INFLUENCE OF SUBURBANISATION ON REAL ESTATE MARKET PERFORMANCE IN SATELLITE TOWNS IN KENYA: A CASE OF KIAMBU TOWN

BY

NJUGUNA LEAH WAMBUI

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DECLARATION

This research project report is my original work and has not been submitted either wholly or in part to this University or any other institution of higher learning for the award of degree or diploma.

Sign…………………………………   Date ………………………

Njuguna Leah

L50/70821/2011

This research project report has been submitted for examination with my approval as the University supervisor.

Sign ………………………….   Date ……………………

Dr. Harriet Kidombo

Senior lecturer,

School of Continuing and Distance Education

University of Nairobi.

DEDICATION

This research project is dedicated to my loving husband Franc and daughter Elaine, for being the source of my encouragement and support throughout the period of writing it. Thank you and God bless you abundantly.

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My sincere thanks go to Dr. Harriet Kidombo who supervised the entire research project report, always ready to offer positive criticism on each chapter of the project. Special thanks to Mr. Michael Musyoka for according me guidance on this research project report. I thank all the lecturers through whose hands I have passed in my academic journey, for helping me gain and build on knowledge gained.

It has been an exciting and instructive study period in the University of Nairobi and I feel privileged to have had the opportunity to carry out this study as a demonstration of knowledge gained during the period of studying for my Master of Arts degree. I appreciate the opportunity given to me by this institution of higher learning. With these acknowledgments, it would be impossible not to remember my fellow colleagues with whom we have worked together to make this journey a success.

Finally, I take this opportunity to express my deep gratitude to the lasting memory of my loving family and friends who are a constant source of motivation and for their never ending support and encouragement during writing of this research project report. To all those who in one way or another, directly or indirectly played a role in the realization of this research project report; I thank you all equally. God bless you all.

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ABBREVIATIONS AND ACRONYMS

KLC   Kenya Land Commission

LIMS   Land Information Management System

LRA   Land Registration Act

UN   United Nations

USA   United States of America

REMK   Real Estate Market

CBD   Central Business District

PSV   Public Service Vehicles

ABSTRACT

This research project report is a study of how suburbanisation influences the performance of real estate market within satellite towns in Kenya. This is through the study of how four components of suburbanisation namely land use patterns, land values, cost of housing and road infrastructure influences the real estate market. Kiambu town, which has experienced an increase in real estate activities in the recent past, has been used as a case. The objective of the study was to investigate the influence of suburbanisation of satellite towns on the real estate market. The research project report gives a background on suburbanisation with its purpose being to find out the influence of suburbanisation on the performance of the real estate market through change of land values, land use, cost of housing and road infrastructure. The major significance of this study to the stakeholders is to help in making decision related to investment in real estate in the suburbanising satellite towns. The study covers Kiambu town, which is the headquarters of Kiambu County.The project looks into the concept of suburbanisation and is guided by the ecological approach and the sociologists' theory of suburbanisation. The methodology of the research used is descriptive survey research design with registered valuers, estate agents, government land valuers in the Ministry of Lands offices in Kiambu, the town planner in Kiambu as well as residents of Kiambu Town being the target population. Purposive sampling technique was used with both primary and secondary instruments data sources, which were piloted before the actual data collection. The primary sources included interviews and questionnaires, while the analysis and review of books, journals, magazines and reports of various authorities formed the core of secondary data. Raw data was collected and the researcher pre-processed it to eliminate unwanted and unusable data which could have been contradictory or ambiguous, developed a coding scheme by creating codes from the responses which was then summarized and analysed using Statistical Package of Social Science (SPSS). The data was analysed in descriptive perspectives and a summary of findings given. The research found that as components of suburbanisation; land use, land values, cost of housing and road infrastructure development affect the performance of the real estate market positively. The increase/ growth of these components lead to a vibrant market with increased transactions. Cost of housing was indicated as the one with a highest influence by 37.2% of the respondents, followed by land values at 20.4%, road infrastructure at 16.8% and finally changes in land use by 15.9%. In conclusion, the research found that these four components influence demand, a major aspect that drives the real estate market performance. The study recommends the development of an Integrated Development Plan to address the issues of zoning for different land use to harmonize the different land users, and to also specifically cater for agricultural land use which is under threat from residential land use. This will also act as a regulation to the market. It also recommends proper planning and opening up of areas by road networks.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The study sought to establish the influence of suburbanisation on the performance of real estate market. It set out to establish how suburbanisation has influenced the performance of real estate market in the satellite towns of Nairobi City, using Kiambu Town, which is the headquarters of Kiambu County, as the area of study.

Suburbanisation is the growth of areas on the fringes of cities. Many residents of metropolitan regions work within the central urban area, and choose to live in satellite communities called suburbs and commute to work via automobile or mass transit. Others have taken advantage of technological advances to work from their homes. These processes often occur in more economically developed countries, especially in the United states which is believed to be the first country in which the majority of the population lives in the suburbs, rather than in the cities or in rural areas as cited by Wiese, (2004)

According to Kolb (2008), suburbanisation can be linked to a number of different push and pull factors. Push factors include the congestion and population density of the cities, pollution caused by industry and high levels of traffic and a general perception of a lower quality of life in inner city areas. Pull factors include more open spaces and a perception of being closer to "nature", lower suburban house prices and property taxes in comparison to the city, and the increasing number of job opportunities in the suburban areas. Swanson (2009) further notes that improvements in transportation infrastructure encourage suburbanisation, as people become increasingly able to live in a suburb and commute into the nearby town or city to work. Developments in railways, bus routes and roads are the main improvements that make suburbanisation more practical. The increase in the number and size of highways is a particularly significant part of this effect.

Government policies can have a significant effect on the process. In the United States, for instance, policies of the Federal government in the post-World War II era, such as the building of an efficient network of roads, highways and superhighways, and the underwriting of mortgages for suburban one-family homes, had an enormous influence on the pace of

suburbanisation in that country. In effect, the government was encouraging the transfer of the middle-class population out of the inner cities and into the suburbs, sometimes with devastating effects on the viability of the city centres as stated by Wiewel et al (1989).

However, some argue that the effect of Interstate Highway Systems on suburbanisation is overstated. Researchers of this vein believe city centre populations would have declined even in the absence of highway systems, contending that suburbanisation is a long-standing and almost universal process. They primarily argue that as incomes rise, most people want the range and choice offered by automobiles. In addition, there is no significant evidence directly linking the development of highway systems to declining urban populations as noted by Cox et al (2008).

In Sweden, there has been a pressure on housing in the suburb areas resulting from population working in metropolis who look for housing outside the metropolis areas but within commuter distance. Majority of these people are between 30 and 64 years of age. (Gallent et al, 2003). Further, holiday homes are portrayed as a key issue in Sweden country side and this has led to increase in values of the real estate market. The agricultural country side and coastal communities have transited to recreational landscape.

The Dutch countryside has been transformed from an agricultural hub to one dominated by multifunctional activities and described as post-modern. Rural and suburb areas by their virtue of not being urban are in high demand and more so for housing purposes as noted by Van Dam and Buckers, (1998) cited in (Gallent et al, 2003). Netherlands has however sought to put a cap on suburbanisation and house building, despite suburbanisation being viewed as an economically rewarding venture.

African countries have not been spared from the influence of suburbanisation on the real estate market. The fast population growth in the suburbs is taking a toll on the land and is increasingly redefining the land use (Mataen 2012). Initially, the human settlement were as per a clan or extended family leaving large tracts for agricultural use, but today the concept of single family dwellings have taken effect leading to land subdivisions and growth of the built environment. Rwanda, Burundi and Nigeria have all undergone this metamorphosis in the recent past, and the trend is still continuing. In Burundi, even though the rate of suburbanisation is at 10%, the land pressure effect is already so high with land being subdivided to small portions the size of commercial plots, of which dwellings occupy not less than half the area of these plots.

In Kenya, suburbanisation has been happening and with an accelerated rate in the recent past. A classic case is that of areas, especially satellite towns, neighbouring Nairobi City Centre which have been undergoing the process of suburbanisation. Satellite towns such as Kiambu, Kitengela and Rongai have been undergoing change in the real estate market as population moves to these areas, a big percentage of this population being people who commute to work in the City. Kitengela for example, is undergoing a transformation from an agricultural area well known for livestock rearing to a residential estate and a business hub with facilities such as banks and hospitals being attracted to the area in the recent past. This has changed the face of the area and has brought with it the emergence of a highly developing town and a suburb area. Kiambu is another example where the process of suburbanisation is taking place. Mwololo (2013) notes that Kiambu County is well endowed with huge resources from rich agricultural land to industries, and most recently a real estate property boom. The infrastructure development especially the Northern bypass and Thika superhighway are, according to Mwololo, among the reasons why there has been a boom in the real estate coupled with migration of middle class people working in Nairobi, to this County. Recently constructed gated communities like Eden Ville and Four Way Junction on Kiambu road are an indicator of the real estate boom. The demand for rental units has reached an all-time high in this area. Not to mention Tatu City which is expected to be home to an estimated number of sixty two thousand residents. Mwololo further notes that this boom in real estate has eaten on land that was previously agricultural.

Suburbanisation tends to change the face of an area as the land use changes, mostly from agricultural to residential and/or commercial. This is the case with Kiambu where about ten years back the area was agricultural but now its face is changing to commercial/ residential. It leads to change in land values and cost of housing as well as infrastructure all of which influence the real estate market performance. This study has been inspired by these happenings to try and understand the influence of suburbanisation on the real estate market performance, especially in the satellite towns.

Kiambu Town is the head quarter of Kiambu County, an administrative county in Central Kenya (what was formerly known as Central Province) that covers eight constituencies namely Githunguri, Gatundu North, Gatundu South, Limuru, Lari, Juja, Kiambaa and Kabete. The County borders Murang'a County to the North and North East,

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Machakos County to the East, Nairobi and Kajiado counties to the South, Nakuru County to the West, and Nyandarua County to the North West. The county has a population of 1,623,282 and an area of 2,449.2 km² (Kenya National Bureau of statistics, 2012). Kiambu town is located 22 kilometres from Nairobi and its population density is relatively increasing due to the influx of residents. In terms of weather/climate the temperatures range from a minimum of 12.8°C to a maximum of 24.6°C with an average of 18.7°C. The average rainfall is 989mm per annum as per the Municipal council of Limuru (2012).

1.2 Statement of the Problem

Satellite towns or cities is a concept in urban planning that refers essentially to smaller metropolitan areas which are located somewhat near to larger metropolitan areas as discussed by Allison & Peters (2011). The aim of such a township is to develop one large self-sustaining unit in which all the needs of its inhabitants are met. This is an old concept with cities such as Shanghai in China developing their satellite cities in the 1840's. According to Pacione (1981), satellite towns such as Minhang, the first in China, were introduced to ease congestion in the city centre. This has become a world-wide trend with many countries introducing satellite towns away from the cities. The optimal range for the towns is between 20 to 70 kilometres from the cities as set by the Chinese. This was so as to avoid the subsequent absorption of the Satellite towns by the cities. These satellite towns are found to suburbanise with time.

Kenya is no exemption from this phenomenon. Satellite towns like Kiambu, Kitengela and Ngong towns have been suburbanising at different rates, with the most noticeable being Kitengela and Kiambu. Ten years ago, Kiambu was agricultural zone with green lush vegetation of coffee and tea plantations, a scenario that has started to change, with the coming of suburbanisation. As the Canadian Urban Institute (2001:5) puts it, suburbanisation is the spreading out of a city and suburbs over rural land, which comes with positive and negative effects. Considering that early development plans had not envisaged such a move where an area would change from agricultural to a commercial cum residential hub, as Ongolla (1989) notes, Kiambu is therefore faced with the challenge of availing infrastructure; offices, houses and utilities; to host the surge in population in this area as witnessed in the recent past (Kolb,2008). In this regard, Kiambu has lately opened up for development with developers invading prime land to build homes for either sale or rental market to an already bulging Nairobi population, which is relocating to this area as a process of suburbanisation. Property developers have increased their projects competing to reap from the need and

demand for infrastructure resulting from the process of suburbanisation. On the other hand, some of the native residents of Kiambu feel that their land, which is under agricultural use, should remain as it were if only to protect their tradition of farming, or to preserve the ancestral lineage of ownership. They have therefore refused to offer their land for developments/re-development and have preferred to continue holding the land, leading to a scramble of the portions whose owners are willing to sell. This has led to a lot of activities in the real estate market in Kiambu, a market that was previously rather dormant, intriguing the researcher to carry out a study to find out the influence of suburbanisation on the real estate market performance.

