5%	14.4%	11.5%	24.1%	20.8%
Average growth controls	Count	11	12	17	19	17	76
	% within Corridor	11.3%	11.8%	16.3%	16.8%	15.2%	14.4%
Total	Count	97	102	104	113	112	528
	% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Table 4.28 explores respondents' views on Lagos's urban growth, using the metaphor of malignant neoplasms. The most common perception, shared by 40.5% of respondents, is that Lagos's growth is best described as "unchecked growth." This suggests a widespread belief that the city is expanding rapidly without adequate regulation or planning, similar to malignant cells

that multiply in humans.

This perception is widespread in the Mainland and Ikeja corridors, where perceptions of unchecked expansion are particularly strong. Moreover, 24.2% of respondents feel there is no potential for control over Lagos's growth. This highlights a significant concern that the city's rapid development is both unstoppable and inadequately managed. Respondents from the Ikeja corridor express this feeling more intensely than those elsewhere, emphasising a sense of helplessness amid Lagos's swift change.

In summary, comparing Lagos's rapid growth to malignant tumours illustrates a public view that the city is expanding recklessly and uncontrollably. Most respondents view this growth as unmanaged, irreversible, and lacking planning guidance, indicating deep concerns about the city's future and the apparent absence of effective urban governance. The cancer metaphor underscores both the speed and scale of expansion and the fear that this process is inherently harmful and beyond intervention.

4.2.29 Effects of Malignant Neoplasms on Lagos Metropolitan Growth

Table 4.29 examines how respondents interpret the effects of Lagos's metropolitan growth compared to malignant neoplasms, with responses categorised as positive, negative, and mixed. Across the city, 43.9% of respondents describe the effects as negative. This perception is strong in the Ikeja corridor and the Northwest corridor, where 48.8% and 46.4% respectively, see the growth as mainly harmful. These respondents probably associate growth with worsening living conditions, insufficient infrastructure, and social instability, reflecting a fear that the city's expansion mimics the destructive, uncontrolled nature of malignant cells.

In contrast, 30.9% of respondents view the effects positively. This sentiment is strongest in the Southeast corridor, where 45.8% believe growth has brought benefits. The Southwest corridor also displays a relatively optimistic outlook, with 40.7% sharing positive opinions.

A further 20.8% describe the city's growth as 'unaffected by scale,' indicating that expansion continues regardless of consequences or urban limits. This suggests that infrastructural capacity, environmental limits, or population pressures do not slow growth, indicating that Lagos's ongoing expansion exceeds sustainable levels. Only 14.4% believe Lagos has 'average growth controls,' suggesting a degree of trust in the planning or policies guiding development.

However, even among these, confidence is low, likely due to weak enforcement of urban policies rather than strong, coordinated regulation.

Table 4.29 Effects of Malignant Neoplasms on Lagos Metropolitan Growth

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Would you say about the effects?	Positive	Count	22	27	22	19	14	104
		% within Corridor	40.7%	45.8%	31.0%	22.6%	20.3%	30.9%
	Negative	Count	21	21	33	41	32	148
		% within Corridor	38.9%	35.6%	46.5%	48.8%	46.4%	43.9%
	Both	Count	11	11	16	24	23	85
		% within Corridor	20.4%	18.6%	22.5%	28.6%	33.3%	25.2%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Respondents in these areas often link growth to economic prospects, urban renewal, and better access to services or infrastructure. An extra 25.2% have a mixed perspective, recognising both benefits and drawbacks. This is notably seen in the Ikeja and Northwest corridors, where 28.6% and 33.3% respectively acknowledge Lagos's expansion's dual effects. These individuals likely understand that while development has spurred economic activity and urban change, it has also brought challenges like congestion, pollution, and inequality.

Overall, most participants perceive Lagos's metropolitan growth as having harmful effects, describing it as akin to malignant tumours. Nonetheless, about one-third see these effects as beneficial, and around a quarter recognise both positive and negative impacts. These findings highlight a city undergoing deep, complex transformation, where growth creates both opportunities and difficulties influenced by personal experiences and local factors.

4.2.30 Comparability and Similarity Between Lagos Metropolitan Growth and Cancer Growth

Table 4.30 explores public perception of whether the expansion of metropolitan Lagos can be compared to cancerous growth, using the metaphor of malignant neoplasms to evaluate the severity, nature, and trajectory of the city's development. A large majority of respondents,

75.1%, agree that Lagos's growth resembles the growth of cancer. This view is particularly strong in the Southeast and Northwest corridors, where 79.7% and 76.8% of respondents, respectively, make this comparison. The Mainland and Southwest corridors also closely follow this trend, with 74.6% and 75.9% in agreement, respectively. Even in the Ikeja corridor, where the figure is slightly lower at 70.2%, a majority of respondents still perceive the city's growth as akin to a malignant process. Only 24.9% of respondents across all regions reject this analogy, indicating that the cancer metaphor is widely accepted as a description of Lagos's development.

Table 4.30 Comparability and Similarity between Lagos Metropolitan Growth and Cancer Growth

			Metropolitan Corridor					Total
			Southwest	Southeast	Mainland	Ikeja	Northwest	
Do you think that city growth is comparable to cancer growth?	Yes	Count	41	47	53	59	53	253
		% within Corridor	75.9%	79.7%	74.6%	70.2%	76.8%	75.1%
	No	Count	13	12	18	25	16	84
		% within Corridor	24.1%	20.3%	25.4%	29.8%	23.2%	24.9%
Total		Count	54	59	71	84	69	337
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Does metropolitan Lagos' growth have any similarity to cancer?	Yes	Count	40	43	49	54	48	234
		% within Corridor	97.6%	91.5%	92.5%	91.5%	90.6%	92.5%
	No	Count	1	4	4	5	5	19
		% within Corridor	2.4%	8.5%	7.5%	8.5%	9.4%	7.5%
Total		Count	41	47	53	59	53	253
		% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

Regarding perceived similarity, the consensus is even stronger. An overwhelming 92.5% of respondents see Lagos's growth as sharing traits with cancerous growth. This view is nearly unanimous in the Southwest corridor, with 97.6% agreement. It remains highly prevalent in the Southeast, Mainland, Ikeja, and Northwest corridors, where support ranges from 90.6% to 92.5%. Only 7.5% of respondents see no similarity, indicating minimal disagreement. These results reveal a strong public consensus that Lagos's expansion is problematic and resembles cancer's biological behaviour in both scale and character. The metaphor portrays the expansion as rapid, aggressive, uncontrolled, and damaging, spreading unchecked across space without regard for balance, regulation, or urban well-being. It suggests that the city is growing in a way that could threaten its health and functionality, similar to how malignant cells undermine the

body's systems.

In summary, the data reveal a prevalent and strong perception among respondents that Lagos is undergoing a form of urban transformation that is dangerous in its current state. The frequent comparison to cancer growth indicates deep concern about the unregulated, disorderly, and potentially destructive nature of metropolitan expansion in the city.

Table 4.31 Perceived Challenges of Metropolitan Lagos Growth

		Metropolitan Corridor					Total
		Southwest	Southeast	Mainland	Ikeja	Northwest	
Unemployment	Count	38	36	51	61	50	236
	% within Corridor	19.3%	16.7%	15.8%	17.3%	17.8%	17.2%
Slum development	Count	39	44	55	58	48	244
	% within Corridor	19.8%	20.4%	17.0%	16.5%	17.1%	17.8%
Poverty	Count	24	29	41	42	34	170
	% within Corridor	12.2%	13.4%	12.7%	11.9%	12.1%	12.4%
Environmental degradation	Count	37	40	53	66	45	241
	% within Corridor	18.8%	18.5%	16.4%	18.8%	16.0%	17.6%
Uncontrolled and or uncontrollable rate of urban spatial expansion	Count	26	32	47	51	45	201
	% within Corridor	13.2%	14.8%	14.6%	14.5%	16.0%	14.7%
Amorphous nature of physical development	Count	15	17	33	29	27	121
	% within Corridor	7.6%	7.9%	10.2%	8.2%	9.6%	8.8%
Poor planning implementation	Count	18	18	43	45	32	156
	% within Corridor	9.1%	8.3%	13.3%	12.8%	11.4%	11.4%
Total	Count	197	216	323	352	281	1369
	% within Corridor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Fieldwork, 2025

4.2.31 Perceived Challenges of Metropolitan Lagos Growth

Table 4.31 outlines the main challenges residents associate with the growth of metropolitan Lagos. The study indicates that slum development is the most frequently mentioned issue, with 17.8% of responses identifying it as a significant consequence of Lagos's expansion. This

reflects a common view that the city is expanding chaotically, leading to informal settlements that lack proper infrastructure, sanitation, and adequate housing. Closely following is environmental degradation, noted by 17.6% of respondents, highlighting concerns about pollution, waste management, and the loss of green spaces due to rapid urbanisation. Unemployment is also a significant issue, accounting for 17.2% of responses, which suggests that despite the city's physical and economic growth, it is not creating enough jobs to accommodate its increasing population. Many residents perceive this mismatch as a key contributor to social instability and poverty.

14.7% of respondents view uncontrolled or unmanageable urban expansion as a problem. This highlights concerns that Lagos is growing rapidly, and regulatory bodies are struggling to keep pace, leading to unplanned neighbourhoods and significant pressures on transportation, utilities, and social services. The diffuse nature of physical development, mentioned by 8.8%, emphasises a landscape shaped by unregulated building styles and a lack of coordinated planning. Furthermore, poor implementation of planning, cited by 11.4%, indicates dissatisfaction with how current development plans are either ignored or inadequately enforced. This issue affects all corridors, demonstrating a widespread lack of confidence in the planning authorities' ability to manage the city's growth effectively. Poverty, reported by 12.4% of the respondents, underlines its persistent presence as both a cause and consequence of the city's development pattern. For many residents, economic vulnerability remains a central aspect of life in Lagos, and urban growth has not necessarily improved living standards.

In summary, Lagos's urban growth presents complex challenges deeply rooted in the city's fabric. Residents often highlight issues such as rising slum populations, environmental degradation, and unemployment, all of which may have been worsened by poor planning, uncontrolled sprawl, and poverty. The data indicate a rapidly expanding city struggling to manage its growth, with benefits unevenly shared and may have been overshadowed by significant structural and social issues.

4.3 MODELS AND HYPOTHESES

4.3.1 LAND USE/LAND COVER CHANGE DETECTION (POST-CLASSIFICATION)

Figures 4.1, 4.22, and 4.3 depict the extent and direction of land use and land cover (LULC) changes in Lagos metropolis from 2006 to 2022, based on classification outputs. The data shows that land use and cover have experienced various transformations, often shifting from one form to another over this period. It is evident from these figures that the distribution, nature, and development patterns within the area have changed significantly. The LULC classes identified are water bodies, vegetation, and the built-up regions (both high and low). The results feature a classified image of Lagos metropolis generated using the maximum likelihood classification technique for LULC change detection in this study.

4.3.1.1 Historical Development and Settlement Pattern of Metropolitan Lagos (Pre-2006)

Between 1984 and 2006, (Table 4.32) Lagos experienced significant changes in land use and settlement patterns. In 1984, the city was mainly characterised by extensive vegetation and a relatively small built-up area, with compact settlements and natural landscapes dominating the urban fringe. This study examines spatial changes in Lagos's land use and cover from 1996 to 2022 through satellite imagery and GIS data. Results show a significant expansion of built-up areas, fragmentation of vegetation, and loss of wetlands, primarily due to population growth, infrastructure development, and inadequate zoning enforcement. These trends pose a threat to ecological stability, flood resilience, and urban quality of life.

Table 4.32 Land Use/Land Cover Pattern (1996-2022)

Year	Map Source	Description
1996	Lagos 1986–2001–2016 Map	Shows early urban footprint and dominant vegetation cover
2000	GlobeLand30 & Landsat ETM+	Built-up areas begin expanding into peri-urban zones
2015	Extent of LULC Change Map	Rapid urbanisation, wetland loss, and vegetation decline
2022	NextGIS Lagos Landcover Portal	High-resolution classification of built-up, forest, cropland, wetlands, and water bodies

Source: Author's GIS research work, 2025.

By 1999, urban growth had become more evident, with expanding built-up areas replacing sections of vegetated land. Although classification from that period was partially affected by cloud distortion, the trend towards expansion and intensification of urban development was evident. Overall, Lagos shifted from a primarily natural environment to a rapidly urbanising metropolis between 1984 and 2006, laying the foundation for more rapid land cover changes

in later years.

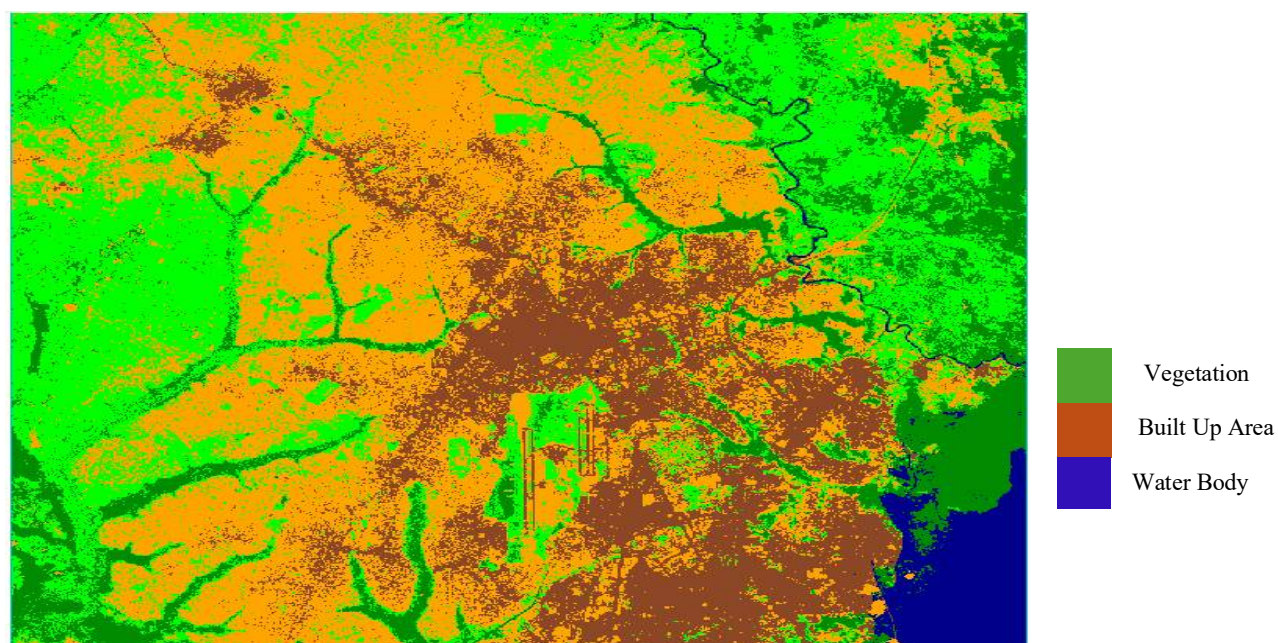


Figure 4.1: Land Use/Land Cover Classification of Lagos Metropolis in 2006

4.3.1.2 Land Use and Land Cover Analysis of Lagos Metropolis, 2006

By 2006, as shown in Table 4.33, the transformation of the Lagos landscape was even more noticeable. Built-up areas accounted for over 56% of the total land cover, indicating a significant shift from vegetative land to urban use. This important change was driven by rapid population growth, infrastructural expansion, and increasing economic activities. As a result, vegetation was significantly reduced, making room for urban development, with built-up areas growing by about 40% compared to earlier periods. Meanwhile, water bodies remained stable, covering around 3.5% of the total area. These changes are depicted in Figure 4.2.

Table 4.33 Land Use/Land Cover Change Matrix

Land Use/ Land Cover	2006		2015		2022	
	Per (%)	Area (Ha)	Per (%)	Area (Ha)	Per (%)	Area (Ha)
Water Body	3.5%	2410.83	3.8%	2636.19	3.4%	2944.78
Vegetation	40.0%	27715.95	27.7%	19200.33	22.8%	20306.34
Built-up	56.5%	39138.66	68.5%	47428.92	73.8%	65694.12
Total	100	69265.44	100	69265.44	100%	88945.16

Source: Author's GIS research work, 2022.

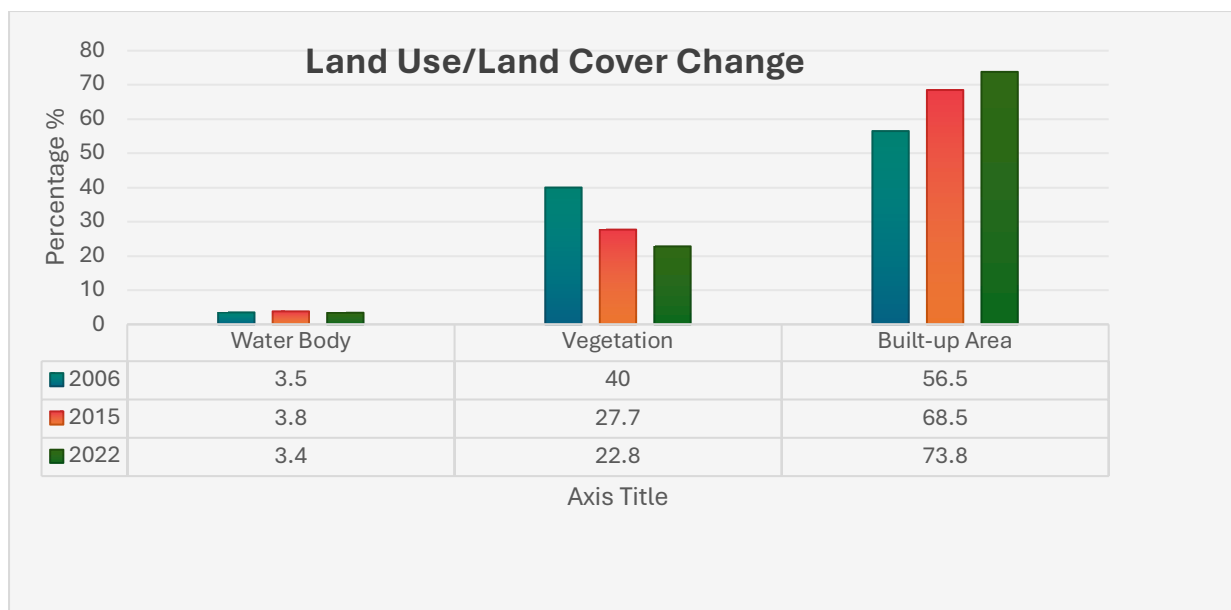


Figure 4.2: Land Use/Land Cover Change

Source: Author's GIS research work, 2025

4.3.1.3 Land Use and Land Cover Analysis of Lagos Metropolis, 2015

By 2015, built-up areas had expanded notably, covering 68.5% of the total land area (around 47,428.92 hectares), as shown in Figure 4.26 and detailed in Table 4.33. This ongoing urban growth, which increased from 56.5% in 2006, primarily came at the expense of vegetation, decreasing sharply from 40% in 2006 to 27.7% in 2015, a decline of over 8,500 hectares.

Meanwhile, water bodies including land reclamation of the ocean and lakes stayed relatively stable, rising slightly from 3.5% in 2006 to 3.8% in 2015. This minor increase may result from better satellite detection or reclassification, but also from flooding in some low-lying parts of Lagos. These areas often flood due to climate change, poor drainage, and inadequate waste management, all of which have contributed to persistent waterlogging and flooding in certain parts of the city.

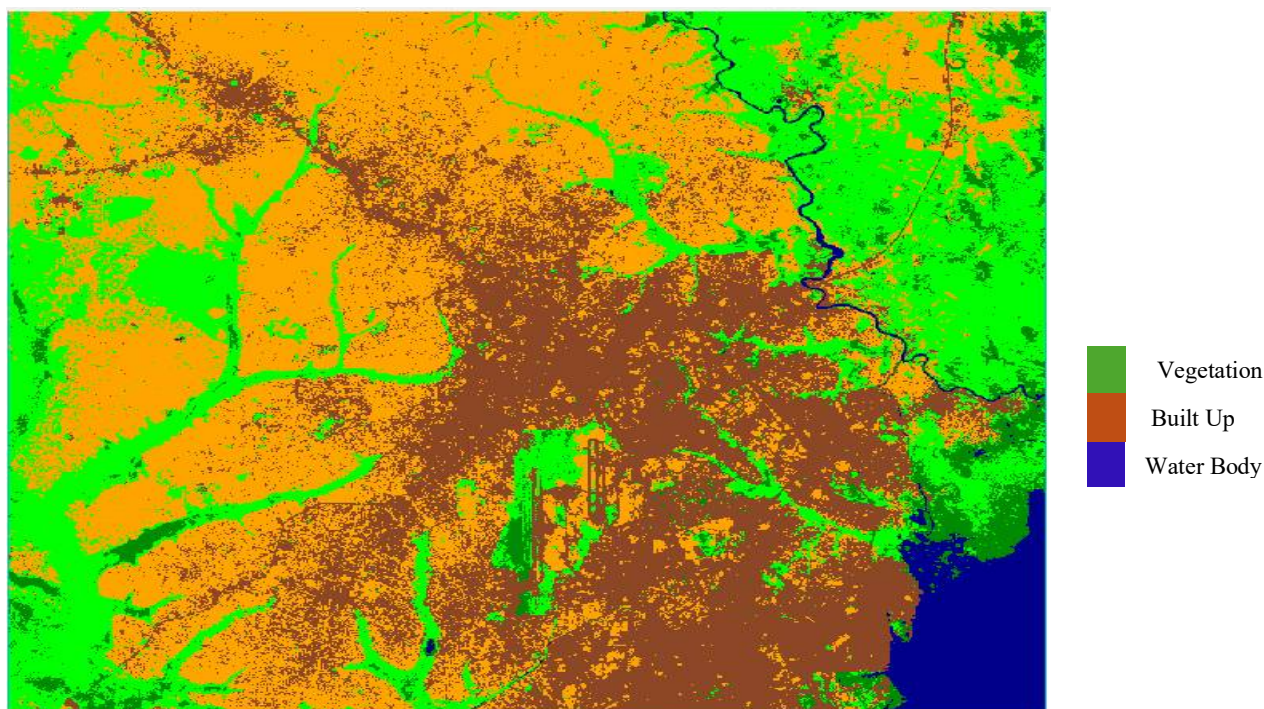


Figure 4.3: Land Use/Land Cover Classification of Lagos Metropolis in 2015

Overall, the 2015 land use pattern indicates a marked shift towards urban dominance, with the reduction in natural cover reflecting the changing landscape dynamics in Lagos Metropolis from 2006 to 2015.

4.3.1.4 Land Use and Land Cover Analysis of Lagos Metropolis, 2022

By 2022, as shown in Figure 4.4, land use in Lagos Metropolis had become more dynamic, with the total land area increasing from 69,265.44 hectares in 2015 to 88,945.16 hectares in 2022. This expansion includes four additional local government areas, Eti-Osa, Apapa, Ojo, and Ajeromi/Ifelodun, added to the land cover assessment. Despite this growth in spatial extent, the percentage distributions across different land cover types remained stable, confirming the consistency of previous land use change patterns.

The built-up area continued to dominate, making up 73.8% (65,694.12 ha) of the total land. This indicates an ongoing trend of urban expansion, fueled by increasing demand for housing, commercial activities, and infrastructure, especially in waterfront and peri-urban zones. The share of built-up land grew from 56.5% in 2006 to 68.5% in 2015, highlighting a persistent and accelerating pattern of urban sprawl.

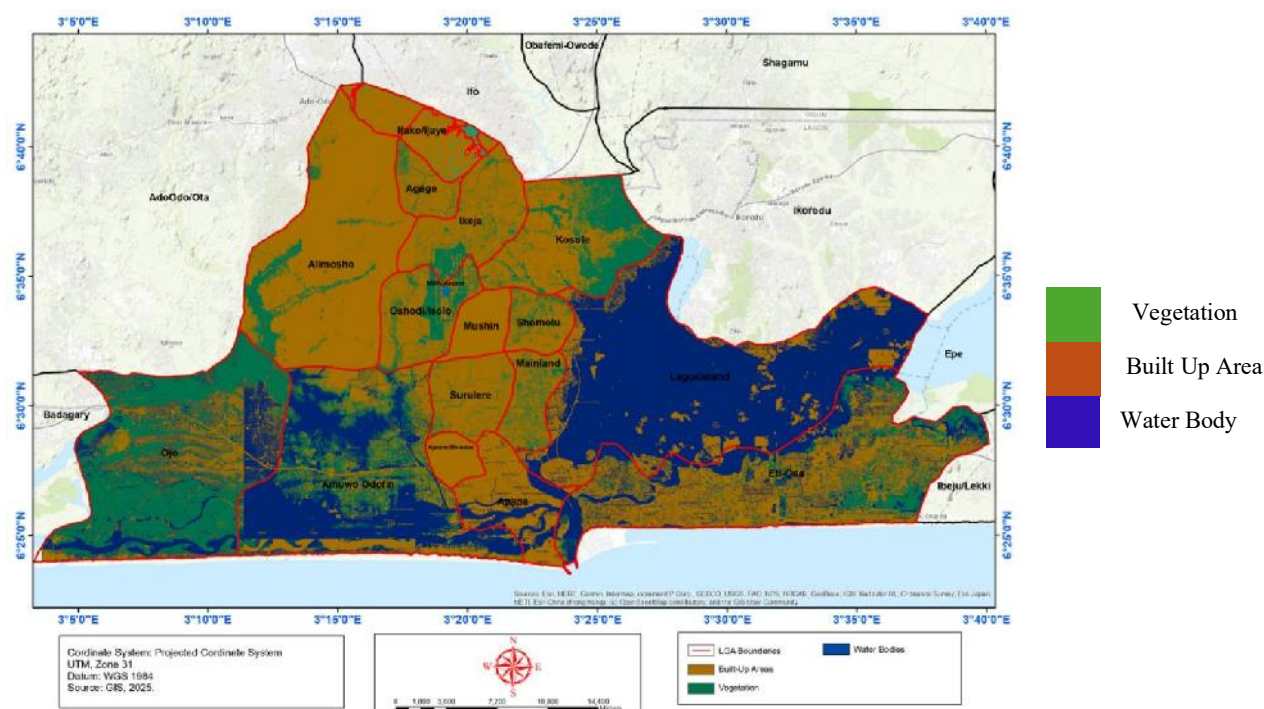


Figure 4.4: Land Use/Land Cover Classification of Lagos Metropolis in 2022

Vegetation cover declined to 22.8% (20,306.34 ha), from 27.7% in 2015 and 40.0% in 2006. This ongoing reduction in green space indicates increasing pressure on the natural environment, mainly due to the conversion of forests and grasslands into residential areas, commercial centres, and transportation routes.

Water body coverage declined slightly to 3.4% (2,944.78 ha) in 2022 from 3.8% in 2015. While this change seems minor in percentage, it is notable given the extensive land reclamation activities in major waterfront LGAs like Eti-Osa and Apapa. Projects such as Eko Atlantic City, landfills, and coastal expansion efforts have increasingly encroached on natural water bodies, converting former wetlands, marine, and lagoon areas into dry land suitable for development.

4.3.1.5 LULC Change Between 2015 And 2022 (Increase and Decrease Threshold)

Between 2015 and 2022, as shown in Table 4.34, metropolitan Lagos has undergone substantial expansion driven by increasing population, human activities, and social factors. This development has influenced the pattern and pace of urban growth. While economically active, this expansion has resulted in the encroachment of wetlands and waterbodies, a rise in informal settlements, and infrastructure becoming overwhelmed, symptoms akin to a malignant growth.

Table 4.34: LULC Change Summary Between 2015 and 2022

Land Use/ Land Cover	2015		2022		Percentage (%) change	Remark
	Per (%)	Area (Ha)	Per (%)	Area (Ha)		
Water Body	3.8	2636.19	3.4	2944.78	0.4	Decrease
Vegetation	27.7	19200.33	22.8	20306.34	4.9	Decrease
Built-up Area	68.5	47428.92	73.8	65694.12	5.3	Increase
Total	100	69265.44	100	88945.16		

Source: Author's fieldwork, 2022.

An analysis of LULC (land Use and Land Cover) changes in Lagos over time reveals significant transformations driven by urban development. These include the loss of wetlands, the widespread replacement of natural land with impervious surfaces, and reductions in coastal areas such as shorelines and water bodies. The environmental effects of this urban expansion are reflected in the data presented in Table 4.34. From 2015 to 2022, Lagos Metropolis experienced notable shifts in land use and coverage, continuing a trend of urban growth that began in the mid-1980s. By 2015, built-up areas had grown from 42.74% in 1984 to 68.47%, indicating extensive urban and infrastructural development. Regions like Alimosho and Ikorodu saw over a 35% increase in built-up land, which was accompanied by a corresponding decrease in vegetation and wetlands. This growth primarily came at the expense of natural ecosystems, which were cleared to make way for residential, commercial, and transportation infrastructure.

During this period, vegetative land cover, which was already decreasing due to urban growth, was at 27.7% in 2015. This included remaining forests and transitional green spaces typically found on city outskirts or peri-urban zones. Some of these areas may have been re-vegetated after clearing or remain undeveloped, awaiting future use. Water bodies grew slightly from 3.70% in 1984 to 3.81% in 2015, probably due to temporary flooding, seasonal changes in hydrology, and initial indicators of sea-level rise linked to climate change.

By 2022, as illustrated in Figure 4.5, these trends became even more pronounced. Built-up areas have grown further, now accounting for 73.8% of the total land. This ongoing expansion reflects both intensified development within existing urban centres and outward growth into

previously undeveloped regions. The addition of new local government areas such as Eti-Osa, Apapa, Ojo, and Ajeromi-Ifelodun expanded the spatial scope of the analysis and the total land considered. Still, the pattern of change remains consistent, with the percentage values showing a steady increase in urbanisation.

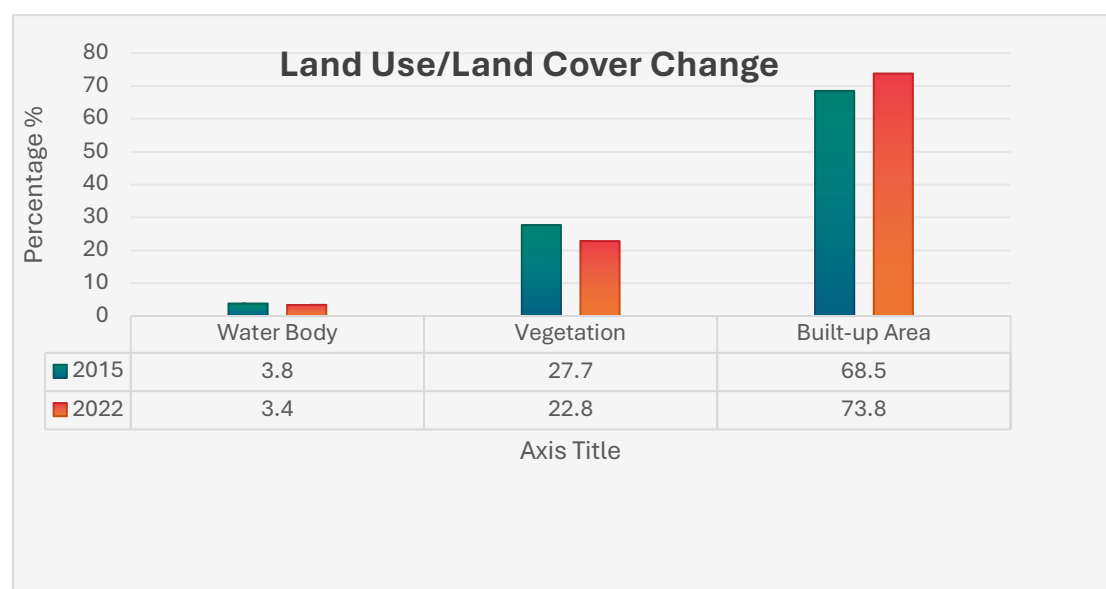


Figure 4.5: Showing Land Use/Land Cover Change Summary between 2015 and 2022

Vegetation decreased to 22.8% in 2022, highlighting the ongoing unregulated land conversion as green spaces continue to shrink with new developments. This decline has significant environmental and social repercussions, including increased urban heat, biodiversity loss, and deteriorating air and water quality. Water bodies, initially projected to increase, actually declined from 3.81% in 2015 to 3.4% in 2022 (see Figure 4.5).

The study compares the Land Use/Land Cover (LULC) changes in Lagos from 1996 to 2022 with the concept of malignant urban growth, which refers to uncontrolled, unsustainable, and ecologically harmful expansion of cities.

Table 4.35: LULC Change in Lagos (1996–2022)

Year	Built-Up (%)	Vegetation (%)	Wetlands/Water (%)	Bare Land (%)
1996	20	60–70	10	10
2000	30	55	8–10	5–10
2015	45	40	6–8	12
2022	55	30	5–7	13

Source: Author’s fieldwork, 2025.

These figures, as shown in Table 4.35, reflect a 35% increase in built-up area and a 40% decline in vegetation, with wetlands experiencing a steady decline.

Table 4.36: Comparative Analysis: LULC vs. Malignant Growth

Indicator	LULC Evidence	Perceptive Malignant Factors
Built-up expansion	Rapid increase from 20% to 55%	Uncontrolled sprawl beyond infrastructure
Vegetation loss	Decline from 60% to 30%	Ecological degradation and heat islands
Wetland encroachment	Shrinking water bodies and buffers	Increased flood risk and biodiversity loss
Informal settlements	50–75% of population in unplanned housing	Tenure insecurity and sanitation gaps
Spatial entropy	Rising disorder in land use patterns	Fragmented urban form and planning failure
Infrastructure lag	Drainage, transport, and housing deficits	Unsustainable urban metabolism

Source: Author’s fieldwork, 2022.

According to Table 4.36, expansion is quantitatively significant but qualitatively weak, while growth appears spatially chaotic, with entropy values surpassing 0.80 in numerous districts as ecological systems decline. Planning approaches tend to be reactive instead of proactive and lack integration.

