

**EFFECTS OF GATED COMMUNITIES TO LOW INCOME NEIGHBOURING
COMMUNITIES AND HOW THIS IMPACTS ON FUNCTIONAL INTEGRATION: A
CASE STUDY OF ATHI RIVER, MACHAKOS COUNTY**

BY:

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DECLARATION

This research project is my original work and has not been presented for examination to any other university.

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DEDICATION

This work is dedicated to my mum, my brothers and sister.

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There are a number of people that I feel greatly beholden to and without whom this thesis might not have been completed.

To God the Almighty for His gift of life, grace, care and blessings throughout my existence.

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LIST OF ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
BC	Before Christ
USA	United States of America
CETRAD	Centre for Training and Integrated Research in Asals
CIDs	Common Interest Developments
CC&Rs	Covenants, Conditions and Restrictions
DESA	Department of Economic and Social Affairs
DPSIR	Driver-Pressure-State-Impact-Response
CBD	Central Business District
OECD	Organisation for Economic Cooperation and Development
SPSS	Statistical Package for Social Scientists
USA	United States of America
UN	United Nations

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ABSTRACT

Gated communities are on the rise globally. The spread of these communities has caused a lot of debates with regard to the impact that they have on social interactions and urban structure. This study sought to establish the kind of interactions between people within gated communities and those residing in often, ungated low income neighbouring communities and how these interactions lead to functional integration. The study objectives were: determining how provision of job opportunities by gated communities to neighbouring low income communities promotes functional integration; finding out how provision of social amenities by gated communities to neighbouring low income communities promotes functional integration and finding out how economic externalities brought about by gated communities impact on interactions between gated and ungated communities and ultimately how this impacts on functional integration.

The hypotheses of the study included: there is no significant relationship in provision of job opportunities by gated communities to low income neighbouring communities and functional integration. There is no significant relationship in provision of social amenities by gated communities to low income neighbouring communities and functional integration. There is no significant relationship between provision of economic externalities by gated communities and the impact these has on interactions between gated and low income ungated communities.

Athi River was used as the case study where gated communities are rampant. Primary data was collected through administration of questionnaires. Proportionate stratified random sampling was used in this research. The target population for this study consisted of 12 gated communities in Athi River with an estimated population of 577 households. The sample size was 30% of the total population (which was total number of households). The sample size was 173 households. Data was arranged and analysed using both descriptive and inferential

statistics. Data was manipulated using cross tabulations and means computed for each variable by use of Statistical Package for Social Scientists (SPSS) in order to run a regression analysis.

The study found out that a significant number of households within gated communities employed individuals from neighbouring low income communities thus providing job opportunities to these individuals. Gated communities also have shared amenities within them which vary widely. These amenities are usually used by those residing within them and serviced by those living outside and this fosters social interactions between the two groups and through exchange of money, functional intergration is promoted. The job opportunities provided by gated communities promote functional integration through serviceable inclusion of low income communities into the wider society through provision of casual jobs and exchange of money.

The study recommends that gated communities' management bodies should consider putting up more facilities and infrastructure within and outside gated communities which are critical in enhancing functional integration between gated and low income often ungated neighbouring communities.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Gated communities are a growing trend globally. These developments are no longer restricted to developed nations, but there are progressively occurring in developing countries as well as countries whose economies are in transition (Landman, 2000). The development of gated communities has often been linked to a variety of factors including: pervasiveness of fear particularly in urban areas due to increased terrorist activities; increasing feelings of insecurity due to crime caused by high unemployment rates; suburbanization; new trends in real estate developments that often view gated communities as very lucrative businesses; increasing material affluence amongst the upper and middle class people and their desire to live in serene environments as well as the privatisation of civic facilities and infrastructure. The above factors have contributed to the increased yearning to create a defence between the individual and society (Quintal, 2008).

The spread of gated communities has triggered a lot of debates with regard to the impact of gated communities on social processes. This is as a result of interpretation of gated communities as manifestations of segregation and fragmentation of urban societies due to fortification, as well as privatization of former public spaces. Additionally, the capitalist production of gated communities by real estate developers has a huge social cost and creates long-term spill-over effects to the neighbouring communities with regard to pollution, overcrowding, sprawl, competition for land-uses, as well as other kinds of externalities (Glasze, 2003).

Despite this, gated communities have been seen to have quite a number of benefits linked to functional integration with regard to the exchange of money for services. As noted by Sabatini and Salcedo (2007), gated communities are aimed at the elite, and as a result often situated on

the fringes of low income neighbourhoods. The low income neighbourhoods provide cheap labour to the 'elite' in gated communities. Consequently, these gated communities foster functional integration indirectly through the provision of employment opportunities, provision of social amenities and infrastructure including other economic externalities.

According to Mwangi (1997), rapid urban growth has resulted in heightened shortages in housing in Kenya. The Kenyan housing sector is typified by shortfalls in the provision of affordable and decent housing, as well as low levels of urban home ownership. The sector is also characterized by extensive and unsuitable dwelling units encompassing informal squatter settlements. It is approximated that the housing sector in Kenya has a shortfall of 300, 000 housing units every year. In addition, the shortfall in low cost housing is especially acute in urban areas approximated 30, 000 housing units which represents 80% shortfall. The challenges delineated above are spreading to Athi River which is in Mavoko Municipality, Machakos County which is part of the Nairobi Metropolitan Area.

Due to this housing deficit, increasing material affluence amongst the middle class people has made more and more urban residents to be dependent on rental housing for accommodation. Consequently, there have been an increasing number of people residing in rental gated communities and also people owning individual homes within gated communities either through mortgaging homes or direct purchases. Gated communities, consequently, represent a significant part of the new housing market in Kenya.

This study set out to investigate how this new forms of housing foster functional integration between gated communities and the low income neighbouring communities.

1.2 Statement of the Research Problem

In Kenya and around the world, gated communities have become a common feature of suburban building patterns and also a kind of urbanism that is security-oriented. These gated

communities are mostly commoditized suburban neighborhoods for the upper and middle class, emphasizing a “community lifestyle”. In South Africa, particularly Cape town, and other cities in Africa, gated communities have tremendously increased in the last decade. These communities have also become very popular in the property industry in Kenya since they embody a new form of urbanism which offers a sense of security, affordability of common facilities, and ‘community’ to the inhabitants. It is critical to note however that an emerging problem relating to the development of gating communities has been that these developments promote social segregation and fragmentation between those living within them and those residing in the vicinity (Landman, 2002). Furthermore, the drivers that result in the development of gated communities have often been observed to concentrate more on the welfare of those residing in gated communities than of those living on the outside. The above references underscore the main problem of disconnect between gated communities and those in the vicinity.

Most literature on gated communities present that these developments protect their inhabitants from the daily hassle of the city. This is what has been referred to as by Quintal (2006), as “a retreat from the public realm to the private sphere of a home.” Nevertheless, gated communities often cause residential segregation, social fragmentation and promote individualism which is a well-known phenomenon in capitalist economies. This, consequently, weakens social ties and has widespread impacts on the community structure. As Sally (2003) states, there has been an increasing pattern of building fences, cutting off relationships with neighbors, and moving out in reaction to problems and conflicts amongst the middle-class and upper-middle class urban and suburban neighborhoods. As a result, residential isolation created by discrimination and socio-economic inequalities is underpinned by planning practices and policing, implemented by zoning laws and regulations.