Suburbanisation has led to increased need for housing that has led to the change of user for example from agricultural to residential use. This has led to increased demand in land as well as entrance of speculative holders in the market, which has pushed the values and prices of real estate up. Of importance to note is that utilities such as water and sewer services are usually provided pegged on the population of an area. This therefore means that a strain will be felt on infrastructure as a result suburbanisation. The change of land use, housing developments, infrastructure requirements and changes in land values have a bearing on the performance of the real estate market as they are all pillars of the real estate market (Jain & Khanna2010).

Various studies on suburbanisation have been carried out though there is no study that covers suburbanisation of satellite towns and its influence on the real estate markets, especially in Kenya. This study therefore seeks to investigate the influence of suburbanisation on the performance of real estate market, pegged on the components of land use, land values, housing access and affordability as well as road infrastructure. The study was therefore to establish the influence of suburbanisation on the performance of the real estate market.

1.3 Purpose of the study

The study seeks to explore the influence of suburbanisation on the performance of real estate market in satellite towns in Kenya, using Kiambu town as a case.

1.4 Objectives of the study

The study sought to:
   i.   Determine the extent to which land use as a component of suburbanisation influence real estate market performance in satellite towns in Kenya.

ii. To examine how land values as a component of suburbanisation influence real estate market performance in satellite towns in Kenya.

iii. Establish how housing costs as a component of suburbanisation influence real estate market performance in satellite towns in Kenya.

iv. To assess how road infrastructure as a component of suburbanisation influence real estate market performance in satellite towns in Kenya.

1.5 Research questions

This study seeks to answer the following questions;

i. To what extent does land use as a component of suburbanisation influence real estate market performance in satellite towns in Kenya?

ii. How does land values as a component of suburbanisation influence real estate market performance in satellite towns in Kenya?

iii. How does housing costs as a component of suburbanisation influence real estate market performance in satellite towns in Kenya?

iv. How does road infrastructure as a component of suburbanisation influence real estate market performance in satellite towns in Kenya?

1.6 Significance of the study

The findings of the study are hoped to inform the investors in real estate while making decisions on whether to invest currently in the real estate market, or to hold and also inform the land owners who are not willing to give up their agricultural parcels for development of the built environment on the implications of their decision. The town planners may use the findings of this study in the process of reviewing the development plans for the towns based on how the suburbanisation and change of land use affect the real estate market, for example, in order to maximise on returns, planning has to be done with the current developments in mind. By considering the influence of infrastructure, in particular road infrastructure, on the real estate market which is a key income earner not only on township levels but also at the National level, the county government and investors may use the findings as a guide on their investment decisions, especially in prioritizing different/competing projects where road infrastructure is among the projects. The real estate legislators may use the findings of this project report to guide suburbanisation/development towards achieving vision 2030 on housing and urbanization which is an adequately and decently housed nation in sustainable all inclusive environment. The goal is to increase the annual production of housing units from

the current 35,000 annually to over 200,000, putting into consideration accessibility by the common man in terms of cost.

The real estate players are hoped to benefit from the findings of this project report by understanding how real estate market is influenced by suburbanisation, and specifically by change of user, housing costs, land values and road infrastructure developments which will enable them to make informed business decisions as well as give credible advise to the consumers of their services. The population at large stands to benefit by understanding matters suburbanisation that touch on land and real estate market in particular, which will enable them make informed decision as far as real estate market is concerned. Though the study focus is on Kiambu town, its findings are hoped to be of much significance to all the other areas undergoing/with potential to undergo the process of suburbanisation.

1.7 Basic assumptions of the study

The researcher assumed that the respondents would be cooperative in data provision and that the information they would give was correct and accurate to the best of their knowledge. The study also assumed that the boom in the housing sector and the recent vibrancy in the real estate market in Kiambu town and areas within the county adjacent to the town especially, was a result of suburbanisation process.

1.8 Limitation of the study

The study focused on real estate market performance, a sector whose data records are not compactly available but are spread out with the different players in the industry. The researcher therefore faced the challenge of time in data collection from the different players. To overcome this limitation, the researcher largely used purposive sampling method to choose respondents. The community was not willing to disclose all information sought due to the mystique that surrounds land matters in Kenya. The researcher overcame this challenge by assuring the respondents on confidentiality of information and data given, as well as using a letter of transmittal from the University and a permit to conduct the research obtained from National council for Science and Technology of the Republic of Kenya to further build the confidence of the respondents.

1.9 Delimitation of the study

The study covers Kiambu town, which is the headquarter of Kiambu County. Kiambu County has a population of 1,623,282 and covers an area of 2,449.2 km². It has 9 major towns whose

population is as indicated: Ruiru 238,858; Kikuyu 233,231; Thika 136,917; Karuri 107,716; Kiambu 84,155; Limuru 79,531; Juja 40,446; Githunguri 10, 007; Gatundu 5,550 as per the statistics on fact sheet of Commission on Revenue Allocation (2013). According to the Kenya National Bureau of Statistics (2012), Kiambu town is centrally located in the county as compared to the other towns at around 1°10 0 S, 36°49 60 E, in the elevation of about 1720 meters.

1.10 Definition of significant terms used in the study

As per this study, the following words have the attached meaning:

Suburbanisation: suburbanisation is herein understood as the combination of non-central population and economic growth with urban spatial expansion.

Satellite towns: these are towns established in the fringes of a major city to help devolve industrial development, and which offer average services to its residents.

Land use: the manner in which land is used, including the nature of the vegetation upon its surface. It essentially deals with spatial aspects of all man's activities on land and the way in which land surface is adapted or could be adapted to serve human needs.

Land value: the capital sum which the fee simple of land will be expected to realise if offered for sale on such reasonable conditions as the bona-fide seller may require.

Real estate market performance: the movement in the real estate market in terms of values, costs and transaction volumes**.**

Housing cost :   the cost of renting a house as well as that of acquiring a housing unit through purchase.

Road infrastructure: road networks in good and usable conditions, which allow access to properties.

1.11 Organization of the study

This research project report is organized into five chapters; the first chapter provides an overview introduction of the study, the statement of the research problem, purpose of the study, the research objectives, research questions, basic assumptions of the study, the limitations, rationale and significance of the study, as well as definitions of significant terms used in the study. Chapter two provides the global and local outlook of the area under study and reviews various studies that have been done previously in areas related to this study. It also covers the theoretical as well as the conceptual framework. Chapter three covers the research design, the target population, sample size and sample selection, research instruments, data analysis and techniques and operational definitions of variables. Chapter four is on data analyses, presentation and interpretations giving the questionnaire return rate and a discussion of the different themes as per the questionnaires. Chapter five gives a summary of findings, discussion, conclusion of the study and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a deeper analysis into suburbanisation both in a global context and in a local context and also looks at suburbanisation theory. It details the introduction of suburbanisation in Kenya today. The chapter looks into the theory of demand and supply and reviews literature on land use theories, theories on land values, road infrastructure and its impact on real estate market, housing cost and its influence on the real estate market. It also gives a conceptual framework and a summary to the chapter.

2.2 The concept of suburbanisation and real estate market performance

Suburbanisation is closely related to over-urbanization of a city. When cities get over-crowded by population, it may result in sub-urbanization. Delhi is a typical example. Sub-urbanization means urbanization of rural areas around the cities characterized by the following features: a sharp increase in the 'urban (non-agricultural) uses' of land inclusion of surrounding areas of towns within its municipal limits, and intensive communication of all types between town and its surrounding area. As Connell& Lea (2002) indicates, over urbanisation refers to the increased exemplification of the characters of urbanisation in a city or its surrounding rural area. It results due to the excessive development of urbanistic traits. Due to the expansion of the range of urban activities and occupations, greater influx of secondary functions like industry, increasing and widespread development of an intricate bureaucratic administrative network, the increased sophistication and mechanization of life and the influx of urban characters into the surrounding rural area, over-urbanization gradually replaces the ruralistic and traditionalistic traits of a community, Kolb, (2008).

Suburbanisation is the process through which a suburb is turned into an urban area. A suburb is defined as a residential area in the outskirts of a city by the Collins Gem dictionary while urban is taken to mean city or town. RichardHarris (2010) names suburb as: peripheral location (and its relationship to access); lower density by comparison with some parts of the city; and a physical and social area.

Suburbanisation originated in the United States. The trend towards suburbanisation in the United States has been attributed to the ideas set forth by Thomas Jefferson. As well as

describing the general American belief in the Declaration of Independence, the Jeffersonian perception of democracy was promoted by the belief that rural life is best for the soul. He believed that the environment had a strong effect on human beings, and that the right surroundings would encourage men and women to think clearly and behave rationally, a necessary quality for a democratic society. Only life in the country prevented one from being corrupted by city life, with its class divisions, social inequities and disorder. Through his system of land allotment, Jefferson hoped that the infinitely expandable grid would encourage the proliferation of equal, independent homesteads (Wright, 1981). Thousands of Americans believed that land meant equality and freedom, so despite the familiarity of urban living to the majority of immigrants, large tracts of open land in America beckoned families to claim independence on their own parcel of land. As cities developed as a result of the industrial revolution and the economic opportunities of cities began to out-weigh those of the country, Americans were forced to search for the rural ideal within, or very close to, the city. While very few urban dwellers were capable of, or even willing to earn their livelihood on a farm or other rural setting, most were content to search for the rural ideal within the confines of suburban living.

Suburban growth is one of the great features of the nineteenth century. It is possible to identify three phases of suburban growth in this period. First, in the first half of the century improved road communication, by private carriage or public coach, facilitated ribbon development. City merchants built grand villas in picturesque settings along the highways that radiated from the major cities, especially London. Then from the mid-nineteenth century a new wave emerged, aided by the railways, that threatened to engulf exclusive villadom with the lower- and middle-classes. Finally, in the late nineteenth century working-class dormitories threatened the status of suburbia again.

Many contemporaries believed the development of suburbia to have spoiled the cities. The suburban dream equalled selfishness, a rejection of the obligation and commitment to the city where the suburbanite earned his living. Suburbs highlighted class distinctions residentially and the core of the cities became depopulated. Suburban development was prompted by a series of factors. First, there was the demographic upsurge. Of particular importance was the expansion of the lower middle-class. Clerks increased from 2.5% of all occupied males in 1851 to over 7% in 1911: a rise from fewer than 150,000 to over 900,000 individuals. Though the composition of the class was varied and the single category

concealed a range of character, responsibility and income, the clerk was the butt of snob jokes, Dyos (1966). There was also some decentralisation of industrial and business activity, some of which catered entirely for suburban needs: building and repair trades, bakeries and breweries, laundries, gas and electricity works. But lack of space and high rents and rates in city centres were driving other businesses to suburban sites. This development was generally part of the process of evolution of suburban sites. Camberwell, for example, began as a detached village outside London, became a satellite community and was fully absorbed as a suburb, Boast (2000).

In Africa, there are two vectors of movement and growth; rural populations spreading towards cities, together with the extent of rural ties is why the cities must be seen first from the countryside; and cities spreading toward the rural. Movement of people appears to be ebbing and flowing all the time between multiple spaces, especially between country and city; and where cities internally reveal ebb and flow to grow in certain cases with among the world's highest contemporary rates (like Luanda, Angola), though in others, much more slowly as in Zambia (Potts 2010). Suburbanisation has an influence on the real estate market as the land use type, values, cost of housing and road infrastructure; all highlighted above and linked to suburbanisation, have an influence on the performance of the real estate market.

2.3 The background of real estate

Real Estate revolves around the land and therefore things that impact on land have an impact on real estate. Suburbanisation is bound to affect the real estate market to the extent that it changes the equilibrium in the components of the real estate market or industry in large, amongst them land use, land values, infrastructure and housing costs. Research on globalisation has tended to stress the role global processes are playing in undermining the importance of nationally based policy-making, politics, culture, and society. Such trends are underpinned by the proliferation of communication and transportation media (infrastructure) the emergence of dominant forms of international, brand-based capitalism, and the standardisation of various modes of interaction, from the convergence of languages to digitisation as indicated by Dicken (1998). General market forces, shaped and regulated by national economic, political, social, and cultural trends, also affect local real estate firms.

