

**DETERMINANTS OF THE EXPANSION OF COMMERCIAL
BUILDING ZONES IN NAIROBI COUNTY, KENYA**

BERNARD ONGOLAH KOBIA

**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A
DEGREE IN MASTER OF ARTS IN PROJECT PLANNING AND
MANAGEMENT OF THE UNIVERSITY OF NAIROBI**

2016

DECLARATION

This research project is my original work and has not been submitted for any award in any other university.

Signature:.....Date:

BERNARD ONGOLAH KOBIA

L50/77930/2015

This research project has been submitted for examination with my approval as university supervisor.

Signature:.....Date:.....

Dr. Anne Aseey

Senior Lecturer,

University of Nairobi

DEDICATION

I dedicate this study to my family, my wife Lady Hilda, My Children Hilary, Brandon and Ligwara Junior.

ACKNOWLEDGEMENT

My gratitude goes to my supervisor Dr. Anne Aseeey for her professional advice and guidance as I was writing the research project. Her continuous communication and availability throughout the study period has enabled me finish the research project in time. My gratitude goes to the University of Nairobi Extra Mural Centre for offering the Master of Art in Project Planning and Management thus giving me an opportunity to conveniently do the course. I appreciate the services of the University of Nairobi's Jomo Kenyatta Memorial Library which has made my research manageable due to the availability of reading materials needed during the study. I am also particularly grateful to my family for the support and encouragement during the study period and also to my employer PTA Bank particularly retired Senior Director for Human Resources and Administration- PTA Bank Mr. Kifle Hamza and his Family.

TABLE OF CONTENT

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENT.....	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
ABBREVIATIONS AND ACRONYMS.....	x
ABSTRACT.....	xi
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background to the Study	1
1.2 Statement of the Problem	2
1.3 Purpose of the Study	4
1.4 Objectives of the Study	4
1.5 Research Questions	5
1.6 Significance of the Study	5
1.7 Delimitations of the Study.....	6
1.8 Limitations of the Study	6
1.9 Assumptions of the Study	6
1.10 Definition of Key Terms used in the Study.....	7
1.11 Organization of the Study	7
CHAPTER TWO: LITERATURE REVIEW	9
2.1 Introduction	9
2.2 Infrastructure and Property Development	9
2.3 Participatory Planning in Urban Development	13
2.4 Legislative Framework for Urban Development	15
2.5 Physical Environment and Property Development	17

2.6 Theoretical Framework	19
2.7 Conceptual Framework	20
2.8 Explanation of Variables	21
2.9 Gaps in Literature	23
2.10 Summary of Literature Review	24
CHAPTER THREE: RESEARCH METHODOLOGY	25
3.1 Introduction	25
3.2 Research Design	25
3.3 Target Population	25
3.4 Sample Size and Sampling Procedures	26
3.4.1 Sample Size	26
3.4.2 Sampling Procedures	27
3.5 Data Collection Instruments	27
3.5.1 Pilot Testing of the Instrument	28
3.5.2 Validity of the Instrument	28
3.5.3 Reliability of the Instrument	29
3.6 Data collection Procedures	29
3.7 Data Analysis Techniques	30
3.8 Ethical Considerations	30
3.9 Operational definition of Variables	32
CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION	33
4.1 Introduction	33
4.2 Background Information	33
4.3 Infrastructure Development	35
4.4 Participatory Planning	37
4.5 Legislative Framework and Regulations	39

4.6 Physical Environment and Urban Development	41
4.7 Correlation Analysis.....	44
CHAPTER FIVE: SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS	47
5.1 Introduction	47
5.2 Summary of the Findings	47
5.4 Discussion	49
5.4 Conclusions	51
5.5 Recommendations	52
5.6 Suggestions for Further Research	53
REFERENCES.....	55
APPENDICES	59
Appendix I: Letter of Introduction	59
Appendix II: Questionnaire for Respondents.....	60
Appendix III: Interview Guide Key Informants.....	64
Appendix IV: Observation Schedule	65
Appendix V: Zoning Map	66
Appendix VI: University Authorization Letter	67
Appendix VII: NACOSTI Letter.....	68
Appendix VIII: The Research Permit.....	69

LIST OF TABLES

Table 3. 1: Target Population	26
Table 3. 2: Sample	27
Table 3. 3: Reliability Statistics Results	29
Table 4. 1: Response Rate	33
Table 4. 2: Respondents Distribution by Gender	34
Table 4. 3: Age Bracket	34
Table 4. 4: Highest Academic Qualification	35
Table 4. 5: Occupation	35
Table 4. 6: Infrastructure Development Rating.....	36
Table 4. 7: Infrastructure development and expansion of commercial buildings zones ..	37
Table 4. 8: Participatory Planning	38
Table 4. 9: Urban Planning influencing Expansion of Commercial Buildings.....	39
Table 4. 10: Legislative Framework and Regulations.....	40
Table 4. 11: Regulations influencing Expansion of Commercial Buildings	41
Table 4. 12: Physical Environment Issues	42
Table 4. 13: Physical Environment Issues and Expansion	43
Table 4. 14: Expansion of Commercial Building Zones	44
Table 4. 15: Correlation Analysis Results	45

LIST OF FIGURES

Figure 2. 1: Conceptual Framework 21

ABBREVIATIONS AND ACRONYMS

CBD	Central Business District
ICT	Information Communication Technology
IREE	Institute for Real Estate Economics
KRB	Kenya Roads Board
NACOSTI	National Commission for Science, Technology and Innovation
NCC	Nairobi City County
NEMA	National Environmental Management Authority
NIESV	Nigerian Institution of Estate Surveyors and Valuers
SPSS	Statistical Package for Social Sciences
UK	United Kingdom

ABSTRACT

The purpose of this study was to investigate the determinants of commercial building zones expansion in Nairobi County, Kenya. It was guided by four research objectives. They included establishing influence of infrastructure on commercial building zones expansion in Nairobi County; determining influence of participatory planning on commercial building zones expansion in Nairobi County; to examine the influence of the changes in regulations on commercial building zones expansion in Nairobi County; and establishing influence of environment on commercial building zones expansion Nairobi County. The study used a descriptive survey design and purposive sampling in selecting the respondents. The target population for this study was 1637 comprising of 1200 architectural firms (Board of Registration of Architects and Quantity Surveyors), 330 registered estate agents (Estate Agents Board), and 107 property developers (Kenya Property Developers Association). Proportionate stratified sampling was used to select a sample size of 384 respondents from 4 zones out of 20 zones in Nairobi County. Developers, real estate agents and architectural firms formed the strata for proportionate stratified sampling in this study. The sample was drawn proportionately from each of these three strata. Purposive sampling was used in selecting the five (5) officials in the Nairobi County Department of Planning who were interviewed as key informants for this study. A pilot study of 12 respondents was carried out in Kikuyu Town. This study used a structured questionnaire to collect data. Data was collected using structured questionnaires. Descriptive statistics were used to analyze data and Statistical package for social sciences (SPSS) was used as an aid for analysis. Results of analyzed data were then presented in frequency tables. Infrastructure development was found to have influenced expansion of commercial buildings zones. Urban planning was found to influence expansion of commercial buildings in Nairobi County. The findings of this study have shown that changes in legislative framework and regulations influenced development of commercial buildings. Environmental issues were found to have influenced expansion of commercial buildings in Nairobi County. The study revealed that there is expansion of commercial building zones. Residential buildings being converted to commercial buildings and new commercial buildings illustrated this expansion. This study concluded that increased infrastructure development will lead to expansion of commercial building zones. The study also concluded that increased participation by various stakeholders in urban planning will lead to expansion of commercial building zones. The study concluded that changes in legislative framework will slow expansion of commercial building zones in Nairobi County, Kenya. The study also concluded that the more the congestion, obstruction and hazards an area is, the less the expansion of commercial building zones. This study recommends that the National government of Kenya should ensure that there is infrastructure development according to needs in the city to support commercial buildings zones. The study also recommends that Nairobi County should embrace participatory planning in urban development. The study also recommends that Kenyan parliament and the Ministry of Land, Housing and Urban development should ensure that laws and regulations in place adequately meet and serve commercial buildings zones. This study recommends that National Environment Management Authority should have clear guidelines to address environmental issues influencing commercial buildings zones.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Real estate has expanded to meet increasing demand for office space and residential houses. This expansion can be traced to growth of cities worldwide. Some of the main factors that have led to this growth include surplus resources, industrialization and commercialization, development of transport and communication, economic pull of the city as well as educational and recreational facilities. In every great civilization there has been migration from the village to the city (Boon and Higgins, 2007).

Real estate is an important component of the wealth of nations (Karakozova, 2005). Real property also constitutes nearly one-half of the wealth in the world, and thus, in terms of value, represents the most significant investment class. According to Corgel, Smith and Ling (2000), real property comprises 49% or \$21.41 trillion of the world's wealth (\$44 trillion) whereas stocks and bonds comprise 25.5% and 18.8% respectively. Real estate has a number of characteristics which make it different from other investment assets including fixed location, heterogeneity, high unit value, illiquidity and the use of valuations to measure performance (Hoesli and MacGregor, 2000).

Commercial property investments constitute a substantial proportion of real property investments worldwide. There is about £762 billion worth of commercial property in the United Kingdom (IPF, 2007). In addition, the commercial property sector is of considerable importance to the British economy (Scott and Judge, 2000).

In Finland, most institutional investors mainly invest in offices and retail properties (Karakozova, 2005). In a study conducted by Jones Lang LaSalle and the Institute for Real Estate Economics on prime office yields in selected cities in the world, the actual rate of return on office property investments was found to be lowest in London and highest in Moscow.

Africa has experienced unprecedented rates of urban growth, at above 3% annually. This growth was accompanied not only by agglomeration economies and spread effects but negative externalities that impinge on the inhabitants and the natural resource base in the rural–urban transition zone (Nigerian Institution of Estate Surveyors and Valuers-NIESV, 2013). Already, cities occupy large geographical areas that are continually expanding (Sebego and Gwebu, 2013). In developing countries such as Nigeria and Kenya, commercial property market has remained relatively under-researched in the past five decades due to the absence of reliable and standard property market database. Most of the property market studies within this period have been focused on the residential property market with little empirical relevance to the commercial property market in developing countries (Nigerian Institution of Estate Surveyors and Valuers-NIESV, 2013).

1.2 Statement of the Problem

In spite of the enormous social and economic challenges of rapid urbanization, physical planning in African countries often remains a peripheral if not an uncoordinated activity (Killick, 2008 & Toteng, 2001). This creates challenges in developing and access to adequate infrastructure for growth and expansion of a city. Infrastructure such as transportation, parking, information communication technology, energy and security may

shape the trend of commercial property expansion in a city (Macharia, 2012). The problems associated with the physical growth of towns and cities are worsening in spite of the fact that nearly every African country has physical planning and development control legislation in its human settlements planning statute books (Clancy, 2008 and Lovett, 2008).