A lot of literature on gated communities has presented discussions on the the types and structure of gated communities, the drivers for these types of developments and the impacts they have on their members among others. Only a few studies have delved to explore the impacts of gated communities to low income neighbouring communities mainly in developing countries. In Kenya in particular, there is no identified study that probes into the effects of gated communities to low income neighbouring communities and how this impacts on functional integration. This study therefore aimed at investigating the stated scenario as an attempt to understand the interactions between people residing within gated communities and low income neighbouring communities in the vicinity and how this impacts on functional intergration.

According to a study done in Santiago, Chile by Sabatini & Salcedo (2007), gated communities promote integration functionally through provision of job opportunities and public services among others to those residing in the vicinity. This is attributed to the fact that gated communities are aimed at the elite, and they are frequently situated on the fringes of low-income neighbourhoods and are also accompanied by non-residential developments, such as, office complexes, shopping centres, health centres among other facilities. Since gated communities have become very rampant over the years, it has been observed that, due to their location in low-income periphery, they bring about a lot of opportunities and advantages to the often low income communities in the vicinity. This study aims at identifying the different kinds of job opportunities and other amenities gated communities provide to those residing in the vicinity.

This study aimed at establishing that despite extensive literature on how gated communities promote social segregagtion and fragmentation, gated communities do provide a number of benefits and advantages to those residing in the vicinity who are usually low income communities. This study focuses on the kind of opportunities provided by gated communities and the consequent interactions between the gated communities and low income communities

living on the outside and how this promotes functional integration. The study has a special focus on Athi River.

1.3 General Objective

To establish the kind of interactions between gated and low income communities in the vicinity and how these relations enhance functional integration.

1.3.1 Research Objectives

1. To determine the types of job opportunities that gated communities provide to low income neighbouring communities in the vicinity and how provision of these opportunities fosters functional integration.
2. To determine the types of social amenities that gated communities provide to low income neighbouring communities in the vicinity and how provision of these amenities promotes functional integration.
3. To establish the types of economic externalities emanating from gated communities and how externalities impact on functional integration.

1.3.2 Research Questions

1. What types of job opportunities do gated communities provide to low income neighbouring communities in the vicinity and how does provision of these opportunities foster functional integration?
2. What types of social amenities do gated communities provide to low income neighbouring communities in the vicinity and how does provision of these opportunities foster functional integration?
3. What types of economic externalities emanate from gated communities and how do these externalities impact on functional integration?

1.4 Research Hypotheses

H₀: There is no significant relationship in provision of job opportunities by gated communities to low income communities in the vicinity and functional integration.

H₁: There is a significant relationship in provision of job opportunities by gated communities to low-income communities in the vicinity and functional integration.

H₀: There is no significant relationship in provision of social amenities by gated communities to low income neighbouring communities and functional integration.

H₁: There is a significant relationship in provision of social amenities by gated communities to low-income communities in the vicinity and functional integration.

H₀: There is no significant relationship in provision of economic externalities and the impact these has on functional interactions between gated and low income neighbouring communities.

H₁: There is a significant relationship in provision of economic externalities by gated communities to low-income communities in the vicinity and functional integration.

1.5 Justification of the Study

Gated communities have become a common phenomenon all around the globe. In Kenya, gated communities are becoming particularly rampant as a form of housing for the middle-income and high-income households. Gated communities in Athi River are an integral element of urban systems in spatial, temporal, social, economic, functional and planning dimensions. Athi River being a transitional zone between the truly urban Nairobi city and Eastern Metro is experiencing rapid socio-economic transformation and as such, gated communities are rapidly being developed in the area. These communities play an integral part to the growth and operation of the wider Nairobi Metropolitan region especially the Eastern Metro which encompasses Kangundo-Tala and Athi River in Machakos County (Simon, 2008). The study

area was chosen because of the factors above including the fact that the researcher resided in the research area at the time of the research. The analysis of the study findings helped draw lessons and make recommendations concerning the kind of interactions between gated and low income communities in the vicinity and how these relations influence functional integration.

According to Mwangi (1997), rapid urban growth in the City of Nairobi has resulted in more and more individuals being dependent on rental housing for accommodation since most individuals cannot afford to buy a home. Rental housing has further been upgraded into what are now referred to as gated communities which represent a significant part of the new housing market, particularly, in the newly urbanized areas. These gated communities have become the latest trend in Kenya as home buyers seek privacy and security and consequently, this new housing typology continues to increase (Otieno, 2012). As such, this study investigated how gated communities in Athi River promote functional integration with their neighboring low income communities through provision of job opportunities and other facilities.

The development of gated communities can also be attributed to escalating land prices in Kenya particularly in areas around Nairobi, as well as rapid urban growth in the framework of limited economic growth. According to Sabatini & Salcedo (2007), due to the high land prices, developers buy land cheaply near marginal areas and in the proximity of highways in the periphery to build mega-residential projects. Developers buy land cheaply in low-income neighbourhoods, privatize it and provide social amenities so that they can maximize their profits by selling or renting this ‘newly urbanized land’ at high prices. The rampant development of gated communities in Athi River calls for an analysis of the interactions between the upper-class groups in gated communities and low-income groups in the vicinity so as to determine how these interactions can be enhanced to promote functional integration between the two groups. The knowledge from the study consequently enhances the theoretical and practical understanding of the benefits brought about by gated communities.

Furthermore, as the urban population continues to grow, the housing production has remained very low as compared to the actual housing demand. Consequently, rental, gated residential developments are tremendously expanding given that only a few urban dwellers can afford to own a home and this type of housing is extremely attractive to middle-income and upper-income individuals (Mwangi, 1997). This is attributed to the sense of security and community, as well as the range of shared amenities that come with gated communities. The study explored how opportunities and amenities from gated communities benefit the communities residing in the vicinity, who are usually not confined by a gate.

Additionally, given that there is limited empirical research regarding gated communities in Kenya, and particularly with regard to how they promote functional integration, this study aimed at addressing the deficiency of scholarly research on gated communities in Kenya. Ultimately, the results of this study add to the existing literature on benefits of gated communities to the neighbouring poor. Understanding these benefits is critical in enhancing integration of gated communities into the wider local environment.

1.6 Scope and Limitations of the Study

This study sought to establish the kind of opportunities and amenities that gated communities provide to low income communities in the vicinity and how provision of these opportunities and amenities promotes functional integration. To achieve this, the study concentrated on the job opportunities, social amenities and economic externalities derived by low income neighbouring communities from gated communities. To assess functional integration, the aspects of how gated communities engage low income communities in the vicinity into the wider economic environment through exchange of money was unpackaged.

The study interviewed only those residing in gated communities as information gathered from these communities would be adequate to evaluate functional integration. Those living in low

income communities in the vicinity were not interviewed. Considerable information both quantitative and qualitative was collected on the job opportunities, social amenities and economic externalities provided by gated communities to low income communities.