Mwololo (2013) notes that Kiambu County is well endowed with huge resources from rich agricultural land to industries, and most recently a real estate property boom. The infrastructure development especially the Northern bypass and Thika superhighway are,

according to Mwololo, among reasons why there has been a boom in the real estate, coupled with migration of middle class people working in Nairobi, to this area. Recently constructed gated communities like Eden Ville and Four Way Junction on Kiambu road are an indicator of the real estate boom. The demand for rental units has reached an all-time high in this area. Not to mention Tatu city which is hoped will be home to an estimated number of sixty two thousand residents. Mwololo further notes that this boom in real estate has eaten on land that was previously agricultural.

2.4 Land use patterns as a component of suburbanisation and real estate market performance

The term land use is widely applied, yet not always unambiguously defined (FAO, 1993) in the literature on agricultural systems. Chich-ester et al, (1995) asserts that depending on the context, land use means land use patterns, for example the spatial structure of different land cover classes, including crop types. The forces that drive land use pattern changes have attracted considerable attention in the literature on the dynamics of agricultural systems in sub-Saharan Africa. According to Reenburg & Lund, (1998), the complexity of the factors that enable and constrain land use options is considerable. Their example illustrates that land rights and access to land have significant influence on farmers' options to respond to changes in environmental or demographic conditions under conditions of land surplus. Although founded on a single case, the findings point to some important issues of more general interest which deserve attention in the research for development of sustainable natural resource management strategies.

Agriculture is among the most important agents of environmental change. Thus, determinants for alteration agricultural strategies and land use deserve attention when environmental degradation is considered. Land use intensification and expansion of agricultural land are frequently used indicators for the study and monitoring of the transformation of agricultural systems. It is widely acknowledged that land use and land cover changes are results of a complex interaction of socioeconomic, cultural, and biophysical factors (Blaikie, 1985;Reenberg,1995;Turner, et al., 1995), cited in Reenberg & Lund, (1998) which, however, still remain to be fully explored. A more comprehensive exploration will contribute significant insights not only into man-earth-atmosphere interactions and biodiversity loss, but also into sustainability issues related to agro-ecosystems and land use systems. Land use intensification and the expansion of agricultural land at the expense of natural or semi-natural vegetation constitute key variables in land use

change, and so does the built environment, with the latter being a direct result of suburbanisation.

Reenberg & Lund (1998) in their study found that land use was influenced by different issues. One issue is the household specific variables of importance to land allocation and access to land resources. The example suggests that the possibilities of expanding fields beyond a household's present domain depend not only on access to land but also on the household's resources in terms of labour and equipment. Good social and cultural relations and nearby idle land are necessary but not sufficient conditions to allow an alleviation of demographic pressure or declining soil fertility. Only households with sufficient resources can use such opportunities. Thus, an increasing inequality between households can be expected to develop.

A second issue concerns the management of land rights. Tenure regimes change and adapt to circumstances and people jockey for position according to their perception of the circumstances and in anticipation of the future. Hitherto, land resources had been relatively plentiful and potential conflicts of interest had not erupted. The study by Reenberg & Lund only focused on agricultural land use where change of use was either change of the type of crop being cultivated or change from small scale to expanded scale thereby changing from natural use to man-use. This project report departs from this singular view and is inclusive on the different forms of land use that include commercial and residential, in addition to agriculture. In conclusion, the works of Reenberg and Lund found that land use patterns (and in extension real estate) is supported by more formally established rights than when labour availability, social relations, and distance to the land seem to be the main constraints to land expansion. In the face of land shortages the tenure system will probably undergo some transformation. More established rights are more favourable in the marketability of real estate and therefore influences the performance of real estate market positively.

Mwololo (2013) notes that there is need for immediate land use planning in Kiambu as the real estate boom has taken the agricultural land and therefore affecting the food basket for Kiambu, which has been a supplier of a significant portion of the food for Nairobi. Of concern is the great rate at which this agricultural land is being swallowed up by the construction industry, Further, she notes that agro-based industries like Del Monte, Thika Coffee Mills and Brookside might be forced to relocate to other Agricultural rich areas as agriculture dwindles in Kiambu. However, she notes that the boom has benefitted the county

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with commercial banks being attracted to the area as well as infrastructure development and employment opportunities.

2.5 Land values as a component of suburbanisation and real estate market performance

Different scholars have fronted different theories that explain the phenomenon of land values. David Ricardo argued that high rents (values) were attributed to the "niggardliness of nature" which is scarcity. He believed that values were related to differences in productivity. The most fertile lands are put to use first with production extending to less productive lands, as demand justifies. His primary argument was that the most productive lands fetch higher values or land rents followed by the less productive lands, with the value of the latter being the difference between the value of the former and the investment required to bring the latter into the same production level as the former. Therefore, the value of land depends on absolute and relative production, according to Ricardo. This theory remains central to estimation of value of nearby land based on comparable sales and cost differentials of what is required to bring the lesser property to the level of the superior property. This theory is at the heart of contemporary real estate appraisal. Its short coming is that it does not account for location.

Johann Heinrich Von Thunen on the other hand focused on location, and relative spatial location. His theory states that value arises from bidding, which is a process of the real estate market. He notes that land owners want to maximize returns while land users or buyers bid against each other to use land. Von Thunen's theory looks at the location aspect that influences value in terms of transport cost/accessibility of the property. He equates the land value to total revenue which is composed of both product value and opportunity cost, less the total cost of production, less the total cost of transport which is the cost of accessibility of the property (from the market). Value= (total revenue) - (total value) – total transport cost.

Loss of accessibility decreases land values, with the yield/return remaining constant. This therefore means that the highest and best use of the land carries the day when it comes to bidding as it gives the highest values, leading to concentric zones (Ian, 2002).
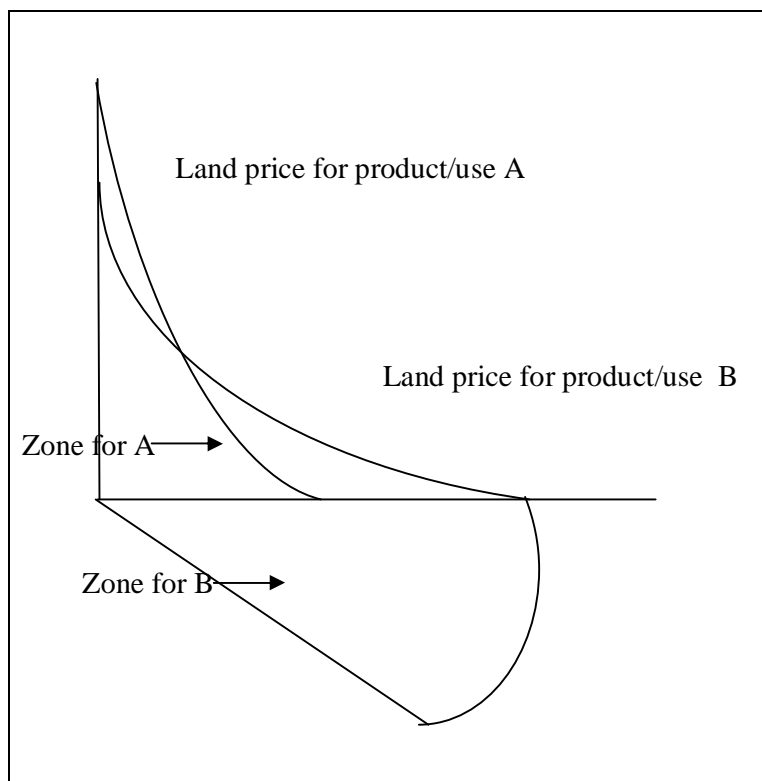
Figure 1: Land value concentric zones

Source: Ian, 2002

This theory is limited in that it looks at use as agricultural, with the difference in use being the product. However, using the concept of highest and best use fronted by Von, we can apply it to other land use like commercial, industrial and residential, and conclude that higher returns attract high values leading to increase in the volume of transaction in real estate market.

A research by Castle & Hatch (1982) which had three objectives as; demonstrate that farm real estate price involves important components additional to the capitalized value of rent for the services of land and buildings in farm production; to furnish at least the rudiments of a model explaining operator behaviour in terms of expectations; and to compare the results of the expectations model with actual agricultural real estate price behaviour ,found that farm real estate price involves important components in addition to the capitalized value of rent for the services of land and buildings in farm production, the first component being the capitalized value of the current year's net contribution of real estate to agricultural income; second the real capital gains component which cause real estate prices to change relative to the general price level, causing real growth (or de-cline) in real estate value and thereby

affecting the performance of the real estate market. A prospective investor operates under the expectation that the per acre value of land and buildings is the expected gain in future (next year) added to the current price (this year). Ruttan (1999) argues that no one has successfully separated the impacts on land price of productivity increases, opportunity cost in non-agricultural use, and general inflation.

Castle & Hotch (1982) found that increases in agricultural real estate prices cannot be explained on the basis of earnings in agricultural production alone. The capital value of farm real estate involve considerably more than the capitalized value of current rents for its services in agricultural production and include the capitalized value of a stream of expected future increases (or decreases) in rent plus capital gains (or losses) not associated with service flows in agricultural production. Their approach measured the direct contribution of price level changes to real estate values and the findings were that those changes had significant impact. Their study concluded that much remains to be explained about real estate price changes relative to other goods and services.

According to the demand and supply theory of microeconomics, at the initial stage where the price of land is low, the demand will be high. But, land being a fixed factor, this can only be sustained to a certain level; land as a commodity is demand inelastic (with the proximity, access and other factors coming into play the supply will run low and there will be unsatisfied demand. As Jain &Khanna (2010) notes, this will then lead to rise in prices/values

2.6 Housing cost as component of suburbanisation and real estate market performance
In capitalist societies, where housing is primarily allocated through the marketplace, real estate firms play a central role in developing and distributing housing according to Fitzpatrick & Gory, (1989). Voith & Watcter, (2009) in their study found that for much of the second half of the twentieth century, development costs in the suburbs were dramatically lower than those in cities. The study was carried out in the USA with the objective of assessing the potential conflict between urban growth and housing affordability.

Land costs were significantly lower, modern low-rise construction technologies were better suited to low-density suburban locations, and the regulatory processes imposed lower costs in suburban locations. In addition, suburban development was further encouraged because of tax benefits for home owners, coupled with high marginal tax rates through the early 1980s. However, in the 1990s and 2000s, the cost advantages of the suburbs eroded

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substantially. Many suburban jurisdictions began to actively discourage new development for fiscal as well as environmental reasons. An important consequence as found out by Voith & Watchter (2009) is that the gap in the cost competitiveness between city and suburban locations has diminished. The study further found out that in cities that did not grow, home prices and rents remained relatively flat. Where there was growth or an anticipation of growth, dramatic price spikes occurred, with home prices far outpacing rents. Home prices in cities with the most rapid escalation, increased by a factor of five while rents saw a far slower increase. In fact, in these growing cities, city house prices often increased faster than rents or house prices in surrounding suburban areas, with San Francisco a leading example. This is the same in the Kenyan context.

The finding on rentals was that the situation was much less dire from an affordability perspective, with rental affordability defined as annual rent equalling no more than one-third of annual income. In 1970, all the comeback cities were still very affordable for renters, with median annual rent ranging from 13 per cent to 17 per cent of median annual income. As the cities' prospects improved and housing became increasingly unaffordable, rent-to-income ratios hovered closer to their 1970 levels. In 2000, the median annual rent in areas with development ranged from 17 to 28 per cent of median annual income. They concluded that the prospect of improving cities (development) has important implications for housing affordability, primarily by affecting the price (not supply) of housing.

The immediate impact of the improving prospects is an increase in the wealth of home owners and costs for future home owners, but the impact on rents is much smaller. As such, there is less of an impact on renter affordability than one might expect. Significantly, the increase in housing prices induce additional investment in housing (including renovation and maintenance), which stabilize and improve the housing stock. Finally, rising prices increase optimal urban density, consistent with stemming the decline in population. Over time, improving cities reduce the supply of affordable housing. The study concluded that the prospect of stability and growth in the nation's cities had serious implications for housing affordability. The prospect of stability and growth in cities results in rising house values, which adversely affect affordability .Left to the market alone, however, growing cities are unlikely to provide significant new affordable housing because construction and land costs do not justify construction of moderately priced housing. Housing prices can rise dramatically in response to growth, which is a component of suburbanisation. The recommendations were

that it is important to plan in advance for affordability in growing, revitalized cities. The study was conducted in cities and was quantitative in nature.

The Vision for housing by the year 2030, as stated in Kenya's Vision 2030 (2006) and urbanization is an adequately and decently housed nation in sustainable all inclusive environment. The goal is to increase the annual production of housing units from the current 35,000 annually to over 200,000. Kenya's cities and towns are poorly planned. There is an acute need therefore for an effective capacity for regional and urban development planning. In addition, there will be better development of and access to affordable and adequate housing; enhanced access to adequate finance for developers and buyers, and pursue targeted key reforms to unlock the potential of the housing sector.