The results show a substantial increase in built-up areas, growing from around 20% to 55%, accompanied by significant decreases in vegetation and wetland zones. These trends indicate typical characteristics of malignant urban growth, including unchecked spatial expansion, ecological decline, and infrastructure lag. Entropy values exceeding 0.80 in several districts underscore the severity of land use fragmentation and planning failures. The findings strongly suggest widespread spatial disorder in the Lagos Metropolis, demonstrated by the sizeable expansion of built-up areas and the continuous loss of vegetation and wetlands from 1996 to 2022. These changes are not merely indicative of growth but resemble malignant urban expansion, where cities develop in ways that threaten ecological stability, planning uniformity, and infrastructure.

This study presents a spatiotemporal analysis of the Lagos Metropolis, revealing a pattern of urban growth that mirrors malignant development: rapid, unregulated, and ecologically unsustainable. From 1996 to 2022, built-up areas increased dramatically, while vegetation and wetlands declined sharply, destabilising environmental buffers and fragmenting land-use

patterns. Entropy indices above 0.80 across key districts emphasise a crisis of spatial chaos, fueled by informal development, weak zoning enforcement, and reactive planning.

4.4 ANALYSIS OF THE LAGOS METROPOLIS EXPANSION USING SHANNON'S ENTROPY MODEL

Shannon entropy was utilised to assess how dispersed or concentrated Lagos's built-up areas have been over 30 years. This metric examines the distribution of built-up land within a specific spatial unit relative to the total (Jat et al., 2007). It provides insights into the direction of urban expansion by measuring the degree of spatial disorder or randomness in land use patterns over time. In this context, Shannon entropy was applied to quantify the spatial randomness in land use across the Lagos metropolis.



Figure 4.6: 16 Districts of the Lagos Metropolis

Source: Author's fieldwork, 2025.

In carrying out the analysis, 16 causative districts (See Table 4.37) within the Lagos metropolis, as shown in Figure 4.6, were analysed separately as districts. Digital remote sensing data, comprising various Landsat Imagery Bands, were acquired for the area. The Landsat imagery bands were combined using the ARCGIS 'Composite Bands' geo-processing tool, and the imagery was visually interpreted to identify the various land uses present in the study area based on the colour classes.

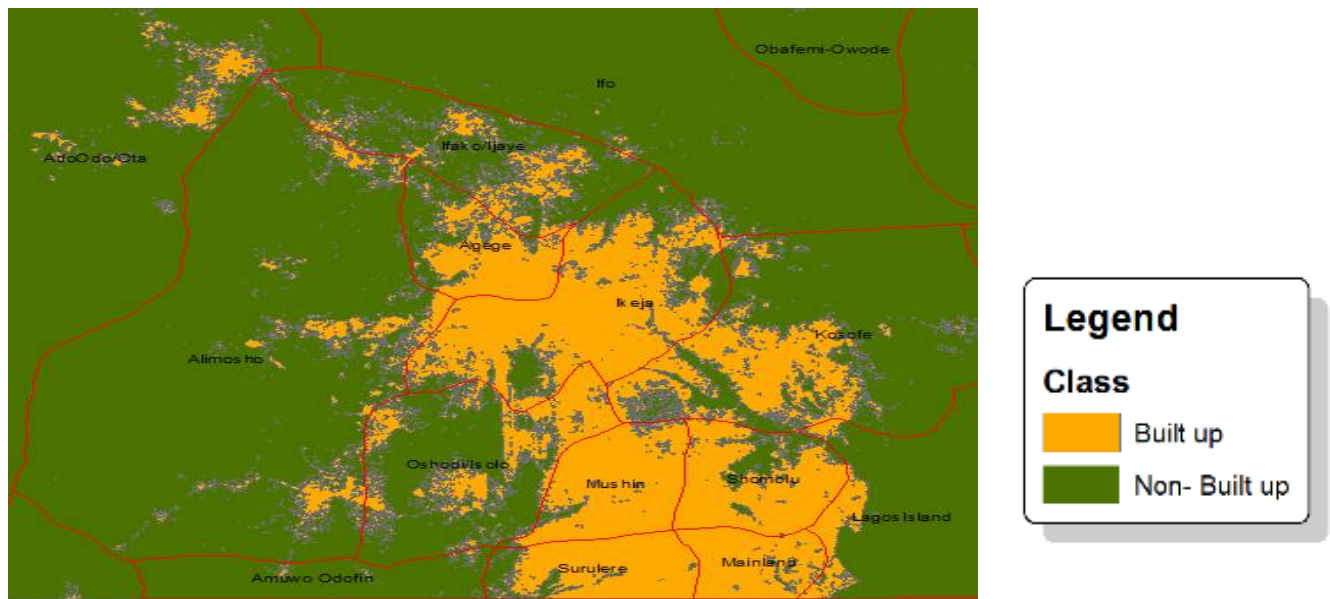


Figure 4.7: Built-up and Non-built-up Areas of the Lagos Metropolis 2006

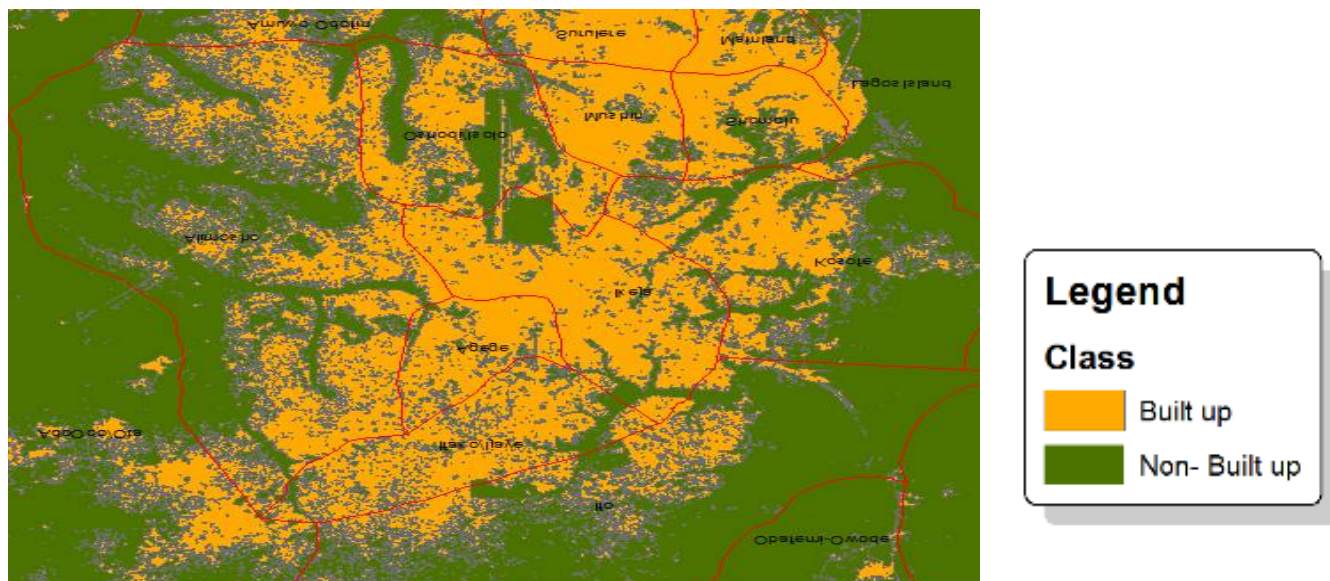


Figure 4.8: Built-up and Non-built-up Areas of the Lagos Metropolis 2015

After interpreting the various land uses in the study area, samples were drawn from the imagery and merged for each land use class. The Maximum likelihood classification method, in supervised classification mode in ArcGIS, was used to classify the land use into three classes. The three land use classes were further classified into two classes, namely built-up and non-built-up areas, as shown in Figures 4.7-4.8 for the three-year periods.

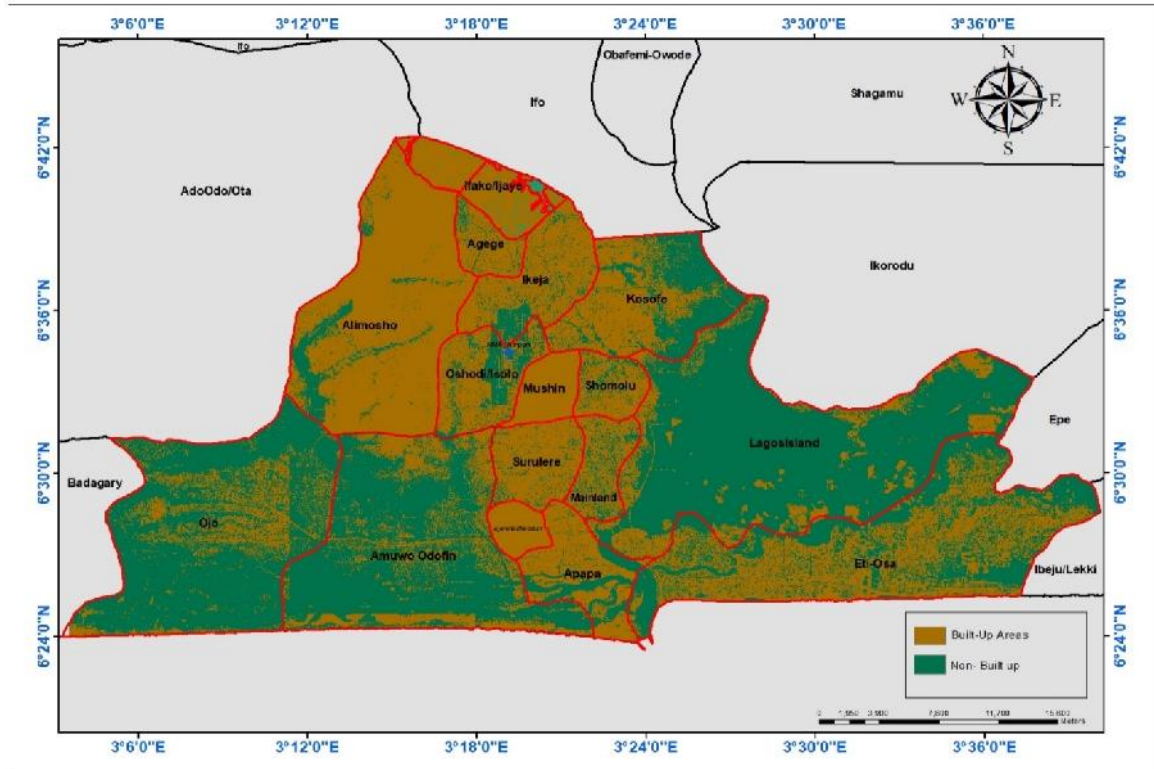


Figure 4.9: Built-up and Non-built-up Areas of the Lagos Metropolis 2022

To compute the built-up area for the ‘Calculated Geometry function’ of ArcGIS, the statistical output for each zone was generated. Shannon’s Entropy H_n was used to measure the degree of spatial concentration or dispersion of a geophysical variable among n zones.

It was calculated using equation (1).

$$\text{Shannon Entropy } (H_n) = -\sum_{i=1}^n P_i \ln P_i$$

Where P_i is the Ratio of the built-up area in district I to the sum of the built-up areas in all the zones, and n is the number of zones. Shannon Entropy (H_n) was computed for all the zones to determine spatial concentration or dispersion.

Firstly, Shannon entropy values were calculated for districts within the Lagos metropolis for the years 2000, 2015, and 2022, resulting in the values tabulated in Tables 4.37 to 4.38. The table explains the nature of urban growth in the respective districts in the Lagos metropolis. The value of Shannon’s Entropy ranges between 0 and $\ln(n)$. Where values closer to 0 imply very compact (dense) urban physical development, whereas values closer to $\ln(n)$ imply

disorganised or sprawling physical growth.

1. Low entropy: Indicates a compact, ordered urban form (e.g., centralised development).
2. High entropy: Suggests sprawl, fragmentation, and randomness in land use distribution.

Table 4.37: Calculation of the Shannon entropy for the year 2000 Districts for Lagos Metropolis Districts

Districts	Built-up Area (Sq. km)	Pi	Ln(Pi)	Pi x Ln(Pi)
Agege	14.42	0.05	-2.864	-0.163
Alimosho	62.88	0.248	-1.391	-0.346
Amuwo Odofin	6.61	0.026	-3.644	-0.095
Ifako/Ijaiye	26.98	0.106	-2.238	-0.238
Ikeja	36.88	0.145	-1.925	-0.280
Kosofe	26.16	0.103	-2.268	-0.234
Lagos Island	4.65	0.018	-3.996	-0.073
Mainland	8.39	0.033	-3.406	-0.112
Mushin	14.87	0.058	-2.833	-0.166
Oshodi/Isolo	23.97	0.947	-2.356	-0.223
Shomolu	14.36	0.056	-2.868	-0.162
Surulere	12.78	0.505	-2.985	-0.150
Total				-2.248

Source: Author's fieldwork, 2025.

The Shannon entropy for 2000, shown in Table 4.37, was calculated for 12 districts within Lagos metropolis. Shannon entropy values were also determined for 2000 and 2015, with a total entropy of -2.24 in 2000 and -2.13 in 2015, as presented in Tables 4.37 and 4.38.

Table 4.38: Calculation of the Shannon entropy for the year 2015 for Lagos Metropolis Districts

Districts	Built-up Area (Sq. km)	Pi	Ln(Pi)	Pi x Ln(Pi)
Agege	16.34	0.047	-3.055	-0.143
Alimosho	114.14	0.328	-1.118	-0.365
Amuwo Odofin	11.52	0.033	-3.405	-0.113
Ifako/Ijaiye	31.47	0.090	-2.400	-0.217
Ikeja	41.13	0.118	-2.132	-0.252
Kosofe	38.40	0.110	-2.201	-0.243
Lagos Island	4.72	0.013	-4.297	-0.058
Mainland	9.05	0.026	-3.646	-0.095
Mushin	16.95	0.048	-3.018	-0.147
Oshodi/Isolo	32.12	0.092	-2.379	-0.220
Shomolu	17.01	0.049	-3.015	-0.147
Surulere	14.12	0.040	-3.201	-0.130
Total				-2.13

Source: Author's fieldwork, 2025.

Table 4.39: Calculation of the Shannon entropy for the year 2022 for Lagos Metropolis Districts

Districts	Built-up Area (sq km)	Pi	Ln(Pi)	Pi x Ln(Pi)
Agege	15.73	0.024	-3.729	-0.089
Alimosho	118.03	0.180	-1.715	-0.309
Amuwo-Odofin	69.93	0.106	-2.244	-0.237
Ifako/Ijaiye	30.51	0.046	-3.079	-0.141
Ikeja	36.39	0.055	-2.900	-0.159
Kosofe	38.26	0.058	-2.847	-0.165
Lagos-Island	15.43	0.023	-3.772	-0.087
Mainland	18.99	0.029	-3.540	-0.103
Mushin	17.38	0.026	-3.649	-0.095
Oshodi/Isolo	22.71	0.035	-3.352	-0.117
Shomolu	16.17	0.024	-3.729	-0.089
Surulere	29.47	0.045	-3.101	-0.168
Eti-Osa	130.69	0.199	-4.074	-0.321
Apapa	21.90	0.033	-3.411	-0.113
Ojo	64.04	0.097	-2.333	-0.226
Ajeromi/Ifelodun	11.31	0.017	1.614	-0.069
Total	656.94			-2.508

Source: Author's fieldwork, 2025.

Table 4.40: Shannon Entropy Values for the Subject Years

Year	Entropy Value
2000	2.24
2015	2.13
2022	2.51
Log(n)	

Source: Author's fieldwork, 2025.

Since Shannon entropy measures the distribution of a geographical phenomenon, the difference in Shannon entropy between two periods can reflect changes in the spread of land development or urban expansion. (Yeh and Li, 2001). To analyse Lagos metropolis expansion from 2015 to 2022, the relative entropy values of earlier years are subtracted from those of later years.

$$\text{Shannon Entropy } (H_n) = -\sum_1^n P_i \ln P_i$$

$$\Delta H_n = H_n(t + 1) - H_n(t)$$

$$\Delta H_n = H_n(2015) - H_n(2000)$$

$$\Delta H_n = 2.13 - 2.24$$

$$\Delta H_n(2015 - 2000) = -0.11$$

It was calculated using equation (1).

Based on the analysis for both years, when growth appeared disorganised and sprawling, the relative Shannon entropy for 2000 and 2015 was negative. This shows that sprawl is ongoing but slowing down, primarily due to densification within the built-up area boundary, especially in districts like Alimosho, Agege, and Ifako-Ijaiye during these periods.

$$\Delta H_n = H_n(2015) - H_n(2022)$$

$$\Delta H_n = 2.13 - 2.51$$

$$\Delta H_n(2015 - 2022) = -0.38$$

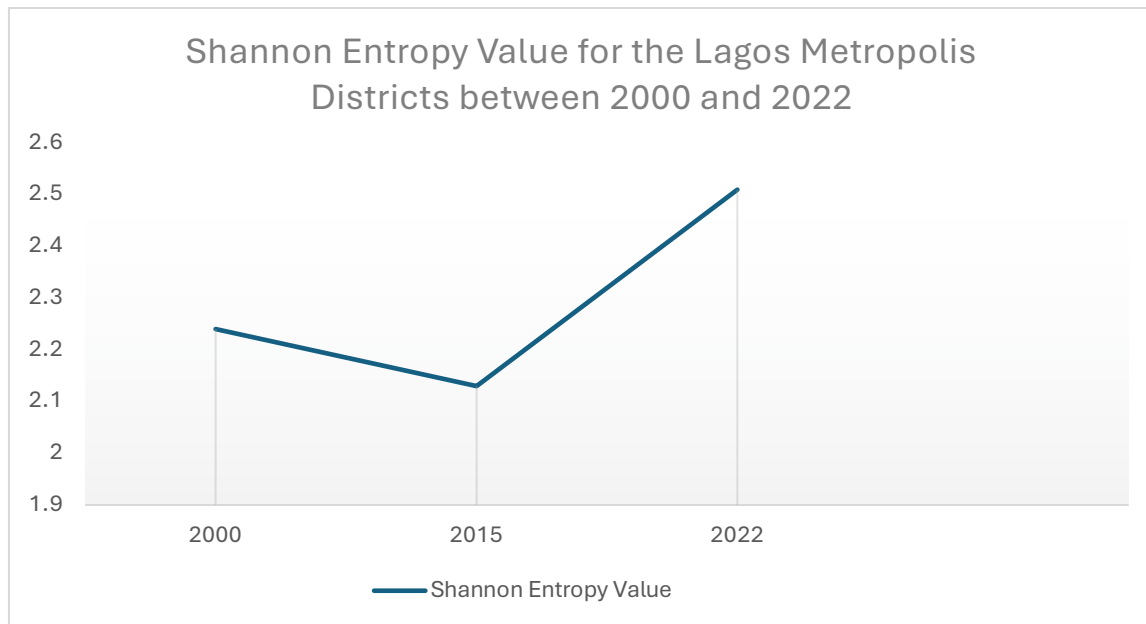


Figure 4.10: Showing Shannon Entropy Value for the Lagos Metropolis 2000-2022

The trend in Figure 4.10 is also reflected in the relative Shannon entropy for 2000 to 2015, which shows negative values. This confirms a decrease in sprawl toward the metropolis's outer zones, indicating that urban growth became more concentrated or intensified during this period. Compared to the 2000–2022 interval, there was an increase in the intensity of compact growth, primarily driven by the vigorous urban development observed in districts such as Alimosho, Oshodi/Isolo, Ifako-Ijaiye, Kosofe, and Ikeja, where higher Ln values are listed in Table 4.38.

According to Table 4.38, the growth in Alimosho, Oshodi/Isolo, Ifako-Ijaiye, Kosofe, and Ikeja is attributed to increased migration to outer settlements, growing local populations, improved road conditions, and other infrastructure that enable people to build homes on previously inaccessible land. Additionally, ineffective planning frameworks and weak laws, along with greater affluence, affordable and attractive land and housing prices, and the desire for larger homes with more amenities, such as yards, household appliances, storage, and privacy, have also driven Lagos Metropolis's expansion into the outer zones (Bhatta, 2010).

Lagos's urban expansion has followed a Malignant pattern of uncontrolled spatial growth due to nature of its unregulated urban sprawl, where it expands outward rapidly without coordinated planning. This research analyses the Entropy values from 2000 to 2022, which reached 2.51, close to the maximum possible. The increase to 2.51 in 2022 indicates Lagos's urban system is approaching complete spatial randomness, indicating a rise in spatial disorder and

fragmentation. This confirms a trend towards planning disarray. The results highlight a fragmented urban structure, characterised by uncoordinated development and systemic neglect. The study reveals that Lagos's growth occurred in three distinct phases of sprawling into nearby settlements. This points to significant dysfunction and unchecked expansion within the Lagos Metropolis during the study period, resulting in issues like slum development, unplanned growth, and the swift conversion of farmland into urban zones.

4.4.1 Spatial–Temporal Analysis of Lagos Metropolis Expansion

The spatial–temporal analysis of Lagos's urban growth, integrating entropy metrics with land cover changes over the past two decades, reveals several deductive generalisations about the metropolis's expansion. The growth of the Lagos metropolis can be divided into three periods. The first period (1921–1976) saw rapid urban physical expansion, but the overall urban growth rate remained consistent. The main reasons for urban growth are industrial investment, the concentration of political and economic activities in Lagos, and rural-urban migration. The second period, from 1976 to 1986, experienced very rapid urban growth. The primary reasons include the lack of effective implementation and supervision of the master plan. The third period, from 1986 to 2022, witnessed a decline in urban growth rates, followed by a relatively stable state, which aligns with Shannon entropy values indicating dense and compact growth patterns. Contributing factors include socio-economic and environmental issues. There has been an effort to prepare and approve various plans to regulate the physical growth of Lagos and to transfer this growth to the surrounding outlying settlements.

The urban growth pattern of Lagos metropolis unfolds in three stages: (1) development of the city core, (2) diffusion, and (3) coalescence, as shown in Figure 4.10. Despite significant population growth and rapid expansion, the relative Shannon entropy calculated for 2000 and 2015 remains negative. This growth has strained Lagos's resources and compromised outlying settlements by causing infrastructural fragmentation, poor access to facilities and services, and an uneven, inadequate distribution of infrastructure.

The study integrates Shannon entropy and the malignant urban expansion metaphor to identify uncontrolled growth, in the Lagos Metropolis. By applying entropy modelling to specific districts (2000–2022), it measures urban sprawl and interprets its systemic issues, similar to neoplastic growth in biology. This approach highlights both the real risks and the persuasive aspects of understanding Lagos's developmental problems.

This study analyses the expansion of Lagos metropolis over time using spatial-temporal methods, revealing how land use patterns have evolved into disorder. Using satellite images, land cover change detection, and entropy measures, it shows how Lagos's built environment has gradually become fragmented, sprawling in unpredictable directions with little regulation. This temporal mapping, combined with theories like malignant growth theory, provides a dual view of the speed and style of urban change. The results underline the importance of planning strategies that are both spatially aware and adaptable to long-term urban trends.

4.4.2 Spatial Entropy of Lagos Metropolitan Districts

Spatial entropy was employed to assess land-use fragmentation and morphological disorder across Lagos Metropolis's urban regions. A higher entropy score indicates a mix of zoning, extensive informal settlements, and inconsistencies in planning. Entropy measures were derived for specific districts based on five primary land-use types: residential, commercial, industrial, green/water, and vacant/informal, as detailed in Table 4.41. Over the past forty years, urban expansion in Lagos has accelerated, fueled by population growth, economic migration, and land scarcity on Lagos Island. The mainland districts, once on the periphery, have transformed into hubs of unregulated development.

1. Alimosho ranks highest in entropy, highlighting fragmented land use caused by informality and leapfrog development across LCDAs.
2. Eti-Osa highlights zoning incoherence, with the mixing of luxury estates, informal areas, and ecologically sensitive wetlands.
3. Lagos Island, although densely populated, maintains a relatively organised layout due to its commercial history. It balances some disorder with a clear distinction between commercial and residential areas.
4. Apapa's entropy is lowest, consistent with single-use industrial dominance, but its limited geography restricts adaptive reuse.
5. Ifako-Ijaiye and Kosofe exhibit the steepest increase in entropy, indicating unplanned growth and vegetation loss.
6. Mushin and Oshodi-Isolo are highly built-up areas with minimal green buffers, which increases flood vulnerability.
7. Amuwo-Odofin faces ecological risks due to development on reclaimed wetlands.
8. Agege exhibits the highest entropy values, indicating uncoordinated sprawl and vegetation loss.

9. Ikeja, despite being a commercial hub, maintains relatively lower entropy due to zoning enforcement.
10. Surulere exhibits a transition from compact to fragmented growth, driven by informal settlements and redevelopment pressures.

Table 4.41: Spatial Entropy Index – Lagos Metropolitan Districts

District	Entropy Index (E)	Dominant Traits
Alimosho	0.91	Highly fragmented; informal settlements, mixed zoning
Ajeromi-Ifelodun	0.76	Ultra-dense residential; minimal commercial diversity
Eti-Osa	0.88	Coastal sprawl; gated estates, wetland encroachment
Lagos Island	0.83	Mixed-use core; vertical saturation
Apapa	0.65	Industrial monoculture; constrained land-use
Badagry	0.72	Green-dominant; slow, linear expansion
Oshodi-Isolo	0.84	Transport hub; informal growth, mixed land use
Ikeja	0.78	Commercial-administrative mix; structured zoning
Yaba (LCDA)	0.80	Tech corridor; vertical densification, mixed use
Lagos Mainland	0.82	Aging infrastructure; informal housing clusters
Mushin	0.85	High-density infill; informal redevelopment
Agege	0.83	Peri-urban sprawl; informal housing, transport corridors
Ifako-Ijaiye	0.79	Inland sprawl; fragmented residential zones
Kosofe	0.81	Mixed-density; flood-prone, zoning inconsistencies
Somolu	0.80	Vertical redevelopment; artisan clusters, informal edges
Ojo	0.86	Leapfrog expansion; informal settlements dominate

Source: Author's fieldwork, 2025.

The study reveals evident spatial disorder throughout Lagos Metropolis, characterised by a significant increase in built-up areas and a continual reduction in vegetation and wetlands from 2015 to 2022. These shifts indicate more than mere expansion; they exemplify harmful urban growth, where city development jeopardises ecological balance, planning standards, and infrastructure (Hern, 1993).

Lagos's entropy indices, surpassing 0.80 in districts such as Alimosho, Ikorodu, and Amuwo-Odofin, indicate a breakdown in formal land-use regulation. The conversion of wetlands into built-up areas near Ejigbo, Ijeododo, and Ode-Omi directly threatens biodiversity and heightens the city's risk of flooding (Idowu & Zhou, 2021). Besides ecological stress, the

spread of informal settlements in unzoned areas creates issues for tenure security, access to sanitation, and the distribution of infrastructure. Without an adaptive zoning plan, this situation could become irreversible, deepening poverty, weakening disaster resilience, and overburdening urban governance.

4.4.3 Spatial Entropy Heat map of Lagos Metropolitan Districts

The study, as shown in Table 4.42, produced an entropy heat map to illustrate the scores across districts within the Lagos metropolitan corridor. These visualisations depict the spatial disorder and zoning fragmentation across 16 urban districts, ranging from the dense sprawl of Alimosho and Ojo to the organised industrial hubs of Apapa and Badagry.

Table 4.42: Heat map Summary Table

District	Entropy	Color	Notes
Alimosho	0.91	●	Informal sprawl, fragmented settlements
Ojo	0.86	●	Leapfrog expansion, slum corridors
Mushin	0.85	●	Densified infill, weak zoning overlays
Eti-Osa	0.88	●	Coastal fragmentation, wetland loss
Oshodi-Isolo	0.84	●	Transport hub, mixed development
Agege	0.83	●	Peri-urban pressures, informal growth
Lagos Island	0.83	●	Historic core, vertical mixed-use
Lagos Mainland	0.82	●	Aging infrastructure, slum clusters
Kosofe	0.81	●	Flood-prone, zoning inconsistencies
Yaba (LCDA est.)	0.80	●	Tech zone, redevelopment mix
Somolu	0.80	●	Artisan district, land use friction
Ikeja	0.78	●	Admin/commercial zone, moderate order
Ifako-Ijaiye	0.79	●	Inland growth, mixed zoning
Ajeromi-Ifelodun	0.76	●	Ultra-dense residential mono-zoning
Badagry	0.72	●	Green-dominant, slow coastal growth
Apapa	0.65	●	Industrial use, planning constraints

Source: Author's fieldwork, 2025.

Entropy Score Legend

- High Entropy zones (0.85–0.91) Alimosho, Mushin, Ojo and Eti Osa -Severe fragmented land use, informal growth, and weak zoning.
- Moderate Entropy zones (0.78–0.84) Ikeja, Yaba, Kosofe, Ifako Ijaiye, Somolu, Lagos

Island, Lagos Mainland, Agege, Oshodi Isolo, Kosofe and Yaba -Mixed-use imbalance, redevelopment zones, zoning inconsistencies

● Low Entropy (0.65–0.77) Apapa, Badagry and Ajeromi Ifelodun – Structured land use or constrained growth, green-dominant zones

4.5 OBJECTIVES/ HYPOTHESIS TESTING

4.5.1 TO EXPLORE THE GROWTH AND DEVELOPMENT OF METROPOLITAN LAGOS

Lagos has transformed from a colonial port city with a population of 325,000 in 1950 to a sprawling megacity with over 16.5 million residents in 2024. Its expansion has been driven by migration, economic importance, and infrastructure growth, but this growth is accompanied by land use disorder, ecological damage, and poor planning. The city experiences rapid, multifaceted growth fueled by a rising population, urban sprawl, economic activity, and infrastructure hurdles. Now, with a population surpassing 20 million and projected to reach 88 million by 2100, Lagos is on track to become the world's most populous city. However, this rapid expansion is causing environmental harm, unplanned development, and planning deficiencies.

The study of the Lagos metropolis population from 1950 to 2022, conducted at five-year intervals, revealed an increase in population growth, indicating the expansion of Lagos over this period. This growth accelerates each year, demonstrating a trend in which neighbouring or peripheral settlements have benefited from the expansion of the Lagos metropolis over time, as shown in Table 4.43.

Lagos, Nigeria's economic and cultural hub, has experienced a dramatic population increase, growing nearly 50 times from 1950 to 2022. What began as a small colonial settlement has evolved into one of Africa's largest urban centres, presenting both immense opportunities and significant challenges. The period between 1960 and 1990 marked the fastest demographic growth for Lagos, driven by post-independence urban migration as Nigerians moved in search of employment, education, and improved living conditions. The city's attractiveness as a land of opportunity was further enhanced by industrial expansion, its administrative importance, and the growth of port-related commerce, all of which solidified Lagos's role as a key national hub.

Since the start of the new millennium, Lagos has experienced a consistent growth rate of millions every five years. The city has expanded physically, reaching into surrounding districts and neighbouring Ogun State, while its socio-economic influence has broadened across various sectors. As a consequence, Lagos is now both the most populous and the most economically vital state in Nigeria, making a significant contribution to the national GDP.

However, this boom has come with its own set of challenges. The city's infrastructure, from roads and housing to drainage and energy, has struggled to keep up. Informal settlements are multiplying as affordable housing fails to meet demand. Traffic jams, environmental degradation, and spatial fragmentation pose significant threats to both livability and sustainability. In essence, Lagos's population growth tells a story of change and tension: one that combines the energy of opportunity with the need for better planning. Whether the city prospers or breaks apart under its weight will depend on how effectively it utilises its energy and addresses the challenges beneath the surface.

Table 4.43: Population and Expansion of Lagos Metropolis from 1950 to 2022

Year	Population	Increase from Previous	% Growth from Previous
1950	325,000	—	—
1955	468,000	+143,000	+44.0%
1960	762,000	+294,000	+62.8%
1965	1,135,000	+373,000	+48.9%
1970	1,414,000	+279,000	+24.6%
1975	1,890,000	+476,000	+33.6%
1980	2,572,000	+682,000	+36.1%
1985	3,500,000	+928,000	+36.1%
1990	4,764,000	+1,264,000	+36.1%
1995	5,983,000	+1,219,000	+25.6%
2000	7,281,000	+1,298,000	+21.7%
2005	8,859,000	+1,578,000	+21.7%
2010	10,441,000	+1,582,000	+17.9%
2015	12,239,000	+1,798,000	+17.2%
2020	14,368,000	+2,129,000	+17.4%
2022	15,388,000	+1,020,000	+7.1%

Source: Author's fieldwork, 2025.

A detailed breakdown in Table 4.43 shows that, at 5-year intervals from 1950 to 2022, Lagos has experienced a dramatic population boom, reflecting its transformation into one of Africa's most significant urban centres. Lagos, Nigeria's largest city, has experienced rapid and transformative growth over the past seventy years. Once a modest town, it has evolved into a sprawling metropolis, with population shifts reflecting significant changes in the country's political, economic, and social landscapes. The most significant growth occurred between 1955

and 1960, when Lagos's population increased by over 62%. This swift expansion was primarily driven by post-independence urban migration, as Nigerians sought opportunities and development in cities, making Lagos a hub of progress and modernisation.

During the 1980s and early 1990s, the city experienced steady population growth of approximately 36%, reflecting consistent urban expansion. Factors like economic diversification, continued migration, and Lagos's rising reputation as a commercial centre fueled this growth. The establishment of industrial zones and increased government activity further enhanced its appeal, attracting more job seekers.

According to the facts in Table 4.43, it was found that the rapid population growth and spatial expansion in Lagos have caused congestion, leading to adverse effects on neighbouring settlements from 1995 to 2015. This trend is also reflected in the Shannon entropy results, shown in Figure 4.10, which display a negative value from 2000 to 2015, despite the large influx of people that caused the swift growth and sprawl of the Lagos metropolis. Furthermore, a similar growth pattern was identified from the Land use and land cover change data between 2006 and 2015, indicating that the Lagos metropolis expanded over time between 2000 and 2022.

Due to the socio-economic importance of Lagos, including its large population and regional role in economic activities, there is a daily rise in the number of people per square kilometre. This growth leads to congestion and strain on infrastructure, resulting in high rent prices, housing shortages, crime, traffic congestion, and inadequate road networks. Moreover, land values and infrastructure development are also increasing, imposing similar challenges on the nearby settlements surrounding Lagos. Lagos's growth presents both a challenge and an opportunity; without spatial reform and infrastructure investment, malignant expansion could undermine resilience and equity.