Many factors could be attributed to these problems. There is failure to regard physical planning as an integral part of economic and social planning. Currently it is viewed as a sectoral activity concerned with works, housing, communications and county government. In addition, there is a failure to retain technical and professional staffs who are the key implementers of development control, because of low salaries and poor working conditions. Finally, there is an absence of political will due to lack of real power or from corruption on the part of enforcing officials. Other factors include the failure to perceive the settlement components as functional systems elements rather than addressing systems' elements in isolation; lack of meaningful communication among stakeholders due to centralization and lack of participatory planning and absence of coordination among the various planning units (Sebego and Gwebu, 2013).

Legal pluralism has also been cited as a problem associated with city expansion in sub-Saharan Africa. This is a situation in which two or more legal land tenure systems co-exist each with its own basis of legitimacy and validity (Von Benda-Beckmann, 2002). In such a situation, there is not just one legal system but rather overlapping legal and normative frameworks at work. Environment is critical to commercial property

development as it is to sustainable development. Commercial property expansion is sensitive to waste management and disaster risk management (Macharia, 2012).

Previous studies in real estate such as Killick (2008), Toteng (2001), Macharia (2012) and Sebego & Gwebu (2013) have concentrated on growth, occupancy rates, property value and rent. Few or none of the studies has sought to investigate determinants of commercial property expansion in Nairobi County, Kenya. This study therefore, sought to bridge this gap by investigating the determinants of commercial building zones expansion in Nairobi County Kenya.

1.3 Purpose of the Study

The purpose of this study was to investigate the determinants of expansion of commercial building zones in Nairobi County, Kenya.

1.4 Objectives of the Study

This study was guided by the following specific objectives:

1. To establish influence of infrastructure on commercial building zones expansion in Nairobi County
2. To determine influence of participatory planning on commercial building zones expansion in Nairobi County
3. To examine the influence of changes in regulations on commercial building zones expansion in Nairobi County
4. To establish influence of physical environment on commercial building zones expansion Nairobi County

1.5 Research Questions

This study sought to answer the following research questions:

1. What is the influence of infrastructure on commercial building zones expansion in Nairobi County?
2. What is the role of participatory planning in commercial building zones expansion in Nairobi County?
3. How have the changes in regulations influenced commercial building zones expansion in Nairobi County?
4. What is the influence of physical environment on commercial building zones expansion in Nairobi County?

1.6 Significance of the Study

This study hopes to contribute to the existing knowledge, address and provide the background information to research organizations, individual researchers and scholars who want to carry out further research in this area. The study will help researchers and academicians to expand their research determinants of commercial building zones expansion in Nairobi County, Kenya. This study will also help urban planners in Nairobi County as they will understand and conceptualize the reality in commercial real estate expansion. The urban planners after understanding determinants of commercial building zones expansion will make the necessary measures to ensure that amenities are in place to support this expansion. To the government, the study will assist in planning and formulation of policies that support growth of commercial real estate. It will also help the government engage key stakeholders to ensure sustainable urban development. To

financial institutions, this study will help in evaluating risks when advancing loans to property developers and other stakeholders in commercial real estate sector.

1.7 Delimitations of the Study

There are 20 zones in Nairobi County but this study covered zones 1-4. These zones have mixed commercial and residential developments. They include zone 1 comprising of CBD and Upper Hill, zone 2 comprising of Eastleigh, Pumwani, Carlifonia and Ziwani, zone 3 comprising of Parklands and Westlands, and zone 4 comprising of Spring valley, Riverside, Kileleshwa, Kilimani and Woodley. The study focused on determinants that are related to infrastructure development, participatory planning, legislative framework and physical environment issues. These were hypothesized to significantly influence expansion of commercial building zones.

1.8 Limitations of the Study

Key limitations of the study included limited time and resources for actual field study where the researcher was required to make several trips around the city to administer the questionnaires. The researcher allocated more time for this research by taking leave to work on the study. The researcher recruited and trained research assistants to collect data in order to meet the scheduled timeframe and save on available resources.

1.9 Assumptions of the Study

The study assumed that respondents would be available for the study and that they would give correct and valid information that would assist in getting valid data. The study also

assumed that nothing would have changed significantly to influence study variables by the end of the study.

1.10 Definition of Key Terms used in the Study

Commercial Building Zones: refers to areas within the city for commercial development

Commercial property: refers to real estate for business mainly office space.

Physical Environment: refers to land, air, water, buildings and other infrastructure, and all of the natural resources that provide the basic needs and opportunities for social and economic development.

Legal framework: refers to laws and regulations governing real estate development in a city.

Legal pluralism: refers to a situation in which two or more legal land tenure systems co-exist each with its own basis of legitimacy and validity. There is not just one legal system but rather overlapping legal and normative frameworks at work

Occupancy rates: It refers to the percentage of units or area in a commercial that has been rented out.

Participatory planning: It refers to engaging other stakeholders in preparation for real estate development with a view to factoring in all the infrastructure required for growth and expansion.

1.11 Organization of the Study

The study is organized into five chapters. Chapter one contains the background of the study, statement of the problem, purpose of the study, objectives, research questions,

significance of the study, limitations, delimitations, basic assumptions of the study and the organization of the study.

In chapter two, literature was reviewed in the following order; a general review of determinants of commercial property expansion, the influence of infrastructure, participatory planning, legal framework and environment on commercial property expansion. The chapter also presents a theoretical and conceptual framework showing the variables and the various indicators.

Chapter three outlines the research methodology that was used in the study and included research design, target population, sample size and sampling techniques, research instruments, questionnaires, validity of the instruments, reliability of the instruments, and pilot test. The chapter also presented the operationalization of variables table.

Chapter four presents data analysis, presentation and interpretation of data. These entails the responses to the questionnaire and interview guide. The analysis was done using descriptive statistics and inferential statistics. Descriptive statistics used comprised of mean, standard deviation, percentages and frequencies. Inferential statistics used was correlation.

Chapter five entails a summary of findings, conclusions, recommendations and suggestions for further research. The summary of findings comprised of the key results in regards to influence of infrastructure, participatory planning, legislative framework and physical environment. The conclusions and recommendations were also based on the four themes of this study and dependent on the findings.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covers review of relevant literature for this study. It comprises of the themes that the objectives of this study sought to achieve. They include infrastructure development, participatory planning, legislative framework and physical environment issues. The chapter also presents the theoretical and conceptual framework of the study as well as explanation of variables. This chapter ends with the gaps in literature and a summary of literature review.

2.2 Infrastructure and Property Development

Infrastructure network is the very socio-economic climate created to serve as conduits of trade and investment. The role of infrastructure in the context of integration is transformative, through enhancing change of resources into outputs or enhancing trade by removing barriers. Therefore, an improvement in a country's infrastructure is one of the key factors affecting the long term growth of such a country. The linkages between infrastructure and economic growth are varied and complex. Infrastructure does not only affect production and consumption directly, it also creates many direct and indirect externalities (Ajibola et al., 2010).

Adebayo (2012) indicates that one of the determinants of the property values is infrastructural facilities, the preserve of which leads to appreciation of property values and its absence affects neighborhood prices adversely. Infrastructure development is a key driver of increased productivity and economic growth across the African continent hence leading to improved living standards and poverty reduction. Adequate

infrastructure is vital for productivity and growth, especially the transport system. Anyanwu and Erhijakpor (2010) indicate that road infrastructure significantly leads to poverty reduction in Africa. Canning and Pedroni (2008) indicate that there is a positive correlation between improved infrastructure and economic growth.

Several studies suggest that the characteristics of the local neighborhood, transport system and environment quality are vital in the determination of commercial property prices. For instance Boucq and Stratec (2011) undertook a study on the effect of rail transport infrastructure on property prices in France and found that infrastructure developments lead to property gains. In Kenya, from 2010 to mid-2012 the travel time to Kiambu from Nairobi CBD was more than two hours during peak period due to traffic jams and ongoing construction of the Thika super highway transport network on that route. Hence with the completion of the super highway, travel time was reduced to half an hour during peak time and fifteen minutes off peak and subsequently a rapid increase in the real estate values of commercial properties in the area. The above findings are similar to several studies done on transport network developments and commercial property prices. However the development of a transport network can lead to a reduction in property values especially if it leads to easier accessibility to the properties near the transport network. In the United Kingdom (UK), John (1998) examined how new transport infrastructure influenced property values in the South Yorkshire. The study found that anticipation of the construction of a super tram led to the reduction of house prices. This is possibly because of expectations of the disruptions during the building of the system. However, on completion of the super tram, the negative effect on property

prices has disappeared and the study has also shown that the type of neighborhood is a major influence on property prices.

Hammer et al (2000) suggest that a residential property user may be prepared to pay a high value for a property depending on his consideration for basic facilities such as accessibility, water and electricity. Ki and Jayantha (2010) investigated how redevelopment affected housing values in specific locations. The findings showed a significant rise in property values from implementation to after completion of the redevelopment project. Also Mallios (2009) while using the hedonic pricing model assessed the economic value of irrigation water as one of the attributes of agricultural parcel lands. The findings indicated that proximity of irrigation water affects the value of land.

Nubi (2003) describes infrastructure as the aggregate of all facilities that allows a city to function effectively. It is also seen as a wide range of economic and social facilities crucial to creating an enabling environment for economic growth and enhances quality of life. They include housing, electricity, pipe-borne water, drainage, waste disposal, roads, sewage, health, education, telecommunications and institutional structures like police station, fire fighting stations, banks and post office. In other words, infrastructure is the large scale public services or systems and facilities of a country or region that are necessary for economic activity, including power and water supplies, public transportation, telecommunications, roads and school. Real estate has no value if it has no utility, if it is not scarce and if it is not effectively demanded. Real estate has significance only as it satisfies man's needs and desires. It is this man's collective desire for property

that gives rise to value (Olusegun, 2003). Thus, the ability of a property to satisfy man's needs and desires together with its degree of scarcity and utility compared with others makes man to ascribe value to it. Property value, therefore, according to Millington (2005) is the money obtainable from a person willing and able to purchase property when it is offered for sale by a willing seller, allowing for reasonable time for negotiation and with the full knowledge of the nature and uses which the property is capable of being put. Real estate is a heterogeneous good that is comprised of a bundle of unique characteristics reflecting not only its location, but equally affected by other amenities such as the quality of neighborhood and infrastructure.