The higher the demand of housing, and the more attractive the value, the higher the number of land owners that will supply housing either directly by building the properties (through financing or selling off portions of their land to enable them build the required type of housing) or indirectly through selling the land to investors (home owners or developers) as a factor of production, land being a fixed factor. This will push the tenants or dwellers that lived in these areas before out of their homes/houses since they can only cope with the competition to a certain level, or they will be forced to adjust their housing budget upwards. Vision 2030 puts access to housing as one of its targets to a growth in the economy, a target that will in one way or another be threatened by the said suburbanisation as explained.

2.7 Road infrastructure as a component of suburbanisation and real estate market performance

Road infrastructure has been looked into at different angles by different scholars: that of the road itself and of other infrastructure that go hand-in hand, as they are conveyed as way leaves along roads. Infrastructure development can simultaneously help and hinder a country's natural environment. On the one hand, a lack of physical infrastructure can exacerbate the environmental damage caused by economic growth. Without proper waste facilities and services, for example, unchecked industries dump toxins and solid wastes into rivers; urban-dwellers dump garbage in uncontrolled community dump-sites; traffic congestion due to poor highway and road service increases the aggregate of fuel emissions, thus worsening urban air quality; and the lack of low-income urban housing leads to unsanitary slum districts as noted by Dayley, (1996). On the other hand, well- meaning

infrastructure development can also tax the environment. Dam construction for energy production, for example, is pursued at the expense of ecosystem preservation; new highways and rail lines often cut through untouched lands and forests; and the diversion of water for hydro-electric dams and rural irrigation can upset ecosystems by causing soil erosion and degradation, according to World Bank, (1994). The infrastructure is laid or fixed on land, and therefore impacts on the real estate market performance. The areas with pollution for example, are shunned by investors and very little or no gainful transactions occur in the real estate market in these areas.

Dabinett (1998) carried out Land surveys in Shafield, both in the city center and upper and lower Don valley areas in respect to roads and infrastructure development, which indicated a clear trend between the 'before' and 'after' the urban infrastructure construction periods. Objectives of the study were to assess the extent to which infrastructure investment promotes additional economic development rather than its redistribution within or between urban areas; the role of public transport provision versus road building as the best means to reduce urban traffic congestion, but at the same time maintaining comparative urban competitiveness; and the need to integrate the planning of transport investment with strategic land use plans to exploit potential benefits to the full.

Dabinett (1998) found that vacant land and buildings declined as a proportion of land use, and other uses such as business/office uses increased. This means a more vibrant real estate market as the vacant land was taken up for gainful production. One of the areas in particular, the lower Don valley, was subject to considerable regeneration activities during the monitoring period, instigated by the Sheffield Development Corporation. The upper Don valley and the city center were also, to a lesser extent, subjected to regeneration efforts. Attributing such land use changes to new transport investment is problematic, and interpretation has to be dealt with cautiously. As Dagles & Haywood (1995) states, The 'before' and 'after' land use surveys were only able to draw out geographical associations between the changes in land use monitored and the investment in new infrastructure, but highlighted the possible impact of these regeneration programmes. Difficulty in attributing impacts was encountered in the case studies of major developments, where developers were unable to attribute development to the transport investment directly, but claimed that it had contributed in a positive way to their decisions.

The assessment and monitoring of changes in land and property involved four components with one of them being a Delphi study of property agents in Sheffield which was used to examine the perceived property-market effects of the transport investment (road infrastructure) (Hennebery, 1996a). The objective was to assess whether transport investments would have a general effect on property values and the findings were dependent on transport modes as thus: the airport was expected to have the smallest general impact on the property market, and any effect was most likely in the office and industrial sectors. The supertram was expected to have the greatest general influence on property values, just ahead of road improvements. The impacts were envisaged as being greatest for retail and leisure sectors, least for industrial. In contrast, the property sector least affected by roads was the residential sector. Where general effects were found, they added to existing property values. However, as Hennerberry, (1996b) found out, respondents differentiated clearly between the impact of the supertram and the other investments, with some respondents believing that the tram system would have a negative effect on values. In ranking, road improvements had the largest positive impact, somewhere between 6 per cent and 10 per cent.

Thus Henneberry (1996a) concludes that property professionals practising in the city held a generally positive view of the impact of transport infrastructure investment on the city's property market. Comparison with other studies suggests that they tended to overstate these transport-induced valuation effects, but this is only a difference of scale rather than principle. In an attempt to measure the impact of the supertram on property values, hedonic analyses were undertaken on residential properties and industrial and commercial properties. Such analysis has been used widely to examine the relationship between transport investment and residential values, but less commonly for commercial and industrial values. Indeed, the study in Sheffield was unable to identify any discrete supertram influence on the value of non-residential property.

Proportionately more change occurred in the road corridor in the lower Don valley, and the interviews with developers in this area suggested that the investment appeared to have had a more positive impact on industrial and commercial projects than the light rail system. In the upper Don valley half of the changes occurred in a 100-metre corridor around the SYS line. The findings shows that infrastructure development leads to a vibrant real estate industry but does not strongly state so as the objective of the researcher was on land-use relations with infrastructure development, not infrastructure and real estate performance. It however forms a good basis for the latter case which is what this project studied. Voith &

Wachter (2009) found one of the driving forces in the growth of suburbs and decline of cities to be the dramatic increase in the supply of desirable residential and commercial land resulting from significant, sustained investment in the automotive transportation system.

In his article, Mulli (2013) notes that depending on location in proximity to major roads in Kiambu, land prices have increased at different rates. Land on the fringes of the administrative centre (Kiambu Town) has tripled in price from four million per ace to about thirteen million per acre in the recent past. As per the rental market, some tenants have experience as much as a hundred per cent increment in rent.

2.8 Conceptual framework

The dependant variable in this study is performance of real estate market. It is affected by various independent variables, as noted in the objectives, which if varied would lead to a change in the resultant performance. Further, there are some extraneous and intervening variables that the researcher held constant for the study to be possible. The independent variables in this study affect the dependent variable in different ways.

Land use patterns, the first independent variable and a component of suburbanisation, affect real estate market performance in two different ways depending on the change introduced on it. The change of land use from agricultural to residential or commercial for example leads to higher prices of the land, therefore more returns on real estate, and a better performing market. This happens because of the capital expenditure on investment in the land in terms of buildings for residential or office use. This investment is a high risk and therefore attracts higher returns leading to increase in land values. Following the theory of supply and demand explained earlier in this study, and with suburbanisation, the increase in demand for offices and residential units leads to higher prices of the land and the investment at large. A change in the opposite direction would have opposite impacts with the exception of changing to intensified green agriculture a factor that has been held constant in this study by only considering the traditional agriculture practiced in Kiambu County, which is tea farming.

Increase in land values, another component of suburbanisation, leads to a vibrant real estate industry as the professionals earn more on their job, since most earn based on the value of the property. It also means that more investors are attracted leading to more transactions and investment in the real estate. But as prices keep souring up, demand rags behind the supply and the market becomes dormant in the long run, or the bubble busts as investment

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values are not sustainable through the rate of recouping the investment. In Kiambu, the industry is at a thriving stage with the prices still going up as noted earlier in this study.

Housing cost as a component of suburbanisation is defined mostly by rental values and the sale prices of the housing components. High prices drive away the low income earner and cut a niche with the middle and high income earners. These are the people who are enlightened about, and/or can afford mortgages to purchase homes and can also pay relatively high rental rates. This thus is a plus in the real estate market as it earns more return for the investor encouraging even more investments.

Accessibility of properties in terms of infrastructure like road also has an effect on the real estate as it dictates how tradable that piece of real estate is. Accessible properties fetch higher values and are in high demand as compared to in-accessible properties. Therefore, there is high turnover and return for fairly accessible properties. Development of road infrastructure, a component of suburbanisation, results to a more active real estate industry.

INDEPENDENT
VARIABLES

DEPEDENT
VARIABLE

LAND USE
- Agricultural use
- Commercial use
- Residential use

LAND VALUES
- For agricultural use
- For commercial use
- For residential use

HOUSING COST
- Rental values
- Sale values

Speculative holding of land

MODERATING
VARIABLE

REAL ESTATE MARKET PERFORMANCE

- Sales volumes
- development of built environment
- values and prices

ROAD INFRASTRUCTURE
- Existence of roads
- accessibility
- proximity

Figure 2: Conceptual framework

Land use as a component of suburbanisation influence the performance of real estate market by applying the highest and best use concept which gives higher return on investment thereby attracting investors and leads to more transactions in the real estate market. As land values go up, people get more benefit in the real estate market and therefore more transactions are done, up to an optimal value. As housing cost as a component of suburbanisation go up, investment in the built environment becomes more attractive as compared to agricultural user, increasing the built stock. Road infrastructure as a component of suburbanisation opens up areas and increase the marketability of the properties thereby serviced.

2.9 Suburbanisation theories.

There are no known contemporary theories advanced so far about suburbanisation, but urbanisation theories have been used to explain the process of suburbanisation given it is an urbanisation process. Urbanisation theories have evolved over time in response to changing trends and patterns. From low levels of urbanisation explained by classical theories like the central place and growth pole theories, the rates, levels and patterns of urbanisation in the 20th century in less developed countries are phenomenal and different from before, Musoga, (2010).

According to a report by the UN HABITAT in 2008 on the state of the world's cities 2010/2011, the global urbanisation trend point to ubiquity of urbanisation phenomenon and its importance in terms of the spatial population redistribution, UN HABITAT (2008). Population increase in the period of year 2000 to year 2030 is expected to be absorbed by areas of less developed regions with an estimated growth of 1.8% per year in the worlds urban population, UN publications, (2000) rural-urban migration and transformation of non-urban areas into urban areas are important determinants of high population growth expected in urban areas in the less developed regions in the next 30 years.

There are several theories that have been advanced to explain urbanisation. These theories include modernization theory, central place theory, ideal typical sequence model, Friedman's sequence of spatial organisation, dependency urban bias theory, worlds systems perspective ,ecological approach and, Rao's Theory and Bose's Theory. This project report looked into the later three theories as they are easily tied to the theme of suburbanisation.

2.9.1 The Ecological Approach

In natural sciences the term ecology is used to understand the relationship plants and animals have with their environment. The term is used in a similar way to understand the process of urbanisation, by such scholars as Robert Park, Ernest Burgess and Amos Hawley. The scholars of ecological approach feel that cities do not grow randomly but grow along lines and in response to features which are advantageous to it–along rivers, near natural resources, in the intersection of trading routes etc. They feel that cities become ordered into "natural areas", through a process of competition, invasion and succession. Patterns of location, movement and relocation in cities follow similar principles. These scholars view cities as a map of areas with distinct characteristics. Burgess sees them as concentric zones- Central Business District (with concentration of trade, retail, business and related activities are located), the Transition Zone to the outer fringes which he calls the Commuter Zone-the satellite towns and suburbs. Process of invasion and succession occur within these segments.

Some of the principles of these theories have been applied to Indian situation especially to growth's such as suburbs such as Gurgaon in outer fringes of Delhi or the growth of suburbs in Bombay but largely the theory is based on American cities which have distinct characteristics. The theory, also emphasises the role of planning and design in cities. Some of the principles of these theories can be applied on suburbanisation, especially the concentric zone principle by Burgess that touches on the satellite towns and suburbs.

2.9.2 Indian Sociologists: Rao and Bose

Rao (1970), analysis urbanisation and urbanism keeping in mind the larger social structures of Indian society. For him, urbanism is a heterogeneous process and hence there can be many forms of urbanisms giving rise to many types of urbanization. Rao states that the dichotomy between cities and villages is incorrect as both have the same structural features of caste and kinship and are parts of the same civilization. Further, urbanization is seen in relation to social change and no real social transformation is associated with it. However, due to urbanization new forms of social organization and association have emerged. Thus, for Rao, urbanization is a complex multifaceted process comprising of ideological, cultural, historical, demographic, comparative, traditional and sociological elements. Rao defines a city as a centre of urbanization and urban way of life. Urbanization is a two way process.