This study was carried out in Athi River where gated communities are rampant. The study mainly focused on the benefits of gated communities to the wider local environment. It was based on a one-time field survey of 12 gated communities in Athi River with a population of 577 households (Athi River Gated Communities Association).

The study focused on Athi River which is in Mavoko Municipality. Mavoko Municipality is in Machakos County which is administratively divided into twelve divisions namely: Kangundo, Kathiani, Kalama, Machakos Central, Masinga, Matungulu, Athi River, Mwala, Ndithini, Yathui, Katangi and Yatta. Athi River which is the focus of this study is one of the administrative divisions.

1.7 Operational Definition of Terms

Gated communities: A type of privately owned residential complex or housing estate containing strictly-controlled entry for people on foot, bicycles; and vehicles, and is mostly encircled by a perimeter wall.

Segregation: The official practice of keeping people apart based on socio-economic status, in this case, residential segregation.

Social cohesion: Social cohesion represents the capacity of a society to ensure the comfort of all its members, reducing disparities and evading marginalisation.

Symbolic integration: This refers to the level of connection and compromise an individual has towards a place where he/she lives.

Functional integration: Functional integration defines the situation where gated communities promote the assimilation of poor residents into the wider society with regard to interaction through businesses, casual jobs and money. This means that, the poor are integrated into the market where they take part as workers, in a democratic process, with political rights and with regard to access to services and urban facilities. The development of gated communities brings low-paying jobs to the neighboring communities, for instance, maids and gardeners.

Society: Refers to the act of people living together in communities.

Social Integration: It is the merging and unifying of social groupings especially the movement of minority affiliations, for instance, ethnic minorities, the poor and underprivileged in society into the mainstream of societies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In order to provide a solid basis for the understanding of the theoretical context applied for this research, a critical re-evaluation of relevant scholarly literature was undertaken. This chapter reviewed past researches that have been done relevant to this research on gated communities both positive and negative. The chapter also reviewed relevant information from past researches so as to identify the gaps within existing literature. The review was aimed at helping the researcher gain a good understanding of the research under study with regard to theoretical and empirical literature.

2.2 Gated Communities: A Definition

Gated and walled cities have always been there since the beginning of human urban settlement. In the ancient times, cities surrounded by walls to prevent invasion by enemies were common. These cities had one major gate which was the central entry point guarded by soldiers. There were other smaller gates which served as secondary ways into the city (Schontiech & Landman, 2002). For instance, in most ancient Chinese cities, gated communities have been common for more than a millennium (Xu & Yang, 2009). Gated and walled cities have their origin in England around 300 BC. In the early eighteenth century, the London royal family and other affluent people walled up their homes to guard themselves from the occasionally unruly lower classes. Roman soldiers also erected walls and defences within the villages they occupied to guard themselves from their foes (Blakely & Snyder 1997). In addition, medieval towns depicted walls, towers and gates (Low 2003). Consequently, the concept of “forted up’ cities and villages is what has been adopted in the creation of gated communities. The term ‘gated community’ depicts a comparatively new development as an architectural concept (Schontiech & Landman, 2002).

According to Grant (2004), many communities around the globe have used fences and walls to provide domestic security. Enclosed areas may encompass only a few houses or even entire neighbourhoods. The walls and fences are mainly to safeguard domestic animals and children. They also help keep natural elements at bay, for instance, flood waters, drifting sand, dangerous invasions and marauders. These security zone developments also have defensive functions. The concept of ‘enclosed compounds’ is what has evolved to modern day ‘gated communities.’

‘Gated communities’ depict closed-off private spaces, representing a conversion of open space to closed space through physical boundaries. According Landman and Schontiech (2002), there is no consensus on the definition of gated communities since there are different types of gated communities in different countries. As a consequence, there are a multitude of interpretations regarding types and meta-types. In Brazil, these enclosed developments are often referred to as ‘condominio fechado’. Others refer to them as ‘closed condominiums’, ‘fortified enclaves’ or simply ‘fenced-up areas’. Some authors talk of gated communities as only one part of a larger phenomenon of enclosed areas including shopping malls and fenced-in housing estates.

The internationally accepted definition of gated communities which this study adopts is, a type of privately owned residential complex or housing estate containing strictly-controlled entry for people on foot, bicycles; and vehicles, and is mostly encircled by a perimeter wall. These ‘enclosures’ are also usually protected by security guards at the entry points, have a number of shared amenities and may also have a legal regulation of their own separate from that of the neighbouring communities (Le Goix, 2004; Quintal, 2006, Schontiech & Landman, 2002; Lang & Danielsen, 1997; Khalfani & Mahgoub, 2012, Bowers & Manzi, 2006).

2.3 Gated Communities: Social Segregation and Exclusion

2.3.1 Culture of Fear, Desire for Safety and Security

The development of gated communities has often been linked to a variety of factors including: pervasiveness of fear particularly in urban areas due to increased terrorist activities; increasing feelings of insecurity due to crime caused by high unemployment rates; suburbanization; new trends in real estate developments that often view gated communities as very lucrative businesses; increasing material affluence amongst the upper and middle class people and their desire to live in serene environments as well as the privatisation of civic facilities and infrastructure (Quintal, 2008).

According to Landman (2000), fear of crime and desire for safety and security are the major driving forces behind the development of gated communities. Gates and perimeter walls are seen as a hindrance to criminals encouraging them to focus on other communities that have no security measures hence wading off crime. Gated communities are usually physically separated from their surrounding environments and by restricting access to residents only, they present themselves as closed residential pockets. They represent a culture of fear and risk evasion for communities living within them. They also mirror increasing concerns of insecurity, control of criminality and the avoidance of anti-social behaviour. These communities usually provide safety and security to elite communities and as such are limited to high and middle income groups which are separating themselves from social problems outside the gates. The physical separation of gated communities from the surrounding urban environments results in social and spatial separation of the residents of these communities and communities in their vicinity.

2.3.2 Gated Communities: Social Segregation and Fragmentation

Gated communities have an impact on the urban form and function. These developments pose major challenges to their surrounding urban environments and to cities as whole because of the social segregation aspects associated with them. Their development rests on a number of assumptions which relate to social fragmentation. Gated communities represent a new trend in the evolution of cities, related with the emergence and growth of mega and international cities. They are often viewed as undemocratic developments that damage the processes of social cohesion (Landman, 2000).

Traditionally, gated developments have often been linked to national security and taxation, urban development and colonialism. This is evident in the Great Wall of China, Hadrian's Wall, the wall placed across colonial India and the compound developments used by westerners during colonisation and development of extraterritorial rights. The Sea Gate New York City's first gated communities were occupied in the middle war years mainly by middle class Jewish households. In 1960's in Florida, USA, gated communities were mainly developed as leisure and living complexes for retirement communities (Scott et.al, 1993). According to Scott (1993), gated communities in Germany were referred to as "partitioned cities" and bore the negative expression of rapid market-led global economic growth, characterising the hopelessness of the local and national state to standardise development and to address new trends of social segregation and the incapacities brought up by the operation of the international market economy. These communities brought about substantial disparities of wealth and poverty and were liable for the development of "mega cities" such as Mexico City, Sao Paulo, Calcutta or Mumbai in Latin America and India. These cities showcase areas of rapid urban development where populations within, depict wide disparities of affluence and poverty (Landman, 2000).