Macharia (2012) summarized five important elements of infrastructure that could determine whether a city will expand or not. They include transportation, parking, water and sanitation services, energy, information communication technology and security systems. Transportation is one of the key physical infrastructural service and is a critical foundation for the sustainable urban development pillars. Transportation entails issues such as; waiting hours as it concerns the public transport system, safety and security standards, road networks integration and adequacy, road maintenance and road pollution aspects. Parking is a key infrastructural service in any city. It entails adequacy of parking spaces; the distribution of parking lots; quality and quantity of parking spaces and; taxi and bus stops. Water and sanitation services system is another key and critical aspect in any sustainable urban development. It focuses on: efficiency of water provision and delivery; effluent discharge into natural water courses within the area; management of storm and flood waters; and the area's water per capita need vis-à-vis the actual provision. Energy is a major development driver in any sector. It is important to consider

the sources of energy; the cost of energy; access to energy; the providers; the efficiency of energy transmission and the utilization of renewable energy resources if any. Information Communication Technology in this case refers to the science in devices and media used to capture, process, store, and transmit information in various forms. ICT infrastructure ownership and service providers; and infrastructure installation services and quality of service delivery are important in expansion of commercial properties. Security system is an important function that can determine expansion of commercial properties. It is primarily the state's role to maintain security but also other public and private stakeholders play a role in security system of an area. It is generally important to assess the neighborhood and community policing strategies within an area of interest (Macharia, 2012).

2.3 Participatory Planning in Urban Development

There are four ideals of participatory planning which include participation as policy implementation, participation as functional problem solving, participation as interest articulation and participation as democratic deliberation. According to the first ideal, participation is a new approach for increasing the capacity to implement policies of the representative political system (Innes and Booher, 1999; Hertting, 2009).

Citizens are crucial sources of knowledge and experience which are important to the planning process. This is often what drives politicians and civil servants to embrace participation at the heart of the political system. According to a second ideal, participation is a strategy to coordinate every actor who controls a resource relevant to resolution of the planning problem. There is no political problem; participation is a

response to a pure coordination problem. This is what drives professional planners and developers to initiate and take part in participation. According to a third ideal, participatory structures are promoted as new arenas for interest articulation and representation in order to advance the interest of certain groups that otherwise would be disadvantaged. The primary idea is to improve the opportunities for wider mobilization within the planning process. From a fourth perspective, the value of participation lies in the construction of a shared position, overcoming special interests, through reflection on different positions and policies. Here, the primary idea is to organize a process for debate amongst affected actors. It is expected that deliberative and participative notions of planning (Healey, 2006; Sellers and Lidstrom, 2007) drive different types of citizen groups.

Participation within a political context may mean many things and therefore can give rise to complex tensions. Tensions may exist between not only the vertical parliamentary and administrative chain and horizontal modes of participation and communication, but also between different types of horizontal collaboration and participation: functional, participative and deliberative. The promotion of open and flexible participatory networks and institutions poses two fundamental dilemmas. First, the promises of innovative participatory planning are open and holistic negotiation, communication and deliberation across not only government and administrative boundaries, but also within a vertical hierarchy that is supposed to hold public servants and politicians accountable to the electorate. The horizontal processes of participatory planning need to be reconciled with the vertical chain of representative parliamentary democracy. On the other hand, there

seem to be both democratic and efficiency rationales for horizontal planning arrangements (Sorensen and Torfing, 2005; Young, 2000; Klijn and Skelcher, 2007).

2.4 Legislative Framework for Urban Development

Analysts have cited weak urban governance and management frameworks as the major impediment to Kenya's realization of a sustainable urban development. The Local Government Act cap 265 and the Physical Planning Act cap 286 greatly restricted the mandates, operations and functions of local authorities disabling service delivery. Adding unto this was the multiplicity of parallel agencies such as Ministry of Lands Director of Planning and the Nairobi City County (NCC), National Environmental Management Authority (NEMA), Kenya Roads Board (KRB) and the NCC's environmental department that further complicated urban areas governance (Macharia, 2012).

In adherence to the new constitutional order and its requirements, the Urban Areas and Cities Act of 2011, was enacted. This Act gives effect to the constitution's section 184 which requires legislation; to provide for the classification, governance principles criteria of establishing as well as the management of urban areas, cities and towns. According to the Act, there shall be established a cities board which amongst the various functions will control land use, land development, land subdivision and zoning by public and private sectors within a framework of spatial and master plans for towns, cities and municipality delegated by County Government and facilitated by the County Transition Authority (Macharia, 2012).

According to the Act planning and development control will be undertaken by the different rural and urban managers at the different level of urban and rural governance set

out in the Act. Analysts contend that the full implementation of the Urban Areas and Cities Act 2011 will be controversial as it divests divesting county government functions and allocating them to boards of cities, municipalities and towns created under the Act (Macharia, 2012).

Kenya has not had a single and clearly defined and codified National Land Policy since independence (Ministry of Lands, 2007). In the interim, a complex set of land laws has evolved, some of which are conflicting, resulting in an overly complex and inefficient land administration and management system. This land governance legacy is no longer appropriate for Kenya and land issues have raised themselves in many forms; deterioration in land quality, squatting and landlessness, disinheritance of some groups and individuals, urban squalor, under-utilisation and abandonment of agricultural land, tenure insecurity and conflicts.

Major land uses include agricultural and pastoral land uses on which the majority of Kenyans depend for their livelihood, harvesting of forest products for timber and wood fuel, tourism, mining, fisheries and infrastructure. These together define the environment in which Kenya's land economy functions. The land distribution pattern in Kenya is very much skewed. In Nairobi, for example, 5% of the land is currently housing 75% of the city's population. Land is critical to the economic, social and cultural development of Kenya. It is crucial to the attainment of economic growth.

One of the most significant dynamics impacting on Kenyan society is rapid urbanisation, mainly due to rural-urban migration and high urban growth rate. Kenya's population shows remarkable trends in levels of urbanisation having increased from 8% at

independence to 19% in 1989, 19.4% in 1999 (Population and Housing Census-CBS 1999) and is projected to account for over 50% of the total population by the year 2018. Some of these urban centres, Nairobi in particular, have doubled in population over the past decade. However, urbanisation on its own is neither good nor bad because it is often a response to economic growth. There is a clear relationship between a country's level of development and the proportion of the national population that is urbanised (Republic of Kenya, 2008).

The land and property market is most active around cities and municipalities. However, quite a lot of buying and selling takes place within the arable rural zones too, such as the Central Province, parts of the Rift Valley, South Nyaza and Western Provinces. In Eastern Province, the land market is active in the productive parts of Machakos, Embu and Meru Districts. It should be noted that the rural buying and selling has also resulted in the subdivision of agricultural land into non-viable units in many cases. It is estimated (Mwathane, 2009) that around 30% of the land and property transactions occur in the informal market.

2.5 Physical Environment and Property Development

Physical environment is important to commercial property development. Friso de vo (2012) argues that industrial sites may cause several negative externalities, such as noise, air, water and soil pollution, congestion and obstruction of view hence reducing value of residential property value, the adverse effect diminish with distance resulting to increased property values in their direct vicinity. Des Rosiers et al (2009) in their study discovered that negative externalities linked to water supply and quality problems in a given

neighborhood adversely affected property values within the study location. Kutz (2008) indicates that infrastructural projects produce significant environmental and social costs, the source of impacts that have been identified and which are known to cause significant negative impacts are noise and air pollution, compulsory acquisitions of land and impacts on local bio diversity.

Carey (2011) indicates that most externalities affect property values in a spatially distributed manner and the common negative externalities entail loss of visual amenity, air and noise pollution. It is important to note that environmental attributes would affect real estate values. The vital environmental considerations would include open space, nuisances, hazards emanating from nearby facilities such as shopping centers, factories, and schools; adequacy of public utilities such as street lights, sewers and electricity; general maintenance; street pattern, width, and maintenance.

People are at the centre of environment and development in Nairobi city. As the capital of Kenya, Nairobi is a centre of industry, education and culture. A big threat to the development of Nairobi and, in particular, planned settlement is a lack of approved and up-to date physical development plans. Nairobi lacks an approved master human settlement plan or physical development plan. The only operational plan approved for Nairobi is the 1948 master plan, as the revised 1973 version was never approved (NEMA 2003). Most urbanization is therefore taking place in a planning vacuum. Urban planning and management have not effectively offered solutions to the increasing urban decay and environmental crisis. Some of the impacts of the lack of a clear planning strategy include haphazard patterns of development with a mix of activities that may not be compatible

with the area, an over-concentration of employment in the Central Business District (CBD) and industrial area, resulting in traffic congestion and environmental pollution, and rapid growth of informal settlements. The main problems facing the water and sanitation sector include access to water, water quality, access to sanitation and poor solid waste management.

Nairobi is faced with two major issues as far as the atmospheric environment is concerned: climate change and air quality. These are mainly the result of anthropogenic activity in the transport, energy and industrial sectors. The main sources of atmospheric pollution are vehicles, industries, emissions from the use of charcoal and firewood for energy, and other municipal sources such as suspended particulate matter from dust and the open burning of waste. The impacts of air pollution range from ecological to socio-economic. These include loss of biodiversity; damage to vegetation, buildings and animal health due to acid rain; and climate change. It also affects human health and affects visibility which can result in traffic accidents or create unpleasant living environments for people. The growing incidence of pollution is thus creating new challenges for human well-being and environmental integrity (City Council of Nairobi, 2007).

2.6 Theoretical Framework

This study was guided by polycentric city theory which is a variation from Burgess's (1925) concentric zone hypothesis. Polycentric city theory states that, as a city grows outward, other (smaller) CBDs come up near the newly growing areas. Businesses relocate to these newer CBDs because of lower rent and less problems in comparison to city centre (overcrowding, heavy traffic). Polycentric cities thus have more than one

CBD. Transportation patterns are more complex in a polycentric city as compared to a monocentric city, since there is significant traffic between the secondary CBDs (in a monocentric city, there is traffic only between the residential districts and the single CBD). This theory explains how businesses influence city expansion based on available infrastructure, planning, regulations and physical environment. It was therefore suitable for this study as it sought to establish determinants of commercial building zones expansion in Nairobi County, Kenya.

Garreau (1991) utilized polycentric city theory in his idea of 'edge cities', a model of polycentric spatial structure usually located at major highway interchanges, to describe new suburban cities with office building and huge commercial infrastructures. Fujita, Krugman and Venables (2001) developed a theoretical framework to describe the evolution of polycentric structure that had resulted from centripetal forces and the agglomeration of economic relationships between firms. Hall (1999) supposed that the Polycentric City focuses on the location of business and envisaged a new polycentric urban form emerging in many contemporary cities. The Polycentric City included six main elements: a traditional business core; a secondary business core; a tertiary business core or inner-city edge city; an outer edge city; outermost edge cities; and specialized concentrations.