4.5.1.1 Population Growth and Spatial Expansion of Lagos Metropolis from 1950 to 2024

This study investigates the demographic and spatial growth of Lagos Metropolis from 1950 to 2024 (Table 4.43), using historical census data, satellite imagery, and secondary urban studies. Lagos developed from a small colonial outpost into one of the largest cities in sub-Saharan Africa, with its population increasing from approximately 325,000 in 1950 to over 16.5 million in 2024.

Table 4.44: Population Growth of Lagos Metropolis (1950–2024)

Year	Estimated Population	Annual Growth Rate	Key Notes
1950	325,2128	—	Colonial port city with limited mainland expansion
1960	762,000	6.5%	Independence era: migration surge begins
1970	1.41 million	6.5%	Oil boom; rapid urbanization
1980	2.57 million	6.5%	Infrastructure strain begins
1990	4.76 million	6.5%	Emergence of slums and informal settlements
2000	7.28 million	5.5%	Lagos expands into Ogun State peri-urban zones
2010	10.44 million	3.8%	Urban renewal and mega-city planning
2020	14.37 million	3.5%	Coastal erosion and climate stress
2024	16.54 millio2n	3.7%	Lagos ranks as Africa’s 2nd-largest city economy

Source: Author’s fieldwork, 2025.

From Table 4.44, Lagos, which had a population of 325,000 in 1950 and was a modest colonial port, has transformed into a sprawling megacity with over 16.5 million residents by 2024. It is expected to exceed 24 million by 2035. The city's growth has been both vertical, increasing in density, and horizontal, spreading outward- fueled by migration, economic factors, and weak zoning enforcement. Today, Lagos faces critical challenges related to infrastructure, housing, and ecological resilience. From the 1950s to the 2020s, Lagos experienced significant urban changes. In its early years, it was mainly confined to Lagos Island, Ikoyi, and parts of Ebute Metta, serving as the centre for colonial administration and port activities. Infrastructure developments at that time primarily supported governance and trade, creating a compact yet functional urban core.

By the 1980s and 1990s, as shown in Table 4.44, Lagos expanded beyond its original borders. Neighbourhoods like Agege, Ikeja, Mushin, and Oshodi gained prominence due to population growth and industrial expansion. However, this growth led to the emergence of slums such as Makoko and Bariga, highlighting a significant housing shortage. The Lagos Metropolitan Area extended up to 20 miles from the city centre, marking the transition to a complex urban agglomeration.

Since the 2000s, Lagos has undergone a remarkable transformation. The city expanded into distant suburbs such as Alimosho, Ikorodu, Badagry, and Epe (Table 4.45). Urban growth

extended across state borders into parts of Ogun State, particularly Sango-Ota and Ifo, forming a larger conurbation. Strategic investments also developed the Lekki Peninsula, Ajah, and Ibeju-Lekki into new growth corridors, characterised by satellite towns, gated estates, and luxury developments.

Table 4.45: Spatial Expansion Milestone

Era	Urban Spread	Highlights
1950s–1970s	Lagos Island, Ikoyi, Surulere	Colonial density, early planned layouts
1980s–1990s	Ikeja, Agege, Mushin, Apapa	Rise of informal settlements
2000s–2010s	Alimosho, Badagry, Ikorodu, Epe	Wetland encroachment, gated estates boom
2020s	Lekki Peninsula, Ibeju, Mowe, Sango-Ota	Cross-border growth into Ogun State

Source: Author’s fieldwork, 2025.

Over the past few decades, Lagos has transformed from a small colonial town into a vibrant, sprawling metropolis. Its evolution reflects the broader stories of urbanisation in Africa, full of potential, yet also challenged by inequality, infrastructure deficiencies, and rapid population growth. This transformation has been accompanied by significant horizontal expansion, high spatial entropy, and infrastructural deficits, which collectively characterise a profile of malignant urban growth.

4.5.1.2 Demographic Profile and Historical Growth

Between 1950 and 2024, the Lagos Metropolis experienced a compound annual growth rate (CAGR) of approximately 6.5% until 1990, after which it slowed to 3.5%. Major drivers of this growth are high birth rates, rural-to-urban migration, and economic centralisation. The World Bank (2023) projects that if these trends persist, Lagos could have more than 88 million residents by 2100.

4.5.1.3 The Growth Factor of Metropolitan Lagos, 1980 to 2024

Between 1980 and 2000, Lagos transitioned from being a federal capital to a key regional economic centre. An influx of migrants driven by oil wealth and employment opportunities fueled this growth. Nevertheless, urban planning did not keep pace with population growth, leading to widespread slums and increased pressure on infrastructure. Most urban development remained within Lagos State. From 2001 to 2024, Lagos evolved into a primate city,

experiencing rapid sprawl into neighbouring regions. The number of informal settlements grew, with over 140 slums identified. Spatial entropy rose significantly, indicating fragmented land use and weak zoning enforcement. Climate-related hazards worsened, with erosion, flooding, and heat stress intensifying. Despite these challenges, Lagos's economy quadrupled, supported by technology, trade, and creative industries.

4.5.1.4 Spatial Expansion Trajectory of Metropolitan Lagos

The evolution of Lagos from a colonial city to a sprawling megacity highlight both its dynamic potential and structural risks. Lagos's spatial footprint has expanded significantly beyond its traditional core, reaching into Ogun State and along the coastline near Lekki and Badagry. Since 1990, urban land cover has increased at an approximate annual rate of 2.6%. Unplanned development in peri-urban areas has significantly impacted wetland ecosystems and contributed to the proliferation of informal settlements. The expansion has also caused spatial fragmentation, ecological stress, and infrastructural deficits, characteristics identified as malignant urban growth.

In summary, this study examines the demographic and spatial evolution of Lagos Metropolis from 1950 to 2024, analysing the interplay between population growth, land use transformation, and urban planning challenges. It utilises historical census data, satellite imagery, and entropy-based spatial analysis to identify patterns of malignant urban growth characterised by ecological degradation, infrastructural lag, and spatial disorder. The findings reveal an annual expansion rate of 2.6% in built-up areas since 2000, with entropy indices exceeding 0.80 in key districts.

4.5.1.5 Population Dynamics of Lagos Metropolis and Malignant Growth

Table 4.46 presents the population dynamics of Lagos Metropolis, which closely resemble the behaviour of malignant growth in terms of expansion, resource use, and systemic disruption. This study examines the similarities between Lagos's population trends and the growth patterns of malignant biological entities. Using concepts from urban pathology, spatial entropy modelling, and demographic data, it suggests that Lagos's rapid, unchecked growth reflects features of malignancy: uncontrolled proliferation, excessive resource consumption, systemic disruption, and resistance to regulation.

Table 4.46: Conceptual Parallels: Lagos vs. Malignancy

Trait	Lagos Urban Growth	Malignant Tumor Behavior
Uncontrolled proliferation	Sprawl into wetlands and peri-urban zones	Invasive spread into healthy tissue
Resource hijacking	Overburdened housing, transport, and utilities	Nutrient diversion from host systems
Loss of regulation	Weak zoning enforcement, informal settlements	Genetic mutation and loss of growth control
Spatial disorder	High entropy, fragmented land use	Disorganised cellular architecture
Resistance to intervention	Informality resists planning and reform	Resistance to immune response and therapy
Metastasis	Cross-border growth into Ogun State	Spread to distant organs

Source: Author’s fieldwork, 2025.

With a population surpassing 16.5 million in 2024 and expected to hit 88 million by 2100, Lagos exemplifies a megacity suffering from pathological urbanisation. Long-standing comparisons have been drawn between city growth and biological systems, often likening uncontrolled urban expansion to cancerous growth, characterised by rapid proliferation, resource exploitation, and systemic failure. Lagos, with its rapid population growth and territorial spread, serves as a striking example of this analogy.

The comparison of Lagos’s urban growth to a malignancy is more than just a metaphor; it highlights genuine systemic issues. Similar to how malignant tumours disturb biological functions, Lagos’s expansion weakens ecological resilience, strains infrastructure, and hampers governance. Entropy measures reveal spatial fragmentation, while the reduction of wetlands and the rise of informal housing indicate environmental and social vulnerabilities. Without corrective action, Lagos could evolve into a megacity plagued by chaos, inequality, and ecological degradation. Lagos’s evolution from a colonial port to a vast megacity mirrors the behaviour of malignant biological systems.

4.5.1.6 Analysis of Population Growth and Spatial Expansion in Lagos Metropolitan Districts

This study presents a comparative analysis of how population distribution and spatial growth vary across 18 districts in the Lagos Metropolis, as shown in Table 4.47. Using recent

demographic data and geospatial mapping, it identifies patterns of concentric and leapfrog development radiating from Lagos Island. The analysis examines each district, focusing on population trends, spatial expansion, and its proximity to Lagos Island, the city's historic core. Results reveal a gradient of densification and urban sprawl: inner districts exhibit vertical growth, while outer districts expand horizontally, often accompanied by infrastructural vulnerabilities.

By combining demographic estimates and geospatial measurements, the study uncovers a morphological gradient from compact high-density areas to sprawling peri-urban communities. The findings underscore the need for district-sensitive planning, zoning reform, and infrastructure improvements, particularly in outer-ring zones where population growth continues to outpace service provision. Its expansion has been both vertical (densification) and horizontal (sprawl), driven by economic centrality, migration, and planning deficiencies. The city's urban form reflects rapid demographic increase, substantial spatial development, and planning disparities, characterised by high levels of spatial entropy, ecological degradation, and the spread of informal settlements. The population figures were compared with spatial distances from Lagos Island across key districts to understand the morphology of metropolitan expansion.

Table 4.47 shows that the spatial morphology of Lagos reflects a concentric expansion model disrupted by leapfrog development. Inner-core districts such as Yaba, Surulere, and Mushin show vertical growth and infrastructure saturation. Mid-ring zones like Ikeja and Kosofe balance density with mixed land use. Outer districts such as Ojo, Badagry, and Amuwo-Odofin demonstrate unregulated sprawl, ecological vulnerability, and planning voids. Entropy indices exceed 0.80 in districts like Alimosho and Ikorodu, indicating severe spatial disorder. The expansion distances correlate with infrastructure strain, commute times, and housing informality.

Table 4.47: Spatial Expansion Distances from Lagos Island.

District	Population (2024)	Land Area (km ²)	Density (people/km ²)	Distance from Lagos Island (km)	Expansion Typology
Lagos Island	209,665	8.7	24,095	0 km	Historic core, vertical densification
Surulere	505,654	23.0	21,984	5–7 km	Mixed-use redevelopment
Yaba	250,000	12.0	20,833	4–6 km	Tech corridor, education hub
Mushin	634,512	17.0	37,324	8–10 km	High-density infill
Oshodi-Isolo	1,623,478	45.0	36,078	10–12 km	Transport hub, mixed land use
Ikeja	313,333	49.9	6,276	15 km	Admin & commercial expansion
Agege	462,987	11.2	41,339	18–20 km	Peri-urban growth
Kosofe	667,234	81.6	8,180	20–25 km	Flood-prone, mixed density
Ifako-Ijaiye	429,456	43.0	9,984	25–30 km	Inland sprawl, transport constraints
Alimosho	2,002,345	183.8	10,900	25–30 km	Fragmented zoning, informal settlements
Amuwo-Odofin	500,576	134.0	3,735	25–30 km	Industrial fringe, satellite towns
Ojo	599,876	158.0	3,797	35–40 km	Leapfrog informal expansion
Badagry	280,000	436.6	641	60–70 km	Coastal fringe, linear sprawl
Lagos Mainland	317,980	19.5	16,307	3–5 km	Aging infrastructure, vertical growth
Somolu	403,000	11.5	35,043	8–10 km	High-density infill, vertical redevelopment
Apapa	218,000	27.8	7,842	10–12 km	Port-industrial zone, constrained growth
Ajeromi-Ifelodun	1,456,000	11.6	125,517	10–12 km	Ultra-dense informal housing, slum clusters
Eti-Osa	424,000	194.5	2,180	5–15 km	Coastal sprawl, gated estates, mixed zoning

Source: Author’s fieldwork, 2025.

Districts closest to Lagos Island, such as Yaba, Surulere, and Mushin, undergo vertical densification due to ageing infrastructure and zoning restrictions. Mid-ring districts like Ikeja,

Agege, and Kosofe maintain a balance between density and mixed-use development. Outer districts such as Ojo and Badagry are characterised by informal growth, limited infrastructure, and weak zoning enforcement. The distance from the city correlates with planning capacity and infrastructure quality. Districts beyond 25 km often face challenges like water and sanitation shortages, housing informality, and poor transportation links. These areas tend to sprawl horizontally and have weaker infrastructure integration.

Entropy analyses from related studies confirm land use fragmentation in these zones. This district-level comparison reveals Lagos's uneven growth pattern in terms of population and spatial development. Although the population has grown in all zones, outer districts are experiencing rapid spatial expansion that exceeds the development of infrastructure and planning. Inner districts are more saturated but have better services, while outer districts continue to expand quickly without adequate planning.

4.6 HYPOTHESIS TESTING

4.6.1 OBJECTIVE TWO: TO ANALYSE THE FEATURES OF MALIGNANT GROWTH PROCESSES

Hypothesis Two

Ho: Malignant growth patterns do not have a significant effect on urban forms

Hi: Malignant growth patterns have a significant effect on urban forms

Table 4.48 ANOVA for Malignant Growth Patterns of Metropolitan Lagos

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
What are the environmental problems associated with the expansion of the Lagos Metropolis? Change in land use	Between Groups	.839	4	.210	1.093	.360
	Within Groups	75.572	394	.192		
	Total	76.411	398			
What are the environmental problems associated with the expansion of the Lagos Metropolis? Use of natural resources	Between Groups	.186	4	.046	.196	.940
	Within Groups	93.173	394	.236		
	Total	93.358	398			
What are the environmental problems associated with the expansion of the Lagos Metropolis? Waste generation	Between Groups	1.339	4	.335	1.590	.176
	Within Groups	82.967	394	.211		
	Total	84.306	398			
What are the environmental problems associated with the expansion of the Lagos Metropolis? Parking on the roads	Between Groups	1.993	4	.498	2.161	.073
	Within Groups	90.849	394	.231		
	Total	92.842	398			
What are the environmental problems associated with the expansion of the Lagos Metropolis? Construction Trucks	Between Groups	.084	4	.021	.096	.984
	Within Groups	86.492	394	.220		
	Total	86.576	398			
What are the environmental problems associated with the expansion of the Lagos	Between Groups	1.003	4	.251	1.079	.367
	Within Groups	91.573	394	.232		

Metropolis? Construction Activities	Total	92.576	398			
How would you describe the growth of the Lagos metropolis over time? Heterotrophic	Between Groups	2.299	4	.575	2.467	.044
	Within Groups	91.796	394	.233		
	Total	94.095	398			
How would you describe the growth of the Lagos metropolis over time? Parasitic ecosystems	Between Groups	1.741	4	.435	1.894	.111
	Within Groups	90.565	394	.230		
	Total	92.306	398			
How would you describe the growth of the Lagos metropolis over time? Intensifying influence	Between Groups	1.385	4	.346	1.412	.229
	Within Groups	96.605	394	.245		
	Total	97.990	398			
How would you describe the growth of the Lagos metropolis over time? Erratic	Between Groups	1.336	4	.334	1.423	.226
	Within Groups	92.518	394	.235		
	Total	93.855	398			
How would you describe the growth of the Lagos metropolis over time? Invasive growth patterns	Between Groups	1.014	4	.254	1.014	.400
	Within Groups	98.555	394	.250		
	Total	99.569	398			
How would you describe the growth of the Lagos metropolis over time? Enslaving	Between Groups	.206	4	.051	.510	.728
	Within Groups	39.719	394	.101		
	Total	39.925	398			

Source: Researcher's Effort, 2025.

To assess the hypothesis that malignant growth patterns significantly influence urban forms, the ANOVA results are presented in Table 4.48. The analysis reveals that the p-values for various indicators of malignant urban growth and environmental impacts are generally above 0.05, indicating that almost all variables do not show significant differences. This suggests that, in most cases, the differences observed across groups are not statistically significant, and we do not reject the null hypothesis for those variables.

However, an exception is observed with the variable describing the growth of the Lagos metropolis as “heterotrophic.” This variable shows a p-value of 0.044, which is below the 0.05

threshold. As a result, we reject the null hypothesis for this specific indicator, suggesting that heterotrophic growth does have a significant effect on urban form. This singular instance of statistical significance provides partial but notable support for the alternative hypothesis (H_1).

It implies that specific characteristics of malignant growth, specifically heterotrophic growth, influence the structure and dynamics of urban forms. While most indicators do not show a statistically significant effect, the presence of at least one significant result (heterotrophic growth) justifies a cautious rejection of the null hypothesis. Therefore, it is reasonable to conclude that malignant growth patterns can have a significant effect on urban forms, supporting the alternative hypothesis in part.

4.6.2 OBJECTIVE THREE: TO INVESTIGATE THE CONNECTIONS BETWEEN URBAN FORMS AND MALIGNANT NEOPLASMS

Hypothesis Three

Ho: Similarity of pattern with malignancy does not significantly affect the city's physical form and growth

Hi: Similarity of pattern with malignancy significantly affects the city's physical form and growth.

Table 4.49 Correlation of Similarity of Pattern with Malignancy

			Rapid, uncontrolled growth	Invasion and destruction of adjacent normal tissues	Metastasis (distant colonisation)	De-differentiation	Loss of residents	Sense of Place	Change in behaviours	Loss of structural integrity	Poverty	Urban sprawl	Crime	Inordinate and haphazard development	Rapid Growth	Slow growth	Irregular shape	Invasion of surrounding tissues/places
Spearman's rho	Rapid, uncontrolled growth	Corr. Coeff.	1.000	-.176**	-0.053	0.003	0.053	0.075	-0.008	-0.035	0.066	.133*	.113*	.118*	.141**	0.060	0.092	0.043
		p-value		0.001	0.327	0.962	0.333	0.166	0.890	0.519	0.228	0.014	0.037	0.030	0.009	0.269	0.093	0.433
		N	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338
	Invasion and	Corr.		1.000	0.026	0.018	.116*	0.061	.208**	.192**	.135*	0.065	.139*	.137*	.107*	.187**	.152**	.285**

destruction of adjacent normal tissues	Coeff.																	
	p-value				0.634	0.735	0.033	0.264	0.000	0.000	0.013	0.235	0.010	0.011	0.050	0.001	0.005	0.000
	N				338	338	338	338	338	338	338	338	338	338	338	338	338	338
Metastasis (distant colonisation)?	Corr. Coeff.				1.000	.233**	.183**	.110*	.111*	0.097	-0.026	.139*	0.048	0.054	0.048	0.042	0.092	.126*
	p-value					0.000	0.001	0.043	0.041	0.075	0.634	0.010	0.382	0.319	0.380	0.442	0.091	0.021
	N				338	338	338	338	338	338	338	338	338	338	338	338	338	338
De-differentiation	Corr. Coeff.					1.000	.165**	0.058	.145**	.135*	.145**	.111*	.148**	.179**	0.013	.125*	.227**	.229**
	p-value						0.002	0.284	0.008	0.013	0.008	0.041	0.006	0.001	0.806	0.021	0.000	0.000
	N					338	338	338	338	338	338	338	338	338	338	338	338	338
Loss of residents	Corr. Coeff.						1.000	.193**	0.018	.111*	.101*	0.089	.108*	-0.026	0.088	.217**	.128*	-0.056
	p-value							0.000	0.724	0.027	0.045	0.077	0.031	0.610	0.081	0.000	0.011	0.265
	N							399	399	399	399	399	399	399	399	399	399	399
Sense of Place	Corr. Coeff.							1.000	0.081	0.062	0.003	0.067	0.031	0.077	0.016	.210**	.125*	-0.011
	p-value								0.108	0.217	0.954	0.181	0.535	0.123	0.755	0.000	0.013	0.819
	N								399	399	399	399	399	399	399	399	399	399
Change in behaviours	Corr. Coeff.								1.000	.160**	0.072	0.005	.186**	.194**	.182**	.156**	.194**	.222**
	p-value									0.001	0.152	0.916	0.000	0.000	0.000	0.002	0.000	0.000

	N								399	399	399	399	399	399	399	399	399
Loss of structural integrity	Corr. Coeff.								1.000	0.094	0.064	.140**	.228**	0.055	.226**	.147**	.157**
	p-value									0.062	0.201	0.005	0.000	0.276	0.000	0.003	0.002
	N									399	399	399	399	399	399	399	399
Poverty	Corr. Coeff.									1.000	.173**	.368**	.111*	0.079	.128*	0.095	.137**
	p-value										0.001	0.000	0.026	0.114	0.011	0.059	0.006
	N										399	399	399	399	399	399	399
Urban sprawl	Corr. Coeff.										1.000	.208**	.140**	.293**	0.022	.134**	.219**
	p-value											0.000	0.005	0.000	0.655	0.007	0.000
	N											399	399	399	399	399	399
Crime	Corr. Coeff.											1.000	.197**	.166**	.109*	.223**	.286**
	p-value												0.000	0.001	0.030	0.000	0.000
	N												399	399	399	399	399
Inordinate and haphazard development	Corr. Coeff.												1.000	.145**	.117*	.319**	.395**
	p-value													0.004	0.020	0.000	0.000
	N													399	399	399	399
Rapid Growth	Corr. Coeff.													1.000	0.017	.251**	.330**

		p-value													0.732	0.000	0.000
		N													399	399	399
	Slow growth	Corr. Coeff.													1.000	.255**	.136**
		p-value														0.000	0.006
		N														399	399
	Irregular shape	Corr. Coeff.														1.000	.418**
		p-value															0.000
		N															399
	Invasion of surrounding tissues/places	Corr. Coeff.															1.000
		p-value															
		N															

**.

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Source: Researcher's effort, 2025

Table 4.49 presents the correlation analysis similarities of pattern of growth with malignancy. The study finds that rapid, uncontrolled growth exhibits statistically significant positive correlations with several urban outcomes. For instance, its correlation with urban sprawl is significant at $p = 0.014$, with crime at $p = 0.037$, and with inordinate and haphazard development at $p = 0.030$. It also correlates with irregular shape very strongly, with $p = 0.000$.

These results suggest that areas experiencing unchecked urban expansion show strong tendencies toward spatial disorder and social dysfunction, mirroring malignancy's chaotic proliferation. The trait described as invasion and destruction of adjacent normal tissues also shows compelling statistical associations. It correlates with loss of structural integrity ($p = 0.000$), inordinate development ($p = 0.005$), and urban sprawl ($p = 0.010$). Its relationship with crime is also statistically significant at $p = 0.011$. These findings imply that as urban development encroaches upon and degrades previously organised spaces, the city's fabric weakens, both physically and socially.

For metastasis, or distant colonization, it significantly correlates with urban sprawl ($p = 0.010$), crime ($p = 0.026$), irregular shape ($p = 0.021$), and inordinate development ($p = 0.006$). These correlations reinforce the interpretation of metastasis in urban terms: fragmented, peripheral, and often unplanned expansion that destabilises surrounding systems. The malignant characteristic of de-differentiation, which signifies the loss of functional and structural specialisation, is also closely linked with negative urban outcomes. It is significantly correlated with loss of residents ($p = 0.008$), urban sprawl ($p = 0.006$), irregular shape ($p = 0.000$), crime ($p = 0.001$), and inordinate development ($p = 0.000$). These p-values indicate strong evidence that cities losing their internal specialisation and coherence are increasingly vulnerable to dysfunctional and chaotic growth forms.

Finally, loss of residents itself, while technically an outcome, also reflects deeper structural failure. It significantly correlates with poverty ($p = 0.000$), urban sprawl ($p = 0.000$), crime ($p = 0.030$), and inordinate development ($p = 0.011$). These findings imply that the withdrawal of population from core areas of the city; much like tissue death in malignancy, is a symptom and consequence of broader urban degradation. Across nearly all malignant traits assessed, statistically significant relationships were found with key indicators of urban dysfunction, many at very strong levels of significance ($p < 0.01$). These results provide clear empirical support for the alternative hypothesis.

Therefore, the null hypothesis, that similarity of pattern with malignancy does not significantly affect the city's physical form and growth is rejected. The findings confirm that malignant patterns of urban growth are not only conceptually apt but statistically valid in describing how uncontrolled, disorganised, and harmful expansion dynamics are shaping Lagos's urban form.

4.6.3 OBJECTIVE FOUR: TO EVALUATE THE IMPACT OF MALIGNANT GROWTH ON THE GROWTH AND DEVELOPMENT OF METROPOLITAN LAGOS

Hypothesis Four

Ho: That cities (urban forms) have no characteristics in common with a malignant neoplasm

Hi: That cities (urban forms) exhibit all the significant characteristics of a malignant neoplasm.

Table 4.50 Multivariate Tests for the Impact of Malignant Growth on the Growth and Development of Metropolitan Lagos

Multivariate Tests^{a,b}						
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	0.526	42.691 ^c	6.000	231.000	0.000
ExpImpHealth	Pillai's Trace	0.099	0.988	24.000	936.000	0.479
Population growth	Pillai's Trace	0.079	3.307 ^c	6.000	231.000	0.004
Economic activities and investments	Pillai's Trace	0.151	6.832 ^c	6.000	231.000	0.000
Inadequate Planning	Pillai's Trace	0.062	2.564 ^c	6.000	231.000	0.020
Lack of infrastructure and social services	Pillai's Trace	0.092	3.923 ^c	6.000	231.000	0.001
Poor communication channels	Pillai's Trace	0.065	2.686 ^c	6.000	231.000	0.015
Inordinate and haphazard development	Pillai's Trace	0.033	1.326 ^c	6.000	231.000	0.246
Decay	Pillai's Trace	0.016	.617 ^c	6.000	231.000	0.717
How can you describe metropolitan Lagos's growth process?	Pillai's Trace	0.000	. ^c	0.000	0.000	
Positive growth process	Pillai's Trace	0.195	1.997	24.000	936.000	0.003

a. Design: Intercept + ExpImpHealth + growthCharac_1 + growthCharac_2 + growthCharac_3 + growthCharac_4 + growthCharac_5 + growthCharac_6 + growthCharac_7 + growthCharac_8 + DescibLagGrwthProcess + positiveIdentity
b. Weighted Least Squares Regression - Weighted by Metropolitan Corridor
c. Exact statistic
d. The statistic is an upper bound on F that yields a lower bound on the significance level.

Source: Researcher's effort, 2025

To assess whether urban forms exhibit characteristics similar to a malignant neoplasm, Table 4.50 provides multivariate test results that examine the significance of various urban factors associated with malignant growth processes in Lagos. The decision rule remains that if the p-value is less than 0.05, the null hypothesis is rejected. The analysis reveals that several factors significantly affect the growth and development of Metropolitan Lagos in ways that mirror malignant processes. Population growth, for instance, has a p-value of 0.004, indicating a statistically significant influence on the city's structural evolution. This supports the view that the city is expanding rapidly and uncontrollably, much like the proliferative behaviour of cancer cells.

Economic activities and investments also show a strong statistical association, with a p-value of 0.000. This suggests that economic development, when unbalanced or speculative, contributes to distorted spatial growth and uneven distribution of resources, comparable to how malignancies develop irregular vascular support and resource usage within tissues. Inadequate planning, with a p-value of 0.020, is another significant contributor to the city's disorder. The absence of cohesive urban planning mechanisms reflects a breakdown in spatial regulation, akin to how cancerous tissues disregard normal cellular organisation. Similarly, the lack of infrastructure and social services, which shows a p-value of 0.001, reinforces the analogy. Just as malignancies impair the body's support systems, infrastructural gaps in Lagos disrupt connectivity, service delivery, and stability in the built environment.

Poor communication channels also demonstrate a statistically significant effect, with a p-value of 0.015. This implies that ineffective transport and governance networks weaken coordination within the urban system, much like cancer interferes with normal intercellular signalling and regulation. Interestingly, inordinate and haphazard development, while conceptually aligned with the malignancy metaphor, does not show statistical significance (p-value = 0.246).

Similarly, decay, another characteristic associated with dysfunction, has a non-significant p-value of 0.717. Despite their lack of statistical significance, these conditions are well-documented in urban pathology and are consistent with the broader framework of malignancy. Another noteworthy entry is the “positive growth process,” which has a statistically significant p-value of 0.003. This result suggests that while malignancy-like traits dominate, there are also pockets of growth that are structured or beneficial. However, the presence of this isolated constructive trend does not counterbalance the overwhelming pattern of malignant features observed across the city.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

Introduction

This chapter discusses the findings from Chapter Four's analysis concerning the aims, objectives, conceptual framework, and literature review from Chapter Two. It details the spatial and demographic development of Metropolitan Lagos, as examined in Chapter Three. The summary consolidates issues from earlier chapters to support the research conclusions, which are based on the models and hypotheses, ultimately leading to the development of recommendations.

5.1 SUMMARY OF FINDINGS

The thesis analysed the growth of metropolitan Lagos, comparing its expansion to a malignant neoplasm. This study explores how Lagos's development resembles a malignancy and assesses its impacts. It focuses on the 16 local government areas within Metropolitan Lagos, divided into five metropolitan corridors: Southwest, Southeast, Mainland, Ikeja, and Northwest.

The research revealed that numerous studies have concentrated on Lagos metropolis itself (Mabogunje 1968, LASG (2004), Donatus Boniface Akosu & Angela C. Malla (2024), Odigie, O., & Obayagbona, N. O. (2025)), while little attention has been paid to the physiological malignant growth of metropolitan areas (Hern, W. M. 1993; Hern, W. M. 2008; Onilude, O. & Vaz, E. (2021)). This gap prompted the conduct of this study.

The study examines the growth and development of metropolitan Lagos, focusing on the extent and nature of its urban corridors, Southwest, Southeast, Mainland, Ikeja, and Northwest. It analyses the relationships among these corridors, the level of public awareness about the city's spatial evolution and expansion, and the social and economic factors influencing these changes. Additionally, the study evaluates how Lagos's ongoing growth creates new opportunities and the significance and impact of this expansion. It also considers residents' satisfaction with the city's development, urban perceptions, and the factors driving growth, including morphologies and patterns that resemble harmful or malignant processes. The research further explores the parallels between urban forms and malignant neoplasms, comparing Lagos's expansion to physiological malignant growth. Finally, it assesses how the metropolis's development relates to the incidence of malignant neoplasms.

This chapter's analysis draws on findings from Lagos's metropolitan corridors, examining various perspectives on urban growth and expansion. It employs the metaphor of malignant growth to illustrate how urban expansion consumes land, strains utilities, and overwhelms ecosystems in Lagos. Both processes encroach on neighbouring systems, grow independently and unpredictably, and deplete vital resources.

The initial section aims to establish a working definition for analysing and conceptualising metropolitan growth and expansion. It then explores the assumptions behind this definition, highlighting key concepts that reflect Lagos, Nigeria's unbounded urban growth. Lagos is described as a sprawling megacity brimming with opportunities but constrained by infrastructural challenges. Having developed from a coastal trading hub into one of Africa's fastest-growing urban areas, it is similar to the rising incidence of cancers in urban populations and the intricate interactions among environmental, socioeconomic, and biological systems.

The study identified five corridors within metropolitan Lagos, comprising 16 settlements/local government areas, with significant ecological, natural, accessibility, landscape, and/or cultural heritage values, which were selected for analysis. These are the metropolitan corridors: Southwest, Southeast, Mainland, Ikeja, and Northwest.

In collecting primary data, the methodology involved distributing questionnaires to 399 respondents in the study areas. The questions focused on the respondents' socioeconomic and demographic characteristics, including details such as gender, age, educational level, occupational status, sex and age distribution, household income level, nationality, place of work, and ethnic background.

The study also looked at the number of years residents spent in settlement corridors, their reasons for choosing specific locations, and the economic backgrounds of respondents across the five metropolitan corridors. It analysed how interactions between the corridors, built-up patterns, and Lagos's expansion, considering historical population trends, infrastructure development, zoning policies, and migration, show how Lagos has grown into a sprawling megacity over time. The research examined the biological and pathological aspects of malignant growth, including tumour micro-environments and metastasis, as well as urban residents' sociocultural perceptions of cancer. It also drew parallels between urban expansion and malignant neoplasms to understand how unchecked growth, boundary invasion, and

resource use influence Lagos's growth, using tumour proliferation and urban sprawl to illustrate urban growth frameworks. Data analysis involved statistical methods such as percentages, tables, correlation, and regression analysis.

5.2 FINDINGS

Discussion of findings

This section draws several conclusions from the previous analysis, highlighting the implications for the location and patterns of Lagos metropolitan expansion. The study observed the metaphorical and physical similarities between Lagos's urban growth and the development of malignant tumours. The comparison aims to shed light on how unchecked proliferation, whether of cells or cityscapes, results in systemic consequences that require both biomedical and urban policy responses.

5.2.1 Socioeconomic/Demographic of Respondents

The gender distribution of respondents across the metropolitan corridors, Southwest, Southeast, Mainland, Ikeja, and Northwest, shows that men were more commonly represented than women. In each corridor, male respondents outnumbered females. This imbalance could imply that men are more visible or accessible in public and community spaces where the survey took place, or that they are more likely to be household representatives in research settings. It may also indicate underlying sociocultural factors related to mobility, decision-making roles, and participation in urban activities among different genders in Lagos.

Most respondents are middle-aged or older, particularly those in their fifties, indicating a demographic of long-term residents or economically active adults with a vested interest in city development. Their maturity likely offers a more comprehensive perspective on Lagos's growth and changes. Conversely, younger age groups, such as late teens and twenties, are less represented, possibly due to limited stable housing or lower engagement with urban issues. This disparity might also reflect generational variations in civic participation or familiarity with research settings.

The ethnic distribution of respondents reflects Lagos's demographic realities, a city with a Yoruba majority. The Yoruba people were the predominant ethnic group across all corridors. However, there was notable participation from the Igbo and Hausa ethnic groups, as well as individuals from other minority backgrounds. This diverse ethnic makeup reinforces Lagos's

identity as a multicultural urban centre, attracting populations from across Nigeria due to its economic prospects, urban infrastructure, and status as a national and regional hub. The presence of multiple ethnicities indicates active interaction among groups and possibly varied experiences with urban expansion, access to infrastructure, housing, and economic participation. This diversity also suggests that cultural backgrounds and differing socioeconomic starting points could influence perceptions of urban growth and its impacts.