2.3.3 Gated Communities: Social Exclusion

The design of gated communities upholds physical separation and restricted access which gives an illusion of control and stability in these developments. Gated communities often raise the question about how they impact on the broader social dynamics of cities. Landman (2000b) states that, although gated communities exclude potential residents through housing costs, residents of these communities have the capacity to restrict and exclude potential residents but also the casual passer-by. This separation and loss of social contact can result in a “them and us” attitude in gated communities. Gating, for instance, presents passers-by with a scenario where they are forced to navigate around gated communities increasing their travel distance and time spent and consequently this decreases their efficiency.

The social exclusion aspect of gated communities impacts on the issue of individual rights to public space and the basic principle of democracy. This is attributed the fact that, gated communities foster privatisation of public space and services and stop community responsibility at the gates. This threatens social equality (Blakely & Snyder, 1997).

2.4 Gated Communities: Opportunities

2.4.1 Opportunities for Residents: Safety and Security

Gated communities have been emerging in different parts of the globe at different times and for different reasons. Low (2003), states that, secured and gated communities in the United States of America (USA) started coming up at the turn of the twentieth century. These communities were built to guard family estates and affluent citizens as epitomized by New York's Tuxedo Park or the private streets of St. Louis. In the late 1960s and 1970s, planned retirement communities became the first places where middle-class Americans could wall themselves off. The concept of gating then extended to resorts and country club developments, and lastly to middle-class suburban developments. In early 1980s real estate speculation

hastened the building of gated communities around lawn courses designed for exclusivity, prestige, and leisure. As Low (1997) presents it, the gating process was as a response to late-twentieth-century economic restructuring changes in urban North America.

In many developing nations, gated communities also develop as a consequence of high crime rates. Crime in most cases tends to increase during times of political changeover coupled with instability and aggression. This occurred in many Latin American countries, including Brazil, and Eastern Europe states during their transition to democracy (Low, 2003). Consequently, development of gated communities in countries like Brazil and South Africa is as a response to increased levels of crime (Low, 2003; Bowers & Manzi, 2006). According to Grant (2004), fear of terrorism forces deportee workers into compounds in Saudi Arabian cities; fear of crime makes tenants of public housing to accept enclosure of their communities; fear of rising violence persuades white South Africans to fence their suburbs and hire armed guards to patrol the streets (Landman, 2003a). Violence in some regions of the world causes the middle and upper classes to feel that they have no choice but to gate themselves off from the chaos outside (Canin, 1998; Faiola, 2002; Quintal, 2006; Malpezzi & Little, 2001). Gated communities not only control access but they also act as a symbol of social status. These communities are a dream of the suburban which persuades the elite (upper and middle classes people) to desire to reside and invest in enclosed areas on the urban periphery (Landman, 2003). Gated residential estates depict an increasing range of choices available to consumers in the postmodern city. As a result, these estates normally appeal to relatively small, affluent elite in their search of privacy and exclusivity, walling themselves up from the dangers of the outside. Consequently, the choice of living in gated communities appeals to those individuals who feel they cannot rely on public regulations to guard their homes from unnecessary individuals (Byers, 2003).

Furthermore, as Quintal (2006) presents, increasing material affluence results in the modern society being increasingly characterized by fear, apprehension and insecurity. Consequently, gated communities provide a sense of community, security and comfort to the inhabitants. Gated communities, therefore, respond to both the fears and concerns about the contemporary city and reflect a search for civility, character, and authenticity in the urban environment and a reliance on surveillance for social control in the contemporary city (Ghonimi *et.al.*, 2011). Consequently, these communities have become extremely attractive to the upper and middle income households around the globe creating new forms of exclusion and residential segregation, exacerbating social cleavages that already exist (Blakely & Snyder, 1997).

In Kenya, gated communities have become rampant as home buyers search for privacy and security. The perimeter walls, independent entry points as well as manned gates make people, especially parents feel safer with their children in enclosed environments. These residential estates reduce crime as a consequence of heightened security and constant surveillance. This concept is being adopted by developers to foster security for home buyers in Kenya (Otieno, 2012).

2.4.2 Gated Communities: Social Amenities

The main reason why people live inside gated communities is for safety and privacy as well as the superior amenities and services offered within them ((Sabatini & Salcedo, 2007; Malpezzi & LaCour Little, 2001). Gated communities depict residential developments with restricted access and a number of shared amenities. They are provided with a number of leisure facilities, for instance, lawn courses, tennis courts and swimming pools among others. These social amenities are usually meant to benefit the residents within these communities. Gated communities have shared amenities within them which vary widely. For instance, public infrastructure such as roads and streets are common. In affluent developments, gated

communities have shared meeting spaces and recreational facilities. Full-service master-planned communities offer shopping malls, schools, industry, hospitals, recreational departments, and the police.

The accessibility of amenities and facilities within the community may influence the degree of interaction with the neighboring communities and; consequently, may have major implications on functional integration and exchange. As the gated communities become more and more self-contained, there is reduced interaction between the people within and people outside. Consequently, as Hegedus (2011) presents, the institution of enclosed residential areas contributes to the disintegration of the local societies, as well as increasing the number of settlement conflicts amongst the residents of gated communities and the people living in their neighbourhood.

2.4.3 Gated Communities: Sense of Community

Many researcher's present that, walls and gates in gated community developments represent community space and as a result, there is usually a heightened community desire to safeguard that space. Newman (1972) came up with the concept of 'defensible space' and asserted that, a clear description of what space is increased consciousness and ownership of that space. Furthermore, controls on non-residents' entry ensures that, gated community residents are likely to be more familiar with their neighbors and; hence, can easily recognize an intruder (Neighborhood Watch Western Australia, 2015). This however reflects segregation and discrimination of neighbouring communities.

2.4.4 Gated Communities: Reduced Dependence and Pressure on Local

Administration

Gated communities provide private community recreational facilities and private roads which are usually provided by the developer to the residents. The residents maintain these facilities

through the rent they pay and other fees. This, consequently, reduces the weight on local government to provide facilities and preserve infrastructure, for instance, roads, gardens, storm water systems among others. Grant (2005) describes the gated community developments as ‘cash cows’ for the local authorities. Many proponents of gated communities in the USA and Argentina present that, most local authorities do not discourage the development of gated communities because of the many financial advantages of this form of development (Blakely & Snyder, 1997; Low, 2003; McKenzie, 2006; Roitman, 2005).

2.5 Gated Communities: Opportunities for Developers

2.5.1 Gated Communities: Benefits to Developers

In the recent years, developers have favored the development of gated communities over other forms of residential estates since they are more profitable. This is attributed to the fact that, the various restrictions put in place for homeowners make it possible for developers to better control future land prices by cutting down potential negative externalities (Sabatini & Salcedo, 2007; McKenzie, 1994). In addition, gated communities allow for increased density without compromising the price buyers are willing to pay. Even if the streets and plots are narrower and smaller than what is commonly prescribed by law, the developers usually compensate for this by providing some common green spaces and other social amenities . In addition, developers have an advantage with regard to marketing these developments because of the positive connotations gated communities evoke in prospective homeowners. As McKenzie (1997) avows, gated communities became very popular in the USA since they were considered completely different from what most people were searching for in suburban houses, that is, a big plot, privacy and space. Consequently, developers developed marketing strategies to convince prospective buyers to live in gated communities through provision of security and ‘a sense of community’ within these enclaves.