2.7 Conceptual Framework

The conceptual framework shown below represents the conceptualized interaction among infrastructure development, participatory planning, legislative framework and environmental issues. Therefore the conceptual framework generally depicts the

influence of infrastructure development, participatory planning, legislative framework and environment on expansion of commercial building zones in Nairobi County.

Independent variables

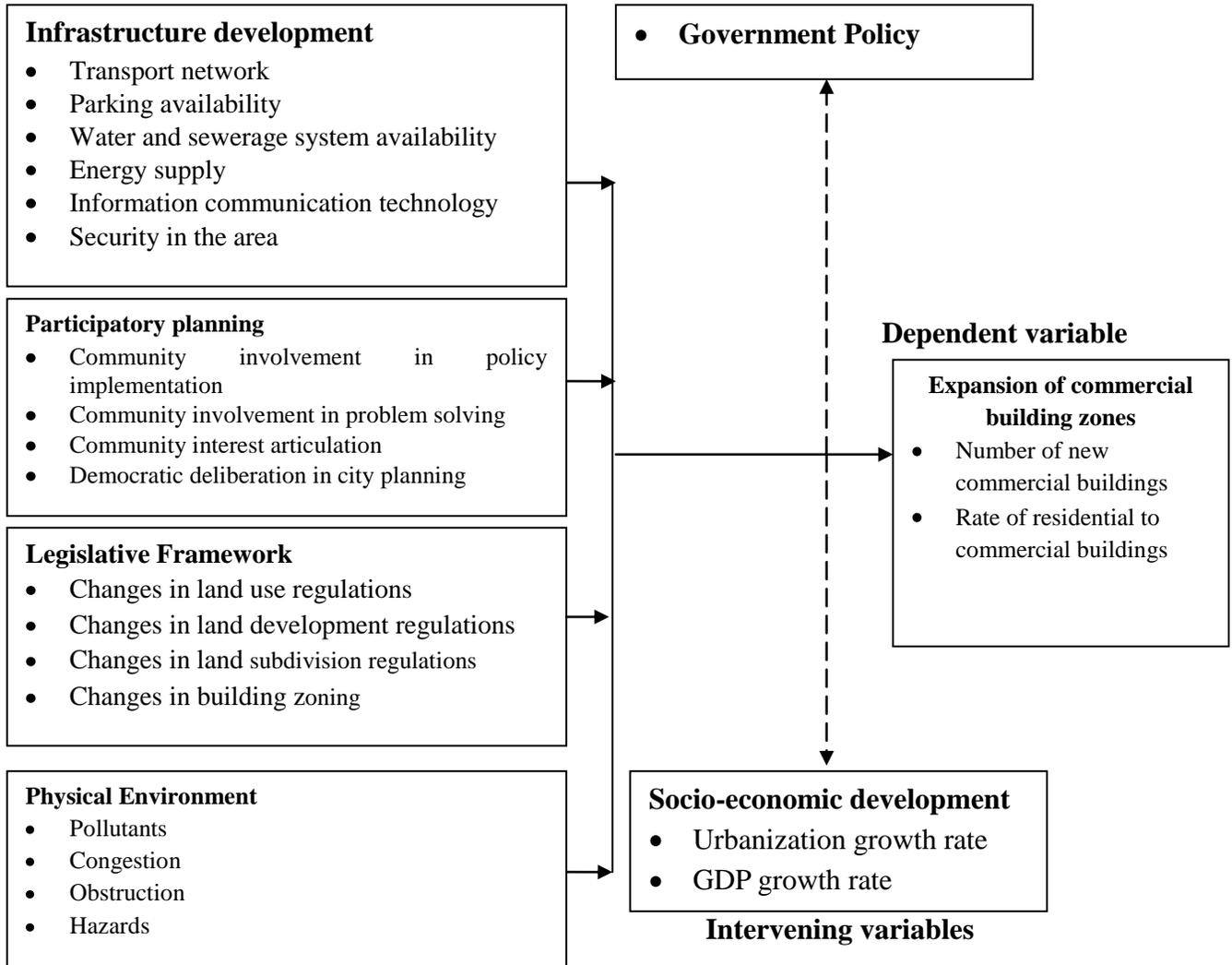


Figure 2. 1: Conceptual Framework

2.8 Explanation of Variables

In this study, there were five important elements of infrastructure development that could determine whether a city will expand or not. They include transport network, parking

availability, water and sewerage system availability, energy supply, information communication technology coverage and security situation in the area.

Participatory planning entails engaging all the stakeholders especially the community in policy implementation, problem solving, interest articulation and democratic deliberation of issues. Community involvement is expected to have an effect on commercial property development in the city.

The legal framework comprises of changes in rules and regulations governing land use, land development, land subdivision and zoning. These changes are expected to affect development of commercial buildings in the city.

The last variable is environmental issues which entail level of pollution, congestion, obstruction and hazardous activities taking place in an area. These elements of environment are expected to negatively affect development of commercial property in an area.

Expansion of commercial building zones was measured by the number of new commercial buildings as well as the rate at which residential buildings are converted to commercial buildings in an area. Socio-economic development is expected to have an intervening effect on the relationship between the determinants and expansion of commercial building zones. Urbanization and growth in GDP are expected to increase commercial building zones expansion in an area.

2.9 Gaps in Literature

Reviewed literature have concentrated on influence of infrastructure on economic development, poverty reduction and property prices (Anyanwu and Erhijakpor, 2010; Canning and Pedroni, 2008; Boucq and Stratec, 2011). Little has been done on role of infrastructure in commercial property growth or even expansion of commercial building zones. Growth in prices has been assumed to reflect growth and expansion but this could be erroneous.

Previous studies have approached elements of participatory planning in an isolated manner when these elements are interlinked (Innes and Booher, 1999; Hertting, 2009; Healey, 2006; Sellers and Lidstrom, 2007; Sorensen and Torfing, 2005; Young, 2000; Klijn and Skelcher, 2007). They include policy implementation, participation as functional problem solving, participation as interest articulation and participation as democratic deliberation. These elements of participatory approach as a determinant of commercial zones expansion require an integrated analysis.

Reviewed literature on legislative framework has been done in the context of the old constitution and has not factored in all the stakeholders in the legislative process. The voice of the citizenry and their role has also not been addressed. The review is concentrated on the planning failures rather than address property development holistically (Macharia, 2012). Literature on environment has focused on externalities that may make an area attractive for commercial property but approached them in isolation while giving them different terms (Friso de vo, 2012; Des Rosiers et al., 2009; Kutz, 2008; Carey, 2011).

2.10 Summary of Literature Review

The literature reviewed was based on the main themes of this study. It included literature on infrastructure and real estate (Anyanwu and Erhijakpor, 2010; Canning and Pedroni, 2008; Boucq and Stratec, 2011), participatory planning and real estate (Innes and Booher, 1999; Hertting, 2009; Healey, 2006; Sellers and Lidstrom, 2007; Sorensen and Torfing, 2005; Young, 2000; Klijn and Skelcher, 2007), legislative framework and real estate (Macharia, 2012) and finally environment and real estate (Friso de vo, 2012; Des Rosiers et al., 2009; Kutz, 2008; Carey, 2011). It has focused on establishing the role of each variable in property growth and expansion. The literature also reviewed theories that explain property growth and expansion with a focus on central business district. Polycentric city theory by Burgess was used to explain property expansion in central business district.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methods and procedures that were used to achieve the set objectives of the study. It comprises of research design, target population, sample size and sampling procedures, data collection instruments, data collection procedures, data analysis techniques, ethical considerations and operational definition of variables.

3.2 Research Design

Research design refers to the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in the procedure (Babbie, 2002). This study used descriptive survey research design. A descriptive survey research design is the most appropriate for investigating the determinants of commercial building zones expansion in Nairobi County, Kenya as this type of research design allows both quantitative and qualitative methods to be used.

3.3 Target Population

The target population for this study was architectural firms, registered estate agents and property developers within the four zones. There are 1200 architectural firms (Board of Registration of Architects and Quantity Surveyors), 330 registered estate agents (Estate Agents Board), and 107 property developers (Kenya Property Developers Association) in Nairobi County.

The following table shows target population of this study.

Table 3. 1: Target Population

Category	Population
Developers	107
Real Estate Agents	330
Architectural firms	1200
Total	1637

Source: Board of Registration of Architects and Quantity Surveyors, Estate Agents Board & Kenya Property Developers Association

3.4 Sample Size and Sampling Procedures

Sample is the portion of the study population that represents the whole. It is expected to have similar characteristics with the whole and findings in this sample are normally generalized to represent study population. Sampling procedure is the method of selecting individual respondents who will form the sample. This procedure is important and is expected to provide every potential respondent with an equal chance of being selected to participate in the study.

3.4.1 Sample Size

A guide of Nairobi County development ordinances and zones shows that there are 20 zones in Nairobi County. The sample for this study was determined using Fisher's formula $n = Z^2pq / d^2$,

Where:

n = required sample size

p= 1-q (variance expected in the responses assumed to be 50:50 proportion rate).

Z = Z score value at 95% confidence level (standard value of 1.96)

q = Estimated responses.

d = Level of precision or margin of error at +/-5% (standard value of 0.1).

$$n = \frac{Z^2 pq}{d^2} = \frac{1.96^2 (0.5 \times 0.5)}{0.05^2} = 384$$

3.4.2 Sampling Procedures

This study used proportionate stratified sampling to select a sample size of 384 respondents from 20 zones in Nairobi County. Developers, real estate agents and architectural firms formed the strata for proportionate stratified sampling in this study. The sample was drawn proportionately from each of these three strata. Purposive sampling was used in selecting the five (5) officials in the Nairobi County Department of Planning who were interviewed as key informants for this study.

The following table shows sampling matrix used in this study.

Table 3. 2: Sample

Category	Population	Sample	Methods of sampling
Architectural firms	1200	282	Proportionate Stratified
Developers	107	25	Proportionate Stratified
Real Estate Agents	330	77	Proportionate Stratified
Total	1637	384	

3.5 Data Collection Instruments

This study used a structured questionnaire and interview guide to collect data. The questionnaire had closed ended questions to allow standardization of responses and at the

same time gave respondents the opportunity to indicate their opinion on the phenomenon under study. It had six sections. The first section sought information on the background information of the respondents. The second, third, fourth and fifth sections sought information on infrastructure development, participatory planning, legislative framework and environmental issues respectively. The last section sought information on commercial building zones expansion in Nairobi County. Interview schedule was used to interview officials in the Nairobi County Department of Planning. Face-to-face interviews sought information on influence of infrastructure, participatory planning, legislative framework and physical environment on expansion of commercial building zones in Nairobi County.