Urbanization is not a uniform process but occurs along different axes - administrative, political, commercial, religious and educational - giving rise to several types of urbanisms. These different axes give rise to different types of contact which the city has with the villagers leading to distinct patterns of urbanization. He distinguishes three kinds of situations of social change in rural areas resulting from urbanization: villages near an industrial town, villages with a sizable number of emigrants working in towns and cities, and villages on the metropolitan fringe. Rao believed that through the study of migration, one could observe the similarities, dissimilarities and continuity between villages and towns. Rao's sociological approach is the most complete approach to the study of urbanization because he tries to examine them in all their different facets and relate these facets to one another and to a sociological understanding of urbanism and urbanization.

Ashish Bose's demographic classification emphasizes quantitative factors like demography rather than qualitative factors in defining urbanization. For him, urbanization, in the demographic sense, is an increase in the proportion of the urban population (U) to the total population (T) over a period of time. As long as U/T increases there is urbanization. The process of urbanization is a continuing process which is not merely a concomitant of industrialization but a concomitant of the whole gamut of factors underlying the process of economic growth and social change. Bose used the concepts of towns and cities interchangeably.

2.10 Summary of literature

The relationship between change of land use as a component of suburbanisation and the real estate market performance is that the land use with the highest return rate is preferred by investors. This leads to movements in the real estate market as bids for this land go up due to demand. When land values are low, there are few transactions in the real estate market, with the transactions increasing with increase in land values up to an optimal level. Housing costs as a component of suburbanisation influence the performance of the real estate market in terms of rental values and cost of acquisition for housing. As the values go up, there are more investors interested in the built environment. This leads to more constructions of residential units. As for road infrastructure, presence of good road networks lead to increased marketability of properties.

Land use has been previously looked at in the aspect of different agricultural use in terms of products, as reviewed in the literature. The researcher found the gap in terms of

other land uses like the commercial and residential land use, which are components of suburbanisation. This project study addresses this gap.

Land values influence the performance of real estate market in a positive way to an optimal level. The theory by David Ricardo on land values changing in response to demand is in line with the demand and supply economic theory earlier discussed. It is seen as a cycle where as demand goes up, the values also go up since the supply is limited. This higher values in turn attract more investors and the demand rises even higher, and the cycle continues. This leads to an increase in the real estate market transaction volumes, i.e. a vibrant market.

As for cost of housing, the cost of acquiring housing units rises with demand. However, the rental returns are not commensurate with the selling prices. This affects the real estate market performance in that most investors develop properties for sale as opposed to rentals, due to the high rate of returns in the former. This leads to the development of gated communities since demand for home ownership is more in this kind of setting as opposed to the traditional flats, and the return is attractively higher.

Road infrastructure development opens up areas and leads to higher marketability of properties. Accessibility is of paramount importance to property usage in order to derive the benefit being sought. Presence of good roads therefore leads to demand for properties serviced by these roads as opposed to closed-up areas thereby leading to more transactions in the areas so serviced.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodological procedure that was used to conduct the study. The discussion includes the research design, location of the study procedure, sample size, instrumentation, data collection, data analysis techniques and ethical considerations.

3.2 Research design

This study adopted a descriptive survey research design. Research design according to Orodho (2003) as cited by Kombo& Tromp (2006) is the scheme; outline or plan that is used to generate answers to research problems. A descriptive survey research design involves the selection of sample of respondents and administering questionnaires or conducting interviews to gather information on variables of interest as defined by Mcmillan & Schumacher(1993). As Gall et al, (1996) further states, information is collected from respondents about their experiences and opinion in order to generalize the findings to the population that the sample is intended to represent. This design is the most appropriate design for obtaining factual and attitudinal information or for research questions about self-reported beliefs, opinions, characteristics and present or past behaviour according Sutton et al, (2004); Grey, (2004) and Neuman, (2000). Since this study sought to obtain descriptive and self-reported information from Real Estate firms, Ministry of Lands Office in Kiambu and the residents of Kiambu town, descriptive survey design was the most appropriate. The survey allowed the researcher to expose the respondents to a set of questions that enabled comparison. It assumed that all the respondents had information or experience that bore on the problem that was being investigated which is performance of real estate industry in a suburbanised setting.

3.3 Target population

The target population of the study comprised of registered estate agents and valuation surveyors; both in private and in public practice whose business portfolio covers Kiambu town; the town planner of Kiambu and residents of Kiambu town. The registered Valuation Surveyors firms that cover Kiambu Town are those situated in Nairobi and Kiambu, which total up to 80 firms while the estate agents firms in Kiambu Town are 10. Kiambu County has a population of 1,623,282 while that of Kiambu Town, the target population is about 84,155.

The adult population is about 50,493 which is estimate adult population of 60% of the total population according to Commission on Revenue Allocation (2013).

3.4 Sample size and sampling procedure

The sample size and the procedure used in sampling were as discussed in the following paragraphs.

3.4. 1 Sample size

For estate agency, the target population was only those who have set up business within Kiambu Town which are 10 estate agents firms, a sample size of 100%, which is 10, was used. As for the Valuation Surveyors, the target population was 80 firms, being the licensed firms in Nairobi and Kiambu counties, and whose portfolio cover Kiambu town. The researcher used a sample size of 24 being 30% of the population as recommended by Mugenda & Mugenda, (2003). The Ministry of Land valuer in Kiambu (formerly District Valuer) target population was 1 and was the same number was interviewed being a 100% sample size, and this applied to Kiambu town planner whose target population was 1 and a sample of 1 was selected, representing 100% sample size.

The residents target population consisted of 50,493 people. When determining the sample size, a confidence level of 95% of the target population was assumed and the response achieved from the sample was set to be within –ve 5 or +ve 5 of the true state of the population targeted.

$$n = \frac{Z^2pqN}{e^2(N\text{-}1) + Z^2pq}$$

(Chava & Nachmias, 1996)

Where N = Population size

$n =$ Sample size

$p =$ Sample population estimated to have characteristics being measured.

Assume a 95% confidence level of the target population

$q =$ 1-p

$e =$ Acceptable error (e = 0.05, since the estimated should be 5% of the true value).

Z = The standard normal deviate at the required confidence level = 1.96

Hence:

$$n = \frac{1.96^2 \text{ x } 0.95 \text{ x } (1-0.95) \text{ x } 50493 = 73}{(0.05^2 \text{ x } (50493-1) + (1.96^2 \text{ x } 0.95 \text{ x } (1-0.95))}$$

The researcher therefore used a sample size of 73 adult residents of Kiambu town.

3.4. 2 Sampling procedure

On the part of registered real estate agents, 100% of the target population was sampled. For registered valuation surveyors, the study employed purposive sampling, which is used when working with small samples where the researcher wishes to select cases that are particularly informative as Thornhill et al, (2007) guides. The purposive sampling technique, also called judgment sampling, is the deliberate choice of an informant due to the qualities the informant possesses. This is a method where the researcher selects a sample of observations that the researcher believes will yield the most comprehensive understanding of the subject of study, based on the researchers' intuitive feel for the subject, which comes from extended observation and reflection. Under purposive sampling, as Rubin & Earl (2010) states, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience.

The researcher, being both a registered estate agent and a valuation surveyor and having held office with the Institution of Surveyors of Kenya which is a regulatory body for both disciplines was able to purposively choose the Valuation Surveyors who had the information sought. As for the government valuer and Kiambu town planner, the total population was used.For the residents, simple random sampling was used. Simple random sampling ensures equal and independent chance of respondents to be selected; Kombo& Tromp, (2006), without bias from the target or accessible population and it yields research data that can be generalized to a larger population.

Table 3.1: Population and sample size

Sections	Population	Sample ratio	Sample size
Registered Valuation surveyors firms	80	0.3	24
Registered Estate Agents	10	1	10
Kiambu district government valuers	2	0.5	1
Town Planner	1	1	1
Residents	50,493	0.0014	73

3.5 Research instruments

Both primary and secondary instruments were used. For primary instruments, interviews were used. Interviews are person to person communication between the researcher and the respondents to elicit and record answers from the latter and they allow understanding of issues under research, obtainance of historical information as well as gives the researcher control over the line of questioning. It is a flexible way of gathering information. Structured questionnaires as a primary instrument were also used. These are a technique of collection of items to which a respondent is expected to react to in writing, as explained by Oso & Onen, (2008), they are time saving and uphold confidentiality. The questionnaires had both open and closed ended questions. Secondary instruments were used to compliment and supplement the primary instruments and included document analysis of literature from the beginning of this study which included examination of recorded data relayed to this study. Collection of secondary data was from government offices, internet and libraries which included books, journals, theses, periodicals and government publications.

3.5.1 Piloting of the instruments

Piloting is the pre-testing of the research instruments. It is a preliminary test of data collection tools. According to Taylor et al (2006) a pilot sample of 5-6 gives valuable information and the piloting should be carried out in the same condition that will be used in the research. Piloting included 3 registered Valuation surveyors and 4 registered Estate Agents as well as

two officers from the Lands office, one from each targeted department, making a total of 9. These were both for the questionnaire and the interview. The objectives of piloting was to eliminate any ambiguity, establish any problems of administration of instruments , test data collection instructions, establish any feasibility problems and allow anticipation and amendment of any logical and procedural difficulties regarding the study as well as allow preliminary (dummy) data analysis. It allowed the researcher to make correctional changes or adjustments before the actual collection of data from the target population. Further, the researcher was able to ensure that the results are not influenced by researcher biases, interests or perspectives.

3.5.2 Validity of instruments

According to Mugenda & Mugenda, (2003) validity is the degree to which results obtained from analysis of a study are an actual representation of the phenomenon under study. Validity was of importance to ensure reflection of concept (real estate market performance) in question. The researcher first went through the instrument and compared it with the objectives of the study to ensure validity. Secondly, the expert (supervisor) was consulted to scrutinize the relevance of questions against the set of objectives. The instruments further underwent piloting on population similar to target population in Nairobi County.

3.5.3 Reliability of the instruments

Reliability as defined by Mulwa, (2006) is the extent to which a measuring device or a whole research project would produce same results if used again on a different occasion with the same objective of the study. Taylor et al (2008) attests to the same but further explains that a measure is reliable to the extent that when repeated under the same condition by different researcher, it gives the same results. To ensure reliability of the research instruments, the researcher used test and retest method on the instruments in different situations and checked if the results were similar. Piloting also assisted the researcher in testing the reliability of the instruments which was found to be at a 95% level of confidence.

3.6 Data collection procedures

This refers to the protocol that must be followed to ensure data collection tools are applied correctly and efficiently. In gathering data the researcher obtained permission from the relevant authorities. The researcher then administered questionnaires to respondents, given that the population was scattered. The questionnaires featured both open ended and closed questions and enough numbers were prepared by the researcher well in advance, distributed

and collected on the date agreed with the respondent. The use of questionnaires was further reinforced by conducting semi-structured interviews especially with officers from the Ministry of Lands Office.

With interviews, the researcher was assured of sufficient data to shed light on the area of study. As a form on interviewing, semi-structured interview required the researcher to have a set of questions and the advantage with this method is that it is flexible and gives more room to ask questions easier to build on ideas on the impact of suburbanisation on the performance of the real estate industry. Furthermore, with the advantage that the interviews provides in being able to record them, it made it possible to do a thorough analysis. Berger (2000) argues that the downside of the interviews is that they are strenuous in collection, processing and analysis of data. Again, in interviewing there is the danger of being subjective which ultimately affects the validity of the research. The researcher however remained objective to overcome this and dedicated ample time to the whole exercise of both conducting the interviews and content analysis. Holsti (1969) observes that content analysis is defined as any technique for making inferences by objectively and systematically identifying specified characteristics of messages.

3.7 Data Analysis Techniques

The study employed qualitative method of data analysis in order to analyze information in a systematic way to come up with valid conclusions. The researcher obtained detailed information on the area under study and tried to establish patterns, trends and relationships from the information gathered. The analysis technique entailed the separation of data into constituent parts and examination of the data in order to distinguish its component parts separately in relation to the whole study. The study entailed both qualitative and quantitative data and was based on respondents' views and opinions, therefore descriptive and inferential statics were used. The researcher coded questions and grouped them under broad themes for easy analysis. Data was collected; the coded materials placed under major themes, and a summary report for each theme generated by the researcher. Descriptive statistics such as frequencies and percentages were used. The researcher presented the findings in form of tables, discussions and direct quotations from the respondents. Key informant data was used for inferential analysis to aid draw conclusion concerning relations of variables.