Moreover, most developers view gated communities as an important niche marketing strategy in an extremely competitive environment. Through provision of beautiful amenities and locking out undesirables, the gating process might increase property values. In addition, developers and property owners demand to develop their property in its highest and best possible use so as to increase value (Grant 2004; Ghonimi 2011). According to Blakely and Snyder (1997), gated enclosures are increasingly becoming commoditized suburban neighborhoods for the upper and middle class, fostering a community lifestyle. Consequently, these Common Interest Developments (CIDs) aim at protecting property values through design policies and Covenants, Conditions and Restrictions (CC&Rs). This explains why most developers prefer these types of housing developments that also act as private governments, grounded on private contracts to guard property values (Kennedy, 1995). Similar issues that concern property values, personal safety and neighborhood amenities drive the gating process.

2.6 Gated Communities: Opportunities for Neighbouring Communities

2.6.1 Job Opportunities

According to Blakely & Snyder (1997), most gated communities in the USA are located in urban and suburban sites. However, in other places, these communities also appear in exurban and rural areas. In Santiago, Chile, these communities are situated on the fringes of low-income neighbourhoods. This is attributed to the economic reforms and liberalization of urban land markets that occurred in this country in the 1970s and 1980s. This led to a continuous spread of residential, commercial and other real estate developments targeting the elite in Santiago Metropolitan area. Consequently, housing projects for the elite, shopping centers as well as modern office buildings are no longer solely situated in the city's upper class spatial zone, but are integrated into the entire neighbourhood (Portes & Roberts, 2004). As Sabatini and Salcedo (2007) present,

“Developers buy cheaply, big plots of land contiguous to marginal areas and close to highways in the periphery. They surround the projects with walls and supplement residential units with sports fields, clubs, and other amenities, privatizing public spaces (...) they are not in the exurban open space or in second-ring suburbs, as in U.S. cities, but are rather at the edges of the city, only blocks or meters away from the most marginalized groups of society.”

Development of gated communities comes with a number of non-residential developments, for instance, shopping centers, schools, swimming pools, meeting halls, office complexes among others which bring about job opportunities into the neighbouring low-income communities in their neighbourhood. The spatial distribution of gated communities for the upper class brings about a lot of advantages to the low-income communities by bringing job opportunities to the neighbourhood, fostering improved provision of public services as well as a restoring a novel sense of pride among the low-income communities.

2.6.2 Social Cohesion

Sabatini & Salcedo (2007), in their paper, *Gated Communities and the Poor in Santiago, Chile: Functional and Symbolic Integration in a Context of Aggressive Capitalist Colonization of Lower-Class Areas* assert that, through provision of the above opportunities to the neighboring communities, gated communities foster functional integration. This is done through fostering the following types of social inclusion:

- *Functional Integration:* gated communities promote the assimilation of poor residents into the wider society with regard to functional exchange of power and money. This means that, the poor are integrated into the market where they take part as workers, in a democratic process, with political rights and with regard to access to services and urban facilities. The development of gated communities brings low-paying jobs to the neighboring communities, for instance, guards, health trainers, house helps and

gardeners. However, despite being low-paying jobs, these opportunities contribute significantly to improving the living conditions of these people. In addition, gated communities enlarge the market for some local stores and other businesses by enlarging the market for their products.

- *Symbolic Integration:* this refers to the level of connection and compromise an individual has towards a place where he/she lives. This type of integration may exist under unequal relations, given that, the development of a community calls for a certain level of “sameness and equality.” Even if there is socio-economic diversity between gated communities and their ungated neighbors, there is social homogeneity within the different groups.
- *Community Integration:* this depicts the formation of social connections which exceed basic functional exchange. It is conveyed in friendships, solidarity networks as well as familial relations. This form of integration calls for people recognizing one another as equals with whom it is likely to overcome the borders of privacy.

Libertun de Duren (2006) also reports that, gated community developments in Argentina do construct roads outside the development as an incentive for approval.

2.6.3 Gaps Identified

From the discourse above, the many studies that have been carried out by scholars concentrate on issues to do with motivations behind peoples’ desire to live in gated communities and how gated communities foster spatial segregation and separation (Landman 2000). However, very few studies have been carried out to look into the kind of benefits gated communities bring about with regard to provision of public services and job opportunities and how this promotes functional integration. To fill this gap, this study investigated the advantages gated communities provide to the low-income communities in their neighborhood and how this fosters functional integration.

In addition, there has been limited literature on how the neighboring communities can benefit from the opportunities and amenities within gated communities. Most studies are more inclined to investigating how opportunities and social amenities within gated communities benefit their inhabitants. This study determines the types of opportunities and amenities within gated communities and how the servicing of these amenities by those outside promotes functional integration.

Furthermore, it is evident that, there is limited empirical research in Kenya with regard to gated communities more so with regard to how these communities can foster functional integration. This study therefore is aimed at addressing the deficiency of scholarly research on gated communities in Kenya.

2.7 Contribution of this Research to Knowledge

This research contributes greatly to the understanding of the extent to which gated communities are being integrated with their neighbouring communities in Kenya, and particularly in Athi River. The rampant infrastructural development in Kenya and increasing housing demand which is fostering the development of gated communities in different parts of the country calls for a proper comprehension of how these communities can be integrated through provision of social amenities, job opportunities and facilities. This information is essential in giving insight on how to promote this form of integration and consequently foster inclusive social and economic development and planning for residential housing development.

2.8 Theoretical Framework

There are several theories that attempt to explain the gated communities phenomenon, its effects and potential future effects of these developments. In this section, these theories are explored and the most applicable theory applied to this research.

2.8.1 The Economic Theory of Clubs

The Economic Theory of Clubs developed by James Buchanan in his 1965 paper, “An Economic Theory of Clubs” presents a method of providing mutually consumed goods effectively on the basis of controlled membership and fee. This theory was primarily applied to privately organised arrangements or entrepreneurial clubs. However, this is readily extendible to publicly or non-profit organised arrangements. Gated communities are presented as “territorial clubs” that supply club goods.

The economic literature on ‘club goods’ helps explain the nature of gated communities and how gated community developments are examples of the growth of privately owned club goods. These developments offer wanted goods and services, for instance, security zones, shopping malls, business parks, timeshare apartments, lawn and squash clubs, lifestyle and high-status communities and other social amenities. As a result, the theory of clubs presents that gated communities are usually created and provided as ‘club goods’, and therefore, are homogeneous enclaves. It describes cooperative membership and consumption of shared amenities. For instance, within gated communities, the inhabitants share social amenities such as swimming pools, open spaces/gardens, children playgrounds, tennis courts, gyms, green spaces, water supply among others. The theory of clubs helps in explaining the probable attractiveness of gated communities’ organization to developers, local governments and inhabitants (Webster, 2001; Webster & Wu, 2001; Webster & Wai-Chung Lai, 2003).