3.5.1 Pilot Testing of the Instrument

A pilot study of 12 respondents was carried out before the main study. They comprised of 4 developers, 4 property managers/estate agents and 4 architectural firms in Kikuyu Town. Isaac and Michael (1995) who suggested that a pilot study should have 10–30 participants and Hill (1998) who also suggested that a pilot should have 10 to 30 participants for survey research are the basis the choice of 12 participants for the pilot study. These respondents did not take part in the main study to avoid chances of bias. They were selected using purposive sampling method. The aim of this pilot was to test the research instrument to be used in the main study.

3.5.2 Validity of the Instrument

Validity as noted by Robinson (2002) is the degree to which results obtained from the analysis of the data actually represents the phenomenon under study. Validity was ensured by having objective questions in the questionnaire. The validity of research instruments

used in the study was ensured by reviewing and discussing them with the supervisor. The supervisor was able to advice on the most appropriate indicators that could measure variables of the study.

3.5.3 Reliability of the Instrument

Mugenda and Mugenda (2003) asserted that, the accuracy of data to be collected largely depended on the data collection instruments in terms of reliability. Reliability is the degree to which a research instrument is consistent in capturing information on a phenomenon. This was achieved by pre-testing the instrument to be used to identify and change any ambiguous, awkward, or offensive questions and techniques as emphasized by Cooper and Schindler (2003). In this study, reliability was ensured through pilot testing of the research instruments and using Cronbach’s Alpha value to establish whether the research instrument is reliable or not. A Cronbach’s Alpha value of 0.7 and above is recommended for a reliable research instrument. In this study, a Cronbach’s Alpha value of 0.9 was obtained as shown in table 3.3. The research instrument was therefore reliable.

The following table presents reliability statistics results of this study.

Table 3. 3: Reliability Statistics Results

Cronbach's Alpha ^a	N of Items
.979	20

3.6 Data collection Procedures

The method of data collection used entailed both primary and secondary methods. Primary data was collected from developers, property managers/estate agents and

architectural firms in Nairobi County using questionnaires. The questionnaires were administered using drop-and-pick-later method. This method gave respondents ample time to fill their questionnaires. Face-to-face interviews method was used to collect data from NCC's Department of planning officials.

Secondary data was obtained from Government of Kenya publications such as the Annual Budget and Financial estimates, Central Bank of Kenya Annual report, Kenya Economic Survey and statistical abstracts by the Ministry of Land, Housing and Urban Development, Vision 2030, journals, published and unpublished research work, dissertations among others.

3.7 Data Analysis Techniques

The study had both quantitative and qualitative data. Quantitative data was analyzed using descriptive statistics. Descriptive statistics such as frequencies, percentages and mean scores were used to analyze quantitative data. Statistical Package for Social scientist (SPSS) was used as an aid in data analysis. Results of quantitative data analysis were presented in tables and charts.

Content analysis was used to analyze qualitative data. Responses from in the interviews were categorized based on emerging themes. The emerging themes were used to supplement quantitative data and make conclusions in the study.

3.8 Ethical Considerations

The researcher sought approval and obtained a research permit from National Commission for Science, Technology and Innovation (NACOSTI). The researcher also

sought informed consent from the respondents. The respondents were requested not to indicate any identifying information in the questionnaires that they were filling. Confidentiality was upheld throughout the study from data collection to reporting.

3.9 Operational definition of Variables

Variable	Type	Indicators	Type of analysis	Scale of measurement
Infrastructure development	Independent	<ul style="list-style-type: none"> • Transportation • Parking • Water and sanitation • Energy • Information communication technology • Security 	Descriptive statistics	<ul style="list-style-type: none"> • Percentage • Frequency
Participatory planning	Independent	<ul style="list-style-type: none"> • Policy implementation • Problem solving • Interest articulation • Democratic deliberation 	Descriptive statistics	<ul style="list-style-type: none"> • Percentage • Frequency
Legislative Framework	Independent	<ul style="list-style-type: none"> • Land use • Land development • Land subdivision • Zoning 	Descriptive statistics	<ul style="list-style-type: none"> • Percentage • Frequency
Environment		<ul style="list-style-type: none"> • Pollution • Congestion • Obstruction • Hazards 	Descriptive statistics	<ul style="list-style-type: none"> • Percentage • Frequency
Socio-economic development	Intervening	<ul style="list-style-type: none"> • Level of urbanization • Economic growth 	Descriptive statistics	<ul style="list-style-type: none"> • Percentage • Frequency
Expansion of commercial building zones	Dependent	<ul style="list-style-type: none"> • Commercial property growth • Rate of expansion of commercial property to residential zones 	Descriptive statistics Inferential statistics	<ul style="list-style-type: none"> • Percentage • Frequency

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

The researcher administered 384 questionnaires. A total of 344 questionnaires were filled and returned. This translates into a response rate of 89.6% which was considered adequate for analysis and conclusion. The response rate is shown in table 4.1.

This table shows the response rate in the study.

Table 4. 1: Response Rate

	Frequency	Percent
Filled questionnaires	344	89.6
Unfilled questionnaires	40	10.4
Total administered	384	100

4.2 Background Information

The researcher asked the respondents to indicate their gender. Majority of the respondents 83.7% were male as compared with 16.3% who were female. These results are shown in table 4.2.

This table shows the distribution of respondents by gender.

Table 4. 2: Respondents Distribution by Gender

	Frequency	Percent
Male	288	16.3
Female	56	83.7
Total	344	100

The respondents were asked to indicate their age bracket. The results show that 44.2% of the respondents were aged 26-35 years while 30.2% of the respondents were aged 36-45 years. Only 4.7% of the respondents were aged below 25 years while 20.9% were aged 46-55 years. These results are shown in table 4.3.

This table shows the distribution of respondents by age bracket.

Table 4. 3: Age Bracket

	Frequency	Percent
Below 25 years	16	4.7
26-35 years	152	44.2
36-45 years	104	30.2
46-55 years	72	20.9
Total	344	100.0

The researcher asked respondents to indicate their highest academic qualifications. The results in table 4.4 show that 44.2% of the respondents were graduates while 34.9% had post graduate qualifications. Respondents with diploma qualifications were 20.9%.

This table shows the distribution of respondents by highest academic qualifications.

Table 4. 4: Highest Academic Qualification

	Frequency	Percent
Diploma	72	20.9
Graduate degree	120	34.9
Post graduate degree	152	44.2
Total	344	100

The respondents were asked to indicate their occupation. Majority of the respondents (77.9%) were architects while 17.4% were real estate agents. Only 4.7% of the respondents were property developers. These results are summarized in table 4.5.

This table shows the distribution of respondents by occupation.

Table 4. 5: Occupation

	Frequency	Percent
Architect	268	77.9
Real Estate Agent	60	17.4
Property developer	16	4.7
Total	344	100.0

4.3 Infrastructure Development

The respondents were asked to rate infrastructure development in their zone. The results in table 4.6 show that information communication technology coverage (M=3.91, SD=.291) and energy supply (M=3.26, SD=.437) were rated as fair. Water and sewerage system availability (M=3.28, SD=.449) as well as transport network (M=3.19, SD=.657) and security in the area (M=3.30, SD=.460) were also rated as fair. Parking availability (M=2.33, SD=.770) was rated as poor.

This table shows the responses on infrastructure development aspects influencing expansion of commercial building zones in Nairobi.

Table 4. 6: Infrastructure Development Rating

	Very Poor		Poor		Fair		Good		Very good		N	Mean	Std. Deviation
	F	%	F	%	F	%	F	%	F	%			
Transport network in this zone	0	0	48	14	184	53.5	112	32.6	0	0	344	3.19	.657
Parking availability	48	14	152	44.2	128	37.2	16	4.7	0	0	344	2.33	.770
Water and sewerage system availability	0	0	0	0	248	72.1	96	27.9	0	0	344	3.28	.449
Energy supply	0	0	0	0	256	74.4	88	25.6	0	0	344	3.26	.437
Information communication technology coverage	0	0	0	0	32	9.3	312	90.7	0	0	344	3.91	.291
Security in the area	0	0	0	0	240	69.8	104	30.2	0	0	344	3.30	.460

The respondents were asked to describe infrastructure development in their zone. Some of the respondents described it as gradual and slow. They indicated that it has taken a lot of time for infrastructure development in their zone to take root. There were other respondents who indicated that infrastructure development in their zone was better but still below expectations for a commercial zone. Some respondents described infrastructure development in their zone as progressing. They indicated that there has been major strides in road infrastructure but less in energy and water system infrastructure.

The respondents were asked to indicate whether infrastructure development has influenced expansion of commercial buildings zones. The results in table 4.7 show that majority of the respondents (86%) indicated that infrastructure development has

influenced expansion of commercial buildings zones as compared to 14% of the respondents who indicated that it has not.

This table shows the responses on whether infrastructure development influences expansion of commercial building zones in Nairobi.

Table 4. 7: Infrastructure development and expansion of commercial buildings zones

	Frequency	Percent
Yes	296	86
No	48	14
Total	344	100.0

Respondents who indicated that infrastructure development has influenced expansion of commercial buildings zones were asked to explain how. Some respondents elaborated that as more infrastructure development takes place, more buildings are developed. Other respondents indicated that areas with better infrastructure have had rapid uptake of commercial developments. Some respondents noted that where bypasses have been built, there is more commercial activity and buildings coming up.

4.4 Participatory Planning

The respondents were asked to use a likert scale of 1-5 where 1 is ‘Not at all’, 2 is ‘Little extent’, 3 is ‘moderate extent’, 4 is ‘great extent’ and 5 is ‘very great extent’ to indicate the extent statements regarding participatory planning apply to their zones. The results show that to a moderate extent there is community involvement in problem solving (M=3.35, SD=.833). The results also show that to a little extent there was community involvement in policy implementation (M=2.53, SD=.500) and community interests are articulated (M=2.65, SD=.848). The findings show that to a little extent there is

democratic deliberation in city planning (M=2.67, SD=.983). Table 4.8 summarizes these results.

This table shows the responses on participatory planning aspects influencing expansion of commercial building zones in Nairobi.

Table 4. 8: Participatory Planning

	Not at all		Little extent		Moderate extent		Great extent		Very great		N	Mean	Std. Deviation
	F	%	F	%	F	%	F	%	F	%			
There is community involvement in policy implementation	0	0	160	46.5	184	53.5	0	0	0	0	344	2.53	.500
There is community involvement in problem solving	0	0	80	23.3	64	18.6	200	58.1	0	0	344	3.35	.833
Community interests are articulated	0	0	206	59.9	54	15.7	84	24.4	0	0	344	2.65	.848
There is democratic deliberation in city planning	56	16.3	72	20.9	144	41.9	72	20.9	0	0	344	2.67	.983

The respondents were asked to describe urban planning in their zone. Some respondents termed it as inadequate and reactionary while others described it as poor and not adhered to. Some of the respondents described urban planning as outdated and that it did not evolve with growth and expansion while others indicated that there is lack of a coherent vision on urban development goals.