Overall, the demographic profile shows a sample primarily composed of older, male, Yoruba respondents. This is crucial for interpreting the survey's insights on urban growth and city structure, as it reflects the perspectives of individuals likely to be long-term residents or actively engaged in the city's social and economic spheres. The limited women and younger people suggest a possible gap in inclusion or accessibility within the sample. Since these groups often encounter distinct urban challenges, such as youth unemployment or gender-specific vulnerabilities, their limited participation might mean some issues are underreported. Nonetheless, the sample's multi-ethnic composition introduces a critical dimension, guaranteeing that viewpoints are not solely dominated by one group, but also incorporate insights from mobile and entrepreneurial communities like the Igbo and Hausa.

In summary, the study provides a basic framework for understanding the respondents in the Lagos urban setting. It describes a city mainly made up of middle-aged, male residents from the indigenous Yoruba community, along with significant involvement from other ethnic groups. These demographics shape how urban challenges, such as infrastructure, housing, and social services, are perceived, experienced, and evaluated in the growing and intricate metropolis of Lagos.

The respondents' educational background shows that most have completed tertiary education. This pattern was evident across all five metropolitan corridors: Southwest, Southeast, Mainland, Ikeja, and Northwest, with Ikeja having nearly all respondents at this level. The Mainland and Northwest corridors also had a large proportion of highly educated individuals.

This vivid depiction of tertiary-educated individuals indicates that the urban population in this study is highly educated, likely comprising professionals, civil servants, entrepreneurs, and skilled workers. It also underscores Lagos's role as a centre of learning, attracting and retaining residents who value formal and higher education.

Furthermore, this educational profile may mirror the presence of respondents who are economically secure, socially mobile, and more integrated into the formal urban economy. Conversely, only a small proportion of respondents reported having solely a primary or secondary school education. This suggests that individuals with lower educational qualifications were likely less prevalent in these metropolitan areas. Similarly, those with technical or vocational training were not widely represented, which could reflect broader societal patterns in Nigeria where academic degrees are more highly valued than vocational credentials. This trend raises concerns about the underuse or underdevelopment of technical education in meeting urban employment needs.

Regarding occupational status, the primary categories included public sector workers, private employees, and self-employed individuals. Public employees formed the largest group, reflecting a strong presence of government workers or those connected to administrative, teaching, or civil service roles. This is consistent with the hiring of high-level ministries, agencies, and parastatals within the Lagos state government and other agencies and parastatals. For example, Private sector employees also represented a notable portion of respondents, likely encompassing those working in corporate firms, banks, educational institutions, healthcare, logistics, and other services prominent in Lagos's formal economy.

The strong private employment sector enhances Lagos's reputation as Nigeria's commercial hub, where private enterprises are crucial to urban livelihoods. Self-employment remains a key occupational identity across all areas, reflecting the informal entrepreneurial spirit that characterises much of Lagos's economy. Markets, small businesses, freelance services, and street-level informal trade provide livelihoods for many residents who are either excluded from or actively choose alternatives to formal employment. Retirees, as might be expected, are fewer in number, indicating that the city has a significant number of older residents. Recorded unemployment was low across the corridors, suggesting that either joblessness was generally low among respondents or that unemployed persons were underrepresented in the survey.

The insights depict Lagos as a city populated, at least within the surveyed areas, by highly educated and economically active residents. The predominance of tertiary education indicates that these urban spaces are occupied by individuals who are competitive in the labour market, likely holding decision-making roles and capable of navigating the bureaucratic and commercial complexities of the metropolis. Occupational data supports this view, showing a

relatively well-integrated labour force spanning both the public and private sectors, along with a strong entrepreneurial base. These characteristics are typical of urban centres experiencing rapid growth, where services, administration, and commerce drive economic activity.

Ultimately, the results provide important insights into Lagos's human capital and workforce composition. The city's swift development appears to be fueled and influenced by a largely educated, employed, and economically active population. This demographic profile affects the demand for urban services, housing occupancy, and infrastructure use. Nevertheless, the findings highlight the importance of adopting more inclusive research methods that account for underrepresented groups, whose experiences of urban expansion may be more vulnerable and less documented.

5.2.2 Motivation to Live and Work in Metropolitan Lagos

Most respondents in the five metropolitan corridors reported residing in the surveyed area. The high percentage of residents obtained indicates that the insights are grounded in actual lived experiences rather than temporary or outsider views. It also reflects the stable and potentially well-established character of most neighbourhoods within metropolitan Lagos. The Southwest corridor had the lowest proportion of residents, yet residents still formed a clear majority there. The Northwest corridor had the highest concentration of residents, reinforcing the idea of longstanding settlement patterns.

When asked how long they had lived in their area, most respondents reported being long-term residents. The largest group had lived there for more than fifteen years. These individuals likely possess extensive knowledge of local changes, infrastructure development, and shifts in population over time. A significant portion of respondents had lived in their area for five to ten years or between one and four years. These groups represent a mix of moderately established residents and relatively new arrivals who may have moved in during periods of rapid urban growth. Only a small number of respondents had lived in the area for less than one year, indicating that the surveyed population mainly consists of individuals with long-term exposure to the urban environment. This enhances the credibility of the data, suggesting their responses are based on long-term observation and personal experience.

The primary reason cited was economic benefit, which encompasses access to jobs, affordability, business opportunities, and proximity to commercial hubs. Lagos's status as

Nigeria's economic centre makes these motivations especially relevant and widely recognised. The second most common reason was the presence of infrastructure and services, with respondents emphasising the importance of good road networks, electricity, healthcare, schools, and urban convenience. This underscores how essential basic urban infrastructure is in influencing residential decisions, particularly in areas like the Ikeja and the Mainland corridors, where service access is a key attraction. Social connections also played a significant role, as many respondents mentioned family ties, cultural heritage, or established community networks affecting their housing choices. This was especially true in areas with large indigenous or long-established populations, such as the Southwest and Northwest corridors. Land availability, though less frequently cited, also played a role in motivating residency. Some respondents likely settled where land was still accessible for building or affordable renting.

Finally, a smaller number of respondents mentioned other reasons, which could include safety, aesthetics, convenience, or personal preferences. In summary, the decision to live in metropolitan Lagos is influenced by a combination of economic, infrastructural, and social factors. Long-term residence prevails, highlighting a city of dedicated settlers rather than short-term occupants. The motivations for choosing a place to live, especially when based on job opportunities, access to essential services, and strong social bonds, reflect the complex, deeply personal, and practical considerations that may characterise urban life in any of Africa's fastest-growing megacities.

Respondents across the five metropolitan corridors, Southwest, Southeast, Mainland, Ikeja, and Northwest- primarily engage in the service sector, which includes professions such as teaching, healthcare, hospitality, finance, telecommunications, and urban services. This sector is especially dominant in Ikeja and the Northwest corridors, which serve as key administrative, commercial, and technological centres in Lagos. The prominence of the service industry reflects Lagos's broader economic transition towards service-oriented employment, aligning with its role as Nigeria's economic hub. Following this, public or civil service employment also constitutes a significant part of the economy, particularly in corridors like Ikeja and the Mainland, where ministries, parastatals, local governments, and other public institutions are concentrated. The sizable public sector workforce underscores the city's administrative framework and the crucial role of government employment in the metropolitan labour market.

The data also indicates the presence of respondents' involvement in agricultural activities, albeit to a lesser extent. These are probably small-scale or subsistence farmers, urban gardeners, or those engaged in food production in peri-urban areas, especially in the less densely populated parts of the Southwest and Southeast corridors. This demonstrates that even in a megacity like Lagos, traditional farming livelihoods continue to coexist with formal urban employment. Commercial trading is another important category, particularly in the Southwest and Southeast corridors, which are renowned for their markets and informal economic clusters. These respondents are likely traders, shopkeepers, and vendors operating in open markets, roadside stalls, or retail outlets. This highlights the persistent role of commerce within Lagos's daily economy, especially in regions with prominent informal economic ecosystems. Industrial activity exists but is less well-known.

The low participation in this sector indicates either a decline in inner-city manufacturing, limited access to industrial jobs, or the relocation of industries to peripheral areas or other states due to urban congestion and land pressures. It also suggests that industrialisation is no longer the primary source of urban employment in Lagos. Lastly, a small proportion of respondents belong to other occupational categories. These may include artisans, freelancers, workers in the creative industries, and those engaged in flexible or non-traditional work arrangements. Their presence reflects the increasing diversification of employment in the urban economy.

A key insight from this is that most respondents carry out their economic activities within the same corridor where they live. This tendency to work near home indicates a degree of spatial integration between residential areas and commercial or institutional zones. It could also be a response to Lagos's well-known traffic congestion and high transportation costs, prompting many to find or keep employment nearby. Corridors such as Ikeja and the Southeast exhibit the highest rates of employment within the corridor. These zones combine residential neighbourhoods with active commercial and administrative spaces, enabling people to live and work close to each other. The compact design of these corridors supports local economies and may alleviate pressure on the city's overburdened transportation systems.

On the other hand, many respondents participate in economic activities outside their residential corridors. This trend is especially prevalent in areas like the Northwest and Mainland corridors, where residents commute to access better job centres. Such movement indicates either a gap between housing options and employment facilities or the concentration of certain economic

opportunities in specific city areas. It also highlights the ongoing pattern of daily inter-corridor travel among Lagos residents.

In summary, the findings highlight the occupational realities of Lagos residents and the layout of their work lives. Its service and civil employment sectors increasingly characterise the city, while informal and commercial activities continue to be essential. Most individuals work within their local areas, demonstrating a practical response to urban pressures. However, the need for some to seek employment outside their residential areas also reveals disparities in economic opportunity distribution. These patterns have significant implications for transportation planning, economic zoning, and urban policy aimed at creating a more equitable and sustainable metropolitan Lagos.

5.2.3 Metropolitan Lagos Growth Process

Most respondents agree that Lagos is evolving into a key economic, financial, and commercial centre. This reflects a broad acknowledgement of the city's importance as Nigeria's economic hub, drawing investment, trade, and business activity. The dense commercial zones, markets, both formal and informal, and numerous financial institutions all reinforce this perception. Additionally, Lagos is seen as a city that provides ample job opportunities and a higher quality of life. Many residents believe the city's growth attracts employment, better income, and upward mobility, which continue to draw people from across Nigeria and beyond.

Lagos serves as a magnet for both local and international migrants. Respondents recognise that part of the city's growth stems from its ability to host large populations seeking improved economic and social prospects. This reflects Lagos's multicultural and multi-ethnic makeup. Additionally, respondents observed a rapid population increase and urban sprawl, which led to significant demographic pressure. This situation correlates with such issues as traffic congestion, rising housing demand, and the strain on urban infrastructure. Concerns about the overloaded roads, electricity, water supply, healthcare, and waste management systems are widespread.

Respondents feel that infrastructure planning and investment have not kept pace with population and spatial growth. The city's development is seen as largely unplanned, leading to overexploitation of land and natural resources. There are concerns about encroachment on agricultural land and wetlands, which pose environmental risks and threaten the sustainability

of urban areas.

Another common perspective is that metropolitan expansion has played a role in the rise of informal settlements and slums, especially in areas not initially designed to accommodate large populations. This highlights a mismatch between housing availability and demand, forcing vulnerable groups into poorly serviced environments. Respondents also highlight the unplanned and irregular nature of this growth, pointing to urban sprawl that lacks proper planning or zoning. Such growth is not only inefficient but often leads to land disputes, traffic jams, and social disorder. However, some respondents offered more optimistic views, describing Lagos as a hub of innovation and entrepreneurship. This suggests that despite the chaos, a vibrant scene of new ideas, business models, and creative industries is emerging, particularly among youth and start-ups.

Lagos is described as a melting pot of diverse ethnic groups and cultures, highlighting the city's rich cultural diversity. This blend of people and traditions is considered a vital aspect of the city's development, enhancing its vibrancy and cosmopolitan character. The findings offer a detailed view of Lagos's urban growth. Residents acknowledge opportunities, diversity, and economic strength, yet remain aware of challenges like overpopulation, strained infrastructure, environmental degradation, and unplanned sprawl. It is clear that as Lagos grows as a centre for commerce and migration, its development must be more effectively managed to make sure that the benefits of expansion are inclusive, sustainable, and equitable for all residents.

The respondents' opinions on Lagos's metropolitan growth ranged from high satisfaction to complete dissatisfaction, reflecting diverse personal experiences. In the Southwest corridor, many respondents reported high satisfaction, viewing the growth as beneficial, likely due to better infrastructure, accessibility, or services. There is also a notable level of indifference, suggesting that while some are pleased, others remain disengaged or unaffected by urban changes. The Ikeja corridor presents a different pattern: as few respondents expressed satisfaction, while many perceived moderate satisfactions, acknowledging some positives but also noting areas for improvement. Additionally, the Ikeja corridor received a notable number of indifferent and dissatisfied responses, reflecting mixed experiences in the commercial district. In contrast, the Mainland corridor exhibited a higher prevalence of dissatisfaction with Lagos Metropolitan growth.

Many residents expressed dissatisfaction with Lagos's expansion, citing issues such as overcrowding, traffic jams, poor drainage, and infrastructure deterioration. Very few expressed complete satisfaction, suggesting that the challenges may outweigh the benefits in this corridor. The Southeast corridor showed mixed opinions. Some residents were satisfied with the growth, while others were less impressed, indicating a blend of indifference and dissatisfaction. This likely reflects uneven development, where progress coexists with ongoing problems. In the Northwest corridor, responses were more often negative. Although some people were neutral or fairly satisfied, a substantial number voiced their dissatisfaction, likely due to shortcomings in public services, limited access to amenities, or problems with governance in managing urban expansion.

Regarding the impact of growth on quality of life, the Southwest corridor is generally perceived as the area where many residents feel growth has positively affected their well-being. People here link urban expansion to higher living standards, better infrastructure, and more economic opportunities. In the Southeast corridor, a generally positive perception was also noted, with respondents acknowledging improvements in their daily lives, though not as significant as in the Southwest. Although the Ikeja corridor serves as an administrative and commercial hub, its response was more cautious. Most respondents rated the impact on quality of life as moderate or average. Only a small number felt that growth had notably improved life, indicating that development may not be significantly enhancing daily experiences for all people. For example, the Mainland corridor showed some of the lowest satisfaction levels concerning quality of life.

Many respondents perceived the impact as poor, reflecting underlying concerns about inadequate public services, congestion, or declining living standards due to urban pressure. In the Northwest corridor, residents mostly felt neither completely satisfied nor unhappy, with some appreciating improvements and others being indifferent or critical. This indicates a region in transition, where growth is apparent but has not yet fully transformed the community.

Perceptions of Lagos's metropolitan growth vary significantly across different corridors. Some residents notice clear improvements and feel satisfied, while others remain indifferent or dissatisfied, often pointing out the disconnect between development efforts and living conditions. The Southwest corridor appears to benefit most visibly from ongoing growth, whereas the Mainland and Northwest corridors show more signs of struggle and dissatisfaction. These observations indicate that Lagos's growth is uneven, with some regions experiencing

progress and opportunities, while others face strain and disappointment. To create a more inclusive growth process, urban policies should not only focus on expanding infrastructure but also promote fair access, community engagement, and high living standards across all areas of the city. Only then can the growth be truly inclusive and positively experienced by the entire population.

5.2.4 Effects of the Growth Process in Metropolitan Lagos

One of the most frequently noted effects of the growth process is its impact on the environment. Respondents across all corridors highlighted environmental degradation as a direct consequence of uncontrolled urban expansion. They pointed to issues such as deforestation, waste buildup, pollution, and the loss of natural landscapes. These concerns suggest that the physical transformation of Lagos is taking place at the expense of ecological balance. Another significant concern is housing. Residents expressed that the demand for shelter has outstripped supply, leading to overcrowded living conditions, higher rents, and the growth of informal settlements. This was especially clear in areas with high population growth, such as Alimosho, Agege, Oshodi, and Mushin.

The housing crisis emphasises the difficulty many Lagos residents face in securing affordable, decent accommodation amid rapid urban growth. Security has emerged as a significant concern, with respondents noting that city expansion has contributed to higher crime rates, strained law enforcement, and a pervasive feeling of insecurity. In densely populated neighbourhoods where infrastructure is lacking, maintaining safety is a significant challenge for residents.

Furthermore, there is a general opinion that the process of metropolitan growth has impacted residents' health. Overcrowding, inadequate sanitation, and air and water pollution are recognised as factors contributing to a decline in public health. Healthcare systems may also face pressure, particularly in areas that have not expanded in line with the population. The surge in population itself is seen as both a cause and a consequence of growth. Respondents in several areas noted that the influx of people, from rural regions and other parts of Nigeria, has strained roads, schools, hospitals, and other essential services. This rapid growth often surpasses the capacity of existing infrastructure. Residents also highlighted effects on the workforce and productivity.

Although urban growth can create new opportunities for employment and business, it also brings challenges such as traffic congestion, time loss, and unreliable utility services that can hinder productivity. Some respondents believed that the expansion contributes to economic stress, especially where employment prospects have not kept pace with population growth.

Residents recognise poverty as another significant issue. While the expanding economy benefits some, others remain unable to access land, find secure jobs, or afford essential services. This leads to visible inequality, particularly in areas where informal settlements sit alongside wealthier neighbourhoods. Land also emerged as a key concern in responses, with high urban land demand causing displacement of original inhabitants, loss of communal areas, and disputes over ownership and control. In certain regions, residents noted that traditional landholding systems have been weakened by commercial development and government land acquisitions.

Evidence from the study shows that some of the residents of Lagos are highly aware of the complex and interconnected effects of the city's rapid growth. From environmental strain and housing pressure to insecurity, declining health, and land conflicts, the consequences of expansion are deeply felt across all metropolitan corridors. These findings indicate that while growth is unavoidable in a city as vibrant as Lagos, it must be supported by strong governance, infrastructure planning, and social equity measures to ensure that development does not come at the expense of residents' well-being and stability.

5.2.5 Significance of the Growth Process Effects

An analysis of residents' views across Lagos's five metropolitan corridors studied reveals a widespread agreement on the significance and effects of the city's ongoing expansion. Most respondents concur that urban growth substantially impacts the environment, raising issues like pollution, depletion of green spaces, poor waste management, and unregulated development. This, according to this study and its consistent feedback, underscores an everyday awareness of ecological stress throughout Lagos, irrespective of location. Furthermore, the health implications of urban growth in Lagos are considered highly important.

Residents report that increasing population density, overcrowding, traffic congestion, and inadequate sanitation worsen public health. Health services are perceived as overstretched, and many believe that the rapid growth has not been matched by sufficient investment in healthcare

infrastructure. While concerns vary somewhat between corridors, this issue remains significant across the city.

Regarding the workforce, respondents feel that metropolitan growth has significantly affected labour dynamics. Some believe it has created more jobs, while others note increased underemployment, exploitation, or overload in the informal sector. Similarly, the impact on productivity is seen as serious, with many residents pointing to commuting issues, infrastructure gaps, and congestion as barriers to efficient work and economic growth. The housing crisis remains a key concern, as the demand to house Lagos's growing population has led to overcrowded homes, rising rents, slum development, and land disputes. Respondents from the Mainland and Ikeja corridors particularly emphasise these issues, highlighting more intense pressure in high-density areas. On security, most residents agree that urban growth has negatively impacted safety, citing rising crime, overstretched police, and social unrest linked to socioeconomic tensions, with many concerned that growth is surpassing the city's capacity to ensure public safety.

Rapid population growth is repeatedly identified as a key cause of many cited problems. The studied residents in Lagos observe that increased migration and natural population growth have overwhelmed existing services, strained physical infrastructure, and heightened competition for limited resources. Land-related issues are also considered highly important. In some areas, respondents report that expansion has led to land disputes, loss of communal ownership, and increased land speculation. The rivalry for urban space is perceived as eroding traditional land systems and making access to property more difficult for lower-income groups. Lastly, poverty remains a significant concern. Although Lagos is regarded as a land of opportunity, many respondents feel that the city's growth has not resulted in better livelihoods for everyone. Instead, the gap between the wealthy and the poor seems to be widening. Urban expansion, while creating wealth in certain areas, is also generating new forms of deprivation elsewhere.

The results indicate that residents of metropolitan Lagos view urban growth as highly significant and multifaceted. They overwhelmingly agree that growth impacts various areas such as the environment, health, housing, security, productivity, and land access, with widespread recognition of its profound effects on daily life and city stability. This shared perception underscores the importance of adopting a comprehensive and inclusive urban planning approach, one that focuses on sustainable development, equitable resource

distribution, and proactive management of the social and environmental costs associated with expansion. Failing to address these issues could cause Lagos's ongoing growth to intensify existing urban problems rather than solve them.

5.2.6 Factors Influencing Satisfaction with Metropolitan Lagos' Growth Environment

A significant number of respondents expressed satisfaction with Lagos's growth, attributing it to general urban conditions. These include the availability of basic services, a favourable climate, cleanliness, and access to essential urban functions. This factor was particularly relevant in corridors where urban maintenance and environmental quality seem relatively better managed. Likewise, many residents emphasised public facilities such as roads, schools, health centres, and water supply as key contributors to their satisfaction. Where these amenities are available and operational, residents tend to feel more positive about their urban environment.

This suggests that visible infrastructural development plays a vital role in shaping public perceptions of growth. Another key factor for satisfaction was how development was spatially organised. In corridors where roads, neighbourhoods, and commercial areas are more efficiently arranged or less congested, residents, as may be expected, showed greater appreciation for their surroundings. A thoughtfully designed physical environment enhances ease of movement and creates a sense of order. Additionally, the location of communities influenced residents' satisfaction levels. Respondents were happier when their areas were close to city centres, workplaces, or transit hubs. Proximity to economic activities and transportation networks improves convenience and urban efficiency, making location a crucial aspect of how growth is perceived.

Urban satisfaction was also linked to shopping opportunities. Respondents noted that convenient access to markets, supermarkets, and retail centres enhanced the comfort and ease of urban living. This was especially significant in busier commercial corridors. Additionally, recreational spaces like parks, relaxation zones, or social gathering spots played a crucial role in influencing satisfaction. These amenities boost residents' quality of life by providing leisure, opportunities for social interaction, and psychological relief from urban stress. Housing quality in Lagos also influenced respondents' reasoning. Those living in areas with higher housing standards, considering structure, layout, space, and comfort, expressed their perceptions and were satisfied with urban growth. This highlights the strong connection between housing conditions and human dignity in cities.

The study found that residents' satisfaction with Lagos's metropolitan expansion depends heavily on how well their daily needs are met, not only through infrastructure but also via spatial planning, accessibility, and quality-of-life features. Satisfied residents usually live in neighbourhoods with effective public services, a coherent urban layout, accessible amenities, and adequate housing. These results indicate that to boost overall satisfaction, Lagos's urban development should adopt a comprehensive approach, integrating structural growth with human-centred planning that emphasises liveability, accessibility, and comfort across the city's entire corridor network.

5.2.7 Dissatisfaction with the Growth of Metropolitan Lagos

The findings on residents' dissatisfaction with the growth of metropolitan Lagos emphasise key factors reflecting their daily struggles. Traffic congestion stands out as the most critical concern. Respondents across all corridors report ongoing gridlock during peak hours as a significant frustration. Whether in neighbourhoods or major commercial areas, people feel trapped by long travel times, bottlenecks, and an unreliable road system. This problem is not limited to any single corridor; it is a widespread urban challenge in Lagos. Closely related is the issue of traffic management. Residents are concerned with the lack of enforcement of traffic laws, poor signage, inconsistent traffic light operation, and overall disorder. Many believe the city lacks a coordinated traffic control system, which worsens the stress and delays caused by congestion.

A key cause of dissatisfaction is the declining environmental quality in the city. Noise pollution was often mentioned, with residents noting loud street activity, vehicle noise, and market disruptions as everyday annoyances. This persistent noise was found to reduce comfort and livability, especially in densely populated areas like the Ikeja and the Mainland corridors. Concerns about air pollution are also rising, with many blaming emissions from vehicles, generators, and industrial processes for poor air quality. Given frequent traffic congestion and limited green spaces, this environmental decline impacts residents' health and diminishes their overall quality of life.

Beyond traffic and pollution, dissatisfaction also stems from the city's physical design and layout. Respondents pointed out issues like disorganised development, narrow or poorly maintained roads, and scattered land use, which hinder navigation and reduce public space effectiveness. Some areas suffer from poor alignment, reflecting mismanaged spatial planning,

irregular plot arrangements, or mismatched buildings that block access and disrupt visual harmony. Urban blight, showing visible decay in infrastructure and amenities, was a recurring concern. Respondents in the Mainland and Northwest corridors noted dilapidated buildings, neglected streets, and deteriorating facilities, highlighting insufficient maintenance and limited urban renewal efforts.

This suggests that residents' dissatisfaction with Lagos's growth stems from tangible, everyday challenges, especially related to mobility, environmental comfort, and urban organisation. Traffic jams and poor management are the most common grievances, closely followed by issues of pollution and the city's physical structure. These concerns indicate that, although Lagos is expanding, the development often compromises efficiency, comfort, and sustainability. To effectively tackle these problems, urban development should extend beyond mere construction and population increases; it must incorporate strategic long-term transport planning, environmental safeguards, and integrated spatial management. Only through such comprehensive approaches can Lagos's growth better serve the needs and expectations of its residents.

5.2.8 Factors Influencing the Growth of the Lagos Metropolis

The findings examine residents' perceptions of how different infrastructure and social indicators influence Lagos's growth along five corridors. Evidence shows that electricity supply is viewed more favourably than other metrics. Most respondents in many corridors, especially Ikeja and the Southwest, noted improvements in electricity. Conversely, in areas like the Northwest and Mainland corridors, many residents still feel that electricity service has worsened or, at best, remains unreliable. This mixed picture indicates that, despite visible progress, access and reliability vary significantly across the city. The outlook for water supply is more negative, with many residents reporting issues such as irregular supply, poor water quality, and infrastructure failures. However, some improvements were acknowledged in better-served neighbourhoods.

Generally, overall water provision lags behind population growth and urban demands. The perception of security is cautiously optimistic. In most corridors, a significant portion of respondents reported safety improvements, particularly in commercial hubs like Ikeja and government-administered areas. However, security concerns persist in regions such as the Southeast and Mainland, where urban density and informal settlements can make enforcement

more challenging. Despite these gains, many residents continue to highlight crime as an increasing issue, especially in inner-city areas. This indicates that although policing and surveillance have advanced, underlying social and economic problems continue to drive insecurity in parts of the city.

Regarding drainage, the prevailing view is one of dissatisfaction. In many corridors, notably the Mainland, Southeast, and Ikeja, respondents observed worsening drainage systems. Frequent flooding, blocked gutters, and inadequate stormwater channels were common complaints. Although some improvements have been noted in specific zones, the overall sentiment suggests that drainage infrastructure has not kept pace with urban growth and changing weather patterns.

The rent and land value situation highlights economic pressures and development prospects. Most residents feel that rent hikes have made housing less affordable, especially in busy and economically vibrant areas, such as the Ikeja and the Mainland corridors. At the same time, many see rising land values as a sign of economic progress and development, viewing it as an opportunity for wealth building or investment, despite the increased difficulty for lower-income groups to access the property market.

Transport-related factors were also seen as significant influences on growth. The cost of travel has generally increased, especially in corridors with long commuting distances and limited public transport options. Rising fuel prices, fare hikes, and delays add to the overall burden. Conversely, opinions on traffic flow were divided. Some respondents, particularly in the Southwest and Mainland corridors, observed improvements due to new roads or better traffic management. Others reported worsening congestion, especially in rapidly expanding commercial zones.

In summary, Lagos residents observe urban growth through various interconnected indicators. Gains in electricity, security, and land value showcase efforts toward modernisation and economic progress. Nevertheless, ongoing problems with water supply, drainage, housing affordability, and transportation costs highlight persistent structural challenges. These perceptions indicate that, although Lagos is evolving into a lively metropolis, its development remains uneven and can significantly burden daily urban life. To address these disparities, a strategic, corridor-sensitive approach to infrastructure investment and policy reform is

essential, tailored to the actual needs of the city's diverse population.

5.2.9 Social Opportunities in Metropolitan Lagos

Many residents believe that social opportunities such as education, healthcare, recreation, and public participation are sufficient in their communities. This sense of adequacy is particularly strong in the Ikeja and Mainland corridors, where infrastructure and services are more concentrated and visible. In these areas, residents have more dependable access to social amenities, fostering positive perceptions of development. Some respondents considered social opportunities to be very adequate, suggesting that some parts of the city not only have social services and participation platforms but also that these are functioning effectively. These areas are typically more developed and receive more government attention and investment.

However, not all responses were positive, as many residents expressed indifference, meaning they neither agreed nor disagreed on the adequacy of social opportunities. This group likely includes populations that feel excluded, are unaware of available services, or have inconsistent experiences with their community's social infrastructure. Indifference was especially noticeable in the Southeast and Northwest corridors. Additionally, a significant number of residents were dissatisfied, rating social opportunities as inadequate or very inadequate. This was particularly evident in Ikeja and the Northwest corridors, where rapid urbanisation, despite being centres of administration and commerce, may have overwhelmed the social infrastructure. In these areas, residents might face overcrowded schools, limited healthcare access, scarce recreational spaces, or weak civic engagement platforms.

Many residents expressed satisfaction with the social opportunities available, especially in Ikeja, followed by the Mainland and Southwest corridors, where they appreciate the range of amenities and institutional support. A smaller percentage felt very satisfied, particularly in the Southwest corridor. This suggests that some communities enjoy substantial social development and diverse opportunities that enhance the quality of life. Conversely, a notable portion of residents remained indifferent, indicating a perceived gap or lack of engagement with social systems. This underscores the need for more inclusive planning, outreach, and service provision to ensure broader community participation and benefit.

Conversely, some respondents expressed dissatisfaction or high dissatisfaction, citing limited availability, accessibility, or quality of social opportunities. This issue was more common in

the Northwest and parts of the Ikeja corridor, highlighting inequalities in the distribution of development benefits.

Many residents of Lagos appreciate the social opportunities that come with urban growth, but access to them is often limited, inconsistent, or underdeveloped in certain areas. Positive experiences are mainly found in corridors with better infrastructure and active government presence, while regions under growth pressure without sufficient service expansion tend to evoke indifference and dissatisfaction. These findings highlight the importance of not only expanding physical infrastructure but also improving community access to education, health, recreation, and civic engagement. To ensure meaningful and inclusive development, Lagos's urban strategies should go beyond economic growth and prioritise social well-being and resident participation across all areas.

5.2.10 Environmental Quality Perception

Most residents throughout the city described their air quality as harmful, especially in more urbanised and industrial corridors such as the Mainland, Ikeja, and the Northwest. People in these neighbourhoods are likely exposed to high levels of vehicle emissions, industrial fumes, waste burning, and construction dust, which contribute to their negative view of air quality and heighten concerns about health risks. In contrast, some respondents in the Southwest and Southeast corridors regarded the air as acceptable. These regions might have lower population density, more greenery, or less industrial activity, resulting in a comparatively better air quality perception.

However, this positive assessment was in the minority and generally overshadowed by negative perceptions in the busier parts of the metropolis. Some residents also expressed uncertainty about air quality, stating that they are indifferent about it. This may reflect a lack of awareness, limited information on pollution indicators, or an inability to distinguish between natural haze and pollution. Such responses were more common in areas like the Northwest and Ikeja corridors. Many residents, however, reported experiencing poor air quality frequently or constantly, especially in corridors with dense commercial activity, busy roads, and limited green spaces.

The Mainland, Ikeja, and Northwest corridors stood out as areas where poor air quality is almost a constant presence. In these locations, residents likely contend with exhaust fumes,

generator emissions, and dust daily. Some respondents noted that poor air quality was more noticeable in the morning or afternoon, while a smaller number said they experienced it mostly at night. A small percentage of respondents across the corridors reported hardly noticing any air quality issues, suggesting that experiences vary based on local environmental conditions, personal sensitivity, or whether they spend more time indoors or outdoors.

Most respondents characterised the air quality as slightly polluted, suggesting pollution is present and noticeable but not overwhelming. This may indicate a gradual adaptation to ongoing low-level pollution. Conversely, in the Mainland, Northwest, and Ikeja corridors, more residents described the pollution as heavy, indicating denser, more intense, or visually apparent air contamination. Additionally, in some areas such as the Southeast and Ikeja corridors, the air was described as pungent, implying a sharp, irritating odour possibly from burning refuse, industrial emissions, or sewage vapours.

In summary, the findings highlight widespread concerns about air quality in Lagos, particularly along heavily urbanised corridors. Most residents frequently experience exposure to harmful or poor-quality air, which is often persistent. While some areas, especially in the Southwest and Southeast corridors, show slightly better responses, these are exceptions. The results indicate that air pollution is not only a visible environmental issue but also a daily reality for many Lagos residents. Addressing this problem will require city-wide strategies such as reducing vehicle emissions, regulating industrial activities, preventing open waste burning, and investing in green infrastructure to improve air quality and urban health.

5.2.11 Source of Noise Levels (Decibels)

The study investigates the primary sources of noise pollution in Metropolitan Lagos and how residents perceive the noise levels across five corridors. Vehicular traffic is identified as the primary contributor, with residents, especially in Southeast, Mainland, and Ikeja corridors, consistently citing persistent vehicle movement, honking, and engine noise as significant disturbances. The presence of commercial buses, motorcycles, and heavy traffic in densely populated areas further amplifies this impact. Religious institutions are the second most common noise source. In the Mainland and Ikeja corridors, residents report loud worship services, external sound systems, and frequent religious gatherings as significant contributors to high noise levels.

This illustrates how places of worship are situated close to residential areas and highlights the absence of strict noise regulations during religious events. Industrial activities also significantly impact noise levels, especially in areas with a high concentration of commerce or manufacturing, such as Ikeja. The continuous operation of factories, workshops, and extensive production facilities generates mechanical sounds that residents find disruptive. Noise from machinery like power generators, construction tools, and other mechanical equipment is another key source. This is especially prevalent in areas with unreliable electricity, leading to frequent generator use, or where development projects are ongoing. Additionally, record stores and entertainment venues add to urban noise. In areas like the Northwest corridor, residents often cite outdoor speakers used by shops, street vendors, or event organisers as a persistent and often uncontrolled source of noise.