As explained above, the club good is neither a 'private' nor 'civic' good in the conventional economic sense. Somewhat, it comprises a hybrid quality in which a self-selecting community distributes a range of benefits and diminishes the costs of public good 'overcrowding' by the utilization of its pricing and membership requirements (Glasze, 2003c). It is this hybrid quality that has led to the application of Theory of Clubs on gated communities.

2.8.2 Postmodern Urbanism Theory

This theory depicts societal reaction to modernism and its image of utopia and perfection. Gated communities are perfect examples of postmodern urbanism since they recreate secure and peaceful environments, with their distinctive identity and style. Gated communities offer social and economic control ensuring a specific lifestyle. This is through the privatization of public space, services and governance. This theory attempts to provide a practicable description of underlying causes of the mushrooming of gated communities, however the theory does not explore the potential effects and impacts of the gating phenomenon (Landman 2002a).

2.8.3 The Driver-Pressure-State-Impact-Response (DPSIR) Framework

The DPSIR framework was initially developed by the Organisation for Economic Cooperation and Development (OECD 1994). This framework presents a chain of causal links starting with driving forces, pressures, state, impact and responses. This framework has been applied in explaining the gating phenomenon.

In this framework, human activities and external forces are seen as drivers that can produce pressures that can bring about changes on the status of the socio-economic and biophysical environments consequently impacting on the state of human settlements. To counter these impacts, society develops policies and programmes designed to prevent the pressures and their impacts on the environment (Landman, 2007).

2.8.4 The Gating Phenomenon

To explain the gating phenomenon and the conceptual framework applied in this research, the DPSIR framework has been applied. The DPSIR framework is a flexible scheme that can be used to assist decision makers in various stages in the decision making process. It was initially developed by the Organisation for Economic Cooperation and Development and has been widely applied in the fields of resource management, sustainable developing, climate change and planning. This framework was applied in a study in South Africa in explaining the gating phenomenon (Landman 2007). The framework demonstrated the possibility to incorporate and consider various aspects related to gated communities in understanding the interactions between these communities and those residing in the vicinity. The framework not only explains the gating phenomenon and the pressures and drivers behind their development but also delves on the analysis of gated communities as part of the wider environment.

2.9 Conceptual Framework

The conceptual framework for this study has been adopted from the DPSIR framework. This involves understanding the causal links starting with driving forces, pressures, state, impact and responses. In this framework, there are different driving factors that lead to development of gated communities. These driving factors include both the internal and external factors. Internal factors include aspects in the community that foster the development of gated communities over other types of residential developments. Firstly, in the recent years, developers have favoured the development of gated communities over other kinds of residential developments since they are more lucrative. This is mainly so, due to the various restrictions put in place for homeowners and tenants that make it possible for developers to effectively control future land prices by reducing probable negative externalities. Additionally, gated communities allow for increased density without compromising prices. Given that the plots

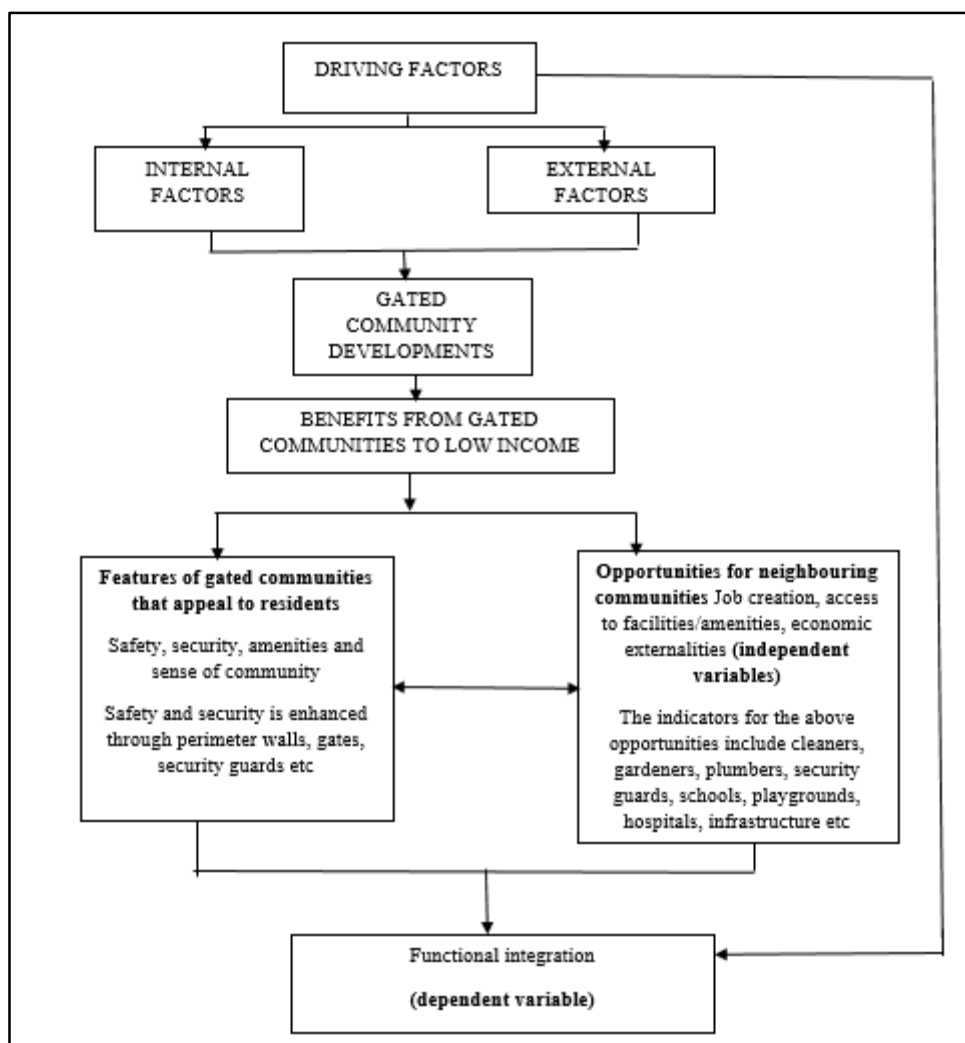
and the streets within gated communities are often smaller, developers pay off for this by providing some private green spaces and other amenities which attract high prices and increase property values. They also take advantage of the fact that, many individuals have positive connotations regarding gated communities with regard to safety and security.

Secondly, increasing social differentiation, modernization, as well as individualization in many societies around the globe, results in feelings of insecurity and; consequently, many people seek safety and security provided within gated communities. This is attributed to the fact that, most people believe that gated communities are safer as compared to traditional neighbourhoods. Furthermore, growing material affluence and increasing economic disparity have aggravated the situation by increasing feelings of fear, anxiety and uncertainty and subsequently, many individuals prefer residing in gated communities.