The respondents were asked to indicate whether urban planning in their zone influenced expansion of commercial buildings zones. Majority of the respondents (81.4%) indicated

that urban planning in their zone influenced expansion of commercial buildings while 18.6% indicated that it does not. These findings are shown in table 4.9.

This table shows the responses on whether urban planning influences expansion of commercial building zones in Nairobi.

Table 4. 9: Urban Planning influencing Expansion of Commercial Buildings

	Frequency	Percent
Yes	280	81.4
No	64	18.6
Total	344	100.0

Those that indicated urban planning in their zone influenced expansion of commercial buildings zones were asked to explain how. Some of the respondents indicated that urban planning has both positive and negative aspects. Allowance of higher density is good for investors while proactive change in planning would encourage better developments. Some respondents noted that urban planning has not been adhered to since there are commercial buildings in residential areas and vice versa. Some respondents indicated that there is mismatch between planning regulations and market forces.

4.5 Legislative Framework and Regulations

The researcher sought to know the extent changes in legislative framework and regulations influenced development of commercial buildings in respondents' zones. The results show that to a great extent they led to changes in building zoning (M=4.24, SD=.648). Changes in land use regulations (M=3.65, SD=.713), changes in land development regulations (M=3.70, SD=.823) and changes in land subdivision regulations

(M=3.85, SD=.640) to a moderate extent influenced development of commercial buildings in respondents' zones. These results are shown in table 4.10.

This table shows the responses on legislative framework and regulations aspects influencing expansion of commercial building zones in Nairobi.

Table 4. 10: Legislative Framework and Regulations

Statement	Not at all		Little extent		Moderate extent		Great extent		Very great extent		N	Mean	Std. Deviation
	F	%	F	%	F	%	F	%	F	%			
	Changes in land use regulations	0	0	0	0	168	48.8	128	37.2	48			
Changes in land development regulations	0	0	0	0	184	53.5	80	23.3	80	23.3	344	3.70	.823
Changes in land subdivision regulations	0	0	0	0	98	28.5	194	56.4	48	14	340	3.85	.640
Changes in building zoning	0	0	2	.6	34	10	184	54.1	120	35.3	340	4.24	.648

The respondents were asked to show the effects of regulations or by laws on urban development in their zone. Some respondents indicated that they encouraged development of commercial buildings while others indicated that change of user regulations have led to more commercial buildings being built in residential zones as well as an increase in mixed-use developments. The respondents also indicated that regulations or by laws determine development that are permitted as well as the size and amenities that should be provided.

The respondents were asked to indicate whether regulations in their zone influenced expansion of commercial buildings zones. Majority of the respondents (95.3%) indicated

that regulations in their zone influenced expansion of commercial buildings while 4.7% of the respondents indicated that they do not. These findings are shown in table 4.11.

This table shows the responses on whether regulations influence expansion of commercial building zones in Nairobi.

Table 4. 11: Regulations influencing Expansion of Commercial Buildings

	Frequency	Percent
Yes	328	95.3
No	16	4.7
Total	344	100.0

The respondents who indicated that regulations in their zone influenced expansion of commercial buildings zones were asked to explain how it did so. Some respondents indicated that change of user has resulted in many residential areas being converted to commercial use. Others observed that plot sizes have been affected by roads allowances.

4.6 Physical Environment and Urban Development

The respondents were asked to rate the level of a number of issues regarding environment. The findings in table 4.12 show that pollution (M=3.70, SD=.460), congestion (M=3.21, SD=.407) and obstruction by other structures (M=3.81, SD=.446) were rated as moderate. Hazardous activities (M=2.72, SD=.623) were rated as low.

This table shows the responses on physical environment issues influencing expansion of commercial building zones in Nairobi.

Table 4. 12: Physical Environment Issues

Statement	Very low		Low		Moderate		High		Very high		N	Mean	Std. Deviation
	F	%	F	%	F	%	F	%	F	%			
Pollution	0	0	0	0	104	30.2	240	69.8	0	0	344	3.70	.460
Congestion	0	0	0	0	272	79.1	72	20.9	0	0	344	3.21	.407
Obstruction by other structures	0	0	8	2.3	48	14	288	83.7	0	0	344	3.81	.446
Hazardous activities	0	0	128	37.2	184	53.5	32	9.3	0	0	344	2.72	.623

Respondents were asked to indicate how environment affected urban development in their zones. Some of the respondents cited that presence of National Environment Management Authority (NEMA) has compelled developers to comply with sustainable development standards. Respondents also noted that there are persistent flooding problems as water and sewerage system infrastructure is not sufficient in some commercial zones.

The respondents were asked to indicate whether environment in their zone influenced expansion of commercial buildings zones. Majority of the respondents (97.7%) indicated that environment in their zone influenced expansion of commercial buildings while 2.3% indicated that it does not. Table 4.13 shows the results.

This table shows the responses on whether physical environment issues influence expansion of commercial building zones in Nairobi.

Table 4. 13: Physical Environment Issues and Expansion

	Frequency	Percent
Yes	336	97.7
No	8	2.3
Total	344	100.0

Respondents who indicated that environment in their zone influenced expansion of commercial buildings zones were asked to explain how it did that. Some of the respondents indicated that buildings that are detrimental to the environment are not approved and where they are approved, environmental problems such as flooding are experienced. Respondents also noted that environmental problems can only be avoided when environmental requirements are followed.

The researcher asked the respondents to indicate their agreement or disagreement with statements regarding expansion of commercial building zones. The results in table 4.14 show that to a great extent there are new commercial buildings in the area (M=4.33, SD=.770) and residential buildings have been converted to commercial buildings (M=4.26, SD=.811).

This table shows the responses on level of expansion of commercial building zones in Nairobi.

Table 4. 14: Expansion of Commercial Building Zones

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		N	Mean	Std. Deviation
	F	%	F	%	F	%	F	%	F	%			
There are new commercial buildings in the area	0	0	0	0	64	18.6	104	30.2	176	51.2	344	4.33	.770
Residential buildings have been converted to commercial buildings	0	0	0	0	80	23.3	96	27.9	168	48.8	344	4.26	.811

Respondents were asked to describe expansion of commercial buildings in their zone. Some respondents noted that many residential plots have been converted into commercial plots and commercial buildings developed while only a few residential buildings have been converted into commercial buildings. Other respondents observed that commercial buildings have popped up everywhere in Nairobi and that building zones are now blurred as one can find residential developments with commercial developments next door.

4.7 Correlation Analysis

A correlation analysis was done to establish the correlation of the independent variables infrastructure development, participatory planning, changes in legislative framework and physical environment and the dependent variable expansion of commercial building zones in Nairobi County, Kenya. The results are shown in table 4.15.

The following table presents the correlation analysis results of independent variables and dependent variables.

Table 4. 15: Correlation Analysis Results

		Infrastructure	Participatory planning	Changes in legislative framework	Physical Environment	Expansion of commercial building zones
Infrastructure	Pearson	1	.215**	.755**	.519**	.570**
	Correlation					
	Sig. (2-tailed)		.000	.000	.000	.000
	N	344	344	340	344	344
Participatory planning	Pearson	.215**	1	.678**	.799**	.764**
	Correlation					
	Sig. (2-tailed)	.000		.000	.000	.000
	N	344	344	340	344	344
Changes in legislative framework	Pearson	.755**	.678**	1	.613**	-.654**
	Correlation					
	Sig. (2-tailed)	.000	.000		.000	.000
	N	340	340	340	340	340
Physical Environment	Pearson	.519**	.799**	.613**	1	-.549**
	Correlation					
	Sig. (2-tailed)	.000	.000	.000		.000
	N	344	344	340	344	344
Expansion of commercial building zones	Pearson	.570**	.764**	-.654**	-.549**	1
	Correlation					
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	344	344	340	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

The results show that there was a positive strong correlation between infrastructure and expansion of commercial building zones in Nairobi County, Kenya ($r=.570$, $p=0.000$). This direct correlation implies that increased infrastructure development will lead to expansion of commercial building zones. The results also show that there was a positive strong correlation between participatory planning and expansion of commercial building

zones in Nairobi County, Kenya ($r=.764$, $p=0.000$). This direct correlation implies that increased participation by various stakeholders in urban planning will lead to expansion of commercial building zones. The study revealed a negative strong correlation between changes in legislative framework and expansion of commercial building zones in Nairobi County, Kenya ($r= -.654$, $p=0.000$). This inverse correlation implies that changes in legislative framework will slow expansion of commercial building zones in Nairobi County, Kenya. This study also established that there is a negative strong correlation between physical environment and expansion of commercial building zones in Nairobi County, Kenya ($r= -.549$, $p=0.000$). The inverse correlation implies that the more the congestion, obstruction and hazards an area is, the less the expansion of commercial building zones.

CHAPTER FIVE: SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter covers the summary of the findings, conclusions made from the findings and recommendations of the study. The summary of findings comprises of the key results in regards to influence of infrastructure, participatory planning, legislative framework and physical environment. The conclusions and recommendations are also based on the four themes of this study and dependent on the findings.

5.2 Summary of the Findings

This section presents a summary of key results in regards to influence of infrastructure and commercial building zones expansion, participatory planning and commercial building zones expansion, changes in regulations on commercial building zones expansion and physical environment on commercial building zones expansion.

5.2.1 Infrastructure and commercial building zones expansion

The study revealed that information communication technology coverage, energy supply, water and sewerage system availability, transport network and security in the area were found to be fair. However, parking availability was established to be poor. Infrastructure development was found to have influenced expansion of commercial buildings zones. Infrastructure development was found to be positively correlated to expansion of

commercial building zones ($r=.570$, $p=0.000$). Increased infrastructure development will lead to expansion of commercial building zones.

5.2.2 Participatory planning and commercial building zones expansion

The results of the study have shown that there was community involvement in problem solving as an element of participatory planning to a moderate extent. To a little extent, there was community involvement in policy implementation, community interests were articulated and there was democratic deliberation in city planning as elements of participatory planning. Urban planning was found to influence expansion of commercial buildings in Nairobi County. The study established that there was a positive strong correlation between participatory planning and expansion of commercial building zones in Nairobi County, Kenya ($r=.764$, $p=0.000$). Increased participation by various stakeholders in urban planning will lead to expansion of commercial building zones.