3.8 Ethical Consideration

Ethics are norms governing human conducts which have a significant impact on human welfare. It involves making a judgment about right and wrong behaviour. According to Bryman, (2007) it is the responsibility of the researcher to carefully assess the possibility of harm to research participants, and the extent that it is possible; the possibility of harm should be minimized. The researcher recognized that the issue under study was sensitive because it involved the core business of the Registered Estate Agents, the Registered Valuers as well as the Government Officers interviewed, and furthermore, land is an emotive issue in Kenya. Therefore, there was need to protect the identity of the respondents as much as possible. The questionnaires therefore did not require the respondent's names or details that may reveal their identity. The researcher obtained a letter of transmittal from University of Nairobi as an introductory letter explaining the purpose of the study, as well as a permit to carry out the research from National council for Science and Technology of the Republic of Kenya as a way of building confidence in the respondents. Confidentiality was upheld for all respondents.

3.9 Operational definition of variables

The operational definitions of variables which in this study are components of suburbanisation influencing performance of real estate market are given in table 3.2

Table 3.2: Operationalization of Variables

Objectives/ research question	Variable	Indicator	Measurement	Level of Measurement	Research Design	Data collection method	Data analysis
	Dependent: Performance of real estate market	* Development of housing units *Development of office blocks *Sales volumes *Property values and prices	*Number of applications per annum for change of land use in the last 5 years *Property values for different categories of land use	Ratio Interval	Survey	Interviews Questionnaire Document review	Descriptive Content analysis
How does change of land use from agricultural to commercial/re sidential influence the performance of real estate market?	**Independent:** Land use	* Land under agricultural land use vis a vis land under commercial/or residential use *Applications for change of land use in the last 3 years	*Number of applications received annually	Ratio Interval	Survey	Document review Questionnaire	Descriptive Content analysis
How does change in land values influence the performance of real estate market	**Independent:** Land values	*Average market values for land under agricultural use *Average market values for land under residential use *Average market values for land under commercial use	Value of land per acre	Ratio	Survey	Questionnaires	Descriptive
What is the influence of cost of housing to the real estate market performance	**Independent:** Cost of housing	*Average rental values for residential units *Average rental value for office space *Average price of residential units *Average price of office space	*Rent per unit over the last 5 years *Rent per square foot over the past 5 years *Price per unit over the past 5 years *Price per square foot over the past 5 years	Interval Ratio	Survey	Questionnaires .	Descriptive
How does road infrastructure influence the performance of real estate industry	**Independent:** Road infrastructure	*Accessibility of properties by road *Price ranges of properties based on distance from road	*Distance of property from motorable road infrastructure *Value of property	Ordinal Interval	Survey	Questionnaires Interview	Descriptive

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CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents analysis of the data and findings of the study as set out in the research methodology. The results were presented on influence of suburbanisation on the performance of real estate market in Kiambu Town. The research sought to answer the research questions; to what extent does land use as a component of suburbanisation influence real estate market performance in satellite towns in Kenya?; How does land values as a component of suburbanisation influence real estate market performance in satellite towns in Kenya?; How does housing costs as a component of suburbanisation influence real estate market performance in satellite towns in Kenya?; How does road infrastructure as a component of suburbanisation influence real estate market performance in satellite towns in Kenya? The chapter covers the questionnaire return rate, demographic information of the respondents, analysis of data, presentation and discussions of the findings based on the research objectives.

4.2 Questionnaire return rate

The study targeted 109 respondents in total comprising of; 24 valuation surveyors, 10 Estate Agents, 1 town planner, 1 ministry of lands valuer and 73 residents. The response rates were as shown in table 4.1

Table 4.1: Questionnaire return rate

Sections	Sample size	Returned questionnaires	Response rate
Registered Valuation surveyors firms	24	16	66%
Registered Estate Agents	10	10	100%
Town planner	1	1	100%
Ministry of lands valuer	1	1	100%
Residents	73	38	52%
Total	109	66	60.55%

The response rate was sufficient and representative and conforms to Mugenda and Mugenda (1999) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. This commendable response rate was due to extra efforts that were made via personal calls and visits to remind the respondent to fill-in and return the questionnaires.

4.3 Demographic characteristics of respondents

An analysis of the demographic characteristics of the respondents in terms of age, education levels, professional experience and period an interviewee has resided in Kiambu town is given in the following section.

4.3.1: Distribution of respondents by age

The study sought to enquire the age of the respondents. The findings are indicated in table 4.2.

Table 4.2: Distribution of respondents by age

Age (yrs.')	Frequency	Percent	Cumulative Percent
20-30	24	36.4	45.5
30-40	30	45.4	81.8
>40	10	15.2	97
No answer	2	3	100
Total	66	100	

Table 4.2 shows that 36.4% of respondents were in the age bracket 20-30 years, 45.4% in the age bracket of 30-40, 15.2% were aged above 40 years while 3.0% did not indicate their age. The majority of those who participated in this study were aged between 30 and 40 years. This means that by qualification of their age, the respondents had reliable information which this study was seeking. The 3.0% that did not indicate their age were considered to have negligible effect to the overall age characteristic of the respondents.

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4.3:2 Education level of respondents

The study sought to establish the level of education for the adult residents of Kiambu and the real estate professionals. The findings are presented in table 4.3.

Table 4.3: Education level of respondents

Education level	Frequency	Percent	Cumulative Percent
University/ College	46	69.7	69.7
High school	20	30.3	100
None	0	0	100
Total	66	100	

69.7% of the respondents had a university/college level education while 30.3% had a high school level education. The real estate professionals and the adult residents of Kiambu town and its immediate neighborhood can therefore be said to have college/university level education.

4.3.3 Total professional experience in years

Table 4.4 shows the overall period of proffessional experience by the respodents

Table 4.4: Total professional experience in years

Total Experience in years	Frequency	%	Cumulative Percent
0-5yrs	8	28.6	28.6
5-10yrs	18	64.3	92.9
>10yrs	2	7.1	100.0
Total	28	100.0	

The overall professional experience was analyzed in relation to the professionals in the real estate market and did not apply to residents. The experience of the majority of the professional respondents, 64.3% is in the range 5-10 years, 28.6% between 0-5 years while 7.1% have an experience of more than 10 years. From these findings, it can be deduced that the professionals had an experience of between 5-10 years, and can therefore be said to be conversant with the real estate market.

4.3.4 Professional experience in years for Kiambu and period lived in Kiambu

Table 4.5 indicates the number of years that the real estate market professionals interviewed have practiced in Kiambu, as well as how long the resident respondents have lived in Kiambu.

Table 4.5: Professional experience in years/ period lived in Kiambu

Years in Kiambu	Frequency	Percent	Cumulative frequency
0-3yrs	40	60.6	60.6
>3yrs	26	39.4	100
Total	66	100.0	

60.6% of the respondents have lived in Kiambu for less than three years or have practiced as real estate professionals in Kiambu for less than three years, while 39.4% have been there for more than three years. The real estate professionals can therefore be said to have practiced their trade in Kiambu town and neighbouring areas for less than three years with the majority adult population having dwelt in Kiambu for a period less than three years. From these findings, it can be deduced that there has been an increase in the real estate opportunities leading to more professionals moving to the area in the recent past and that also there has been a population influx in the last three years.

4.4 Land use as a component of suburbanisation and real estate market performance

According to the town planner of Kiambu sub-county, the dormant land use in Kiambu has been agricultural. There were no applications of change of user 5 years back (before 2008), but from 2008, there were applications at an average of 20 annually with the number increasing to a current figure of 60. The dominant applications are from agricultural user to residential user, with gated communities and multi-dwellings being the common types of residential properties being developed. This trend can be directly linked to suburbanisation of

Kiambu town. However, the research found that there has been minimal application for change of user from agricultural to commercial.

According to the interviewees, Kiambu town is facing numerous challenges amongst them lack of an Integrated Development Plan and Infrastructural Development Plan. Despite the ever increasing population, there has not been formulation of ways of decongesting the town's CBD. Further, the interviewees indicated that acquisition of Title deeds for public land has not been a priority. Due to the high demand of land mainly for house development, unscrupulous individuals and companies have been engaging in illegal subdivision and selling of land and issuing share certificates to plot owners. These subdivisions in most cases had not been approved by relevant authorities as per the requirements of the Physical Planning Act Cap. 286. In some cases, the land buying companies also alter the plans to suit their needs thus leading to haphazard development. All these factors have affected the performance of the real estate market, some to a negative effect of reducing investors' confidence.

The high rate of return in the built environment has led to change of user from agricultural to multi-dwelling units and gated communities and was noted to have influenced the real estate market in terms of investors preferring to invest in the latter two at the expense of agricultural use, and leading to more investment in the built environment.

The sprouting of the population has also led to coming up of illegal structures some semi-permanent and temporary. Also, there has been no proper public awareness on development applications which has greatly contributed in development of illegal structures. Due to the population increase as a result of suburbanisation and the need for creation of jobs, there has been an influx of informal traders including car washes within the town. In many cases, these traders and car wash operators encroach on roads and pavements.

Due to proximity to Nairobi, with many people commuting daily to and from the city (employees and traders), the number of PSVs especially matatu's has rapidly increased with their parking being within CBD. This has increased congestion in the CBD. There has also been no proper parking space within the CBD hence congestion. The town is also facing the problem of lack of a defined land use zones vis-à-vis the change of users happening within the town coupled with lack of articulated road networks within the Kiambu town and other towns within the County with some roads still not opened up to facilitate ease of access.

Table 4.6: Applications for change of user

Annual Applications for change of user	Agricultural to commercial	Agricultural to residential
5 years ago	0	0
3years ago	0	20
current	0	60

4.5 Land values as a component of suburbanisation and real estate market performance

The effect of land values as a component of suburbanisation was discussed under commercial land, residential land and agricultural land.

4.5.1 Commercial land

Valuers and estate agents involved in this research indicated that on average, the value of an acre of commercial land in Kiambu town has shot up three times in the last five years with the current average price being Kenya shillings Seventy Six million (Kshs 76 million). In the period 2008-2010, the values changed at an average of 153% while in the period 2010-2013 the value increased at an average of 83%. The market seemed to be stabilizing in the second period though the period's length difference of three and two years respectively could also be the account for this difference. The overall information is that the values have been increasing over the years.

4.5.2 Residential land

The rise in price has been recorded for land for residential user with average price per acre presently being Kshs 40 million up from Kshs 8.6 million recorded five years ago. The research found out that during the period 2008-2010, the values shot up at a higher rate than in the period 2010-2013. In both periods, the values went up but with different proportions. The year was taken to start in May and end in April, therefore the first period covers two years while the latter covers three years, a fact that could explain the difference in terms of duration cover. Further, the respondents indicated that the period November 2012 to early May 2013, which was an electioneering period in the Republic of Kenya, negatively affected

the real estate market and transactions slowed down, thereby affecting the growth rate. This applies for the three types of land use under study.

4.5.3 Agricultural land

The study found that the average price for an acre of land located between three to five kilometers from Kiambu town (Ndumberi area) has shot up especially in the last three years from Kshs 2.3 million to an average of Kshs 6.7 million. Majority of the interviewees cited Proximity to Nairobi City, Population growth and Infrastructure development as the main contributors to the rise of land values in Kiambu town. Also cited was good maintenance of Kiambu town. All these are the effects of suburbanisation which means that suburbanisation could be said to be synonymous with increase in land prices. This data is presented in table 4.7.

Table 4.7: Land values in millions for different user in different time periods

Period	Agricultural	% change	residential	% change	commercial	% change
5 years ago	1.3	-	8.6	-	16.4	-
3 years ago	2.3	76	21.7	153	41.5	153
Current	6.7	91	40	83	76	83

This increase in land values is a component of suburbanisation and has led to a lot of activities in real estate market in the recent past. It has led to an increase in strength of title deeds as collateral for acquisition of finance. This has seen a rise in number on the mortgaging of the real estate in Kiambu.

4.5.4 Influence of property values increase to real estate market

From the findings of the study, when the real estate property values increases, the real estate market is affected in different ways as shown in table 4.9.

Table 4.8: Influence of change in values to real estate market

Factor	frequency	Percent
Affordability	16	11.9%
improved economy	10	7.5%
increased real estate investment	25	18.7%
increased sales	41	30.6%
change in land use	26	19.4%
improved collateral value	15	11.2%
no answer	1	0.7%
Total	134	100.0%

11.9% of the respondents indicated that the affordability of the real estate is affected with the low-income earner being pushed-off from some category of properties as their price increase. 7.5% indicated improved economy, 18,7% cited an increase in real estate investment, 30.6% indicated increased volumes of sales, 19.4% said change in land use, 11.2% cited improved collateral value while 0.7% did not give an answer. The research deduces that when real estate values go up, there is increase of change in land use as well as increased volume of sales. The research found that there is the risk of the low-income earners being pushed off from some categories of properties as they cannot afford.