External factors include both local and international aspects that foster the development of gated communities. In many developing countries including Kenya, gated community developments are usually marketed as places of the “westernized elite” and consequently, many residents perceive these private neighbourhoods in this manner. This has now become part of a global lifestyle. In addition, notions of privatization administrate the political discourse in varied countries around the globe. Most governments continue to increase tax revenues; however, public spending in the provision of civic infrastructure remains low. Consequently, in many developing nations, gated community developments stand-in public supply and regulation through provision of essential amenities. In addition, the liberty of the real estate markets has increased the coverage of residential developers and fostered the development of gated communities.

The interplay of both the external and internal factors, result in the development of gated communities which come with a variety of benefits for both gated community residents as well

as non-residents. These benefits come in the form of social amenities, safety and security and a sense of community for the residents and as job opportunities and benefits for those in the vicinity. The interactions between gated communities' residents and those residing on the outside comes as a form of functional integration with regard to the services provided by people in the poor neighboring communities and the opportunities/benefits offered in return by the gated communities. This, as a result, leads to functional integration which in itself, although indirect, is a driving element in the development of gated communities.

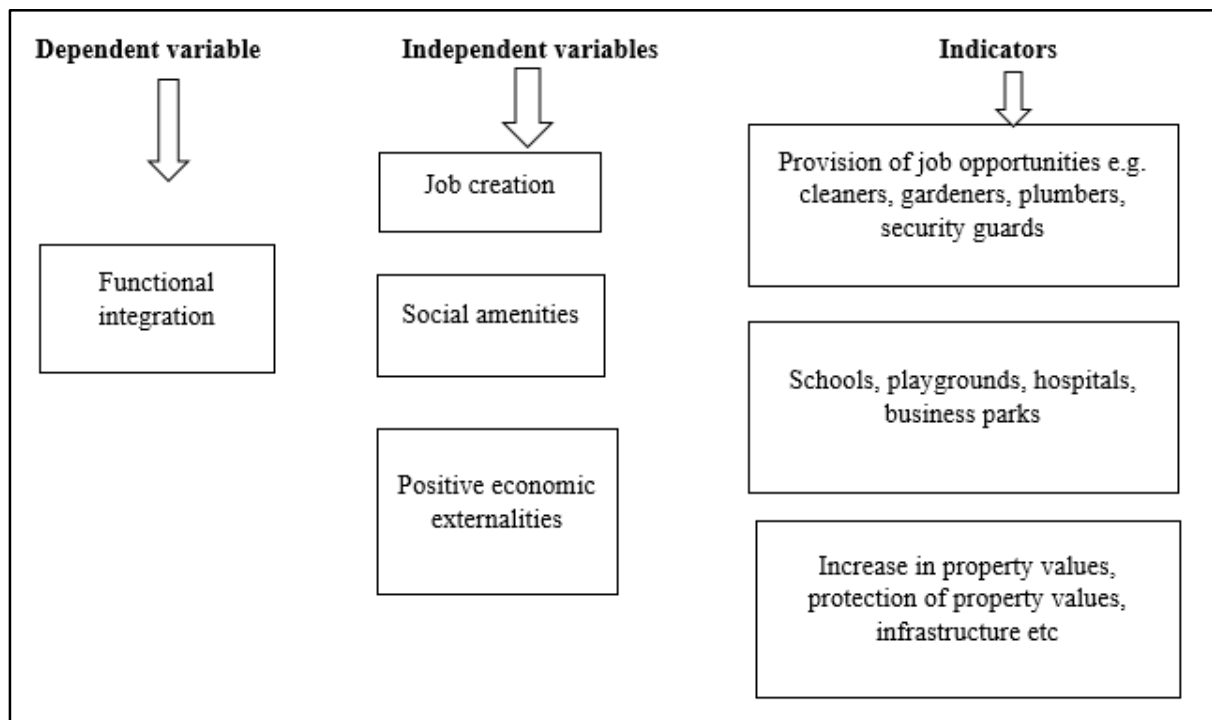


Source: Adopted from the DPSIR Framework (OECD 1994)

Figure 1: The Conceptual Framework (Researcher 2016)

2.9.1 Variables in the Research

In this research, the dependent variable is functional integration which is influenced by job creation, access to social amenities and economic externalities emanating from gated communities. The social amenities, job opportunities and economic externalities are the independent variables that affect the level of functional integration. The variables in this research are as shown below:



Source: Adopted from the DPSIR Framework (OECD, 1994).

Figure 2: Researcher, 2016

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the study area, research design and methodology used in the study. It specifically discusses nature and sources of data, population sample, sampling technique, methods of data collection and data analysis.

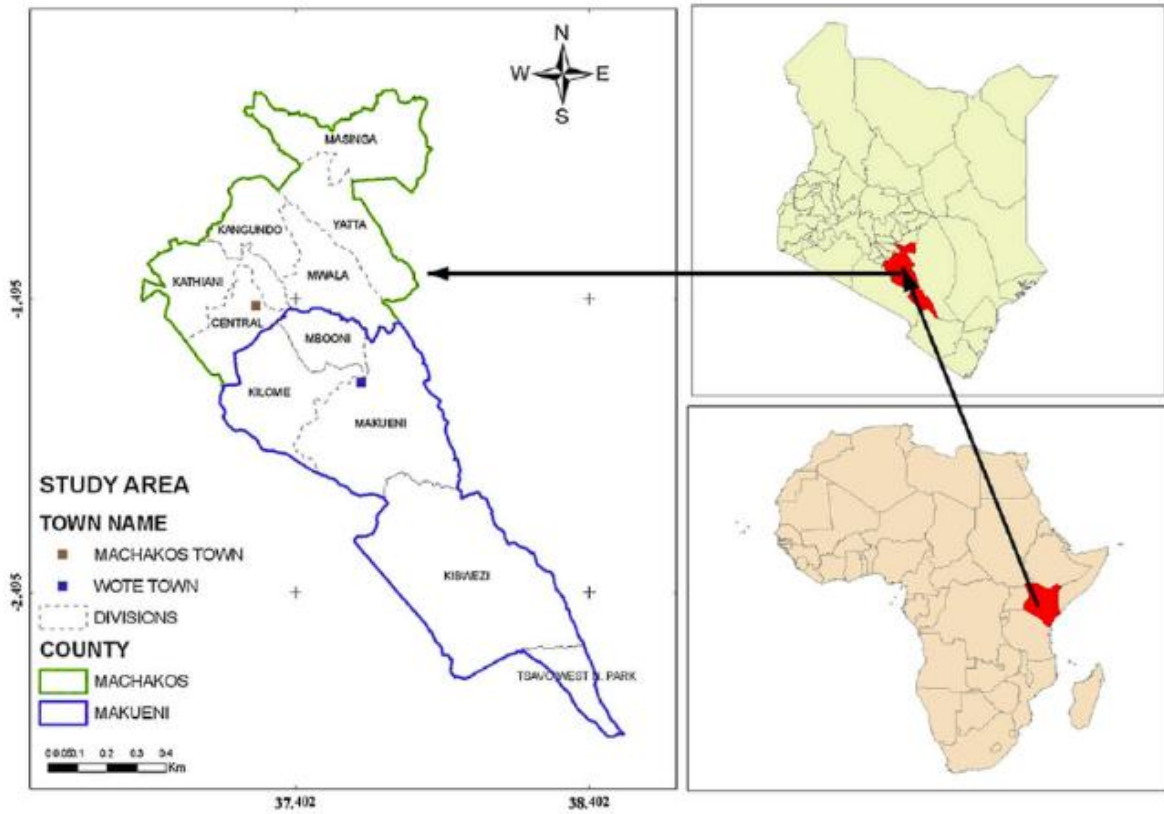
3.2 Study Area

The area of study for this research is Athi River which is in Mavoko Municipality in Machakos County. Athi River is a Division that is under the jurisdiction of Mavoko Municipality. Mavoko Municipality covers an area of 693 km³. It borders Nairobi City Council to the west and covers Katani and Ruai on Kangundo road. It stretches Muthwabi-Lukenya and Makutano (Kyumbi) to the east where it borders Machakos Municipal Council. It covers Kapiti plains to the south west towards Kitengela area where it borders Olkejado County Council and to Embakasi at the Nairobi City Council border (Gulf Power Limited, 2010).