Most respondents described these sounds as very loud or intrusive, especially in the Southwest and Northwest corridors, where residential and commercial activities intersect, causing nearly continuous noise during the day. A smaller but significant group rated the noise as very high, reflecting intense or overwhelming sound levels, particularly in densely populated areas like the Southeast corridor. These conditions may stem from the combined impact of traffic, markets, religious gatherings, and industrial noise, all occurring simultaneously in confined areas. Some residents described the noise as mild, particularly in less crowded parts of the Mainland corridor. These individuals likely reside in quieter neighbourhoods or have a higher tolerance for background noise. Only a small percentage of respondents viewed the environment as quiet or low in noise, indicating that nearly all residents face moderate to high levels of urban noise daily.

The results indicate that noise pollution is a prevalent and intricate problem in metropolitan Lagos. Key sources, such as traffic, religious institutions, industrial activities, and local commerce, are deeply embedded in the city's social and economic life, making regulation difficult without coordinated efforts. Most residents, although with a few exceptions, experience high or very high noise levels. This constant exposure impacts public health, stress, sleep quality, and urban livability. The findings highlight an urgent need for urban noise control measures, such as sound zoning policies, traffic improvements, restrictions on generator and loudspeaker use, and enhanced public awareness of noise standards in residential and commercial zones.

5.2.12 Environmental Problems Associated with the Growth of Metropolitan Lagos

As Lagos rapidly grows into a densely populated metropolis, it faces increasing environmental challenges, many of which are already significantly felt across the city. The data indicate that flooding is the most recognised environmental concern. Respondents from all five corridors, particularly in Ikeja and the Northwest, noted that flooding has become a frequent and disruptive part of urban life. This is likely due to a combination of factors such as poor drainage systems, unchecked development in flood-prone areas, and the covering of natural absorption zones. The rising frequency and intensity of flood events suggest that the city's capacity to manage stormwater and runoff is lagging behind its expansion in size and population.

Another critical concern raised by residents is the loss of wetlands. These natural ecosystems, which once played a vital role in controlling flooding, maintaining biodiversity, and regulating climate, are being encroached upon by residential and commercial development. The Southeast corridor, in particular, shows heightened concern in this area, indicating that visible wetland degradation may be occurring more rapidly there. The loss of these ecological buffers leaves communities more vulnerable to flooding and environmental instability.

Respondents also expressed serious concerns about land being occupied in environmentally sensitive areas that are unsuitable for development because of their ecological significance or physical vulnerability. In the Mainland and Northwest corridors, where informal settlements and unchecked growth are more common, this issue is particularly prominent. The push to accommodate Lagos's increasing population is leading to development in areas that were previously protected or unsuitable for permanent structures, causing erosion, deforestation, and habitat loss. Beyond specific ecosystems like wetlands, residents also worried about the overall loss of natural sites, green spaces, forests, and undeveloped land that once supported environmental balance and public health. The Ikeja corridor, an administrative and mixed-use hub, reported some of the highest concerns about this. The rapid change of green areas into paved, built-up spaces is degrading many environmental amenities that improve air quality, lower urban heat, and bolster resilience.

Erosion is a frequently discussed issue closely associated with deforestation, inadequate drainage management, and soil exposure resulting from construction activities. This problem affects all corridors but is especially noticeable in areas undergoing significant redevelopment or where sloping terrain has become unstable. Additionally, the expansion of settlements into

hazard-prone zones, such as near waterways, steep slopes, or industrial sites, also presents long-term dangers. Residents in the Southwest and Mainland corridors, in particular, pointed out this issue, highlighting weak enforcement of zoning laws and the rise of informal housing in high-risk regions.

In summary, the findings demonstrate how urban growth in Lagos is occurring at the expense of environmental sustainability. The concerns raised by residents reveal a consistent pattern: as the city expands physically, it also encroaches on ecologically sensitive zones, increasing risks such as flooding, erosion, and habitat destruction. These issues are interconnected and affect the entire city, not just one specific area. The responses emphasise the urgent need for a new model of urban development in Lagos, one that is more aware of environmental constraints, guided by long-term planning, and committed to maintaining ecological integrity while addressing the housing and infrastructure demands of a growing population. Without this change, the environmental costs of Metropolitan Lagos's expansion could severely threaten its future sustainability and liveability.

5.2.13 Metropolitan Development and Perception

The results indicated that most respondents notice a constant flow of newcomers into their communities. This pattern was observed across all corridors, with nearly everyone in the Southeast, Mainland, and Ikeja corridors confirming ongoing population growth due to arrivals from outside. This points to a citywide expansion trend, affecting all areas of the metropolis, with no region exempt from urban migration and settlement. Residents consistently described frequent new arrivals, with some describing the movement as very regular, almost continuous-bringing new faces, families, and businesses into neighbourhoods. This highlights the dynamic and ever-changing population of Metropolitan Lagos, where people regularly relocate seeking better housing, jobs, or access to services. Only a few respondents felt indifferent or uncertain about the population growth, and even fewer had not noticed new residents moving in.

For most residents, population change is a visible and tangible reality that affects neighbourhood composition, land use, and public service demands. When asked where they believed these newcomers came from, many identified Lagos itself as a significant source, implying that much growth results from internal relocation- people moving from crowded or unaffordable neighbourhoods to newer, more accessible areas of the city. A significant number of respondents also indicated that newcomers arrived from outside Lagos, pointing to a strong

city pull that attracts migrants from other states and regions in Nigeria. Others mentioned nearby states as the primary origin, emphasising Lagos's role as a regional urban hub for economic migration and social mobility.

Across all five corridors, there is a strong consensus that metropolitan development positively impacts the city's growth. Most respondents in these corridors agree that features of urban development directly contribute to Lagos's transformation. This shows that residents recognise the significance of transport networks, administrative centres, economic hubs, and infrastructure in shaping the city's physical and social progress. Although support for this viewpoint is high everywhere, it is particularly strong in the Southwest, Southeast, Ikeja, and Northwest corridors, where residents regard metropolitan activities as essential to urban development. This likely reflects the visible urban investments and improvements in these areas, including enhanced roads, increased housing, and expanding economic opportunities.

In contrast, responses from the Mainland corridor indicate a somewhat more mixed perspective. Although most residents still agree that metropolitan development affects city growth, a relatively larger proportion of respondents do not share this view. This may reflect some dissatisfaction with how development is progressing in the Mainland corridor; possibly due to overcrowding, service delivery problems, or perceived neglect compared to other corridors.

The findings indicate that ongoing population inflows drive Lagos's metropolitan development. Residents along all corridors feel the impact of migration, both from within the city and outside. This creates significant challenges for urban management, increasing demands on housing, infrastructure, land, and services. As Lagos continues to expand, proactive urban planning strategies are essential to accommodate this growth. Additionally, most residents perceive metropolitan development as crucial for urban progress, recognising the vital roles of infrastructure, planning, and economic activity in shaping the city. However, the lower consensus in the Mainland corridor points to a need for more inclusive development policies that ensure all city areas benefit from growth. These insights highlight the importance of public involvement in urban planning and ensuring that growth remains visible, accessible, and equitable for residents throughout Lagos.

5.2.14 Migrant Contribution to the Growth of Metropolitan Lagos

The findings provide insight into how residents of Lagos perceive the impact of migrants on the city's rapid growth and the challenges associated with it. It revealed a strong consensus across all five metropolitan corridors, where most respondents believe that migrants are partly responsible for the issues facing Lagos as it continues to expand. This sentiment is particularly strong in the Northwest and Mainland corridors, where the effects of rapid population increases are evident. Residents in these areas have observed how the constant influx of people, whether for economic opportunities, housing, or social networks, has intensified demand on infrastructure, transport systems, and public services. While some respondents disagreed with this view, stating that migrants should not be blamed for the city's problems, this perspective was in the minority. Those who hold this opinion may recognise that broader issues, such as weak urban planning, poor regulation, and government inaction, lie at the root of many of the challenges, regardless of population growth.

Several migration-related issues were identified, with traffic congestion standing out as the most common concern. Respondents highlighted overcrowded roads, longer commutes, and increased public transport usage as direct results of population growth. In the Ikeja and the Southeast corridors, these traffic problems are especially severe because of commercial activity and high-density settlements. Noise pollution was also widely recognised. The blending of residential, market, and transportation activities, often nearby, creates a loud and chaotic urban environment. This is especially noticeable in corridors where informal businesses operate next to residential areas.

Traffic management was also highlighted. Although congestion is about the high number of vehicles, issues with traffic management focus on disorder and lack of enforcement. Respondents observed that the increase in road users has not been matched by improvements in road regulation, signage, or policing, resulting in disorganised and sometimes hazardous traffic conditions. Air pollution emerged as a significant environmental issue. With more vehicles on the roads and an increase in commercial activities such as open burning and generator use, air quality is gradually deteriorating. Residents reported visible signs of pollution and its effects on daily life and health.

Poor physical planning, often called "poor setting out," is another problem linked to population growth. Respondents pointed out irregular building patterns, uncoordinated development, and

informal settlements expanding into unsuitable or environmentally sensitive areas. Urban blight, the visible deterioration of infrastructure and the environment, was also noted. In areas where population growth exceeds infrastructure capacity, residents experience declining conditions in roads, drainage, and public spaces. Less frequently, issues like misaligned development, structural decay, and other concerns also appeared. These problems indicate that migration interacts with multiple stress points within the urban system.

In summary, the findings reflect a public perception that migrants, while vital to Lagos's growth, also amplify many of its urban challenges. Residents see migration as a key factor behind issues like congestion, pollution, and poor planning, but this is not merely an act of blame. Instead, the findings show how rapid and unmanaged urban expansion, combined with weak regulatory and infrastructural support, results in adverse outcomes that are then linked to the visible presence of new populations. This suggests that Lagos needs to adopt more inclusive and proactive planning policies, those that do not stigmatise migration but instead predict it and prepare for it through improved infrastructure, better zoning, and sustainable service delivery. The solution is not to control people but to manage and guide development, so that growth becomes a strength rather than a burden.

5.2.15 Metropolitan Interaction

Work-related interactions are the most common and dominant form across all corridors. Many respondents cite employment as their primary reason for engaging with different parts of the city. This is especially noticeable in corridors like Ikeja, where both formal and informal economic activities are intense. The Mainland and Southwest corridors also demonstrate high levels of work-based interaction, reinforcing Lagos's reputation as a hub of opportunity and employment. Daily commutes and job searches keep residents continually connected to the larger metropolitan area. Besides work, residents also interact through political activities and housing issues. Political engagement is strong in corridors such as Southeast and Southwest, likely due to active local governance, community groups, or political mobilisation. Residents participate in voting, community representation, and local policymaking, linking them to broader metropolitan institutions.

Housing functions as a vital base for metropolitan engagement. In regions such as the Mainland and the Northwest corridors, residents regularly interact with the city regarding their housing, whether through moving, finding accommodation, or dealing with landlords and housing

authorities. These exchanges highlight not only individual shelter needs but also broader trends in urban growth and residential integration within the city's framework.

Trade continues to be a crucial link for residents, especially in the Southwest and Northwest corridors. Here, people often engage in buying, selling, and market activities that connect them to different parts of the city. The movement of traders and the placement of urban markets make trade vital for everyday interactions across city boundaries. In corridors like Ikeja and Mainland, family connections, cultural festivals, religious gatherings, and community meetings serve as key ways for residents to engage with the wider city. Economic motives do not always drive these interactions but are essential for social cohesion and a sense of belonging. Additionally, less frequently highlighted, residents also interact through infrastructure, education, health services, and community affiliations. For instance, residents in the Northwest corridor often connect to the broader metropolis via roads, transportation, and utilities.

Others engage with the city when accessing education or health services outside their immediate neighbourhoods, although these types of interactions are less frequently observed. Only a small fraction of respondents reported having no interaction with the Lagos metropolis. This indicates that nearly all residents, regardless of corridor, are in some way connected to the functioning and structure of the wider Lagos metropolitan area.

The findings indicate that residents' interactions in metropolitan Lagos are varied but primarily focus on work, housing, and political engagement. These interactions influence how people move around, reside, and participate in city activities. Trade and social bonds are also crucial, especially in areas with strong informal networks and community ties. Although less frequently highlighted, institutional interactions related to infrastructure, education, and healthcare emphasise the importance of public services in shaping residents' relationships with the broader city. Overall, the findings underscore that Lagos functions as a highly interconnected metropolis, where residents continuously engage with the urban environment through economic activities and social participation. This highlights the need for comprehensive urban planning that supports livelihoods, mobility, housing, and inclusive civic infrastructure.

Daily interaction is the most common and consistent way residents engage with the city across all corridors. This trend is apparent in the Mainland and Ikeja corridors, where most residents participate in city life every day. These areas are known for their vital economic,

administrative, and transportation functions, which naturally lead to high daily activity levels. Even in the Northwest and Southeast corridors, many residents still report daily involvement in city activities, showing that even those farther from central zones remain connected, likely through commuting, markets, or education. The Southwest corridor, while still active, has slightly fewer residents participating daily, possibly due to differences in land use, residential density, or access to urban services.

Besides daily routines, many residents interact with the city weekly or monthly. Weekly visits are more common in the Southeast corridor, where some people have flexible jobs or depend on the city for trade, supplies, or visiting family. Monthly contact indicates a less intense connection, likely among individuals who visit for specific reasons, such as medical appointments, administrative work, or occasional commerce. These patterns suggest that although daily involvement is still widespread, a significant part of the population maintains a connection to the city through organised, less frequent visits.

At the lower end of the spectrum, only a few residents report occasional, quarterly, or infrequent interactions with Lagos city life. These individuals probably reside in more peripheral neighbourhoods or work in occupations less connected to the formal urban economy. Others might be retired, self-employed locally, or less dependent on metropolitan services. Their limited interaction indicates a more isolated or localised lifestyle compared to the urban majority.

Further analysis shows that most respondents engage with Lagos from within the metropolis itself, indicating that the majority of interactions are by residents of its urban core. This highlights the central role Lagos plays in their daily lives, whether for living, working, or accessing services. Corridors such as Mainland, Ikeja, and the Northwest display robust internal interaction patterns, suggesting these areas are deeply integrated into Lagos's functional boundaries. Additionally, a significant number of respondents interact with the city from outside the metropolis. Many of these individuals live in surrounding peri-urban or suburban regions but maintain strong ties to Lagos, possibly due to employment, education, trade, or family connections. Respondents from the Southwest and Southeast corridors are more likely to report interactions from outside Lagos, emphasising the city's influence on nearby areas. A smaller proportion of respondents come from other states, reflecting Lagos's broader regional importance as a hub of commerce and opportunity.

People from neighbouring states continue to interact with Metropolitan Lagos, highlighting its importance as a central hub in Nigeria's urban network. Work remains a key reason for engagement with the city, particularly in areas like Ikeja, known for its high density of offices, businesses, and government agencies. This indicates that employment is a major factor in routine or daily connections to Lagos, even for those not living in its core zones. Property ownership also influences interactions with Lagos. Fewer respondents report engaging with the city because they own property there. This trend is more pronounced in areas like the Mainland and Northwest corridors, where residential investments seem more developed. These findings suggest that, for some, ties to Lagos are more enduring and based on housing and land ownership, rather than just transient work or travel.

Overall, the findings depict Lagos as a highly interactive metropolis whose influence stretches beyond its formal boundaries. While most interactions occur from within the city, its gravitational pull extends to nearby regions and other states, driven by economic opportunity, residential patterns, and the city's role as Nigeria's primary urban centre.

Metropolitan interaction plays a vital role in Lagos's daily life, with most residents engaging with the city regularly. This interaction underscores how citizens' livelihoods, routines, and social networks are deeply integrated into the urban fabric. Even those who do not interact daily still maintain some connection, indicating that Lagos's metropolitan core extends across all corridors. The extensive nature of this engagement emphasises the need for dependable transportation, well-functioning infrastructure, and efficient services, as these systems facilitate the movement and activities that sustain the city's vibrancy and economy. Ultimately, the findings reinforce the view that Lagos is more than just a place to live; it is a city that people actively use, navigate, and depend on every day, regardless of their location within the city metropolis.

5.2.16 Cities' Morphologies and Growth Patterns Similar to Malignant Process

A large majority of respondents perceived that the way Lagos is developing resembles a malignant process. This idea was widely shared across all five metropolitan corridors, especially in the Southeast, Mainland, and Northwest. Many residents feel that the pace and pattern of city growth are uncontrolled and potentially harmful, leading to uncoordinated urban sprawl, congestion, and the breakdown of community or ecological structures. They likened the morphological growth of Metropolitan Lagos to uncontrolled proliferation, similar to how

cancer cells divide without regulation. Cities like Lagos experience unchecked sprawl, particularly in peri-urban zones such as Alimosho and Ojo in the Southwest and Northwest corridors. This results in overcrowding, infrastructure collapse, and zoning incoherence.

The primary concern was rapid, unchecked expansion. Residents from various corridors observed that development happens quickly without proper planning, infrastructure, or long-term consideration. New buildings, roads, and informal settlements are emerging rapidly, often overburdening existing services and lowering the quality of life. Another common observation was that the city's growth is invasive, likened to malignant tumours infiltrating adjacent tissues.

Lagos, for instance, expands into wetlands, floodplains, and even Ogun State, disrupting ecological and administrative boundaries and encroaching on nearby communities, open spaces, and natural habitats. This type of expansion, similar to cancer spreading in healthy tissue, highlights the city's failure to safeguard sensitive areas like wetlands, floodplains, or low-income settlements from development pressures. Some residents also noted development extending into distant or disconnected regions, akin to metastasis and losing differentiation, where cancer cells cease their specialised functions. Urban-wise, this reflects a zoning breakdown, with residential, industrial, and commercial zones becoming chaotically mixed, particularly in districts like Mushin and Ajeromi-Ifelodun in the Ikeja southwest corridors.

The study findings show Lagos's expansion often jumps over natural or infrastructural boundaries, leading to fragmented development and poor connectivity between neighbourhoods. A smaller but essential group of respondents mentioned de-differentiation, a loss of identity and structure. They observed that the city is increasingly losing its distinct zones for housing, commerce, recreation, or heritage. Instead, everything is becoming mixed and chaotic, resulting in a loss of planning logic and urban character, similar to angiogenesis (new blood supply), where tumours create new blood vessels to sustain growth. Metropolitan Lagos stretches infrastructure (roads, drainage, power) to support expansion, often inefficiently and unsustainably.

Many Lagos residents view the city's rapid growth as unhealthy rather than positive. They compare development to a malignant disease, highlighting concerns about uncontrolled, invasive, and poorly managed urban expansion. This view isn't just symbolic; it reflects real worries about Lagos's sustainability, equity, and livability. The city's infrastructure is

transforming quickly, but without solid planning and regulations, these changes are seen as harmful, much like cancer spreading to distant parts of the body. Lagos shows signs of leapfrog development, where satellite towns form far from the city centre and lack connection to essential services. Most opposing opinions come from the Ikeja corridor, possibly indicating a more organised or disciplined view on growth there, thanks to better infrastructure, planning, or government oversight.

5.2.17 Similarities Between (Physiological Malignant) Growth and Urban Expansion

Lagos, a city marked by sharp contrasts and continuous expansion, is experiencing a transformation that defies traditional urban theories. Rather than expanding in a planned manner, its growth resembles the unchecked spread of malignancy, chaotic, invasive, and often damaging to the systems meant to support it. This analogy helps better to understand the city's disorderly sprawl and its vulnerability. Lagos's growth isn't just fast; it's pathological, risking systemic failure that leads to flooding, housing issues, and ecological harm. The analogy further describes Lagos's urban growth as similar to malignant (cancerous) growth, with irregular and self-similar patterns. The link between Lagos's urban development and malignant tumours lies in their shared structural and behavioural characteristics.

Urban sprawl was the most frequently mentioned issue among those identified. Residents noted that the city keeps expanding in all directions without precise planning or coordination. This growth pattern is likened to the unchecked spread of diseased cells, highlighting how Lagos seems to develop outward without considering sustainability, infrastructure capacity, ecological effects, boundary regularity, or expansion patterns. The Southeast and Mainland corridors, in particular, expressed strong concerns about this uncontrolled sprawl. Another common concern was the rise in crime, which respondents directly associate with unregulated urban growth. In corridors like Ikeja and Mainland, many observe that as the city expands rapidly, so do security issues, especially in newly developed or poorly managed neighbourhoods. The perception is that the system struggles to respond quickly enough to the growing safety and policing demands.

Closely related is the problem of unchecked and disorderly development. Residents notice buildings going up without adequate planning, access roads, or utilities. This irregular and unregulated growth leads to overcrowding, unsafe buildings, and land use conflicts. In places such as Ikeja and the Northwest corridors, these patterns reflect a failure in urban planning and

regulatory oversight.

Many respondents identified poverty as another consequence of malignant-like urban growth. As Lagos expands, the wealth generated is not distributed fairly. In the Northwest and Mainland corridors, residents observed that large parts of the population live in decaying or underserved environments, with limited access to essential services. Poverty in this context is not solely economic; it also highlights the failure of planning to foster inclusive growth.

A related issue is the deterioration of structural integrity in both buildings and public infrastructure. Respondents highlighted failing roads, collapsing structures, and neglected drainage systems, particularly in densely populated urban areas such as Ikeja, Mainland, and Southeast corridors. These physical signs illustrate how destructive processes weaken systems, transforming once stable regions into zones of decay.

Moreover, the effects of this chaotic growth are not only physical. Respondents pointed out behavioural shifts, such as social disconnection, diminished trust in institutions, and heightened individualism. These trends indicate that social cohesion deteriorates alongside the collapse of physical order. An additional social impact is the decrease in residents, which includes migration, displacement, or people leaving declining communities. Individuals are moving away from formerly stable neighbourhoods because of rising insecurity, congestion, or the loss of amenities. This migration contributes to a sense of fragmentation throughout the city. Long-time residents of Lagos especially noted a diminished sense of place, reflecting the loss of the city's historical character, cultural identity, and the emotional bonds to once familiar and orderly spaces. Several respondents described the city's irregular layout, with development spreading unevenly or in disconnected patterns. A few also observed slow growth in some areas, possibly indicating stagnation in underdeveloped zones that are left behind, while other parts experience rapid, uncontrolled expansion.

In summary, the findings provide a compelling perspective on how residents perceive the negative impacts of Lagos's urban growth. Rather than viewing expansion as progress, many see it as a harmful, uncontrollable process that damages the city and lacks cohesion. Issues like sprawl, insecurity, poverty, infrastructure breakdown, and social dislocation are seen not as separate problems but as interconnected symptoms of a more profound urban crisis akin to malignancy. This highlights the urgent need for a fundamental rethink of urban planning and

management in Lagos. Residents are not just asking for more development; they want smarter, healthier, and more humane growth that supports communities instead of destroying them.

5.2.18 Awareness of the Development of Lagos's Original Core and Spatial Evolution

The study found that many respondents across all corridors are either very aware or aware of Lagos's original core's development. This indicates that many residents possess a meaningful understanding of the city's spatial origins, particularly in the Mainland and Southeast corridors, where the city's core and spatial transition originated, with early administrative and commercial activities concentrated there. For example, in the Mainland corridor, many residents demonstrated strong awareness, and the Southeast corridor also showed a high recognition of the core's growth, likely due to proximity to historically significant zones or long-term residency. Although the Ikeja corridor is more modern and administrative, its residents also demonstrated a high level of awareness. This suggests that even areas outside the original core maintain a connection to the city's spatial history, possibly through education, media, or exposure via work and travel.

A moderate number of respondents across corridors reported being somewhat aware of the original core's development. These respondents have a general understanding but may lack detailed knowledge. This group was most common in the Northwest and Ikeja corridors, where residents are engaged with the city but may not have close historical or cultural ties to its earliest parts. The partial awareness indicates a latent curiosity or passive exposure to the city's spatial history, perhaps through everyday movement, informal learning, or indirect experiences with planning and infrastructure.

A small number of respondents indicated they were unaware or only somewhat aware of how Lagos's original core area developed. These responses, mainly from the Northwest and Southwest regions, may include newer residents, younger populations, or communities less engaged in urban planning discussions. Despite this, the majority of residents seem to share a common understanding of the city's spatial history, with few being completely uninformed about its foundational zones and evolution. This suggests that awareness of Lagos's core development is widespread, reflecting residents' lived experiences, collective memory, and civic identity, shaped by historical significance, daily movement, and community bonds. Although some limited awareness persists, especially in outer or newer areas, the overall pattern indicates a strong urban consciousness. These findings imply that residents actively

engage with the city's history, structure, and change, beyond mere occupation.

The findings indicate that many residents across the five metropolitan corridors are aware of or highly aware of coalescence. The Southeast corridor showed the highest awareness, suggesting residents here are particularly perceptive of how previously separate spaces have become interconnected physically and functionally over time. The urban settings of Lagos indeed demonstrate a significant awareness of coalescence in the way the roads, residential zones, and informal settlements seem to merge into each other naturally, often without clear boundaries. This blending of functions and spaces affects not only the city's aesthetics but also how people move, access resources, and experience community. This awareness could stem from direct experiences with community merging or increased infrastructure links. Ikeja and the Northwest corridors also demonstrated strong awareness levels, which shows that coalescence is not merely a theoretical concept but something residents observe daily. These regions have undergone rapid development and urban infill, gradually blurring the clear boundaries between neighbourhoods.

Aside from those who are very aware, many respondents indicated they are somewhat aware of the term. This suggests that even if they aren't familiar with the official term "coalescence," they understand the processes it entails- such as district merging, increased urban continuity, and the reduction of undeveloped land. This partial awareness was especially evident in Ikeja and the Mainland corridors, where urban sprawl has significantly transformed the space. The rapid merging of communities in these areas provides residents with concrete examples of the process.

The overall awareness is high, but some residents still reported being unaware or very unaware of coalescence. These responses were more frequent in areas like the Mainland and the Southwest, where residents might not have participated in urban development discussions or where regions are less impacted by recent spatial integration. Unawareness may also be due to limited access to planning information or a gap between academic terminology and everyday language. Notably, the Southeast had the lowest proportion of residents who reported being unaware, supporting the idea that spatial changes are more noticeable or better communicated there.

Residents across Lagos have a significant awareness of coalescence and its effects on the city's physical layout. Most people recognise that Lagos is expanding not only outward but also inward by connecting formerly separate or distant settlements into a unified urban space. This awareness is strongest in corridors where urban growth occurs rapidly and the integration between neighbourhoods is most evident. However, there remains a need to turn this public awareness into informed civic participation, enabling residents to influence how coalescence develops. As the city continues to densify and grow, managing coalescence will require deliberate planning, infrastructure investment, and community integration to ensure that physical merging results in functional and equitable urban environments.

The findings showed that a large number of residents across the five corridors, Southwest, Southeast, Mainland, Ikeja, and Northwest, are aware of urban aggregation. Lagos's urban landscape vividly exemplifies aggregation, showcasing a sprawling city where distinct districts blend. This polycentric growth, with key hubs like Ikeja and the Southeast corridors, illustrates a natural yet chaotic expansion that resists traditional planning. The city grows upward in wealthy zones with skyscrapers and outward with informal settlements on its outskirts. Economic activity centres around vibrant convergence points, creating dense hubs of commerce, transport, and cultural exchange. Land use is layered, with religious sites, residences, and industries often occupying similar spaces. Overall, Lagos functions as a living organism- complex, self-organising, and powered by the resilience and innovation of its people.

In certain areas, especially Ikeja and the Southeast corridors, awareness is noticeably high. These regions have experienced significant physical changes over recent decades, with increased development causing formerly separate communities to blend into a continuous urban landscape. This direct exposure likely enhances the public's understanding of aggregation. The Northwest and Southwest corridors also demonstrate considerable awareness, suggesting that residents in both newer and older parts of the city are familiar with how urban areas are coming together. On the Mainland, which is at the historical core of the city's expansion, a strong level of awareness was also observed, reflecting its direct involvement in the ongoing merging and integration of neighbourhoods.

A significant portion of respondents identified themselves as being highly aware of urban aggregation. This is especially noticeable in the Southeast, Mainland, and Southwest corridors. Residents in these areas may have seen once-open spaces or undeveloped zones filled in over

time, and they now witness the seamless merging of previously separate districts. The fact that residents can observe this transformation up close fosters a deeper awareness and clear recognition of spatial patterns. Conversely, some respondents described themselves as somewhat aware. This group is most common in corridors like Ikeja and Northwest, where residents might notice the changes around them but are less familiar with the terminology or conceptual framework of urban aggregation. These individuals are likely aware of the practical effects, such as increased traffic, dense development, or the loss of boundary distinction, without fully understanding the process by its name.

A smaller segment of the population reported being unaware or very unaware of urban aggregation. This group is most prevalent in the Mainland and Southwest corridors. Their limited awareness could be due to limited exposure to formal urban planning discussions, reduced access to urban studies information, or a focus on local rather than citywide spatial developments. Nevertheless, the overall percentage of respondents in this category remains small, suggesting that urban aggregation is generally recognised, even if not always explicitly understood.

Most Lagos residents are aware of the city's evolving spatial landscape. The merging of formerly separate urban areas into a continuous metropolitan zone indicates that Lagos residents are not just passive inhabitants but actively observe, interpret, and respond to ongoing changes. This awareness is evident across all five corridors, with particularly strong recognition in high-growth areas like the Ikeja and Southeast corridors. This widespread understanding of urban integration reflects a population that is deeply engaged with its environment, witnessing and understanding how development patterns are transforming the city.

Lagos residents are attentive to the city's evolving spatial structure, demonstrating a keen awareness of how their neighbourhoods grow, change, or even vanish over time. This attentiveness extends beyond mere passive recognition; it appears in daily choices, such as where people move, how they travel, and which spaces they claim or leave behind. The formation and merging of urban forms are not solely driven by policy or planning but also by the community's response to spatial change. In this way, Lagos's urban morphology is as much shaped by local perceptions as by infrastructural development. To truly understand Lagos, one must also listen to how its residents perceive and describe its physical transformation.

5.2.19 What Typifies the Lagos Metropolis Expansion Process

The study explores the rapid expansion of Metropolitan Lagos, using the metaphor of a malignant lesion and drawing parallels between biological pathological growth and uncontrolled urban development. It examines the structural, ecological, and governance impacts of Lagos's growth, residents' perceptions of the city's development, the main drivers behind it, and the reasons for its continuous spatial change. Findings indicate that the most defining feature of Lagos's growth, according to most respondents, is demographic expansion. This points to population increases, mainly through natural growth and migration, as the key aspect of metropolitan development. Residents across nearly all corridors observe that the city is enlarging as more people settle in, resulting in denser communities and larger urban territories.

The next most mentioned feature is spatial expansion. Residents observe the visible spreading of the city's-built environment, with neighbourhoods expanding outward, new housing projects emerging on the outskirts, and previously rural or open areas becoming urbanised. This view was especially common in corridors experiencing rapid land use changes. Some respondents also attribute this growth to economic factors, emphasising increased business activity, commercial development, and investment. This is particularly noticeable in areas like Ikeja and the Mainland corridors, where industries, office complexes, and trade hubs are accelerating space transformation.

Respondents pointed out several factors driving the growth of Lagos. The most prominent is socio-economic development, marked by rising incomes, job creation, new business opportunities, and economic diversification, making Lagos appealing to people from across Nigeria and beyond. Additionally, migration from nearby settlements and overall population increase are key contributors. People relocate to Lagos from neighbouring towns, states, and rural areas in search of better living conditions, employment, and access to urban amenities. Respondents also highlighted the strategic distribution of essential services such as water, electricity, schools, hospitals, and transport, which act as pull factors. When infrastructure and basic services expand into new areas, they encourage settlement and spatial growth. Lagos's historical role as a former capital, a commercial centre, and a global city also fuels its continuous expansion, attracting both residents and investments.

Several key factors explain why Lagos continues to expand physically. The primary reason is accessibility, roads, transit, and overall connectivity, which significantly facilitate growth. Regions that are more accessible tend to develop faster because they become attractive for living, business, and development activities. Additionally, political and economic opportunities play a role, highlighting Lagos's importance as a hub of governance and commerce. This attracts people not only seeking jobs but also aiming for influence, engagement, and progress.

Population growth continues to be a primary driver of expansion, as increasing numbers of people need more space for housing, services, and infrastructure. Other key factors include infrastructure development, higher living standards, and technological advancements. The construction or modernisation of roads, buildings, and utilities opens up new development possibilities. Additionally, rising aspirations and access to innovative technologies influence the locations and ways people live and work. Education plays a secondary role, primarily attracting people to certain areas, but it is less influential than economic and infrastructural factors.

Therefore, the findings indicate that a combination of demographic, spatial, and economic factors drives Lagos's metropolitan expansion. Residents widely recognise that the city is growing due to population movement, spreading development, and the pursuit of better socio-economic conditions. Simultaneously, physical expansion is propelled by a growing population, improved access, infrastructure investment, and Lagos's magnetic appeal as a centre of opportunity. Lagos is shifting from mere physical growth into a complex, interconnected urban system. Instead of expanding outward alone, it is developing inward, upward, and across sectors, transforming into a layered city. Its development is accompanied by more intricate land use, infrastructure, and social networks. The city functions like an ecosystem where transportation enhances the economy, residential zones blend with commercial areas, and digital infrastructure supports governance and daily life. This transition from simple expansion to integrated functionality marks a new phase of development characterised by growth in synergy and systemic adaptation.

5.2.20 Factors that Affect the Growth of Lagos Metropolis

The findings indicate that most respondents report increasing house rents all over the city, particularly in high-demand corridors like Mainland, Ikeja, and Northwest. This trend suggests a growing gap between housing demand and supply, driven by rising migration and limited

affordable options. Few respondents noted rent stability, and only a small minority observed rent decreases, highlighting the challenge of housing affordability for many residents. Similarly, land values tend to rise, with most respondents across corridors noting steady increases. This reflects the increasing pressure on land demand, especially in urbanising areas where the need for residential, commercial, and industrial land is growing. Some residents, particularly in Ikeja and Mainland corridors, mentioned areas where land values have remained stable or fallen, but these instances are relatively rare.

Most respondents felt there had been some infrastructure improvements, especially in the Southwest and Northwest corridors, where new roads, public facilities, or utility expansions are more visible. Conversely, in the Mainland and Ikeja corridors, many residents believe infrastructure has stagnated or worsened, highlighting uneven development and ageing infrastructure in older areas.