4.5.5 Causes of land value increase in Kiambu town

The research sought to know the reason(s) for the change in property values from the respondents and the findings are as tabulated in table 4.9

Table 4.9: Causes of change in land values

Factor	frequency	Percent	Cumulative Percent
Proximity to Nairobi City	24	36	36
Population increase	18	28	64
Infrastructure Development	9	14	78
Maintenance of the town by authorities	8	12	90
Others	7	10	100
Total	66	100	

36% of the respondents indicated proximity of Kiambu to Nairobi City as a factor influencing the change in values, 28% cited population increase, 14% talked of infrastructure development with 12% linking this change to maintenance of Kiambu by the authority while 10% attributed the change to other factors like growth in the national economy and role of middle-men in real estate transactions.

On proximity to Nairobi city, it was noted that many people working in Nairobi prefer to live in towns near the city Kiambu being one of them. This has in turn pushed the population in Kiambu town up greatly affecting land values as demand for housing increases. Demand for housing was indicated as direct cause to the rise in land values and it was noted that this has led to change of land use from agricultural to residential. On infrastructure, the construction of the Northern by-pass was cited as having greatly influenced the land values. The interviewees also pointed out that the development of gated community in Kiambu has pushed up the land values. Also linked to increase in land values in Kiambu town is good maintenance of the town by the authorities. According to the valuers, the increase in land values has a positive impact on the general performance of the real estate market. Reasons cited include rise in land values giving rise to change or user and borrowing capacities of the owners hence directly positively affecting the real estate market. It was also noted that the increase in land values results to increase returns in the real estate market as it attracts more investors. Due to the increase in prices, land owners tend to sell hence increasing activities for those in the real estate market (property boom). From the above discussion, it is clear that suburbanisation influences the performance of real estate market. The influence of suburbanisation is seen through increase in demand and values.

4.6 Housing costs as a component of suburbanisation and its influence on real estate market performance.

The research found that housing cost as a component of suburbanisation has influenced the real estate market in terms of rent values and price of acquisition. On the cost of acquisition, the research found that the cost of acquiring a 4 bedroom masionette located on an eighth of an acre has shot from an average price of between Kshs 5,000,000.00 and Kshs 7,000,000.00 to a cost of between Ksh10, 000, 00.00 to 15, 00,000.00 depending on the location, in the period of the past 5 years. One bedroom flat used to sell for about Kshs. 2,000,000.00 in the last three years but are now trading for between Kshs 4,000, 00.00 and Kshs 5,00,0000.00

while the two bedroom apartments have shot up from Kshs. 5,000,000.00 average cost to exchange hands at an average cost of Kshs. 7,00,000.00. Overall, the purchase price of properties has been increasing over the past five years, with the highest growth noted as that of masionettes. This was explained in that gated communities and owner occupier is the major trend, as a result of suburbanisation.

On the rental aspect, the research found that a bedsitter used to rent for an average monthly rent of Kshs. 3,000.00 five years ago with the rent shooting up to Kshs 6,000.00 and Kshs 8,000.00 for the last three years and the current period respectively. Similarly, the monthly rental value for a one-bedroom flat has raised from Kshs 5,000.00, to Kshs 8,000.00 in periods of five and three years respectively, with the current rent being between Kshs. 10,000.00 and Kshs 12,000.00. A two-bedroom flat has also increased in its rental value from Kshs, 8,000.00 per month five years ago; to between Kshs 10,000.00 and Kshs 12,000.00 three years ago with the current rent being between Ksh.15, 000.00 and 18,000.00 depending on location and accommodation details. Table 4.10 presents this data.

Table 4.10: Average rental values for different house categories in different time periods

Period	Bedsitter	% change	1-bedroom flat	% change	2-bedroom flat	% change
5 years ago	3000.00	-	5,000.00	-	8,000.00	-
3 years ago	6000.00	100	8,000.00		11,000.00	
current	8000.00		11,000.00		16,500.00	

From these findings, it can be deduced that the rental market has continued to be vibrant with an increase in market rent. The cost of acquiring housing units has also been increasing in the recent past. The reason for this trend was given as population increase which has led to increased demand for housing, thus increase in cost of housing. This increased cost in turn attracts more investments leading to growth of the built environment, which is a sector of the real estate market. As noted before, the increase of population is also attributable to suburbanisation.

4.7: Road infrastructure as a component of suburbanisation and performance of real estate market.

The study sought to find out how road infrastructure as a component of suburbanisation influences the real estate market, and which aspects of infrastructure affect the real estate market. The findings were as shown in table 4.11

Table 4.11: Influence of road infrastructure on real estate market performance

Factor	Frequency	Percent
good infrastructure	35	40.7%
proximity& accessibilty	30	34.9%
Utilities	21	24.4%
Total	86	100.0%

The research found that road infrastructure influences the real estate market through two major aspects; i.e. proximity and accessibility. 40.7% of respondents indicated good road infrastructure to affect the real estate market performance, 34.9% indicated proximity and accessibility of proprieties to/by road and 24.4% citing utilities as aspects of road infrastructure influencing the performance of real estate market. On proximity, the nearer the property to good road infrastructure, the more marketable the property is and vice versa. More accessible properties fetch higher values and such areas have vibrant real estate market transactions. The research further found that such areas are highly developed and this gives more value to title deeds as collateral to loans from commercial banks. For instance, the construction of Northern bypass was cited as having rapidly increased the prices of properties near it. Further, it was noted that other utilities like water, which affect demand of properties, are easily accessed in areas that have good road networks thereby adding to the importance of road infrastructure to the real estate sector.

4.8 Suburbanisation components and their influence on the performance of real estate market

The study sought to establish the level at which suburbanisation components had affected the general performance of the real estate market in Kiambu and the findings are as tabulated in table 4.13

Table 4.12: Influence of suburbanisation on real estate market performance

Factor	frequency	Percent
increase in cost of housing	42	37.2%
increased real estate values	23	20.4%
change of land use	18	15.9%
infrastructure	19	16.8%
speculation	10	8.8%
no answer	1	.9%
Total	113	100.0%

37.2 % of the respodents cited increased cost of housing, 20.4% increased real estate values, 15.9 % change in land use, 16.8% infrastructure, 8.8% as speculation with 0.9% abstaining. Respodents felt that suburbanisation had resulted to expectation of more growth in the real estate sector and that some investors were holding land speculating for better returns in future, thereby creating a shortfall of supply, leading to even higher values in real estate properties.

4.12 Correlation analysis

Pearson correlation analysis was conducted to examine the relationship between the variables. A correlation is a number between -1 and +1 that measures the degree of association between two variables. As cited in Wong and Hiew (2005) the correlation coefficient value *(r)* range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. A positive value for the correlation implies a positive. A negative value for the correlation implies a negative or inverse association.This is presented in table 4.14.

Table 4.13: Correlations matrix

		Cost of housing	value	REMKT performance	Transactions Volume	Road infrastructure
Cost of housing	Pearson Correlation	1	.059	.050	.044	.021
	Sig. (2-tailed)		.640	.691	.726	.866
	N	66	66	66	66	66
Value	Pearson Correlation	.059	1	.986**	.995**	.994**
	Sig. (2-tailed)	.640		.000	.000	.000
	N	66	66	66	66	66
REMKT performance	Pearson Correlation	.050	.986**	1	.993**	.993**
	Sig. (2-tailed)	.691	.000		.000	.000
	N	66	66	66	66	66
transactions Volume	Pearson Correlation	.044	.995**	.993**	1	.999**
	Sig. (2-tailed)	.726	.000	.000		.000
	N	66	66	66	66	66
Performance Factors	Pearson Correlation	.021	.994**	.993**	.999**	1
	Sig. (2-tailed)	.866	.000	.000	.000	
	N	66	66	66	66	66

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

All the independent variables had a positive correlation with the dependent variable with road infrastructure having the highest correlation of +.993 followed by land values with a correlation of +.986 and then cost of housing with a correlation of +.050. This indicates that all the variables are statistically significant at the 99% confidence interval level 2-tailed.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This is the last chapter of this study. It covers the summary of findings of the study, discussions of findings, conclusions, recommendations, and suggests areas for further study.

5.2 Summary of findings

From the data analysis in chapter four, the research found out that suburbanisation has an influence on the performance of real estate market through the four parameters in the objectives of the study namely: land use; land values, , cost of housing as well road infrastructure. There has been a rise in application for change of land use from agricultural to residential, the most common being multi-dwelling developments and gated communities the likes of Migaa, Edenville, Fourways Junction and Jacaranda Gardens. The research found out that there are no records of change of user from agricultural to commercial user so far, as the area within town which had been designated for commercial use is still the on being used for this purpose. The applications have risen from 0 to 60 in number annually, within five years. The approvals in change of user have attracted more investors as residential user has higher return that the traditional agricultural use, and has therefore led to increased transactions in the real estate market, and the growth of the built environment.

The rate of change of user also emerged as a concern as the respondents expressed their concern to future-food security if no checks and controls are put in place to direct and control the phenomena. Some respondents however defended the replacement of the coffee and tea plantations with real estate saying the returns on investment on built environment as compared to that of agriculture is much higher and attractive citing the international coffee and tea prices which have not been very encouraging while real estate returns are attractive. Kiambu is now experiencing the upsurge of self-supporting neighbourhoods.

Land values have shot up for commercial land from an average of Kshs 40,000,000.00 per acre to 76,000,000.00 in the last three years. Residential land has shot from an average of Ksh.8,600,000.00 per acre to Kshs. 40,000,000.00 in five years while agricultural land has experienced an upward growth of up to 6,7000,0000.00 from Kshs. 2,3000,000.00 per acre.

The rise in land values has been associated with suburbanisation factors such as population growth and development and has led to more sales as well as higher usage of the land as a security collateral from financiers due to the increase in the value of the land as a security for collateral.

Suburbanisation has caused an influx in cost of housing acquisition; both rental and owner occupied. The rental values for a bedsitter for instance has shot from Kshs. 3,000.00 per month to a rental value of Kshs. 8,000.00 while one and two bedroom flats have shot from Ksh.5,000.00 to Kshs. 12,000.00 and from Kshs. 8,000.00 to Kshs. 18,000.00 respectively. Cost of acquiring a four bedroom masionette on an eighth of an acre for example has shot from Kshs. 5,000,000.00 to Kshs. 15,000,000.00.This has led to more transactions in the built environment as compared to the past, and has also seen the growth of the gated-community concept as return on investment in owner-occupier housing units goes up.

As for road infrastructure, the findings were that the presence of road infrastructure influence property marketability by virtue of proximity and accessibility, with some citing that other utilities like water are easily accessible where there are good road networks and therefore further enhancing the marketability of properties that are serviced by road infrastructure.

5.3 Discussion of findings

The objectives of the study have been met with the findings on each being presented in chapter four. The findings of this study do not find any contravening facts with those of the study by Reenburg and Lund (1998) that the land tenure as well as household variables influences the land use, but rather adds the dimension of suburbanisation and return on investment as factors influencing the land use.

As castle and Hotch (1982) found out, the study has also found that increase in agricultural land values is not solely dependent on the change in earnings from agricultural production alone. Dimensions like demand, accessibility and proximity to good road infrastructure also have an influence in the change of values for agricultural land. This can be said to apply to the other two categories of land use under study i.e. commercial and residential user. The study is also in agreement with the theory of land value by John Heinrich Von Thunen which states that the value of land is influenced by the need of the

owner to maximize his returns as well as the process of out-bidding of each other by the people willing to use the land (demand versus supply).

The study carried out by Voithand Walter (2009) found that the cost of housing in suburbs is less than that of the properties within the city. This attracts housing demand in the suburban areas by the city population, and as this demand grows, the cost of housing responds positively. This is no different from the findings of this study where demand has been underscored in the findings as a major factor influencing the cost of housing. Further, Voith and Walter found out that the prices of housing further outpace the rental values, and so do the findings of this study reflect.

The presence of good road infrastructure was found to influence the marketability and values of properties as accessible properties and properties in close proximity to road networks were found to fetch more values. Dabinnet (1998) findings of his study on mobility infrastructure influence on the real estate market were that there was a difference in values and prices of properties before and after the development of these infrastructures, meaning then that road infrastructure, being a mobility enhancing infrastructure, contributes to enhancement in values and prices in the real estate market. Dyley (1996) however recommends that there is more to infrastructure than road networks. This includes utilities like water and sewer system.