5.2.3 Changes in regulations on commercial building zones expansion

The findings of this study have shown that changes in legislative framework and regulations influenced development of commercial buildings. To a great extent changes in legislative framework and regulations were found to have led to changes in building zoning. These changes also to a moderate extent led to changes in land use regulations, land development regulations and land subdivision regulations. This study revealed that there was a negative strong correlation between changes in legislative framework and expansion of commercial building zones in Nairobi County, Kenya ($r= -.654$, $p=0.000$).

Changes in legislative framework will slow expansion of commercial building zones in Nairobi County, Kenya.

5.2.4 Physical Environment on commercial building zones expansion

Results on issues regarding the environment have shown that pollution, congestion and obstruction by other structures were moderate while hazardous activities were found to be low. Environmental issues were found to have influenced expansion of commercial buildings in Nairobi County. The study revealed that there is expansion of commercial building zones. Residential buildings being converted to commercial buildings and new commercial buildings illustrated this expansion. This study established that there is a negative strong correlation between physical environment and expansion of commercial building zones in Nairobi County, Kenya ($r = -.549$, $p = 0.000$). The more the congestion, obstruction and hazards an area is, the less the expansion of commercial building zones.

5.4 Discussion

The findings of this study show that infrastructure in form of information communication technology coverage, energy supply, water and sewerage system availability, transport network and security influence expansion of commercial buildings zones. These findings are in agreement with Ajibola et al. (2010) who observed that infrastructure has both direct and indirect influence on trade and investments. Adebayo (2012) also appreciates the role of infrastructure in urban development as he noted that one of the determinants of the property values is infrastructural facilities.

The findings of the study have shown that participatory urban planning influence expansion of commercial buildings in Nairobi County. Participation of different actors affected by urban development is therefore important. These observations are in line with those by Healey (2006) who argued that the value of participation lies in the construction of a shared position, overcoming special interests, through reflection on different positions and policies. The findings also agree with perspectives by Sellers and Lidstrom (2007) who view participation in planning as organizing a process for debate amongst affected actors, which is expected to initiate deliberative and participative notions of planning hence driving different types of citizen groups into agreement.

The findings of this study have shown that changes in legislative framework and regulations influenced development of commercial buildings. To a great extent changes in legislative framework and regulations were found to have led to changes in building zoning. These changes also to a moderate extent led to changes in land use regulations, land development regulations and land subdivision regulations. The findings show that weak urban governance and management frameworks are likely to negatively affect commercial development. These results are congruent to observations by Macharia (2012) who lamented about the multiplicity of parallel agencies involved in urban areas governance. The findings also contrasts worries by Mwathane (2009) that many property transactions could be taking place in the informal market.

Results on issues regarding the environment have shown that pollution, congestion and obstruction by other structures were moderate while hazardous activities were found to be low. Environmental issues were found to have influenced expansion of commercial

buildings in Nairobi County. The study revealed that there is expansion of commercial building zones. Residential buildings being converted to commercial buildings and new commercial buildings coming up illustrated this expansion. The findings of this study are in agreement with observations by Des Rosiers et al (2009) that externalities linked to water supply and quality problems in a given neighborhood adversely affect property values in a location. The findings are also congruent with those of Friso de vo (2012) who established that industrial sites may cause several negative externalities, such as noise, air, water and soil pollution, congestion and obstruction of view hence reducing value of property value. The adverse effect of pollution may diminish with distance resulting to increased property values in their direct vicinity. Development projects also may cause pollution. This is in line with observations by Kutz (2008) who indicated that development projects influence local bio-diversity. Environmental attributes affect real estate values and these findings confirms observations by Carey (2011) that vital environmental considerations including open space, nuisances, hazards emanating from nearby facilities such as shopping centers, factories, and schools affect property values.

5.4 Conclusions

This study concluded that infrastructure development is a determinant of commercial buildings zones expansion in Nairobi County. Elements of infrastructure development that determine expansion of commercial building zones in Nairobi County include information communication technology coverage, energy supply, water and sewerage system availability, transport network and security. Parking availability is also an element of infrastructure development but it is poor in Nairobi County.

This study concluded that participatory planning is a determinant of commercial buildings zones expansion in Nairobi County. Elements of participatory planning that influence commercial buildings zones expansion in Nairobi County include community involvement in problem solving, community involvement in policy implementation, articulation of community interests and democratic deliberation in city planning.

This study concluded that changes in legislative framework and regulations are determinants of commercial buildings zones expansion in Nairobi County. Changes in legislative framework and regulations influence building zoning, land use regulations, land development regulations and land subdivision regulations.

This study concluded that environmental issues in urban development are determinants of commercial buildings zones expansion in Nairobi County. The elements of environmental issues that influence commercial buildings zones expansion in Nairobi County include pollution, congestion and obstruction by other structures.

5.5 Recommendations

This study recommends that:

1. The National government of Kenya and Nairobi County government should ensure that there is infrastructure development according to needs in the city to support commercial buildings zones expansion in Nairobi County. Infrastructure development will make Nairobi County attractive for business hence increasing commercial buildings zones expansion.

2. Nairobi County should embrace participatory planning in urban development. This will ensure that all the stakeholders' interests are taken into consideration.

3. Kenyan parliament and the Ministry of Land, Housing and Urban development should ensure that laws and regulations in place adequately meet and serve commercial buildings zones expansion in Nairobi County. Changes in these laws and regulations should be done with caution as they influence many elements of land use, development and subdivisions hence significantly influencing commercial buildings zones expansion in Nairobi County.

4. National Environment Management Authority should have clear guidelines to address environmental issues influencing commercial buildings zones expansion in Nairobi County such as pollution, congestion and obstruction by other structures.

5.6 Suggestions for Further Research

This study recommends further research in the following areas:

1. Future studies should investigate infrastructure development elements hindering commercial buildings zones expansion in Nairobi County.
2. Further studies should be carried out to find out ways of engaging stakeholders in participatory planning for urban development.
3. This study recommends that scholars should develop a framework for making laws and regulations to govern commercial buildings zones expansion in cities such as Nairobi City County.

4. Future scholars should conduct research on the impact of environmental issues on commercial buildings zones expansion in cities.

REFERENCES

- Adebayo, M. A. (2006). The state of urban infrastructure and its effects on property values in Lagos, Nigeria. *Journal of Land Use and Development Studies*, 2(1).
- Ajibola, M.O., Awodiran, O.O., & Salu-Kosoko, O. (2013). Effects of infrastructure on property values in Unity estate, Lagos, Nigeria. *International Journal of Economy, Management and Social Sciences*, 2(5), pp. 195-201.
- Anyanwu, J., & Erhijakpor, A.E.O. (2010). Do international remittances affect poverty in Africa? *African Development Review*, 22(1), pp. 51-91.
- Boon, F.N. and Higgins, D. (2007). Modeling the Commercial Property Market: An Empirical Study of the Singapore Office Market, *Pacific Rim Property Research Journal*, 13(2): 176-193.
- Boucq, E., & Stratec, S.A. (2011). Estimating the impact on housing prices brought by a light rail infrastructure in France. *Association for European Transport and Contributors*.
- Canning, D., & Pedroni, P. (2008). Infrastructure, long-run economic growth and causality tests for co-integrated panels, *Blackwell Publishing Ltd and The Manchester School*, 76(5).
- Corgel, J.B., Smith, H.C. and Ling, D. H. (2000). *Real Estate Perspectives: An Introduction to Real Estate*, 4th Ed., New York: McGraw-Hill.

- Friso de vo. (2012). The impact of industrial sites on residential property values. *Journal on Real Estates*. University Of Amsterdam.
- Gallimore P., Fletcher M., & Carter M. (2011). Modelling the influence of location on value. *Journal of Property Valuation & Investment*, 14 (1), pp. 6-19.
- Hammer, L., Booth, D., & Love, H.E. (2000). *Poverty and transport*. A Report prepared for the World Bank in collaboration with DFID, Overseas Development Institute.
- Healey, P (2006). *Collaborative planning: shaping places in fragmented societies* *Collaborative Planning*. Basingstoke: Palgrave Macmillan.
- Hertting, N (2009). Neighborhood network governance, ethnic organization, and the prospects for political integration. *Journal of Housing and the Built Environment*, 24:1.
- Hoesli, M. and MacGregor, B. (2000). *Property Investment: Principles and Practice of Portfolio Management*. London: Pearson Education Ltd.
- Innes, J.E. & D.E. Booher (1999). Consensus building and complex adaptive systems. A framework for evaluating collaborative planning, *American Planning Association Journal*, 65:4.
- John, H. (1998). Transport investment and house prices. *Journal of Property Valuation and Investment*, 16 (2), pp.144 – 158.

- Karakozova, O. (2005). *Modeling and Forecasting Property Rents and Returns*, Helsinki: Swedish School of Economics and Business Administration.
- Ki, L., & Jaynatha, S. (2010). The effects of urban redevelopment on neighborhood housing prices. www.lagosstate.gov.ng/web/ppp/home.
- Klijn, E H & Skelcher, C K (2007). Democracy and governance networks: compatible or not? Four conjectures and their implications, *Public Administration*, 85:3.
- Kutz, M. (2008). *Environmentally conscious transportation*. Vol. 1. John Wiley and Sons Inc. New Jersey, USA.
- Macharia, E. (2012). Managing Expansion of Commercial Districts for Sustainable Development: A Case Study of Upper Hill Area in Nairobi, Kenya. FIG Working Week 2012, Knowing to manage the territory, protect the environment, evaluate the cultural heritage. Rome, Italy, 6-10 May 2012.
- Mallios, L. (2009). Spatial hedonic pricing model for valuation on irrigation water. *Global Nest Journal*, pp. 575-582.
- Millington, A. (2005). *Introduction to property valuation*. 5th Ed. The Estate Gazette. London.
- NIESV (2013). Investment Property Databank, Abuja: The Nigerian Institution of Estate Surveyors and Valuers.

- Nubi, T.O. (2003). *Procuring, Managing and Financing Urban Infrastructure: Towards an Integrated Approach*. Land Management and Property Tax Reform in Nigeria, in `Omirin et al. (ed.) Department of Estate Management, University of Lagos, Akoka.
- Olusegun, G. K. (2003). *Principles and practice of property valuation*. (Volume One: General Principles). Climax Communications Limited, Lagos.
- Scott, P. and Judge, G. (2000). Cycles and Steps in British Commercial Property Values. *Applied Economics*, 32: 1287-1297.
- Sellers, J & Lidström, A (2007). Decentralization, Local Government and the Welfare State, *Governance*, 20:4.
- Sorensen, E & Torfing, J. (2005). The Democratic Anchorage of Governance Networks, *Scandinavian Political Studies*, 28:3.
- Stern, N. (1991). The determinants of growth. *Economic Journal*, 101 (404), pp.122–133.
- UN report (2012). Sustainable Development in Kenya: Stocktaking in the run up to Rio+20. <https://sustainabledevelopment.un.org/content/documents/985kenya.pdf>
- Young, M (2000). *Inclusion and Democracy*. Oxford: Oxford University Press.