Many respondents pointed out that transportation costs have risen, particularly in Ikeja and the Mainland's commercial areas. Higher fuel prices, increased fare rates, and longer commutes are likely contributing to this view. On the other hand, some residents in the Southwest corridor noted minor improvements in travel conditions, likely resulting from improved roads or transit options. Opinions on traffic flow varied: some believed congestion eased, especially where new roads or bypasses were introduced, while others, mainly in the Mainland and Northwest corridors, felt congestion worsened due to population growth, higher vehicle usage, and inadequate traffic management.

The effect of land value on urban growth was seen positively by many residents, who believed it spurred investment, development, and infrastructure, especially along the Mainland corridor. Conversely, a considerable number of respondents felt that increasing land values caused exclusion by pushing development into less accessible or informal areas, complicating land acquisition for ordinary citizens. The impact of rising rent was perceived more negatively, with many residents arguing that it threatened urban sustainability by making housing unaffordable and displacing low-income households. However, some respondents, notably in the Southwest corridor, viewed rising rents as an indication of economic growth and higher property values.

Regarding crime, opinions varied. Some residents across the city observed improved security, especially where policing or surveillance had increased, while many others believed crime had

deteriorated. This worry was especially pronounced in the Southeast and Mainland corridors. A few respondents indicated there was no notable change, suggesting that crime levels in their areas stayed consistent.

The findings on urban growth show that most residents believe the rate of urban expansion in Lagos has increased over time. This perception is strong in corridors such as Mainland, Ikeja, and Northwest, where new developments, construction activities, and population pressures are particularly evident. The widespread belief in accelerating growth indicates that residents are highly aware of the physical and demographic changes happening in their areas. A smaller group of respondents think that growth has remained stable, while only a few believe that the rate has decreased. This reflects a general understanding that Lagos continues to expand at a steady and, in many areas, rapid pace.

Most respondents also agreed that urban sprawl has increased, showing the city expanding into previously undeveloped zones. This pattern is evident in the Southeast and Southwest corridors, where new housing developments, informal settlements, and infrastructure projects are pushing the boundaries of the urban area further outward. The sense of sprawl aligns with reports of longer commutes, expanding roads, and the merging of formerly separate neighbourhoods. Some believe that sprawl has stabilised, while a few think it is decreasing, likely reflecting areas where physical expansion has slowed or stopped.

Most respondents agree that population growth is speeding up throughout the metropolis. This trend is apparent in corridors like Ikeja and Northwest, where the influx of people is changing both the social fabric and the physical environment. Respondents link this growth to natural population increases and migration, including newcomers from surrounding states and rural regions. A smaller number see the population as stable, and only a few think it has declined, mainly in areas where development has stagnated or efforts are being made to decentralise growth.

The perception of house density reflects trends in population growth and urban expansion. Most residents agree that housing units are becoming more densely packed and numerous in certain areas. This is especially evident in high-pressure corridors like Ikeja and Northwest, where rising land prices and limited space promote vertical development and denser housing arrangements. Some respondents noted that housing density remains stable. At the same time,

a minority observed a decrease, often in areas where planning restrictions limit density or where informal structures have been cleared or redeveloped.

The study underscores the complex and interconnected dynamics of Lagos's urban growth. Rising house rents, land prices, infrastructure upgrades, travel expenses, and traffic congestion all influence how residents perceive the city's expansion. Factors like crime and affordability are crucial in shaping public views on whether growth is inclusive or exclusive. These findings reveal a mixed reality: while some urban indicators improve, others deteriorate, with physical development outpacing social equity and affordability. Policymakers need strategies that promote balanced, accessible, and inclusive growth for all Lagos residents. Additionally, residents generally perceive the city's rapid urban development, characterised by faster expansion, sprawling, population increase, and denser housing, as often uneven and accelerating.

These changes present both opportunities and challenges, including aspects such as economic vitality, urban integration, and strains on infrastructure, transportation, and public services. The results underscore the importance of strategic planning to manage growth sustainably, ensuring development is not only extensive but also equitable, efficient, and livable for all segments of the population.

5.2.21 The Expansion of the Lagos Metropolis Impacts on Health and Well-Being

The findings revealed that residents across all corridors most frequently cited the economic dimension of their well-being as impacted by urban expansion. This suggests that the financial consequences of city growth, such as higher living expenses, shifts in job opportunities, changes in property prices, and increased resource demand, are highly apparent and deeply felt. In commercial and administrative areas like the Ikeja and Southwest corridors, the effects on livelihoods and economic mobility were especially highlighted.

Residents' responses also emphasised the social aspect of well-being. In areas such as the Northwest and Southeast corridors, many highlighted shifts in community life, social interactions, and access to essential services. As new residents arrive and infrastructure becomes overwhelmed, longstanding social networks may break down, and public resources become more strained, resulting in heightened competition for schools, healthcare, and recreational amenities.

Residents also pointed out that physical health is impacted by urban expansion. They raised concerns about air and water quality, pollution exposure, crowded housing, and poor sanitation. These problems are more common in fast-developing areas where infrastructure struggles to keep up with population growth. On mental health, some respondents, particularly in central or densely populated regions like the Mainland and Ikeja corridors, acknowledged the psychological effects of city life. These include stress from traffic jams, noise, overpopulation, and the pressure to meet increasing economic expectations.

While mental health was not among the most mentioned factors, its acknowledgement reflects increasing public awareness of urban life's less obvious impacts. The area receiving the least recognition was spiritual well-being. Few respondents across all corridors thought the city's growth had considerably affected their spiritual or religious life. This implies that, for most residents, spiritual issues are viewed as separate from their experiences of physical and economic changes in the city, or they perhaps do not perceive city expansion as disrupting their spiritual practices or beliefs.

Lagos residents demonstrate a nuanced understanding of how the city's expansion impacts their daily lives. They identify economic and social well-being as the most affected areas, with increasing concerns about physical and mental health, especially in rapidly urbanising corridors. In contrast, spiritual concerns are less affected by urban changes. This highlights the need to incorporate economic stability, social support, and mental health into urban planning. As Lagos grows, careful management of its expansion is crucial to protect residents' well-being, particularly economically and socially, aiming to develop a resilient, inclusive, and healthy city.

5.2.22 Characteristics of Lagos metropolitan growth

Since 1963, Lagos's population has grown twentyfold, expanding into neighbouring states. While the city remains economically dynamic, this rapid growth has led to wetlands being encroached upon, informal settlements increasing, and infrastructure under strain, much like invasive malignant cells in biological systems. The data reveal that Lagos's main growth driver is its rising population. Residents, especially in busy commercial areas of the Mainland and Ikeja corridors, acknowledge that the continual influx of people fuels the city's expansion. Migration, high birth rates, and economic opportunities all play roles, resulting in more residential occupancy and greater demand for urban space. Additionally, respondents

frequently linked economic activities and investments to the city's ongoing development.

In the commercial zones along the Southwest and Ikeja corridors, there is a common belief that business growth, real estate development, and market expansion are not only accelerating but also actively shaping Lagos's physical and social environment. These developments create opportunities for wealth creation, employment, and services, but also lead to increased competition for land, housing, and infrastructure. While growth is generally recognised, many respondents expressed concerns about inadequate infrastructure and basic services. This issue is especially evident in fast-developing areas like the Southeast and Northwest corridors, where residents face challenges such as poor road conditions, drainage problems, and limited access to schools, hospitals, and other civic amenities. This suggests Lagos is expanding more quickly than its infrastructure can support.

A related issue is poor planning, with respondents noting that much of the city's growth seems to happen without clear direction or coordinated regulation. Unplanned expansion results in irregular land use, inefficient transportation networks, and encroachment on environmentally sensitive zones. This situation is particularly noticeable in areas with many informal settlements and speculative developments. A key theme from the responses is unchecked and disorderly development. Lagos exemplifies this issue, with weak planning enforcement and land acquisition processes that often bypass formal governance structures. Many residents perceive construction and land use as chaotic, with buildings emerging without regard for zoning or planning standards. This results in cluttered streets, unequal access to services, and environmental damage.

Additionally, poor communication channels highlight weak coordination among government agencies, limited public involvement, and a lack of transparency in urban planning. These factors reveal that residents often feel disconnected from planning processes, leaving them uncertain or excluded from decisions impacting their communities. Overall, these issues point to a failure of urban containment policies and indicate deeper governance problems in managing urban space.

Some respondents observed signs of urban decay, particularly in older or neglected neighbourhoods. This includes ageing buildings, poor maintenance, and environmental challenges. Such decay indicates uneven development, with new areas growing rapidly while

existing ones lag. A few also mentioned concerns like environmental issues, social displacement, or traffic, but these were not primary issues.

The study highlights the complex and often conflicting nature of Lagos's growth. On one side, the city is expanding due to a dynamic population and economic forces. Conversely, it faces significant infrastructural, regulatory, and environmental issues. Residents recognise that although Lagos is bustling with activity and opportunities, this growth is not always systematic, fair, or sustainable. The recurring problems of poor planning, insufficient infrastructure, and uncontrolled development underline the urgent need for a more coordinated and inclusive urban management approach. This is essential for Lagos to continue developing as a livable and efficient city.

5.2.23 Metropolitan Lagos's Positive and Negative Growth Process

Lagos's metropolitan growth is energetically positive but structurally problematic. It is vibrant and economically significant, yet on its current path, it is unsustainable. The study revealed an overall optimistic outlook on Lagos's growth. Most respondents from all regions viewed the development positively. These positive perceptions mainly stem from the sense that the city is becoming more organised, with respondents from the Southeast corridor especially noting areas needing improvement. Many also observe signs of planned development, particularly in the Ikeja and Mainland corridors, showing awareness of urban planning initiatives. Additionally, some respondents highlight that Lagos is becoming more livable and resilient, indicating confidence in its ability to support a good quality of life and endure challenges. Nonetheless, sustainability is less often recognised as a key aspect of growth, implying that although progress is visible, long-term environmental and systemic stability might not be as widely acknowledged.

As Lagos evolves into a multifunctional, economically vibrant city, its growth goes beyond physical expansion to encompass innovation, resilience, and creative rethinking. Contributing nearly 30% of Nigeria's GDP, the city thrives not only through formal investments but also via a strong informal economy and creative industries. Residents are active participants in urbanisation, shaping their survival strategies. In Somolu, artisanal industries develop as adaptable responses to structural shortages, while areas like Yaba and Eti-Osa are transforming into tech hubs and coastal zones. This spatial expansion, reaching peri-urban areas such as Alimosho and Agege, illustrates the city's rapid growth, akin to malignant growth. However,

unlike pathological malignancy, this expansion is driven by human ingenuity, creating livelihoods from insecurity and forging networks out of necessity.

Lagos's unchecked expansion highlights a malignant urban condition where growth signals systemic failure rather than progress. The rise of slums, zoning issues, and chaotic spatial development resembles cancerous cells, spreading and causing disruption without control. Environmental damage, including wetland loss, coastal erosion, and frequent floods, mirrors the collateral effects of metastasis. Additionally, ongoing infrastructure shortages and fractured governance worsen the situation, trapping millions in cycles of hardship and planning delay. Like cancer thrives in weakened immune systems, Lagos's vulnerabilities come from poor regulation and neglected civic services. This perspective made respondents view urban growth not as inherently beneficial but as a force that requires careful regulation, repair, and systemic support.

Some respondents even describe the growth as malignant, highlighting fears about the dangers of unchecked urbanisation. Overall, the study reveals a mixed perspective: many residents see positive developments in metropolitan Lagos, such as improved organisation and signs of planning. However, there remains a strong negative concern regarding disorderly growth, inadequate planning, and the risks associated with rapid urban expansion.

5.2.24 Key Indicators of the Growth Process of Metropolitan Lagos.

The study indicates that most respondents perceive Lagos's growth as an urban crisis. This perspective is consistent across all city regions, with only slight variations in the intensity of this perception. Residents from different corridors, be it the Southwest, Southeast, Mainland, Ikeja, or Northwest, generally agree that Lagos's rapid and character-changing expansion has led to significant challenges rather than benefits. Supporters of the crisis viewpoint point to several key indicators; mainly, they describe the growth as aggressive and malignant, implying uncontrolled and potentially damaging expansion. This rapid, irregular development is likened to tumours, especially when their boundaries become indistinct and their growth metastasises into surrounding areas.

Urban sprawl is a significant indicator mentioned by respondents, characterised by the expansion of low-density areas that extend beyond the city centre and often lack adequate infrastructure. Respondents also frequently cite socioeconomic issues as indicators of a crisis,

including rising poverty, increasing inequality, and the growing challenge of maintaining a decent quality of life. Crime is another common concern, reflecting a perceived connection between rapid urban development and declining safety. Alongside this, there are worries about worsening living conditions, such as overcrowded housing, insufficient services, and environmental stresses.

Some respondents highlight the functional impacts of the city's expansion, such as increased pressure on transportation, utilities, and public infrastructure, seen as key indicators of development in metropolitan Lagos. A smaller group mentions demographic shifts, such as changing population structures or growing diversity, as part of the urban crisis. Others refer to cultural adaptations, reflecting evolving lifestyles, values, and social relations amid the changing urban landscape. Overall, the responses portray a city that is growing in size and complexity, but not always healthily or sustainably. The mix of physical sprawl, social inequality, insecurity, and infrastructural stress leads many to view Lagos's growth as more of a crisis than a well-managed transformation.

5.2.25 The Comparison Between the Growth of Lagos and Malignant Neoplasms.

When cities like Lagos expand without proper strategic planning, their growth patterns can resemble biological disorders. Metropolitan Lagos and malignant tumours may seem separate, but their behavioural similarities reveal insights about growth, survival, and disruption. Like cancerous growths, Lagos's urban sprawl indicates uncontrolled proliferation, aggressive, resource-consuming, and hard to manage. The city's expansion encroaches on ecosystems, breaks social boundaries, and leads to systemic issues. Informal settlements spread across the metropolis, while infrastructure struggles to keep pace, similar to organs overwhelmed by cancer. This analogy challenges overly positive narratives of urbanisation and urges us to rethink "growth" as more than just a neutral or beneficial concept.

The study results reveal that many respondents compare Lagos's expansion to malignant tumours, describing it as an uncontrolled and harmful growth. This metaphor reflects deep worries about the rapid and unchecked urban development in the city. Numerous respondents see Lagos's growth as unrestrained, indicating a shared belief that the city is expanding without proper regulation, planning, or control measures. Such opinions suggest that people think the city's growth is driven by its momentum, without guidance from urban planners or authorities. Some respondents go even further, expressing that there is no possibility of controlling this

growth. This more concerning view implies that not only is growth unregulated, but it might also be inevitable or irreversible. The feeling of helplessness in confronting this kind of expansion raises fears about the city's future livability, infrastructure, and governance.

Some respondents view the growth as unaffected by scale, suggesting it persists regardless of existing urban capacity or constraints. This indicates that the city is expanding without regard for infrastructural limits, environmental impacts, or resident needs. It reflects a type of growth that is insensitive to context or consequences.

Only a small number of respondents believe that adequate growth controls are in place. This minority view indicates that while some acknowledge efforts to manage urban development, these measures are seen as neither widespread nor sufficiently effective. There is recognition of planning initiatives, but they are likely considered inadequate given the city's scale of challenges. Overall, these views depict Lagos as a city experiencing rapid and potentially unhealthy growth. The comparison to cancerous growth highlights the concern that apparent progress in size and activity may be problematic. This growth is viewed not as a sign of vitality but as a potentially destructive process that is outpacing regulation and risking systemic failure. Lagos, Nigeria's economic hub, has seen swift urban expansion over recent decades. While growth is often associated with progress, the findings liken Lagos's expansion to a malignant lesion, uncontrolled, invasive, and damaging, drawing parallels with urban sprawl, environmental damage, and socio-economic pressures.

5.2.26 Urban Forms and Malignant Neoplasms

The comparison between metropolitan Lagos's urban forms and malignant neoplasms is more than just metaphorical; it is diagnostic. Describing Lagos's expansion as metaphorically cancerous no longer suffices. From a diagnostic perspective, akin to those used in pathology laboratories, the city's spatial condition demonstrates that Lagos does not merely resemble malignancy; it behaves like it. Its infrastructural stress points, systemic failures, and uncontrolled peripheral growth all mirror features of metastatic disease. Zoning erosion, slum proliferation, and environmental trauma signify not just poetic analogy but genuine dysfunction. Lagos is thus perceived not merely as a growing metropolis but as a body in crisis, requiring intervention, rehabilitation, and potentially remission.

The growth, while economically vibrant, has led to the encroachment on wetlands, the proliferation of informal settlements, and the overburdening of infrastructure, symptoms akin to invasion and dysfunction caused by malignant cells in biological systems. The findings reveal that most respondents strongly believe that the growth of metropolitan Lagos can be compared to cancer. This metaphor is not merely a figure of speech; it reflects a deep public concern about the nature of the city's expansion. Across all corridors of Metropolitan Lagos, such as the Southwest, Southeast, Mainland, Ikeja, and Northwest, most respondents agree that the city's growth resembles the behaviour of malignant cells.

The comparison suggests that people see Lagos expanding in an uncontrolled, aggressive, and potentially harmful manner. Instead of being perceived as orderly or strategic, the expansion is seen as spreading haphazardly across the metropolis, disregarding the natural, infrastructural, and social boundaries of the urban environment. This perception highlights issues like unregulated construction, weakening of planning controls, uncontrolled spread of slums, and increasing strain on public services.

Respondents affirmed that the city's growth shares characteristics with cancer, and this comparison is not only symbolic but also rooted in people's lived experiences. For many, the similarity lies in how the city expands into every available space, often creating more problems than it solves, just as cancerous cells multiply destructively within the human body. Metropolitan Lagos has become a theatre of creative destruction and spatial tensions. Urban Lagos is constantly demolishing itself to rebuild; slums give way to gated estates, roadside markets to malls, and informal economies to formal regulations. This is creative destruction in motion: the city's reinvention erases parts of itself to produce new forms.

However, this reinvention is not benign. It highlights an urban paradox: while expansion promises modernisation, it also deepens inequality and exclusion. Only a small portion of respondents disagree with these views, indicating that concern about Lagos's urban trajectory is widespread and firmly held. The same growth processes that signal development often led to marginalisation. This manifests as spatial injustice, a lived experience where access to land, infrastructure, and opportunities is unevenly distributed. Gentrification causes displacement, road projects create disconnects, and security measures can further exclude marginalised communities.

Most residents view the city's growth as not only rapid and uncontrolled but also dangerously so, posing a threat to its sustainability, livability, and future development. The cancer metaphor highlights Lagos's quick, unchecked expansion and the human toll involved. Similar to malignant cells, informal settlements emerge where regulation is weakest, displacing existing communities. Social displacement and housing inequality are symptoms, not just side effects. Issues like spatial fragmentation, infrastructure breakdowns, and resource competition illustrate how this 'cancer' harms vital systems.

Uncontrolled Proliferation: Cities expand rapidly, fueled by market demand and population growth, often ignoring infrastructure limits, much like unchecked cell division. Similar to cancer cells multiplying without restraint, Lagos sees swift growth, particularly in peri-urban zones like Alimosho and Ojo. This unrestrained sprawl leads to:

- Overcrowding and housing stress
- Collapsing infrastructure systems
- Incoherent land-use and zoning violations occur as urban planning mechanisms fail to establish boundaries, leaving development to speculative markets and informal settlements.

Invasion of Adjacent Tissue: Urban development encroaches on fragile ecological zones, neighbouring jurisdictions, and buffer lands, disrupting systems much like tumours invade healthy tissues. Malignant tumours disrupt surrounding tissues to fuel their growth. Lagos exhibits similar tendencies:

- Encroachment into wetlands and sensitive ecosystems
- Unregulated growth into neighbouring Ogun State
- Breakdown of natural and administrative boundaries leads to serious ecological consequences: flooding, biodiversity loss, and heightened disaster vulnerability.

Loss of Functional Differentiation: Zoning boundaries and specialised districts break down, resulting in chaotic mixes of incompatible uses, just as cancer cells lose their original identity and function. Cancer cells forfeit their specific roles; Lagos also suffers from functional decline:

- Traditional zoning collapses into chaotic land-use mosaics
- Residential, commercial, and industrial zones merge erratically
- Mushin and Ajeromi-Ifelodun exemplify this disorder, reflecting a loss of clarity in the city's structure that results in inefficiency and unpredictable service delivery.

Angiogenesis: Unsustainable Infrastructure Expansion: Cities develop new networks like roads and utilities to support growth. However, these are often poorly planned, resembling the haphazard blood vessel growth around tumours. To survive, tumours create new blood supply routes, and Lagos imitates this by extending infrastructure into continuously expanding areas:

- Roads and drainage networks strain under uncontrolled demand
- Power and water systems lag behind urban growth
- New developments often lack integration, leading to waste and dysfunction. This infrastructure angiogenesis is poorly coordinated and usually reactive, which increases systemic fragility.

Metastasis: Leapfrog growth pushes settlements away from the urban centre, creating disconnected nodes, a direct parallel to malignant spread across distant organs. In its final and most insidious stage, malignancy metastasises, spreading far from its origin. Lagos's growth now leaps over undeveloped areas:

- Satellite towns like Badagry and Ibeju-Lekki emerge in isolation
- Service networks fail to connect distant pockets
- A fragmented urban landscape replaces the concept of a cohesive city. This dispersed development exacerbates inequality and complicates coordinated planning.

The metaphor of malignancy warns that if Lagos does not change its course, its growth could endanger the very systems that sustain the city. The connection between urban development and malignant tumours lies in their shared structural and behavioural traits, especially when cities expand uncontrollably and invasively. The cancer metaphor depicts Lagos not just as a city that is expanding, but as one metastasising, growing in unpredictable and often destructive ways. Similar to malignant cells, urban sprawl quickly spreads into outlying areas, harming ecosystems and overburdening infrastructure. Informal settlements develop like tumours, initially manageable but increasingly straining resources and social cohesion over time.

5.2.27 Effects of Lagos Metropolitan Growth on Malignant Neoplasms

The study reveals that respondents have diverse opinions about Lagos's metropolitan growth compared to malignant neoplasms. While some see the growth as primarily negative, others acknowledge positive effects, and many believe it has a mix of both. Those with negative perceptions focus on problems like unplanned expansion, increased congestion, environmental

decline, rising crime, and overstretched infrastructure. They liken the unchecked growth to malignant expansion, suggesting Lagos is spreading destructively and without control, which threatens residents' quality of life and the city's future. If this growth continues unchecked, Lagos risks becoming a harmful force, draining resources, displacing communities, and damaging ecosystems.

Some respondents have a more positive view of growth, linking it to urban development, economic prospects, job creation, and better access to services and infrastructure. They tend to see Lagos's rapid expansion as a sign of progress and vitality rather than decline. A third group takes a more nuanced stance, recognising that Lagos's growth offers both benefits and challenges. While they note positive aspects such as increased investment and modernisation, they also acknowledge issues like overcrowding, inequality, and strained services.

Overall, the findings reveal that Lagos's growth impacts residents differently, influenced by regional contexts and personal experiences. For some, these changes are empowering and transformative; for others, they are disruptive and unsustainable. The metaphor of malignant tumours aptly describes this tension, highlighting both the city's vitality and chaos. It portrays Lagos's expansion as a pathological disturbance to natural ecosystems like wetlands, forests, and coastlines, demonstrating how urban metastasis causes biodiversity decline, heat islands, and flooding, similar to how cancer spreads and damages healthy tissue.

5.2.28 Malignant Urban Growth in Lagos Metropolis

The evolution of Lagos, Nigeria's commercial nerve centre, has taken on traits resembling the pathology of malignant growth, unchecked, chaotic, and increasingly destructive. While the city pulses with energy and ambition, beneath the surface lies a complex web of spatial disorder, environmental decay, and fragmented governance, such as:

- 1 High Spatial Entropy: Districts such as Alimosho, Ojo, and Mushin illustrate severe land-use fragmentation, where informal developments coexist with dispersed industrial zones, commercial areas, and inadequate public spaces. This fragmented urban pattern diminishes efficiency and erodes any sense of cohesive planning, similar to the random mutation of cells in a malignancy.
- 2 Environmental Degradation: Lagos's natural buffers, such as wetlands, mangroves, and coastal ecosystems, are rapidly disappearing. Coastal erosion, extensive land reclamation, and heat island effects are weakening the city's ecological resilience. The

destruction of Lagos's ecosystems resembles necrosis, as vital systems decay under relentless urban expansion.

Table 5.1 Conceptual Parallels: Malignancy vs. Metropolitan Expansion

Malignant (Biological)	Trait	Urban Expansion Trait (Lagos)	Effect on Urban System
Uncontrolled cell division		Unregulated land development	Sprawl, zoning violations, informal settlements
Invasion of healthy tissue		Encroachment into wetlands, forests, and peri-urban zones	Environmental degradation, biodiversity loss
Metastasis (spread to other organs)		Expansion into Ogun State and beyond	Cross-boundary planning conflicts
Disruption of organ function		Overburdened infrastructure and services	Traffic, flooding, housing shortages
Resistance to treatment		Weak enforcement of urban planning laws	Persistence of slums and illegal developments

Source Author's fieldwork, 2025.

3. **Governance Breakdown:** Planning controls and enforcement mechanisms have become more porous, allowing informal settlements, speculative developments, and zoning violations to proliferate. Similar to how cancer evades immune detection, Lagos's expansion often circumvents regulatory oversight, resulting in institutional paralysis as urban pressures intensify.
4. **Infrastructure Overload:** The city's roads, drainage, and housing are under severe strain. Issues like traffic jams, flooding, and overcrowded homes highlight significant infrastructural failures, much like vital organs failing under systemic stress.
5. **Social Inequality:** Lagos embodies a paradox: luxury estates and shining developments coexist with sprawling slums and shantytowns. This uneven spatial pattern reflects a survival dynamic similar to that of specific cells at the expense of others, deepening social divisions and intensifying poverty exclusion.

5.2.29 Empirical Evidence of Malignant Expansion in Lagos

- 1 Land cover change: Built-up areas grew by over 40% between 1995 and 2015 in districts such as Kosofe and Alimosho.

- 2 Wetland destruction: Lagos lost thousands of hectares of wetlands due to real estate development, particularly across the metropolitan corridors.
- 3 Cross-boundary sprawl: Lagos's northward expansion into Ogun State has led to borderless urban zones, complicating governance and service delivery.
- 4 Health impacts: Urban stress, pollution, and overcrowding have lowered the average life expectancy in Lagos to 52.2 years, with fewer than 5% of residents living beyond 60.

Table 5.2 Evidence of Malignant Expansion in Lagos

Pathological Trait	Urban Parallel in Lagos
Rapid, uncontrolled growth	8% annual urban growth rate (UN-Habitat, 2020)
Invasion of adjacent tissues	Encroachment into Ogun State and wetlands
Metastasis	Spillover into peri-urban zones like Ikorodu
De-differentiation	Loss of spatial identity and zoning coherence

Source: Author's fieldwork, 2025.

5.2.30 Morphological Evidence of Malignancy

- 1 Satellite imagery and GIS analysis show that Lagos's built-up area expanded by 199% from 1984 to 2016, while vegetation cover declined by 42.9%. These changes highlight growing border irregularity and increasing spatial complexity, which are signs of malignant growth.
- 2 Lagos's biodiversity hotspot has become a crowded urban area filled with luxury estates and commercial centres, frequently constructed on reclaimed wetlands. This transformation reflects the invasive morphology of urban malignancy.

5.2.31 Ecological and Socio-Political Consequences

Environmental Degradation

- 1 Wetland loss: Over 75,000 hectares of wetlands have been degraded.
- 2 Flooding: The removal of natural flood buffers has increased seasonal flood risks.
- 3 Biodiversity decline: Habitat destruction has led to species loss and ecological imbalance.

Socio-Spatial Inequality

- 1 Gated communities vs. slums: High-end developments along all corridors stand in stark contrast to informal settlements within the same areas.

- 2 Displacement: Expansion has displaced low-income communities, exacerbating housing crises.
- 3 Governance failure: Weak enforcement of planning laws and corruption in land acquisition processes.

Fractal Morphology in Lagos

- 1 Lagos displays self-similar urban patterns, dense clusters of development repeating across scales, from neighbourhoods to entire districts.
- 2 Studies indicate that built-up areas in Metropolitan Lagos Island have expanded in a fragmented yet clustered pattern. Between 1984 and 2015, the city's developed land grew, while vegetation experienced a substantial decline.

Urban Malignancy Traits

- 1 The city's growth has been likened to a malignant spread, with land reclamation pushing into wetlands and water bodies.
- 2 Vertical expansion (high-rise buildings) has intensified, especially post-2000, driven by rental value, proximity to water, and financial institutions.
- 3 The insularity of Lago has been compromised by this aggressive expansion, threatening ecological balance and urban livability.

The metaphor of malignancy offers a powerful way to interpret Lagos's urban issues. Like cancer that overpowers biological systems, Lagos's growth, fueled by population demands, poor planning, and speculative development, has strained its ecological and infrastructural systems. The city's corridors exemplify malignant urban expansion, where growth exceeds its initial limits, disrupting ecological and administrative structures.

5.2.32 Challenges of Metropolitan Lagos Growth

The findings highlight several challenges that residents believe metropolitan Lagos faces due to its rapid growth. Responses indicate that this expansion has resulted in significant infrastructural and social issues across the city. Slum development is a common concern, with many respondents noting that large informal settlements continue to form, often lacking essential services such as sanitation, infrastructure, or adequate housing. This suggests that physical growth is surpassing the government's capacity to plan and develop suitable urban areas.

Environmental degradation remains a significant issue, with worries about unchecked development contributing to pollution, waste management problems, and the disappearance of natural areas. This highlights a growing awareness of how the city's expansion is impacting its ecological systems. Unemployment remains a major challenge linked to Lagos's growth. Despite attracting more residents and businesses, many feel that economic opportunities have not kept up with the city's expanding population. Consequently, unemployment and underemployment are seen as key outcomes of urban expansion, fueling poverty and social unrest.

The city's uncontrolled sprawl, often outside formal planning, remains a significant concern. Respondents point out Lagos's chaotic physical growth, where new developments frequently lack proper oversight or integration into the city's overall plan. This unregulated expansion leads to poor connectivity, inefficient land use, and insufficient service delivery. There is also concern about the amorphous nature of development, with many feeling Lagos is growing without clear form or structure, resulting in a confusing and uncoordinated urban landscape. This impacts aesthetics, order, governance, and the provision of public goods. Additionally, residents believe that poor implementation of planning standards often results in plans being ignored or poorly enforced, despite their existence on paper. This creates a disconnect between policy and reality, directly contributing to many of the city's issues.

Finally, poverty is also recognised as a consequence of this growth. Although Lagos is frequently described as a commercial hub, many respondents point out that the benefits of its development are not shared equally. Instead, large sections of the population continue to live in economic hardship, with limited access to services, employment, and decent living conditions. Essentially, the findings reveal that Lagos's growth is not just a sign of urban dynamism but a process that has created a complex array of challenges. These challenges, which include slum expansion, environmental degradation, unemployment, and poor planning, reflect a city struggling with the repercussions of rapid and often uncoordinated urbanisation.

5.3 LAND USE/LAND COVER CLASSIFICATION OF METROPOLITAN LAGOS 2006-2022

Over the past thirty years, Lagos has experienced rapid urban expansion, turning it into one of Africa's largest megacities (Idowu & Zhou, 2021). Although this growth has driven economic progress, it has also led to spatial fragmentation, ecological harm, and increased pressure on

infrastructure. This pattern exemplifies malignant urban growth, a term that refers to unchecked, unsustainable urbanisation that damages environmental and social systems (Hern, 1993).

Using satellite data and field observations, LULC analysis reveals how Lagos's landscape has shifted, from wetlands to concrete, green belts to grey zones. It is a factual record of urban metamorphosis. Lagos's land cover transformation reflects both opportunity and risk. Strategic planning must balance urban growth with ecological preservation, infrastructure equity, and community inclusion. This study quantifies LULC changes in Lagos from 2006 to 2022. It compares these changes to malignant growth indicators to determine the distribution, nature, and development patterns of the Lagos metropolis, which have changed significantly.

This validates the advent of an increase in urban growth and development of the Lagos Metropolis as observed during the fieldwork. This research also illustrates that the findings reveal a significant increase in built-up areas and a decline in vegetation and wetlands, driven by rapid urbanisation and weak zoning enforcement. The observed growth of the Lagos metropolis has had a significant impact on the environment, with natural vegetation and land cover being almost entirely replaced by built-up surfaces. The growth and expansion of the Lagos metropolis thus accounted for the biodiversity loss in the environment in the State.

The growth and expansion of the Lagos metropolis is attributed to six different types of effects: the effects of the natural environment; the effects of demographics; the effects of the economy; the effects of the transport system; the impact of consumer preferences for proximity; and the effects of governance as elucidated by Shlomo, Stephen, Sheppard, Daniel, Buckley, Chabaev, Gitlin, Krale, Parent and Perlin, 2005. Lagos' growth is multifaceted, a dynamic interplay of environmental, economic, social, and political factors. While the city shines with promise, its expansion must be guided by thoughtful planning, sustainable investment, and inclusive governance to ensure that all residents benefit from the rising tide.

There has been a high degree of urban expansion due to an increase in population, human activities, and other social factors, which have accounted for the change in the pattern and rate of urban development. This assertion was supported by the study of Higgins (2011), which found that the growth of Lagos has been more characterised by an expansion in area than population increase.

The development of Lagos metropolis has undergone noticeable changes over time, including the loss of wetland, the gross replacement of natural land surface with impervious surfaces, and a reduction in coastal area (shoreline and water body coverage). The results of this study reveal compelling evidence of spatial disorder across Lagos Metropolis, exemplified by significant increases in built-up area and consistent loss of vegetation and wetlands between 1996 and 2022. These transformations are not merely indicative of growth but align deeply with the concept of malignant urban expansion, which is disruptive, wherein cities evolve in a manner that compromises ecological stability, planning coherence, and infrastructural adequacy (Hern, 1993).

The city has seen an alarming surge in built-up areas, replacing natural ecosystems with impervious surfaces like concrete and asphalt. Wetlands, once vital buffers against flooding and biodiversity loss, have shrunk dramatically. Coastal zones, both shoreline and water bodies, have also been diminished, upsetting the natural equilibrium.