5.4 Conclusions

Influx in population has been noted as the most evident factor characterizing suburbanisation. The majority of the population moving to the area have jobs in the city and are in search of housing within commuter distances to the City. This population influx comes with increase in demand for housing, which in turn influences the value of rental properties. Kiambu being a traditionally agricultural area, the new demand for housing has led to change of land use from agricultural to residential for the purpose of developing a residential built environment. This has led to an increase in the land values as the return from the investment in built environment are higher from those earned from agricultural products.

The research further found that the increase in value have increased the strength of title deeds as security collateral in financial banks, where by the owners of these properties are able to access substantial credit facilities that enable them to develop the properties. From the study, it is clear that proximity of Kiambu to Nairobi has played a significant role in the town's suburbanisation. As the population in expands, one can only expect the towns near it

to also expand. This suburbanisation comes in with both advantages and disadvantages. It is however important that the authorities to always ensure there is proper planning in the process of suburbanisation.

5.5 Recommendations for policy and practice

The researcher recommends the following:

1. Preparation of an Integrated Development Plan for Kiambu town and to larger extent Kiambu County. The plan should incorporate all sectors of the economy including Social, Economic and Spatial aspects of development. The plan will greatly assist in guiding development in the entire county. To assist in development of a proper plan, the Kiambu County government should consider setting aside adequate funds for the exercise. The County should also consider engaging a consultant and also ensure the County Planners, Engineers and other stakeholders actively participate in preparation of the Integrated Development plan.

2. The policy makers should zone the areas and ensure that food security is not threatened as agricultural land use is abandoned for better returns from the built environment. Further, housing needs for the population should be planned for to avoid disarticulation of the low-class carder of the population.

3. Preparation of an Infrastructural Development Plan for Kiambu town and to larger extent Kiambu County and formulation of ways of decongesting the Kiambu town CBD and other CBDs/centers within the County such as prosecution of any individual/company that will in future subdivide land which is below the recommended measurements, demolitions of all illegal structures land acquisition for the purpose of town expansion and legal possession of public utility land that is in the hands of private entities. The informal traders, who will always be there as a result of suburbanisation, should be relocated from the road reserves to designated and well developed/modernized markets.

4. There is need to open up existing road and upgrading them to at least gravel standard. This will further enhance the performance of real estate market and the rate of return for investment in real estate for investors.

5.6 Suggestions for further study

1. The researcher recommends a further study on the influence of other infrastructural components, apart from roads, such as schools, water and sewerage utilities on the performance of real estate market.

2. The researcher also recommends a study to be carried out to establish the influence of devolution to the real estate market as some respondents pointed out that it could have had some influence on the real estate market, more so on land values.

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APPENDICES

APPENDIX I: LETTER OF TRANSMITTAL

Leah Njuguna

P.O BOX 365-00241

KITENGELA

Dear Sir/Madam,

RE: REQUEST FOR YOUR PARTICIPATION IN M.A. RESEARCH PROJECT

I am a student at the University of Nairobi pursuing a Masters of Arts degree in Project Planning and Management. As part of my coursework, I am required to carry out and submit a research project report on effect of suburbanisation on performance of real estate market in satellite towns in Kenya; case of Kiambu town.

To achieve this objective, I kindly request for your assistance in completing the attached questionnaire. With your honest answers, the interested stakeholders will have the right information to plan the way forward. You are hereby guaranteed that the information you give will be treated with utter confidentiality. A copy of the project would be available at the University of Nairobi Library.

Yours faithfully,

Leah Njuguna

L50/70821/2011

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

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
N A I R O B I

27ᵗʰ MAY 2013

UON/CEES//NEMC/15/217
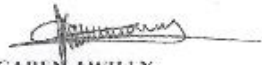
TO WHOM IT MAY CONCERN

RE: LEAH WAMBUI NJUGUNA - REG.NO. L50/70821/2011

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 a research entitled "influence of suburbanization on real estate market performance in satellite town in Kenya". The case of Kiambu town.

Any assistance given to her will be appreciated.

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EXTRA-MURAL CENTRE

APPENDIX II: PERMIT FROM NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

PAGE 2

THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Leah Wambui Njuguna
of (Address) University of Nairobi
P.O Box 30197-00100, Nairobi
has been permitted to conduct research in

	Location
Kiambu	District
Central	Province

on the topic: Influence of suburbanization
on real estate market performance in
satellite towns in Kenya: Case of
Kiambu Town.

for a period ending: 30th September, 2013.

PAGE 3

Research Permit No. NCST/RCD/14/013/1033
Date of issue   18th June, 2013
Fee received   KSH. 1000

Applicant's
Signature

For Secretary
National Council for
Science & Technology

APPENDIX III: QUESTIONARE TO VALUATION SURVEYORS (VALUERS)

Personal information

i) What is your age bracket?

20-30 ☐   30-40 ☐   above 40 ☐

ii) For how long have you practiced as a valuer in Kenya?

0-5 yrs ☐   5-10 yrs ☐   more than 10 years ☐

iii) Educational level: University/College ☐   High School ☐   Primary ☐   None ☐

iv) For how long have you valued properties in Kiambu County?

Less than 3 years ☐   more than 3 years ☐

v) In your opinion, what has been the influence of land use as a component of suburbanisation on the performance of real estate market?

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....

vi) In your opinion, what has been the influence of land values as a component of suburbanisation on the performance of real estate market?

....
....
....

vii) In your opinion, what has been the influence of cost of housing as a component of suburbanisation on the performance of real estate market?

....
....
....

viii) In your opinion, what has been the influence of road infrastructure as a component of suburbanisation on the performance of real estate market?

....

....

....

ix) What is/was the average value of an acre of land in Kiambu town for commercial user?

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………..

x) What was/ is the average value of an acre of land in Kiambu town for residential user (rental units)?

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………..

xi) What is/was the current average value of an acre of land near Kiambu town (an average of three to five kilometers from the town) for agricultural user.

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………..

xii) What is/was the average rental value per month of office space per square foot in Kiambu Town?

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………

xiii) What has been the main contributor of change in values in the recent past, in your opinion?..

....

....

xvi) In your opinion, is there change in the volume of business in land transactions as the values change?

YES [ ]   NO [ ]

If YES, is it positive or negative?

…………………………………………………………………………..

Thank You

APPENDIX IV: QUESTIONARE TO REAL ESTATE AGENTS

Personal information

i) What is your age bracket? (Please tick as appropriate in the boxes provided)

20-30☐   30-40☐   above 40 ☐

ii) Educational level: University/College ☐   High School ☐   Primary ☐None   ☐

iii) For how long have you practiced as an estate agent in Kenya?

0-5 yrs   ☐   5-10 yrs   ☐   more than 10 years   ☐

iv) For how long have you sold/managed properties in Kiambu County?

Less than 3 years☐   more than 3 years☐

v) In your opinion, what is the influence of land use as a component of suburbanisation on the performance of real estate market in Kiambu?

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....
....

vi) In your opinion, what is the influence of land values as a component of suburbanisation on the performance of real estate market?

....
....
....

vii) In your opinion, what is the influence of cost of housing as a component of suburbanisation on the performance of real estate market?

....
....
....

viii) In your opinion, what is the influence of road infrastructure as a component of suburbanisation on the performance of real estate market?

....

....

....

ix) What is/was the average price of an acre of land in Kiambu town for commercial user (a radius of 3km)?

Currently Kshs……………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs……………………………………………..

x) What was/ is the average selling price of an acre of land in Kiambu town for residential user (rental units)?

Currently Kshs……………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs……………………………………………..

xi) What is/was the average selling price of an acre of land near Kiambu town (an average of three to five kilometers from the town) for agricultural user.

Currently Kshs……………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs……………………………………………..

xii) What has been the main contributor of change in prices in the recent past, in your opinion?...

....

....

……………………………………………………………………………………………

xiii) What was/is the average rental value for a bedsitter in Kiambu town?

Currently Kshs……………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………..

xiv) What was/is the average rental value for a one bedroom self-contained unit in Kiambu town?

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………..

xv) What was/is the average rental value for a two-bedroom self-contained unit in Kiambu town?

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………..

xvi) What is/was the average selling price of a bedsitter in Kiambu Town?

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………..

xvii) What is/was the average selling price of a one bedroom flat in Kiambu Town?

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs…………………………………………..

xviii) What is/was the average selling price of a two bedroom flat in Kiambu Town?

Currently Kshs…………………………………………………..

Three years ago Kshs…………………………………………

Five years ago Kshs……………………………………………..

xix) Is there change in the volume of business in property transactions as the rental prices change? YES ☐ NO ☐

If YES, what kind of a relationship exists between the two?

....
....
....
....

xx) Using a Likert 1-5 scale, with 1 being 'very low', 2 being 'low' 3 being 'average', 4 being 'high' and 5 being 'very high' has been

a) the demand for rental housing units? Please tick (✓) as appropriate

	1	2	3	4	5
Currently					
Three years ago					
Five years ago					

b) the demand for housing units for sale? Please tick (✓) as appropriate

	1	2	3	4	5
Currently					
Three years ago					
Five years ago					

Thank you

APPENDIX V: QUESTIONARE TO RESIDENTS

Personal information

i) What is your age bracket? (Please tick as appropriate in the boxes provided)

20-30 ☐   30-40 ☐   above 40 ☐

ii) Educational level: University/College ☐ High School ☐ Primary ☐ None ☐

iii) For how long have you lived in Kiambu?

0-5 yrs ☐   5-10 yrs ☐   ☐ more than 10 years

iv) Have you experienced any housing challenges as a result of suburbanisation?

YES ☐   NO ☐

If YES, explain

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

v) What has been the main contributor of change in rental values in the recent past, in your opinion?..

....

....

vi) Do you think suburbanisation has influenced the property prices? Yes ☐ No ☐

If yes, please explain briefly ……………………………………………………………..

…………………………………………………………………………………………………

…………………………………………………………………………………………………

xvii) Do you think presence of good roads influence the amount of rent charged on a property?

YES ☐   NO ☐

If yes, please explain …………………………………………………………………………….

………………………………………………………………………………………………………

………………………………………………………………………………………….......

xviii) Do you think the change of rental values has negatively affected the low income earner?

YES ☐   NO ☐

xix) If Yes, please explain

………………………………………………………………………………….…………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

Thank You

APPENDIX VI: INTERVIEW GUIDE FOR KIAMBU GOVERNMENT VALUERS

i) What has been the influence of land use as a component of suburbanisation on the performance of real estate market?

ii) What has been the influence of land values as a component of suburbanisation on the performance of real estate market?

iii) What has been the influence of cost of housing as a component of suburbanisation on the performance of real estate market?

iv) What has been the influence of road infrastructure as a component of suburbanisation on the performance of real estate market?

v) What is/was the average price of an acre of land in Kiambu town for commercial user within Kiambu town?

Currently Kshs…………………………………………………..

Three years ago Kshs……………………………………………

Five years ago Kshs…………………………………………………..

vi) What is/was the average price of an acre of land in Kiambu town for residential user (rental units)?

Currently Kshs…………………………………………………..

Three years ago Kshs……………………………………………

Five years ago Kshs…………………………………………………..

vii) What is/was average selling price of an acre of land near Kiambu town (an average of three to five kilometers from the town) for agricultural user?

Currently Kshs…………………………………………………..

Three years ago Kshs……………………………………………

Five years ago Kshs…………………………………………………..

viii) What is the impact of land values on the performance of real estate industry?

What is/was the average rental value for a bedsitter, one bedroom and two bedroom unit in Kiambu town?

Currently Kshs…………………………………………………..

Three years ago Kshs……………………………………………

Five years ago Kshs…………………………………………….

xiii) What are the challenges facing Kiambu as a result of suburbanisation?

Thank you.

APPENDIX VII: INTERVIEW GUIDE FOR TOWN PLANNER

i) What has been the influence of land use as a component of suburbanisation on the performance of real estate market?

ii) What has been the influence of land values as a component of suburbanisation on the performance of real estate market?

iii) What has been/is the dominant land use in Kiambu: Currently, 3 years ago, 5 years ago

iv) What is the most applied for type of change of user. (From which land use to which)

v) What has been/is the average annual applications for change of land use: currently, 2 years ago, 5 years ago?

vi) In your opinion, what has been the cause of change in numbers?

vii) What has been the influence of suburbanisation on real estate market performance?

viii) What has been/is the minimum allowable acreage in Kiambu: Currently, 3years ago, 5 years ago?

ix) Has there been an increase in applications for land subdivisions?

x) What are the challenges facing Kiambu as a result of suburbanisation?

Thank you.