APPENDICES

Appendix I: Letter of Introduction

Dear Respondent,

RE: Data Collection on MA Project

I am a Masters student at the University of Nairobi and in my final year of study. As part of the requirement for graduation, I am undertaking a research to establish “Determinants of Commercial Building Zones Expansion in Nairobi County, Kenya”.

In this regard, I am kindly requesting for your support by responding to the attached questionnaire. Your accuracy and candid response will be critical in ensuring objective research. It will not be necessary to write your name on this questionnaire and for your comfort, all information received will be treated in strict confidence. In addition, the findings of the study will solely be used for academic research purposes and to enhance knowledge in the field of project planning and management. Thank you.

Yours faithfully

BERNARD ONGOLAH KOBIA

L50/77930/2015

Real Estate Agent []

Property developer []

Any other (specify)

Section B: Infrastructure development in this zone

5. How would you rate the following?

Statement	Very poor	Poor	Fair	Good	Excellent
Transport network in this zone					
Parking availability					
Water and sewerage system availability					
Energy supply					
Information communication technology coverage					
Security in the area					

6. How would you describe infrastructure development in this zone?

.....
.....

7. Has infrastructure development in this zone influenced expansion of commercial buildings?

Yes [] No []

8. If yes above, explain how?

.....
.....

Section C: Participatory planning in this Zone

9. To what extent do the following statements apply to this zone?

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent
There is community involvement in policy implementation					

There is community involvement in problem solving					
Community interests are articulated					
There is democratic deliberation in city planning					

10. How would you describe urban planning in this zone?

.....

11. Has urban planning in this zone influenced expansion of commercial buildings?

Yes [] No []

12. If yes above, explain how?

.....

Section D: Legislative Framework

13. To what extent have the following changes influenced development of commercial buildings in this zone?

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent
Changes in land use regulations					
Changes in land development regulations					
Changes in land subdivision regulations					
Changes in building zoning					

14. What are the effects of regulations or by laws on urban development in this zone?

.....

15. Have regulations in this zone influenced expansion of commercial buildings?

Yes [] No []

16. If yes above, explain how?

.....

Section E: Environment in this Zone

17. How would you rate the following in this zone?

Statement	Very low	Low	Moderate	High	Very high
Pollution					
Congestion					
Obstruction by other structures					
Hazardous activities					

18. How has environment affected urban development in this zone?

.....

19. Has environment in this zone influenced expansion of commercial buildings?

Yes [] No []

20. If yes above, explain how?

.....

Section F: Expansion of commercial building zones

21. What is your agreement or disagreement with the following statements regarding this zone?

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
There are new commercial buildings in the area					
Residential buildings have been converted to commercial buildings					

22. How would you describe expansion of commercial buildings in this zone?

.....

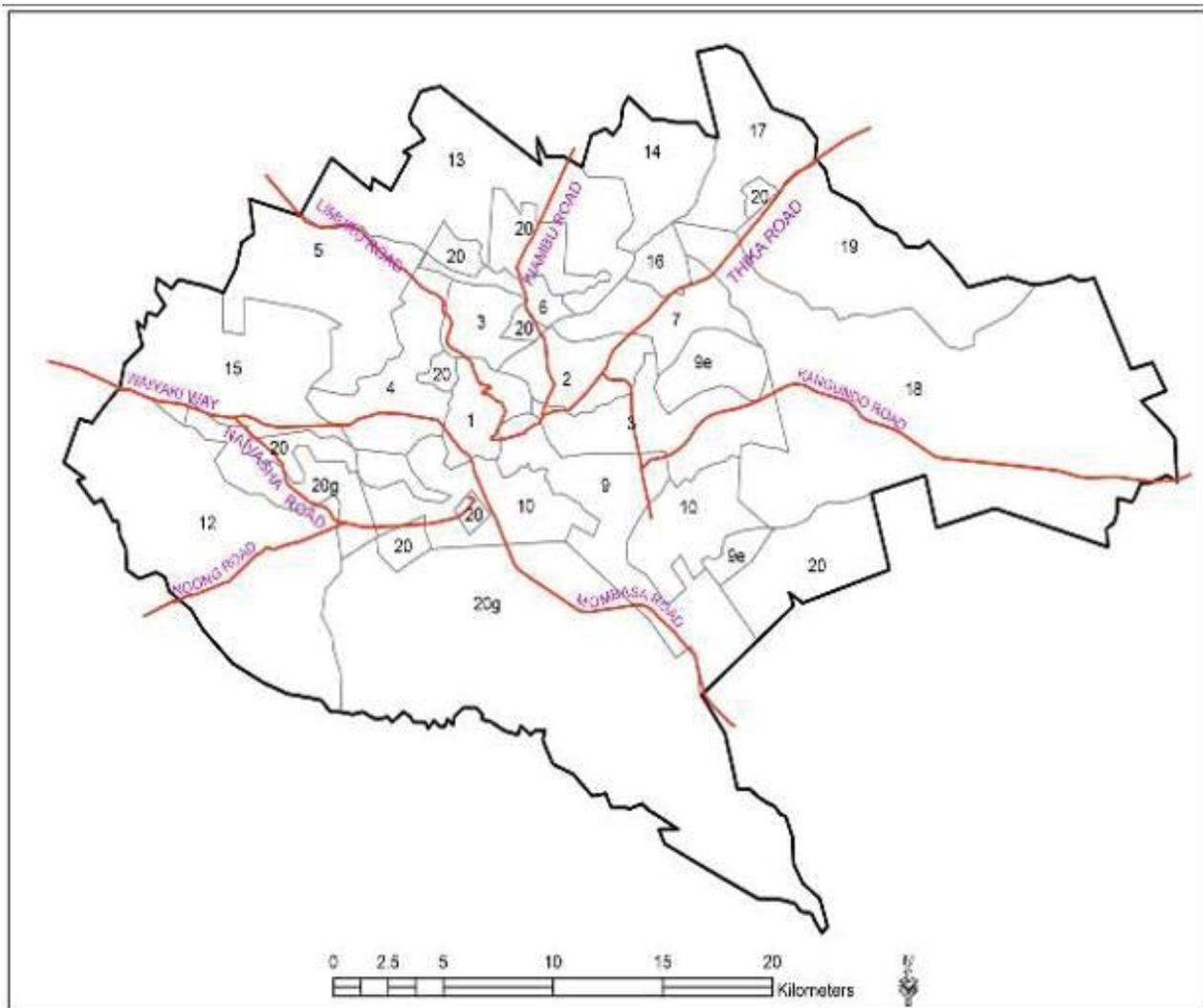
Appendix III: Interview Guide for Key Informants

1. How would you describe transport network in the area?
2. How is parking availability in this area?
3. How would you describe water and sewerage system availability in this area?
4. Is the energy supply sufficient for business in this area?
5. How would you describe information communication technology coverage in this area?
6. How would you rate security in this area?
7. Is there community involvement in policy implementation?
8. Is there community involvement in problem solving?
9. To what extents are community interests are articulated?
10. Is there democratic deliberation in city planning?
11. How have the following changes affected development of commercial buildings in this area?
 - Changes in land use regulations
 - Changes in land development regulations
 - Changes in land subdivision regulations
 - Changes in building zoning
12. How would you rate the following in this area?
 - Pollution
 - Congestion
 - Obstruction by other structures
 - Hazardous activities in the area
13. How would you describe the rate new commercial buildings have been developed in this area?
14. How would you describe the rate of conversion of residential buildings to commercial buildings in this area?

Appendix IV: Observation Schedule

Observation	Remarks
Transport network	
Parking availability	
Water and sewerage system	
Energy supply	
Security	
Pollution	
Congestion	
New commercial buildings in the area	
Obstruction by other structures	
Hazardous activities in the area	
Residential buildings being converted to commercial buildings	

Appendix V: Zoning Map



Zoning map - source Nairobi City Council Planning Department

Key:

Zone 1- CBD and Upper Hill

Zone 2- Eastleigh, Pumwani Carlifonia and Ziwani

Zone 3- Parklands and Westlands

Zone 4- Spring Valley, Riverside, Kileleshwa, Kilimani and Woodley

Appendix VI: University Authorization Letter



UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES
NAIROBI EMC

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
NAIROBI

16th June 2016

REF: UON/CEES/SCDE/DEMS/NEMC/23/410

TO WHOM IT MAY CONCERN

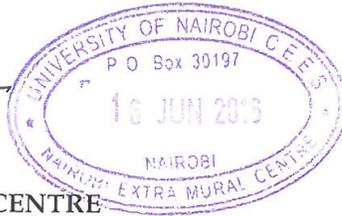
RE: BERNARD ONGOLAH KOBIA – REG.NO. L50/77930/2015

This is to confirm that the above named is a student at the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Department of Extra- Mural Studies pursuing Master of Arts in Project Planning and Management

He is proceeding for research entitled “**determinants of commercial building zones expansion in Nairobi County, Kenya**”.

Any assistance given to him will be appreciated.

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EXTRA-MURAL CENTRE



Appendix VII: NACOSTI Letter



**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349,3310571,2219420
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No.

Date:

NACOSTI/P/16/31322/12050

28th June, 2016

Bernard Ongolah Kobia
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Determinants of commercial building zones expansion in Nairobi County Kenya,”* I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **27th June, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

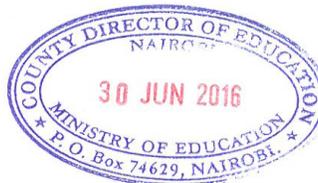
**BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner
Nairobi County.

**COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666**

The County Director of Education
Nairobi County.



National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified

Appendix VIII: The Research Permit

THIS IS TO CERTIFY THAT:
MR. BERNARD ONGOLAH KOBIA
of UNIVERSITY OF NAIROBI, 48596-100
NAIROBI, has been permitted to conduct
research in *Nairobi County*

Permit No : NACOSTI/P/16/31322/12050
Date Of Issue : 28th June, 2016
Fee Received : Ksh 1000

on the topic: **DETERMINANTS OF
COMMERCIAL BUILDING ZONES
EXPANSION IN NAIROBI COUNTY KENYA**

for the period ending:
27th June, 2017



.....
*Applicant's
Signature*

[Signature]
.....
**Director General
National Commission for Science,
Technology & Innovation**

CONDITIONS

You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit. Government Officers will not be interviewed without prior appointment. No questionnaire will be used unless it has been approved. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice



REPUBLIC OF KENYA



National Commission for Science,
Technology and Innovation

**RESEARCH CLEARANCE
PERMIT**

Serial No. A

CONDITIONS: see back page