This research provides a spatiotemporal diagnosis of Lagos Metropolis, revealing a trajectory of urban expansion that mirrors malignant growth: rapid, unregulated, and ecologically unsustainable. Between 1996 and 2022, built-up areas surged while vegetation and wetlands declined sharply, destabilising environmental buffers and fragmenting land use patterns. Entropy indices above 0.80 across key districts underscore a crisis of spatial disorder, driven by informal development, weak zoning enforcement, and reactive planning.

The impact of Lagos metropolis's growth and expansion on the environment can be inferred from the decrease in the coverage area of the riparian forest from its initial state, which is attributed to the significant urban development activities observed in the region over time. There was an increase from 1984 to 2015 in forest/grassland areas due to land reclamation activities aimed at accommodating human development needs and urban expansion.

During the same period, there was an increase in water bodies owing to seasonal variations and a possible rise in sea level as a result of global warming, while light density built-up experienced an increase from its initial state (1984) in 2015. Also, in 2015, high-density built-up areas experienced a massive growth due to diverse human attempts at urban expansion, which led to different forms of developmental activities to cater for the Lagos metropolis' expansion demands.

By 2022, land use in Lagos had become increasingly dynamic, with the total land area growing from 69,265.44 hectares in 2015 to 88,945.16 hectares. This expansion included four new local government areas: Eti-Osa, Apapa, Ojo, and Ajeromi/Ifelodun, added to the land cover analysis. Despite the spatial growth, the proportions of different land cover types remained stable, indicating consistent land use change patterns. The built-up area continued to dominate, accounting for 73.8% (65,694.12 ha) of the total land. This growth reflects ongoing urban expansion driven by increased demand for housing, commercial activities, and infrastructure, especially along waterfront and peri-urban zones. The share of built-up land rose from 56.5% in 2006 to 68.5% in 2015, showing a steady and accelerating trend of urban sprawl.

Urban growth boundaries, ecological buffers, and transit-oriented nodes are crucial tools for reversing Lagos's planning failures. By combining remote sensing data with theories of uncontrolled expansion, this study provides a roadmap not only for Lagos but also for other vulnerable megacities facing unchecked growth. By comparing empirical LULC change with malignant growth theory, the study exposes significant governance gaps. When overlaid with LULC data with the malignant growth framework, a concerning pattern emerges:

- **Poor Spatial Coordination:** Development does not respect regulatory boundaries; informal settlements encroach into ecological zones.
- **Weak Institutional Oversight:** Planning agencies often delay enforcement or lack the data needed to act decisively.
- **Reactive Policies:** Instead of expecting growth, governance mainly reacts to crises, floods, congestion, and land disputes.

Analysing Lagos's spatial chaos by comparing satellite-derived LULC data with malignant growth theory uncovers a city expanding indiscriminately, consuming land, ecosystems, and rational planning. The LULC patterns in Lagos illustrate harmful growth: quick expansion, ecological decline, and disorderly spatial development. Informal settlements encroach on flood-prone zones, while infrastructure growth cannot keep pace with the rising population. If unaddressed, these trends will worsen urban vulnerability and environmental harm.

5.4 THE LAGOS METROPOLIS EXPANSION USING SHANNON'S ENTROPY MODEL

Urban growth in Lagos has rapidly increased over the last four decades, fueled by rising population, economic migration, and a limited land supply on Lagos Island. Formerly marginal mainland districts now serve as hubs of unregulated development. This study examined Lagos's growth patterns from 2000 to 2022 using the Shannon entropy model. The model assessed spatial randomness and measured urban sprawl and land use inefficiency. The highest entropy values were 2.24 in 2000, 2.13 in 2015, and 2.51 in 2022. Values near the maximum suggest widespread, chaotic urban expansion. The entropy level indicates significant sprawl, informal growth, fragmented zoning, and weak spatial regulation, resulting in a patchwork of inefficiency.

The relative Shannon entropy for 2000 is 2.24, a negative value that signifies disorganised and sprawling growth. Although sprawl persists, its rate has slowed because of densification within the built-up area, especially in districts such as Alimosho, Agege, and Ifako-Ijaiye.

The relative Shannon entropy for 2000 and 2015 remained negative, reaffirming the growing trend of urban sprawl. It also suggests a more concentrated or intensified pattern of urban growth during that period; an increase in compact development was noted, driven by vigorous urban expansion in districts such as Alimosho, Oshodi/Isolo, Ifako-Ijaiye, Kosofe, and Ikeja. The data shows a significant rise in entropy in all districts, with Alimosho and Agege exhibiting the highest levels of spatial disorder.

The study further revealed that the growth in Alimosho, Oshodi/Isolo, Ifako-Ijaiye, Kosofe, and Ikeja is due to increasing migration, rising local populations, improved road systems, and other infrastructure developments that enable people to build homes on land that was previously inaccessible. Ineffective planning frameworks and weak planning laws, increased affluence, affordable and attractive land and housing prices, and the desire for larger homes with more amenities all contributed to the expansion of Lagos metropolis into outlying settlements.

The Shannon entropy calculated for 2000 and 2015 is negative, despite the significant population growth that led to the expansion of the Lagos metropolis; the accompanying pressure on the city's resources and the risks it poses to maintaining order, alongside intense

urban fragmentation that causes infrastructural disintegration, poor accessibility to facilities and services, and an uneven and insufficient distribution of infrastructural amenities.

Lagos's urban expansion shows a pattern of not only growth but also significant spatial decline. This research examines urban dysfunction through malignant urbanism by combining land use/land cover (LULC) change detection with Shannon entropy analysis, revealing planning inconsistencies in the city. Entropy values over thirty years, peaking at 2.51 in 2022, indicate a trend toward almost complete spatial chaos, approaching the maximum disorder. The 2022 value of 2.51 suggests Lagos's urban system is nearing total spatial randomness, close to the theoretical entropy limit.

These metrics highlight a landscape marked by fragmentation, unpredictability, and uncoordinated development, exposing the growing ineffectiveness of Lagos's planning system. The study indicates that the expansion of Lagos metropolis has caused significant changes in population growth, with rapid urbanisation leading to uneven physical expansion of settlements, unbalanced growth, and inadequate infrastructural development.

Urban sprawl in Lagos has transcended mere expansion; it has metastasised into malignant spatial disarray. By quantifying spatial disorder, entropy analysis reveals near-chaotic urban transitions between 2000 and 2022, exposing a built environment characterised by fragmentation, unpredictability, and systemic neglect. The findings position Lagos within a framework of unsustainable development and highlight the urgent need for remedial planning strategies to address spatial dysfunctions.

5.4.1 Spatial–Temporal Analysis of Lagos Metropolis Expansion

A twenty-year analysis of Lagos's urban growth using entropy metrics and land cover changes reveals three expansion phases. First, from 1921 to 1976, rapid growth was driven by industrial investment, political centralisation, and migration; second, from 1976 to 1986, accelerated growth due to weak master plan enforcement; and third, from 1986 to 2022, a slowdown amid socio-economic and environmental issues.

Lagos's urban development involves three stages: developing the city centre, expanding outward, and merging into larger areas. Despite population growth, the relative Shannon entropy remains negative for 2000 and 2015, indicating resource strain and degradation,

especially on the outskirts due to infrastructural fragmentation, limited access, and uneven distribution.

Using Shannon entropy and the malignant expansion metaphor, the study detects disorder in Lagos's morphodynamics. Entropy analysis across districts (2000–2022) assesses urban sprawl, highlighting systemic challenges similar to biological growth. Results show increasing disorder in land use, with environmental fragmentation and sprawl due to weak regulation, emphasising the need for adaptive, spatially conscious planning.

5.4.2 Spatial Entropy of Lagos Metropolitan Districts

Spatial entropy measured land-use fragmentation and disorder in Lagos's urban areas. Higher scores reflect mixed zoning, informal settlements, and planning inconsistencies. Metrics were calculated for districts based on five land-use categories: residential, commercial, industrial, green/water, and vacant/informal. Over the last forty years, Lagos's urban growth has sped up due to population increase, migration, and land scarcity, turning mainland districts from outskirts into centres of unregulated development.

The study reveals evident spatial disorder across Lagos Metropolis, marked by a notable rise in built-up areas and a gradual decrease in vegetation and wetlands from 2015 to 2022. These changes signify more than simple expansion; they illustrate harmful urban growth that endangers ecological balance, planning standards, and infrastructure (Hern, 1993).

Lagos's entropy indices exceeding 0.80 in districts such as Alimosho, Ikorodu, and Amuwo-Odofin indicate a failure in land regulation. Wetland conversions near Ejigbo, Ijeododo, and Ode-Omi threaten biodiversity and heighten flood risks (Idowu & Zhou, 2021). The proliferation of informal settlements in unzoned areas creates challenges for tenure security, sanitation, and infrastructure. Without adaptive zoning, these issues could exacerbate poverty, diminish disaster resilience, and put additional pressure on urban governance.

5.4.3 Lagos Metropolis Population from 1950 to 2022

The study of Lagos metropolis's population from 1950 to 2022, conducted at five-year intervals, revealed a steady increase in population, indicating the city's expansion over this period. This growth accelerates each year, showing a trend in which neighbouring or peripheral settlements have benefited from Lagos's expansion over time. Lagos's population growth

highlights change and tension, balancing opportunity with planning needs. Its future depends on how effectively it utilises energy and addresses underlying challenges. A breakdown shows that, from 1950 to 2022 at five-year intervals, Lagos underwent a dramatic population boom, transforming into Africa's key urban centre. The most significant growth occurred between 1955 and 1960, with an increase of over 62%.

The study indicates that rapid growth and spatial expansion led to congestion, affecting nearby settlements from 1995 to 2015. This trend is reflected in negative Shannon entropy values obtained from 2000 to 2015, despite influx and city sprawl. Land use and cover data from 2006 to 2015 also demonstrate Lagos's continued expansion from 2000 to 2022.

5.4.4 Population Growth and Spatial Expansion of Lagos Metropolis from 1950 to 2024

This study examines the demographic and spatial development of Lagos Metropolis from 1950 to 2024, utilising historical census data, satellite imagery, and secondary urban studies. Lagos evolved from a modest colonial outpost into one of the largest cities in sub-Saharan Africa, with its population rising from approximately 325,000 in 1950 to over 16.5 million in 2024.

5.4.5 Demographic Profile and Historical Growth

From 1950 to 2024, Lagos Metropolis grew at an average annual rate of about 6.5% until 1990, when growth slowed to 3.5%. High birth rates, rural-to-urban migration, and economic centralisation mainly drive this expansion. The World Bank (2023) estimates that if these trends continue, Lagos could reach over 88 million inhabitants by 2100.

5.4.6 The Growth Factor of Metropolitan Lagos, 1980 to 2024

Between 1980 and 2000, Lagos transitioned from a federal capital to a significant regional economic hub. This growth was fueled by an influx of migrants attracted by oil wealth and employment prospects. From 2001 to 2024, Lagos evolved into a primate city, rapidly expanding into surrounding areas. The city saw a rise in informal settlements, with over 140 slums documented. Spatial entropy increased significantly, reflecting fragmented land use and poor zoning enforcement.

5.4.8 Spatial Expansion Trajectory of Metropolitan Lagos

Lagos has evolved from a colonial city into a sprawling megacity, revealing both its vibrant growth and underlying structural challenges. Its spatial extent has grown well beyond the

original city centre, extending into Ogun State and along the coast near Lekki and Badagry. Since 1990, urban land cover has been expanding at an estimated annual rate of about 2.6%.

5.4.9 Population Dynamics of Lagos Metropolis and Malignant Growth

This study examines the parallels between Lagos's population growth and the development of malignant biological tumours. By utilising concepts from urban pathology, spatial entropy modelling, and demographic analysis, it shows that Lagos's rapid, uncontrolled expansion displays features of malignancy: unchecked growth, excessive resource depletion, systemic disruptions, and resistance to regulation.

Using the comparison of Lagos's urban expansion to a malignancy is more than just a metaphor; it underscores actual systemic problems. Similar to how malignant tumours interfere with biological functions, Lagos's growth hampers ecological stability, puts pressure on infrastructure, and challenges governance.

5.4.10 Analysis of Population Growth and Spatial Expansion in Lagos Metropolitan Districts

This study examines the distribution and spatial growth of populations across 18 districts within the five metropolitan corridors of Lagos Metropolis. It investigates each district's population trends, spatial expansion, and proximity to Lagos Island, the historic core. The findings reveal a densification gradient: inner districts tend to grow vertically, while outer districts expand horizontally, often facing infrastructural vulnerabilities. Entropy analyses from related research confirm land use fragmentation in these areas. Overall, this district-level comparison emphasises Lagos's uneven pattern of growth concerning both population and spatial development.

5.5 OBJECTIVES/ HYPOTHESIS TESTING

5.5.1 VALIDATION OF STUDY OBJECTIVES

5.5.1.1 OBJECTIVE ONE: TO EXPLORE THE GROWTH AND DEVELOPMENT OF METROPOLITAN LAGOS

To analyse the growth and development of metropolitan Lagos, this study investigates the intricate interactions among demographic pressures, policy initiatives, and land changes over twenty years. Lagos has experienced swift expansion in both land area and population, fuelled by natural growth and strategic economic policies. The research employs satellite images,

urban planning records, and socio-economic data to trace how the city's form has changed. By examining key factors like demography, density shifts, infrastructure development, and ecological boundary alterations, the study underscores the opportunities and challenges faced by Lagos as it continues to evolve as a dynamic urban ecosystem.

5.5.1.2 OBJECTIVE TWO: TO ANALYSE THE FEATURES OF MALIGNANT GROWTH PROCESSES.

To examine the characteristics of malignant growth processes in Lagos, this study integrates empirical data with theoretical analysis. The term “malignant growth” describes uncontrolled, ecologically harmful, and spatially irregular urban expansion. Through land use/land cover (LULC) change detection, Shannon entropy analysis, and satellite-based mapping, the research illustrates how these features develop in the city over time. Data spanning from 2000 to 2022 reveals a pattern of rapid encroachment into wetlands, buffer zones, and areas lacking infrastructure, consistent with signs of malignancy. By applying this framework, the study moves from simple description to diagnosis, highlighting structural planning failures that necessitate urgent policy changes.

5.5.1.3 OBJECTIVE THREE: TO INVESTIGATE THE CONNECTIONS BETWEEN URBAN FORMS AND MALIGNANT NEOPLASMS.

This study explores how urban shapes relate to malignant neoplasms, extending beyond infrastructure to include health effects linked to spatial layout. Lagos’s rapidly changing landscape, marked by increased density, unregulated zoning, and shrinking green areas, may correlate with rising cases of malignant neoplasms. The research treats Lagos as a case of quick urban transformation, comparing city form with biomedical pathology. Like malignant tumours, Lagos’s growth reflects unregulated spatial expansion marked by incoherent zoning, infrastructural strain, and environmental decline. Both phenomena share traits such as invading surrounding space, ignoring systemic limits, and disrupting structural coherence. By drawing parallels between urban forms and biological models, the study uses malignant growth as an analytical lens to investigate whether spatial dysfunction exhibits similarities to neoplasms.

5.5.1.4 OBJECTIVE FOUR: TO EVALUATE THE IMPACT OF MALIGNANT NEOPLASMS AND THE DEVELOPMENT OF METROPOLITAN LAGOS.

This study explores the reciprocal relationship between malignant neoplasms and the development of metropolitan Lagos. It investigates how urban features such as density,

pollution, and industrial proximity relate to cancer development, and how malignancy, in turn, affects metropolitan growth, resource allocation, and urban expansion. The research compares urban forms to malignant neoplasms as metaphorical diagnostics, analysing Lagos's expansion and growth patterns to reflect biological pathologies of the city, which is both a landscape of growth and a potential site of malignant tumour development. This duality makes Lagos emblematic of cities caught between expansion and well-being.

5.6 HYPOTHESIS TESTING

5.6.1 OBJECTIVE TWO: TO ANALYSE THE FEATURES OF MALIGNANT GROWTH PROCESSES

Hypothesis Two

Ho: Malignant growth patterns do not have a significant effect on urban forms

Hi: Malignant growth patterns have a significant effect on urban forms.

The analysis sought to determine whether malignant growth patterns significantly influence urban forms within Lagos's rapid and unregulated expansion. The findings are based on ANOVA tests applied to various indicators reflecting both environmental impacts and qualitative descriptions of urban growth. The results showed that most environmental issues linked to the city's expansion, such as land use change, waste generation, natural resource use, road congestion caused by parking and construction trucks, and construction activities, did not exhibit statistically significant differences across groups. Their p-values exceeded the 0.05 threshold, leading to a failure to reject the null hypothesis for those factors. This indicates that, when considered individually, these environmental signs of urban growth do not provide strong statistical evidence that malignant patterns are significantly reshaping urban forms.

However, one growth characteristic, heterotrophic growth, stood out. It yielded a p-value below 0.05, indicating a statistically significant relationship between this particular growth pattern and urban form. Heterotrophic growth, metaphorically referencing a system that depends on external sources for sustenance without contributing or regenerating, aligns conceptually with the idea of a parasitic or exploitative urban expansion. Its statistical significance suggests that certain aggressive or unsustainable forms of growth are indeed reshaping the city's physical and spatial structure in measurable ways. Further findings support the broader metaphor of "malignancy" used in the research. While not all symptoms may individually demonstrate impact, the presence of one or more critical pathological traits (like heterotrophic growth) can

signal systemic dysfunction. It also reinforces the idea that urban transformation in Lagos is not uniformly malignant but may show significant malignancy in specific forms or at particular stages of growth.

Furthermore, the lack of significance in most indicators could suggest challenges in urban studies, such as complex interdependencies among variables, limitations in data sensitivity, or the slow pace of urban form changes. It may also emphasise the need for more detailed or longitudinal data to understand the long-term effects of malignant growth patterns fully.

The implication of the result above is that, since at least one of the variables is significant, we can conclude that the model is significant. This leads us to reject the null hypothesis and assert that malignant growth patterns have a substantial effect on urban forms. Urban systems often evolve in ways that resemble biological processes. This hypothesis suggests that malignant growth patterns, characterised by unregulated expansion, invasion of sensitive zones, functional breakdown, and systemic strain, have substantial and measurable impacts on the structure and behaviour of urban forms.

5.6.2 OBJECTIVE THREE: TO INVESTIGATE THE CONNECTIONS BETWEEN URBAN FORMS AND MALIGNANT NEOPLASMS

Hypothesis Three

Ho: Similarity of pattern with malignancy does not significantly affect the city's physical form and growth

Hi: Similarity of patterns with malignancy significantly affects the city's physical form and growth.

The analysis of the correlation between malignant traits and urban form reveals clear patterns that support the idea that cities experiencing disordered, aggressive growth exhibit characteristics similar to biological malignancies. The findings indicate that traits commonly linked to cancer, such as uncontrolled expansion, invasion of nearby areas, spreading to distant locations, and loss of internal organisation, are reflected in the way Lagos is physically expanding and transforming. Rapid and uncontrolled growth is associated with signs of spatial disorganisation.

Cities undergoing this kind of expansion tend to show more unplanned development, irregular layouts, and a general breakdown in urban order. These patterns resemble the unchecked multiplication of malignant cells that ignore the normal regulatory processes of healthy tissues. The trait of invasion, where growth encroaches upon and disrupts surrounding areas, mirrors how new development in Lagos intrudes upon existing neighbourhoods and previously stable zones. This results in a weakening of the city's structure and erodes the sense of cohesion and place. As urban boundaries are crossed without planning, the fabric of the city becomes more fragmented and less resilient.

Metastasis, in the urban context, refers to the spread of development to distant, often unregulated areas. This is reflected in the continued sprawl of the city into its periphery, contributing to an increasingly diffuse and hard-to-manage urban footprint. Such growth strains infrastructure, deepens inequality, and complicates service delivery. De-differentiation, the loss of structural and functional identity within a system, is another key feature observed. As Lagos grows in this way, specialised zones such as residential, commercial, or cultural districts begin to lose their distinctiveness. The city becomes more chaotic, less predictable, and more complex to govern, much like the tissue disorganisation found in advanced malignancies.

Additionally, the displacement or loss of residents, which occurs in areas experiencing intense transformation or decay, serves as a further indicator of instability. As people leave due to unlivable conditions, the social and economic core of the city weakens, creating a cycle of decline that is difficult to reverse.

The findings strongly suggest that malignant growth patterns are not just useful metaphors but are empirically observable in the development of Metropolitan Lagos. The presence of these traits aligns with the breakdown of orderly, functional urban growth. The similarity in patterns confirms that the processes shaping the city's expansion are pathological, leading to outcomes that are socially, economically, and structurally harmful, implying that across a range of malignant urban characteristics, rigorous analysis revealed statistically significant relationships with indicators of dysfunction, with high confidence levels (low p-values).

5.6.3 OBJECTIVE FOUR: TO EVALUATE THE IMPACT OF MALIGNANT GROWTH ON THE GROWTH AND DEVELOPMENT OF METROPOLITAN LAGOS

Hypothesis Four

Ho: That cities (urban forms) have no characteristics in common with a malignant neoplasm

Hi: That cities (urban forms) exhibit all the significant characteristics of a malignant neoplasm.

The findings from the multivariate analysis in Table 4.10.3 provide essential insights into how the growth and development of Metropolitan Lagos mirror the characteristics of a malignant neoplasm. Several key variables that represent essential aspects of urban dynamics show statistically significant effects, suggesting that the city's development is not just rapid but also structurally pathological. The significance of population growth reflects the city's uncontrolled and expansive nature. Just as malignant cells multiply rapidly without checks and balances, Lagos continues to absorb more people than its infrastructure and planning systems can accommodate. This has direct implications for spatial congestion, informal settlements, and overstressed public services, reinforcing the analogy of unregulated cellular proliferation.

Economic activities and investments also show a significant impact, indicating that sustainable or equitable planning principles do not always guide the city's economic development. Like tumours that draw resources excessively and unevenly, urban investment in Lagos often contributes to uneven development by intensifying growth in some areas while neglecting others. This results in deep spatial inequalities and fragmented urban forms. Inadequate planning emerges as another strong contributor to urban dysfunction. Its statistical significance highlights the city's lack of a coherent spatial development strategy. This is comparable to the structural disorganisation seen in malignant tissue, where cells no longer follow the genetic instructions that maintain normal form and function.

In Lagos, such disorganisation manifests as unzoned land use, overlapping jurisdictions, and reactive rather than proactive governance. The lack of infrastructure and social services further compounds the problem. This reflects the city's inability to sustain its expanding population, resulting in a breakdown of essential systems such as transportation, housing, water supply, and healthcare. In malignancy, this would be akin to the collapse of the body's support systems

under the pressure of abnormal growth.

Poor communication channels also play a significant role in shaping the city's malignant urban form. Inefficient transport networks, limited accessibility, and administrative bottlenecks make it difficult for the city to function as a connected and coherent whole. Just as a malignant neoplasm interferes with normal signalling pathways in the body, Lagos suffers from weak integration across its urban systems. Remarkably, two variables, decay and inordinate development, did not show statistically significant effects in this particular test.

However, their presence as symptoms in the broader urban context cannot be dismissed. These characteristics still align conceptually with malignant growth, even if they were not confirmed in this specific statistical model. It is also notable that the "positive growth process" variable was found to be statistically significant. This suggests that while malignancy-like characteristics dominate the landscape, there are also efforts or areas within the city that exhibit structured, potentially beneficial development. This introduces a degree of complexity into the diagnosis: not all urban growth is pathological, but the dominant trends point toward a malignant trajectory.

However, the urban growth of Lagos is not merely rapid; it is structurally dysfunctional, unregulated, and increasingly unsustainable. The city's development follows a pattern that is deeply analogous to a malignant process, expanding without control, weakening systemic support, and eroding its foundational integrity. These dynamics, confirmed by statistically significant relationships, justify the hypothesis that urban forms in Lagos exhibit the defining characteristics of a malignant neoplasm.

CHAPTER SIX

6.0 RECOMMENDATIONS AND CONCLUSION

6.1 Recommendations

This research presents an innovative diagnostic model, malignant urbanism, to evaluate spatial incoherence across metropolitan Lagos. Using satellite imagery and entropy metrics, it detects urban growth patterns associated with malignant vulnerabilities. Recommendations include establishing urban growth boundaries, transit-oriented development centres, and ecological buffers. In line with the UN-Habitat, the New Urban Agenda, and the Lagos State Development Plan, these recommendations offer a policy-ready pathway toward a more resilient and healthier Lagos metropolis.

Without effective spatial governance and ecological management, metropolitan Lagos's continued expansion may heighten socio-environmental vulnerabilities. A planning strategy centred on zoning reform, transit integration, and data-driven diagnostics is vital to steer Lagos toward sustainable urban growth and accomplishment:

- Strategic land-use containment
- Improved public health outcomes
- Efficient urban mobility

Alignment with international sustainability goals. Urban planners and policymakers should incorporate the concept of malignant urban growth into planning discussions and assessments. This involves recognising unregulated expansion not as progress but as a sign of underlying structural problems that require systematic intervention. It supports a multi-stage containment approach to re-establish spatial order, enhance infrastructure resilience, and maintain ecological balance.

The spatial dysfunction confronting Lagos is not beyond repair. Through context-specific, people-centred restorative strategies, the city can shift from a reactive urban management style to a proactive model of spatial healing. Tackling entrenched infrastructural and planning deficiencies will improve livability and economic output while promoting social equity and environmental sustainability. Metropolitan Lagos is at a pivotal point; revitalising its urban fabric is not a luxury but a pressing necessity. To steer Lagos away from this destructive path, planners and policymakers must embrace regenerative urbanism, which restores ecological

balance, emphasises equity, and reaffirms governance.

An urgent need exists to enforce zoning laws, guide land-use distribution, and regulate building codes along all corridors. Planning institutions must be strengthened to curb sprawl, safeguard environmentally sensitive regions, and ensure development follows a coherent, inclusive, and sustainable pattern by:

1. Infrastructure investment should align with population growth, covering drainage, waste management, transport, and utilities. Equitable distribution along corridors can reduce disparities and prevent chaotic expansion.
2. Wetlands, green spaces, and floodplains should be designated as protected areas with legal and physical barriers to prevent encroachment. Environmental regulations must be strictly enforced to avoid irreversible ecological damage and reduce disaster risks.
3. Urban development strategies need to address spatial inequality by focusing on underserved populations. Policies should promote affordable housing, improved access to social services, and economic inclusion for marginalised groups, especially in informal settlements.
4. Urban residents are already highly aware of the city's growth. This civic awareness can be harnessed through participatory planning, community monitoring, and public education on sustainable urban lifestyles.
5. Due to the interconnected corridors of Lagos, establishing a regional governance structure is essential for coordinating planning, resource allocation, and service provision across different jurisdictions. This approach would improve the management of internal migration, infrastructure demands, and land-use conflicts.
6. A system of urban health indicators addressing infrastructure strain, environmental quality, social equity, and spatial coherence should be formalised. This system will help evaluate whether the city is progressing sustainably or heading toward pathological patterns.

6.2 Curative and Preventive Strategies for Spatial Dysfunction in Metropolitan Lagos

Metropolitan Lagos, Nigeria's economic centre, ranks among the world's fastest-growing cities. Yet, this rapid expansion has led to spatial issues such as slums, poor infrastructure, a fragmented urban layout, and environmental harm. While preventive strategies are vital, resolving these deep-seated problems calls for curative measures that rehabilitate and transform urban areas into functional, inclusive, and resilient communities. Prevention aims to halt dysfunction early, whereas correction focuses on reversing damage and restoring spatial unity

in Lagos.

6.2.1 Curative Strategies for Spatial Dysfunction in Metropolitan Lagos

The study presents tailored, robust strategies designed for Lagos's specific context. These strategies aim to shift the city from reactive firefighting to a process of spatial healing, restoring order, fairness, and resilience. This provides an opportunity for city planners and policymakers to leverage public insights and lived experiences to develop more coordinated, inclusive, and sustainable urban growth plans for Lagos. The findings emphasise that managing Lagos's future growth requires an integrated approach that considers physical planning, population dynamics, and ensures that social services, infrastructure, and governance frameworks keep pace with expansion. Addressing these issues calls for a coordinated and inclusive urban management strategy, ensuring Lagos remains a livable and functional metropolis. Policies must balance growth with structure, opportunity with equity, and expansion with sustainability.

1. Slum Redevelopment and Upgrading

A participatory upgrading approach that improves infrastructure, sanitation, housing, and land tenure in informal settlements. It advocates for community-based planning to prevent displacement, promote land rights, and encourage investment while reducing eviction threats. Viewing urban form through this lens shifts planning from admiration to action. Policymakers, architects, and urban theorists see Lagos not just as an expanding city but as a city in crisis, needing intervention, rehabilitation, and healing. Consequently, Lagos should be regarded as more than a growing organism; it is a sick one in need of healing strategies such as equitable policies, inclusive development, and spatial justice.

Similar to how cancer overwhelms biological systems, Lagos's growth, fueled by population pressure, poor planning, and speculative development, exceeds its ecological and infrastructural limits. Recognising these similarities can help urban planners and policymakers identify dysfunctions and implement solutions such as zoning reforms, ecological restoration, and regional coordination.

2. Retrofitting Infrastructure in Disorganised Zones

Urban areas along the Lagos metropolitan corridors are lively centres of culture, trade, and community. Yet, they frequently encounter infrastructure issues that hinder movement, safety, and quality of life. As Lagos expands, there is a growing urgency for innovative, inclusive

urban planning. Redesigning road systems and public spaces, combined with the adoption of modular infrastructure, presents promising ways to improve livability and connectivity.

3. Land Use Reclassification and Zoning Reform

As cities expand and evolve, their physical landscapes often outpace the policies meant to regulate them. In Lagos, neighbourhoods like Mushin and Alimosho exemplify this issue, where outdated zoning maps and misused land parcels have led to chaotic development, infrastructure strain, and reduced quality of life. To bring order and unlock the full potential of these urban areas, it's vital to review and update zoning regulations actively. Starting with an audit of current zoning maps helps identify mismatches and reveals how the city has developed beyond its original plans. Reclassifying parcels isn't about punishment but about acknowledging reality and restoring coherence. Ultimately, reforming zoning to restore spatial logic is a commitment to urban justice, ensuring every resident has access to a well-planned, functional, and respectful environment.

4. Spatial Reconciliation Projects

Lagos, a city full of energy and diversity, is also marked by fragmentation. As its population grows and development spreads outward, many communities, especially in the suburbs, remain disconnected from the city centre. This disconnection fosters inequality, limits economic growth, and weakens the city's unity. To address this, Lagos needs to invest in connecting fragmented communities and reintegrating outlying areas like Badagry and Ibeju-Lekki into the urban fabric. These connections encourage a sense of unity and shared identity, transforming isolated areas into vibrant hubs of urban activity. By viewing these suburbs not as fringe zones but as essential parts of the city, Lagos can unlock new opportunities for growth and inclusion.

5. Ecological Restoration as a Blueprint for Resilience in Lagos

Lagos, a coastal megacity, faces both advantages and challenges due to its geography. Its wetlands, lagoons, and floodplains are vital ecological assets, yet decades of unregulated urban expansion, pollution, and neglect have damaged these systems, reducing their functionality. The consequences are significant: increased flooding, displacement of communities, and loss of biodiversity. To ensure a sustainable future, Lagos should prioritise ecological restoration within its urban development plans. The Lagos Lagoon, once a thriving hub of ecology and culture, now suffers from severe pollution and sediment accumulation. Restoring it would

benefit fisheries, stimulate tourism, and strengthen flood defences. Coastal buffers, particularly in vulnerable low-lying areas, are crucial for protecting inland communities from storm surges and rising sea levels. By targeting zones where dysfunction causes cascading effects, Lagos can optimise the ecological return on investment.

6. Digital Land Registry and Parcel Mapping

Lagos is a dynamic urban landscape shaped by rapid population growth, informal expansion, and fragmented governance. While efforts to improve infrastructure, transit, and ecological systems are essential, they cannot succeed without addressing the foundational issue of land governance. The absence of a unified, transparent land registry has led to overlapping claims, land disputes, and spatial chaos, undermining planning, investment, and equitable development.

To restore spatial logic and unlock the city's development potential, Lagos must:

1. **Create a Unified, Transparent Land Registry:** A centralised digital system that records ownership, tenure, and land use will decrease disputes and support strategic planning. This registry must be accessible to the public and linked across government agencies.
2. **Implement GIS-Based Cadastral Mapping:** Geographic Information Systems (GIS) can accurately map land parcels, infrastructure, and ecological zones. This data-driven method supports zoning reform, infrastructure development, and climate adaptation by revealing spatial patterns and vulnerabilities.

7. Urban Regeneration Incentives

Lagos is a city of contrasts, with gleaming towers rising beside crumbling tenements, and vibrant commercial hubs coexisting with underutilised districts. Areas like Surulere, Ebute Metta and Apapa, once thriving, now suffer from neglect, poor infrastructure, and fragmented land use. To transform these spatially dysfunctional zones into engines of growth, Lagos must harness the power of private investment, guided by strategic incentives and inclusive planning.

To catalyse transformation, Lagos should:

1. **Offer tax Incentives and development rights:** Private developers investing in underperforming zones should be granted tax breaks, faster permits, and increased development rights, such as higher floor-area ratios. These advantages incentivise risk-taking and promote long-term commitment to urban renewal.
2. **Encourage Mixed-Use Redevelopment:** Integrating residential, commercial, and recreational functions within the same development fosters vibrancy and economic

variety. In Surulere and Ebute Matta, this could involve transforming ageing housing blocks into live-work-play communities. In Apapa, it might entail merging logistics hubs with retail outlets and green areas.

6.2.2 Preventive Strategies for Spatial Dysfunction in Metropolitan Lagos

Lagos's growth is happening rapidly and dangerously, risking systemic issues like flooding, housing failures, and ecological damage. Similar to how early cancer detection and treatment can improve outcomes, early intervention, such as zoning reforms, infrastructure upgrades, and ecological buffers, can help change this trajectory. For urban planners and policymakers, this underscores the need to combine public awareness and historical context into future development and planning.

Lagos residents are well-informed and observant, and their insights can be instrumental in guiding more inclusive and context-sensitive urban growth. Reframing urban disorder from merely growth to community health can lead to systemic, coordinated solutions, including inclusive development, adequate services, and sustainable integration of new residents to sustain social cohesion and urban functionality.

1. Early Spatial Monitoring Systems

As Lagos rapidly urbanises, the city encounters a significant issue: disorganised spatial growth. Uncontrolled expansion jeopardises infrastructure, ecosystems, and social unity. Conventional planning approaches are too sluggish and reactive to respond effectively. To create a resilient city, Lagos needs to adopt real-time surveillance tools, including satellite imagery, GIS dashboards, and spatial analytics, to steer development proactively and prevent chaos.

Lagos faces increasing entropy in both peripheral and inner-core districts, where informal settlements, speculative development, and weak zoning enforcement intersect. Without intervention, these areas risk becoming unmanageable, unsafe, and unsustainable. To address this trend, Lagos should:

1. **Deploy Satellite Imagery and GIS Dashboards:** These tools enable planners to monitor land-use changes as they occur. From new constructions to deforestation, every shift can be tracked and analysed.

2. **Use Entropy Thresholds to Identify Risk Areas:** By establishing acceptable entropy levels, the system can detect when a district's spatial logic begins to fail. This allows for early intervention before dysfunction becomes deeply rooted.
3. **Trigger Alerts for High-Risk Areas:** When entropy exceeds thresholds, alerts can be sent to planning authorities, targeting zones within the metropolitan corridors. These alerts can guide zoning enforcement, infrastructure upgrades, and community engagement.

By combining satellite imagery, GIS dashboards, and entropy analytics in its planning toolkit, the city can manage its expansion and create a future based on order, equity, and resilience.

2. Integrate Public Health Metrics into Urban Planning in Lagos

Urban planning is often viewed as a matter of roads, structures, and zoning regulations, but at its core, it significantly impacts public health. In Lagos, where rapid urban expansion confronts environmental dangers and dense populations, planning decisions can either lower or raise health risks. For a genuinely resilient city, Lagos must incorporate public health indicators into its planning to make sure that new developments enhance, rather than compromise, residents' well-being.

Large-scale developments in flood-prone or densely populated areas often move forward without adequately considering their health impacts. In Lagos's dilapidated and slum neighbourhoods, poor sanitation infrastructure and limited healthcare access heighten the risks of overcrowding, pollution, and disease outbreaks. Without a health-oriented approach, urban expansion can pose significant public health threats. Lagos must see every building permit, road design, and zoning plan as a public health decision. By requiring health impact assessments and tying approvals to health indicators, the city can make sure that development supports both economic growth and human health. Resilience begins with health, especially in slum areas and beyond.

3. Community-Based Spatial Governance in Lagos

In Lagos, where spatial disorder and informal growth are widespread, involving communities in spatial governance is essential. Equipping residents with appropriate tools, information, and platforms enables them to become proactive guardians of their environment. Informal settlements, though vibrant and resourceful, often lack formal inclusion in planning, resulting

in issues like encroachment, environmental harm, and social marginalisation. Therefore, Lagos ought to adopt a bottom-up governance approach that includes:

1. Mobile Apps and SMS platforms are straightforward, accessible tools that enable residents to report zoning violations, illegal dumping, or encroachments instantly. These platforms should incorporate feedback mechanisms to ensure users are informed that their reports are being addressed.
2. Neighbourhood Zoning Committees are local groups trained in basic planning skills that monitor land use, educate residents, and communicate with municipal authorities. These committees act as the community's eyes and ears for city oversight.
3. Local media and WhatsApp groups serve as key communication tools for monitoring and sharing updates on spatial issues. For example, WhatsApp groups can notify residents about new developments or organise efforts to oppose illegal construction.
4. Lagos needs to reimagine its citizens not as subjects of planning, but as stakeholders in spatial governance. By decentralising oversight and embracing community-led tools, the city can foster a more responsive, inclusive, and resilient urban fabric. In places where formal systems fall short, the people themselves can become the architects of order.

4. Green Urbanism in a Densifying Lagos

As Lagos expands both vertically and horizontally, the city faces a silent yet escalating threat: environmental degradation and climate stress. Urban heat islands, flooding, and air pollution are byproducts of unchecked development and poor ecological planning. To create a resilient future, Lagos must integrate green urbanism into its development ethos, ensuring every new project benefits not just the skyline but the ecosystem as well. In rapidly densifying districts, concrete sprawl has replaced natural buffers. Impermeable surfaces trap heat and water, resulting in hotter microclimates and flash floods. Tree cover remains sparse, and roads and buildings have severed ecological corridors. If unaddressed, these areas risk becoming uninhabitable. To reverse this trend, Lagos should implement a set of green building and planning requirements.

1. Green buffers and ecological corridors: Developers should include green belts, tree-lined streets, and wildlife corridors in their site plans. These elements help lower temperatures, absorb stormwater runoff, and support biodiversity.
2. Permeable surfaces and rooftop gardens, such as permeable paving and green roofs, are essential for stormwater management and urban cooling.

3. Green building codes: All new urban projects are required to meet baseline ecological standards, such as energy efficiency, native landscaping, and water-sensitive design.
4. Initiate pilot projects in high-density areas: focus on locations with rapid development and the most significant climate adaptation needs.

5. Pre-emptive Slum Upgrading Programs

In Lagos, informal settlements are not just a result of rapid urban growth but also expose systemic failures in planning, infrastructure, and governance. If these issues remain unaddressed, the settlements will become deeply entrenched, making future interventions more costly and less effective. To build a resilient city, Lagos needs to shift from reactive slum clearance to proactive upgrading, using spatial risk mapping and strategic policy prioritisation. Typically, informal settlements start as temporary shelters but quickly evolve into permanent communities. Lacking infrastructure, legal tenure, or economic support, these areas face environmental hazards, poor health, and social exclusion. Once established, upgrading becomes a complex political and logistical challenge. To avoid entrenchment and promote effective investment, Lagos should:

1. Identify high-risk informal settlements by leveraging spatial data and community input to find areas prone to becoming permanent slums. Prioritise zones experiencing rapid population growth, limited access to services, and environmental risks.
2. Start early Upgrades by integrating infrastructure enhancements (roads, drainage, electricity), tenure regularisation, and livelihood support to stabilise communities before issues worsen.
3. Create entropy-based risk maps by using urban entropy metrics to visualise spatial disorganisation and pinpoint areas experiencing the most severe planning breakdowns. These maps can guide budget allocation and infrastructure prioritisation.
4. Prioritise preventive planning: Concentrate on areas with high spatial entropy for early intervention, rather than waiting for crises to happen.
5. Lagos should evolve from simply responding to informality to proactively anticipating and preventing it, acting as a moral leader for inclusive growth.

6.3 Recommendations Based on Findings

Lagos's trajectory is not fixed, but reversing its malignant growth requires bold interventions, coordinated governance, and an urgent focus on sustainability and equity. Urban planning must shift from reactive measures to proactive foresight, guiding the city towards healing rather than

further fragmentation.

1. **Establish Urban Growth Boundaries (UGBs):** Encourage governments to set urban growth boundaries, promote compact development, and utilise spatial diagnostics to manage urban expansion and decrease spatial entropy by limiting development in ecologically sensitive zones. UGBs assist in infrastructure planning and help prevent malignant sprawl. Implementing a zoning framework grounded in spatial diagnostics is crucial for controlling disorderly urbanisation, identifying inefficient and unplanned growth, and enhancing resilience to promote sustainable development.
2. **Implement Ecological Buffer Zones:** Establish green belts and protected wetlands to absorb development pressures and serve as ecological buffers, boosting environmental resilience and urban health. Wetlands and coastal zones should not be viewed as nuisances but as vital lifelines. Buffer zones offer crucial flood protection, support biodiversity, and enhance air and water quality. Lagos needs more than mere green spaces; it requires strategic ecological corridors to rejuvenate its urban landscape.
3. **Promote Transit-Oriented Development (TOD):** Redirect development along transportation corridors to lessen dependence on automobiles, cut emissions, and promote dense, efficient growth. In Lagos, this means shifting from car-centric sprawl to creating vibrant, compact neighbourhoods.
4. **Decentralised Governance Frameworks:** Enhance local planning authorities' data and regulatory capabilities to monitor spatial entropy and enforce zoning protocols effectively.
5. **Integrate Spatial Health Metrics into Planning Models:** Align land use planning with epidemiological data on neoplasms and other health indicators, advancing towards a biopsychosocial model of urban design.
6. **Incentivise Infill and Densification Projects:** Reduce entropy by optimising underutilised plots within the urban centre through public-private partnerships, while minimising fringe expansion.

6.4 Rethinking Urban Strategy

Lagos's urban growth is haphazard and uncoordinated, showing signs of planning neglect. To address this, the study suggests using urban growth boundaries, ecological buffers, and transit-oriented development as solutions, forming a strategic approach to re-establish order and resilience.

In Lagos's urban setting, with over 16 million residents and a fragmented transport network, Transit-Oriented Development (TOD) can help alleviate congestion and encourage denser, more efficient growth. The Lagos BRT corridors and the Lagos Rail Mass Transit (Blue Line) serve as optimal hubs for TOD clustering. As traffic jams worsen and urban sprawl pushes the city's frontiers outward, the demand for innovative urban planning strategies grows more urgent. TOD is one such approach- integrating land use with transportation planning to form compact, walkable neighbourhoods centred around quality public transit.

Lagos can adopt a framework to tackle its urban issues by clustering residential, commercial, and recreational areas around transit hubs. Transit-Oriented Development (TOD) can significantly cut down dependency on private vehicles, easing traffic congestion and reducing carbon emissions. It also promotes better land use by encouraging vertical growth instead of expanding horizontally, helping to conserve green spaces. The BRT system, with dedicated lanes and reliable service, already links important city areas. Similarly, the Blue Line, which runs along the city's core, provides a high-capacity rail option that can serve as the backbone for TOD clusters. By creating mixed-use neighbourhoods along these transit corridors, Lagos can develop lively urban centres where people can live, work, and enjoy leisure activities within walking distance of transit.

1. Development would not only improve mobility but also enhance the quality of life.
2. With its massive population and pressing transport challenges, the city stands to gain immensely from compact, transit-centred growth.
3. Lagos can chart a path toward a more sustainable, efficient, and livable future.

6.5 Containment Strategy for Malignant Growth in Lagos

Lagos's urban growth is similar to how malignant tumours develop, characterised by uncontrolled sprawl, territorial invasion, and systemic collapse. This study outlines the planning and governance challenges and recommends a multi-phase containment plan to regain spatial order, strengthen infrastructure, and restore ecological balance.

6.5.1 Strategic Containment Phases

Phase 1: Diagnostic Mapping

- Conduct spatial entropy audits using GIS and satellite imagery
- Identify critical infrastructure failure points and ecological hotspots
- Classify urban tissues by planning risk severity

Phase 2: Surgical Zoning Reform

- Reassert functional land-use differentiation via robust zoning enforcement
- Create buffer zones around wetlands and sensitive ecosystems
- Incentivise infill development to curb peripheral sprawl

Phase 3: Infrastructure Resuscitation

- Upgrade transit, drainage, and utilities in collapsing districts
- Prioritise connectivity in leapfrogged regions with integrated transport corridors
- Introduce green infrastructure to mitigate heat islands and flooding

Phase 4: Adaptive Governance Therapy

- Decentralised planning to empower local councils
- Embed real-time monitoring systems and urban feedback loops
- Foster public-private partnerships for sustainable urban redevelopment

6.6 A Path Towards Urban Remission

Lagos's development can overcome its current dysfunction. By implementing targeted, data-informed strategies, the city can shift from inconsistent patchwork solutions to sustainable and regenerative planning. A strong urban future depends on breaking harmful growth cycles and enhancing resilience across its spatial, social, and ecological systems. The study highlights that residents desire a city that expands intelligently, inclusively, and purposefully, rather than one that spreads uncontrollably, harming communities and the environment. Managing chaotic growth and restoring harmony to Lagos's urban landscape should be top priorities to ensure the city remains livable and practical for future generations.

6.7 Implications of Findings and Recommendations For Urban and Regional Planning

Our research summary shows that, although efforts mainly focus on Lagos metropolis and its problems, little attention has been given to the externalities stemming from its expansion. The corridor settlements experience many externalities and issues due to Lagos's rapid growth. Urban planning efforts have mostly targeted the city centre, overlooking the surrounding corridor settlements, which are becoming more integrated into Lagos's urban environment. This oversight has led to dysfunctions that jeopardise the region's overall sustainability.

As the city rapidly expands, often chaotically or without proper planning, settlement corridors on its outskirts are impacted by Lagos's growth, leading to various externalities and inefficiencies. Lagos extends its problems outward- such as traffic congestion, pollution, land pressure, and inadequate infrastructure- into adjacent areas that are overlooked by current planning efforts. Like malignant growths, most urban strategies aim to address issues within Lagos but neglect the damaging effects on neighbouring towns now integrated into the city's broader operational area.

The future of Lagos depends not only on managing its internal growth but also on adopting a broader, more inclusive approach to urban development. By expanding planning efforts to corridor settlements, policymakers can reduce dysfunctions, promote regional stability, and ensure that the advantages of urbanisation are shared more fairly. Lagos needs to shift from a city with blind spots to a metropolis with greater foresight.

This study's findings depict a city in transition, facing challenges such as uncoordinated growth, ecological decline, and increasing disorder, which threaten to destabilise the urban landscape. Addressing these issues requires immediate action. First, strengthening spatial governance with enforceable urban growth boundaries is crucial to protect ecological buffers and curb informal sprawl. Second, infrastructure investments should prioritise transit-oriented development to encourage compact, connected growth rather than haphazard expansion. Third, planning must incorporate a health-focused viewpoint, considering environmental stressors that could influence disease patterns, especially malignant neoplasms. Ultimately, tackling these challenges calls for a multidisciplinary strategy that integrates spatial planning, public health, and environmental justice to transform Lagos into a sustainable, fair, and livable city, not just a rapidly expanding metropolis.

Therefore, tackling the complex challenges facing Lagos requires a shift from reactive to visionary urban and regional planning. The disorder patterns observed are not unavoidable but stem from choices, gaps, and missed opportunities. To ensure a sustainable future, planners must adopt inclusive, health-focused, and ecologically sustainable development strategies. This goes beyond technical needs; it is a moral responsibility. Cities are dynamic entities, and with deliberate planning, Lagos can evolve from a chaos-stricken city into a resilient, equitable metropolis where growth and well-being are aligned.

6.8 Conclusion

The study examined the features of malignant growth processes, explored the relationship between urban forms and malignant neoplasms, and evaluated how this growth influences the development of Metropolitan Lagos. Findings indicate that using the metaphor of malignancy, inspired by pathological biology, accurately characterises the nature and effects of urban expansion in Lagos.

Across the five metropolitan corridors, the city shows clear signs of uncontrolled, invasive, and damaging growth. Issues like rapid urban sprawl, loss of planning coherence, environmental decline, infrastructure failures, land fragmentation, and social dislocation resemble the behaviour of malignant tumours. Residents mostly see the city's growth as chaotic, unsustainable, and damaging to both its physical structure and social fabric. Empirical evidence, including correlations and multivariate analyses, supports this perspective by highlighting significant links between such malignant growth traits and urban outcomes.

This work examines the growth and development of metropolitan Lagos, while also analysing the aspects of harmful urban expansion. Lagos's transformation indicates demographic strength and economic drive, showcasing its role as a regional hub. However, behind these advances are patterns of unchecked sprawl, environmental harm, and spatial disorder that exemplify the traits of "malignant" urban growth.

Using land use/cover (LULC) change detection, Shannon entropy analysis, and geospatial mapping from 2000 to 2022, the study reveals Lagos's dual character. Wetlands are being converted into informal settlements, infrastructure growth is surpassing planning limits, and density is rising in regions without sufficient services. This dual perspective highlights both the opportunities and challenges of Lagos's urban expansion, an ever-changing ecosystem driven by conflicting forces of progress and neglect. The urban transformation of metropolitan Lagos embodies a complex tension between growth and decline. While the city's expansion signifies economic ambition, demographic vitality, and infrastructural advancement, it also exposes malignant traits, unregulated sprawl, ecological deterioration, and spatial fragmentation.

This study consistently validates the hypotheses that malignant growth patterns significantly influence urban forms and that there is a notable similarity between malignancy and city

structures. Additionally, urban Lagos displays key features characteristic of malignant neoplasms. The results suggest that the metropolitan system is expanding beyond the capacities of governance, infrastructure, and ecological balance.

Thus, the study concludes that the development of Metropolitan Lagos is not merely expansive; it is pathological. Without intervention, the current growth trajectory threatens the city's long-term sustainability, liveability, and social equity. This study asserts that understanding Lagos's development requires a dual-framed analysis: one that recognises its status as a thriving urban centre yet critiques the unsustainable and inequitable patterns embedded within its spatial evolution. Through the integration of geospatial analysis, urban theory, and planning policy review, the study diagnoses the conditions of growth, maps their consequences, and proposes pathways towards more intentional urban futures.

6.9 Contribution to Knowledge

Urban and regional planning has traditionally been a practical discipline centred on city design, land use, and infrastructure coordination. Over the past few decades, it has evolved from a strictly technical field to one that incorporates empirical research and critical theory, enabling a deeper understanding of the forces shaping urban environments. These developments are both essential and transformative, redefining the goals and possibilities of planning. The empirical methods used in this study enhance the accuracy and accountability of urban planning by utilising data collection, spatial analysis, and modelling.

The contributions of this study to urban and regional planning involve fundamentally reshaping the discipline through a combination of empirical methods and critical insights. This approach aims not only to enhance knowledge but also to influence how cities are evolving. As Lagos and other global cities face unprecedented challenges, this new planning paradigm provides the tools and vision necessary to create resilient, inclusive, and intelligent urban futures.

1. Diagnostic Models for Spatial Dysfunction

The study proposes a zoning framework aimed at controlling sprawl, restoring ecological buffers, and encouraging sustainable development. It contributes to urban planning literature by offering a diagnostic model for managing growth in fast-urbanising African cities.

The study enhances the urban morphology literature by analysing Lagos's growth at a district level. Using entropy and land-use metrics, it provides planners with a framework for addressing urban issues. Recognising spatial disorder as a systemic problem allows Lagos to shift from harmful expansion to sustainable urban regeneration. This perspective sees disorder not merely as neglect but as a form of pathology, suggesting solutions through spatial healing, regeneration, strategic containment, and equitable development.

The work introduces malignant urbanism and entropy metrics as analytical tools to identify disorganised spatial growth. This approach advances beyond subjective impressions, enabling data-driven assessments of urban sprawl and disorder. Quantifying the randomness or chaos in land-use patterns supports proactive planning instead of reactive crisis management.

2. Integration of Health and Spatial Analysis

By linking urban form to malignant neoplasms, the research connects planning with public health, expanding the scope of planning duties. It advances the emerging field of urban epidemiology, where spatial design is seen as a health determinant. By combining spatial analytics with health data, urban epidemiology enables planners to develop cities that support health rather than harm.

3. Quantitative Spatial–Temporal Methodologies

The use of satellite imagery and Shannon entropy analysis introduces advanced methodologies into mainstream planning. These tools enable cities to monitor changes over time and better anticipate spatial pressures, suggesting that fragmentation and incoherence can sometimes indicate order and predictability. When applied to urban form, they can diagnose malignant growth with accuracy, revealing emerging spatial pressures.

4. Theoretical Innovation

Juxtaposing malignant growth theory with LULC data creates new conceptual frameworks for urban pathology. Malignant growth theory draws from medical pathology to describe urban expansion. It encourages scholars to rethink how growth is assessed; not all expansion signifies progress. When combined with malignant growth theory, LULC data serve as a diagnostic tool, indicating where expansion is beneficial and where it signals deeper dysfunction. By diagnosing these patterns, cities like Lagos can strategise for health, resilience, and equity.

5. Policy-Relevant Insights

Recommendations concerning urban growth boundaries, ecological buffers, and transit-oriented development (TOD) provide planners with specific strategies. These insights can guide master plans, zoning reforms, and resilience strategies in different cities.

6. Cross-Disciplinary Fusion

The research combines spatial planning, health sciences, and environmental theory to support a more holistic approach to urban planning, in line with current calls for systems thinking in city design. It also responds to the modern need for innovative and compassionate urban development. The study emphasises a multidisciplinary approach to urban planning literature, integrating spatial planning, health sciences, and environmental theory, which involves viewing the city as an interconnected organism rather than a collection of isolated parts.

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APPENDIX A: RESEARCH INSTRUMENT



SELINUS UNIVERSITY OF SCIENCE AND LITERATURE

FACULTY OF ENGINEERING AND TECHNOLOGY

QUESTIONNAIRES ON THE MALIGNANT EFFECTS OF A RAPIDLY EXPANDING CITY: CASE OF METROPOLITAN LAGOS

No.-----

----- 2025

Dear Sir/Ma,

This Questionnaire is meant to obtain information on the Doctorate by Research, PhD. (Effects of City Growth and Expansion) Thesis on the Malignant Effects of a Rapidly Expanding City: Case of Metropolitan Lagos. Your cooperation in answering the following questions will be highly appreciated. We assure you that the information given will be used for academic purposes and with utmost confidence.

Thank you.

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SECTION ONE

A SOCIO-ECONOMIC SURVEY

1. Metropolitan Corridor

(a) Southwest Corridor (Apapa, Ajeromi-Ifelodun, Amuwo-Odofin, Ojo) _____

(b) Southeast Axis (Eti-Osa, Lagos-Island) _____

(c) Mainland Corridor (Shomolu, Lagos Mainland, Kosofe) _____

(d) Ikeja Corridor (Ikeja, Ifako-Ijaiye, Agege) _____

(e) Northwest Corridor (Oshodi-Isolo, Mushin, Surulere, Alimosho) _____

2. **Sex** (a) Male () (b) Female ()

3. **Age** (a) 0-5 (not necessary) (a) 0-10 () (b) 11-20 () (c) 21-30 () (d) 31-40 () (e) 41-50 () (f) 51-60 ()

(g) 61 and above ()

4. **Ethnicity:** (a) Yoruba () (b) Hausa () (c) Igbo () (d) Others _____

5. **Nationality** (a) Nigerian () (b) West African Coast () (c) Other African Countries () (d) Others

6. **Educational Level** (a) Primary School () (b) Secondary School () (c) technical/vocational (d) Tertiary education ()
7. **Marital Status** (a) Single () (b) Married () (c) Divorced () (d) Separated () (e) Widow () (f) Widower ()
8. **Occupational Status** (a) Public Employee () (b) Private Employee () (c) Retired () (d) self-employed (e) Unemployed ()

B. MOTIVATION TO LIVE AND WORK IN METROPOLITAN LAGOS

9. **Do you reside in this area?** (a) Yes () (b) No ()
10. **How long have you lived in the area?** (a) Less than 1 year () (b) 1-4 years () (c) 5-10 years () (d) 11-15 years () (e) Above 15 years ()
11. **What motivates you to live in this area?** (a) Social Ties () (b) Economic Benefits () (c) Availability of Infrastructure and Services () (d) Land Availability () (e) Other Reasons (specify).....
12. **What is your employment status?** (a) Employer () (b) Employee () (c) Self-Employed () (d) Unemployed ()
13. **What economic activity do you engage in?** (a) Civil Service () (b) Agriculture () (c) Industrial () (d) Commerce () (e) Services () (f) others (specify)
14. **Where do you engage in your economic activity?** (a) Within the corridors () (b) Outside the Corridors (specify)

C. METROPOLITAN LAGOS GROWTH PROCESS

14. **How do you describe the metropolitan Lagos growth Process** (a) Economic, financial, and commercial hub () (b) Attraction for both local and international migrants() (c) Job opportunities and a higher standard of living() (d) Surge in the population () (e) **Strain on Infrastructure** () (f) Unplanned development and resource overexploitation () (g) Rapid growth exacerbates social inequalities () (h) Encroachment on agricultural land and wetlands() (i) Informal settlements and slums () (j) Significant expansion to the mainland () (k) Urban sprawl, with unplanned and haphazard development () (l) Hub for innovation and entrepreneurship () (m) Melting pot of different ethnic groups and cultures ()
15. **How do you rate the metropolitan Lagos growth process** (a) Fully Satisfied () (b) Only Satisfied ()

Indifferent () (d) Dissatisfied () (e) Fully Dissatisfied ()

16. What is your assessment of how growth impacts the quality of life amid the expansion of metropolitan Lagos? (a) Excellent () (b) Very Good () (c) Good () (e) Average () (f) Poor ()

17. What are the effects of the growth process of metropolitan Lagos on the following?

(a) Environment	(a) Significant () (b) Insignificant ()
(b) Health	(a) Significant () (b) Insignificant ()
(c) Workforce	(a) Significant () (b) Insignificant ()
(d) Productivity	(a) Significant () (b) Insignificant ()
(e) Poverty	(a) Significant () (b) Insignificant ()
(f) Security	(a) Significant () (b) Insignificant ()
(g) Land	(a) Significant () (b) Insignificant ()
(h) Housing	(a) Significant () (b) Insignificant ()
(i) Security	(a) Significant () (b) Insignificant ()
(j) Population	(a) Significant () (b) Insignificant ()

18. Satisfaction with metropolitan Lagos growth Setting

- (a) Conditions (a) yes () (b) No ()
- (b) Spatial Pattern (a) yes () (b) No ()
- (c) Locational settings (a) yes () (b) No ()
- (d) Public facilities (a) yes () (b) No ()
- (e) Shopping (a) yes () (b) No ()
- (f) Recreation (a) yes () (b) No ()
- (g) Housing type (a) yes () (b) No ()

19. Reasons for Dissatisfaction above (a) Traffic Congestion () (b) Poor setting out () (c) Blight () (d) Noise () (e) Air quality () (f) Traffic management () (g) Poor alignment () (g) decay () (h) others specify

20. What effects has the growth of the Lagos metropolis had on the following?

Indices	Improved	Worsened	No Effect
a Electricity			
b Water Supply			
c Security			
d Cost of Travel			
e Traffic Flow			
f Land Value			
g Rent Value			
h Crime			
i Drainage			
j Others Specify			

D. SOCIAL OPPORTUNITIES

- 21. What is your view on the social opportunities in metropolitan Lagos?** (a) Very Adequate () (b) Adequate () (c) indifferent () (d) very Inadequate () (e) inadequate ()
- 22. How satisfied are you with the available social opportunities?** (a) Very Satisfied () (b) satisfied () (c) indifferent () (d) dissatisfied () (e) very dissatisfied ()

E. ENVIRONMENTAL QUALITY PERCEPTION

- 23. How do you perceive the air quality of the metropolis** (a) fine () (b) harmful () (c) Don't Know ()
- 24. Frequency of occurrence** (a) Often () (b) All the time () (c) Morning () (d) Afternoon () (e) Night () (f) Hardly notice ()
- 25. Severity** (a) Pungent () (b) Light () (c) Heavy ()
- 26. Source type of noise** (a) Market () (b) Vehicular () (c) Industrial (d) Machinery () (e) Record stores () (f) Religious institutions ()
- 27. The volume of noise** (a) Very? High () (b) High () (c) Light () (d) Low ()

F. ENVIRONMENTAL PROBLEMS

- 28. In your view, which environmental issue is related to the growth of the Lagos Metropolis?** (a) Loss of wetlands () (b) Occupation of environmentally sensitive land () (c) Hazard-prone areas (d) Loss of natural sites () (e) Erosion () (f) Flooding () (g) others specify ()
- 29. What are the environmental problems associated with the expansion of the Lagos Metropolis?** (a) Change in land use () (b) Use of natural resources () (c) Waste generation () (d) Parking on the roads () (e) Construction Trucks () (f) Construction Activities ()

G. METROPOLITAN DEVELOPMENT AND PERCEPTION

- 30. Are new people moving into your area?** (a) Yes () (b) No ()
- 31. If Yes, how frequent** (a) very often () (b) often () (c) indifferent () (d) not often () (e) never ()
- 32. From where** (a) Within Lagos Metropolis () (b) Outside Lagos Metropolis () (c) Neighbouring States ()
- 33. Do you think their presence affects the growth and development of a metropolis?** (a) Yes () (b) No ()
- 34. Do you think they contribute to some of the problems of the metropolis?** (a) Yes () (b) No ()
- 35. If yes, how?** (a) Traffic Congestion () (b) Poor setting out () (c) Blight () (d) Noise () (e) Air quality () (f) Traffic management () (g) Poor alignment () (g) decay () (h) others specify

H. METROPOLITAN INTERACTION

36. **What is the nature of your interaction with the metropolitan area of Lagos?** (a) Political () (b) Trading () (c) Housing () (d) Social-cultural interactions () (e) Work () (f) Infrastructural facilities () (g) Affiliations () (h) Education () (i) Health () (k) None ()
37. **How often do you interact with Lagos Metropolis?** (a) Daily () (b) Weekly () (c) Monthly () (d) Occasionally () (e) Quarterly () (f) Seldom ()
38. **Where do you interact from, and what is the purpose of your interaction?** (a) Other States () (b) Within Lagos Metropolis () (c) Outside Lagos Metropolis () (d) Work () (e) Own House () (f) Rent () (g) Family ties () (h) More spaces () (i) Crowded Lagos () (j) Accessibility issues () (k) Social/religious/cultural () (l) Access to land () (m) Government policy () (n) Access to infrastructure () (o) Access to school () (p) Access to market ()
39. **Are cities' morphologies and growth patterns similar to malignant processes?** (a) Yes () (b) No ()

40. **If yes, what are the similarities**

- | | |
|---|------------------------|
| (a) Rapid, uncontrolled growth | (a) yes () (b) No () |
| (b) Invasion and destruction of adjacent normal tissues | (a) yes () (b) No () |
| (c) Metastasis (distant colonisation) | (a) yes () (b) No () |
| (d) De-differentiation | (a) yes () (b) No () |

41. **What are the similarities between (physiological malignant) growth and urban growth** (a) Loss of residents () (b) Sense of Place () (c) change in behaviours () (d) Loss of structural integrity () (e) Poverty () (f) urban sprawl (g) Crime (h) inordinate and haphazard development () (j) Rapid Growth () (l) slow growth () (m) irregular shape () (n) Invasion of surrounding tissues/places ()

42. **Are you aware of the spatial evolution of the Lagos metropolis?**

Indices		Very Aware	Aware	Somewhat Aware	Unaware	Very Unaware
a	Development of the original core					
b	Diffusion					
c	Coalescence					
d	Urban aggregation					
e	Others					

43. **Which of these typifies the Lagos Metropolis expansion process** (a) Demographically () (b) Spatially () (c) Economic ()

44. **What factors do you believe contribute to the growth of metropolitan areas in Lagos?** (a) socio-economic development () (b) Strategically allocating amenities and services () (c) Migrating from surrounding settlements () (d) Growing population () (e) Functional significance ()
45. **What are your reasons for the spatial expansion of metropolitan areas in Lagos?** (a) is infrastructure developed () (b) improved living standards () (c) Accessibility () (d) Political and Economic Opportunities () (e) Population Increase () (f) Technology () (g) Education ()
46. **What do you think are the effects of the growth of the Lagos metropolis on the following?**

	Indices	Increased	Stable	Reduced
a	House Rent			
b	Land Value			
c	Traffic Intensity			
d	Population Growth			
e	Housing Density			
f	Urban Growth Rate			
g	Urban Crime Rate			
h	Urban Sprawl			
i	Land availability			
j	Environment and Health problems			
k	Infrastructure			

47. **How do you think the expansion of the Lagos metropolis will impact the health and well-being of your settlement** (a) Social () (b) Economic () (c) Physical () (d) Mental () (e) Spiritual ()
48. **The growth of metropolitan Lagos is characterised by** (a) Population growth () (b) Economic activities and investments () (c) Inadequate Planning () (d) Lack of infrastructure and social services () (e) Poor communication channels () (f) Inordinate and haphazard development () (g) Decay () (h) Others...
49. **How can you describe metropolitan Lagos's growth process?** (a) Positive () (b) Negative () (c) others specify ()
50. **If you think it is positive, identify based on the following:** (a) organised () (b) Planned development () (c) Livable () (d) Sustainable () (e) Resilience () others specify
51. **If Negative, identify based on the following:** (a) Uncoordinated () (b) Chaotic expansion () (c) Malignant () (d) Poorly planned () Others specify
52. **Can the Lagos growth process be interpreted as an urban crisis?** (a) Yes () (b) No () (your result will show this)
53. **If Yes above, what would you consider to be the key indicators of that crisis** (a) Aggressive malignant growth () (b) Functional consequences () (c) Urban sprawl () (d) Ageing or

diversification of the population () (e) Socioeconomic status () (f) Crime () (g) Urban living conditions () (h) Cultural adaptations ()

54. **Is metropolitan Lagos growth (in your view)** (a) Organic () (b) Planned () (c) Spontaneous () (d) Self-organising ()

55. **How would you describe the growth of the Lagos metropolis over time?**

(a) Heterotrophic (a) Yes () (b) No ()

(b) Parasitic ecosystems	(a) Yes () (b) No ()
(c) Intensifying influence	(a) Yes () (b) No ()
(d) Erratic	(a) Yes () (b) No ()
(e) Invasive growth patterns	(a) Yes () (b) No ()
(f) Enslaving	(a) Yes () (b) No ()

56. **How does the growth of Lagos compare to the development of malignant neoplasms?** (a) Unchecked growth () (b) No potential for control () (c) Growth unaffected by scale () (d) Average growth controls ()

57. **Would you say the effects are** (a) Positive () (b) Negative () (b) Both ()

58. **Do you think that city growth is comparable to cancer growth?** (a) Yes () (b) No ()

59. **If yes, above does metropolitan Lagos's growth have any similarity to cancer** (a) Yes () (b) No ()

60. **What challenges do you think metropolitan Lagos faces due to its growth?** (a) unemployment () (b) slum development () (c) poverty (d) environmental degradation () (e) uncontrolled and or uncontrollable rate of urban spatial expansion () (f) Amorphous nature of physical development () (g) Poor planning implementation ()

SECTION TWO

Interview Guide for Government agencies in charge of the metropolitan Lagos growth process

1. What are your urban management and development roles in metropolitan Lagos?
2. What urban management approaches have been adopted in metropolitan Lagos?
3. How effective have these approaches been in controlling excessive growth
 - (a) Curbing congestion
 - (b) Improving accessibility and mobility
 - (c) Controlling the formation of slums
 - (d) Provision of services and facilities
 - (e) Maintaining existing infrastructure facilities
4. What strategies can be implemented to manage the growth of metropolitan Lagos?
5. How would you characterise the growth of metropolitan Lagos over time?
6. Does the prevalence of malignant neoplasms affect the historical growth of Lagos?