Machakos County is one of the thirteen counties in Eastern Province. Machakos County stretches from latitudes 0⁰ 45' south to 1⁰ 31' south and longitudes 36⁰ 45' east to 37⁰ 45' east. The total area is roughly 6, 281.4 km² shared among the 12 divisions: Central, Kalama, Kangundo-Tala, Kathiani, Masinga, Matungulu, Athi River, Mwala, Ndithini, Tathui, Katangi and Yatta. Athi River is one of the administrative divisions. Athi River which is the focus of this study has the following geographical coordinates: latitude 1⁰ 27' 22.68" S, longitude 36⁰ 58' 41.74" E.

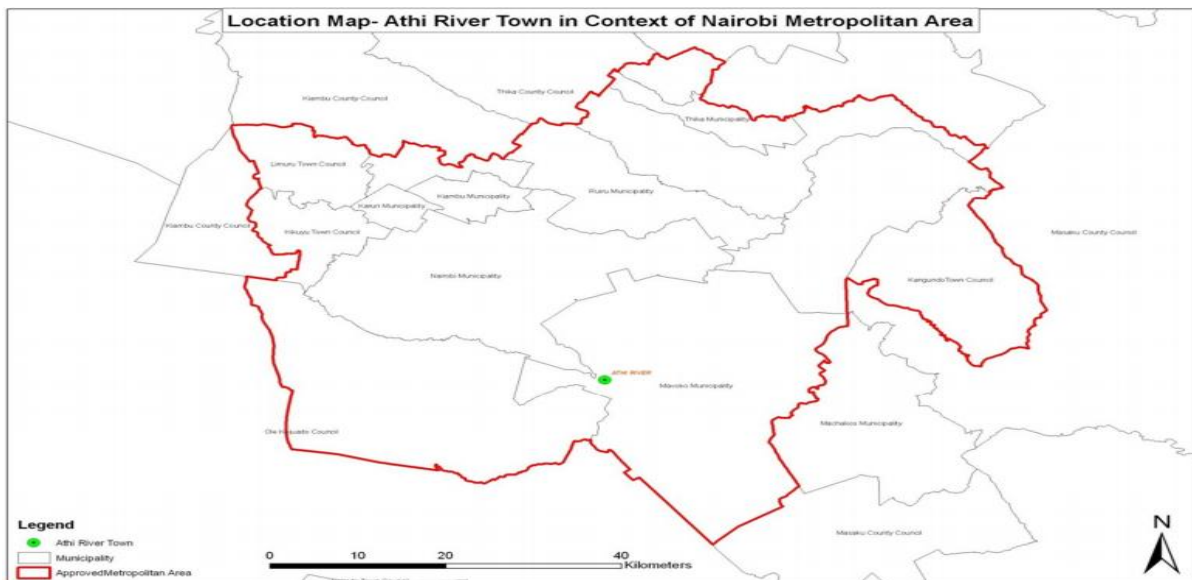
3.2.1 Population of the Study

The population of Machakos County according to the 2009 Kenya Population and Housing Census was approximately 1,098,584. 52% of the total population in Machakos County is urban that is 571,355 people. The rest reside in rural areas (48%). The County has an area of approximately 6,281.4 km². The number of persons per square kilometre in 1989 was 126 while in 1999 this had increased by 14.3% with 144 persons per square kilometre. Currently, the number of persons per square kilometre is 177 persons. The county has 186,297 households. 63% of the population lives below the poverty line. The area of Athi River is 957 km². The focus of this study is Athi River Division as shown below. Athi River is approximately 30 km from Nairobi Central Business District (CBD). Proportionate stratified random sampling was used in this research. This was made possible because a complete list of all gated communities in Athi River is 40 (Athi River Gated Communities Association). The sample size was 30% of the total number of gated communities. The target population for this study consisted of 12 gated communities in Athi River with an estimated population of 577 households.



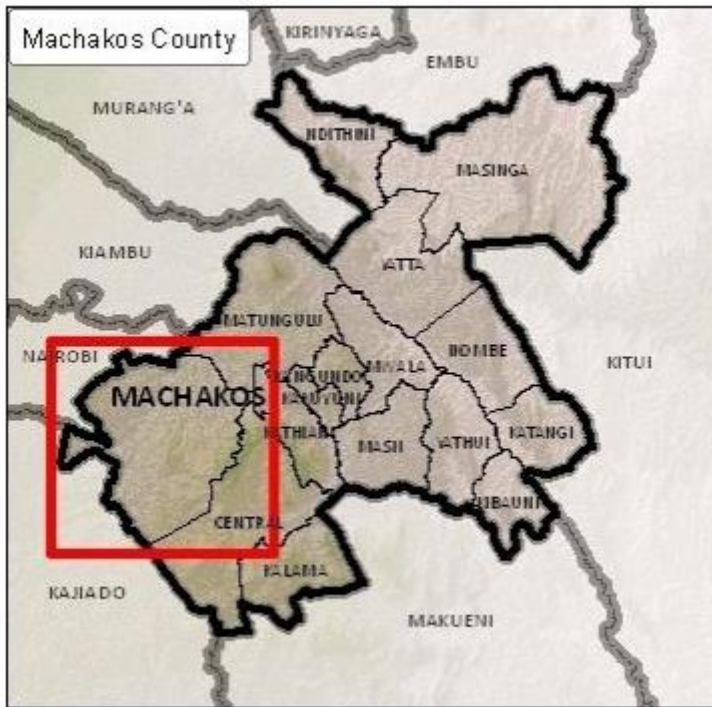
Source: Journal of Ethnopharmacology, 2011

Figure 3: Map of Kenya showing location of Machakos County



Source: Land Use Analysis Report (Gulf Power, 2010)

Figure 4: Location of Athi River in the context of Nairobi Metropolitan Area



Source: CETRAD, 2013

Figure 5: Map of Machakos County showing Athi River

The research was carried out in the geographical region demarcated as Athi River (Figure 5) which is in Mavoko Municipality, Machakos County within Nairobi Metropolis. Athi River is a town outside Nairobi, Kenya in Machakos County. It is also known as Mavoko. The town hosts Mavoko Municipal Council and headquarters of Mavoko Municipality which is part of Machakos County.

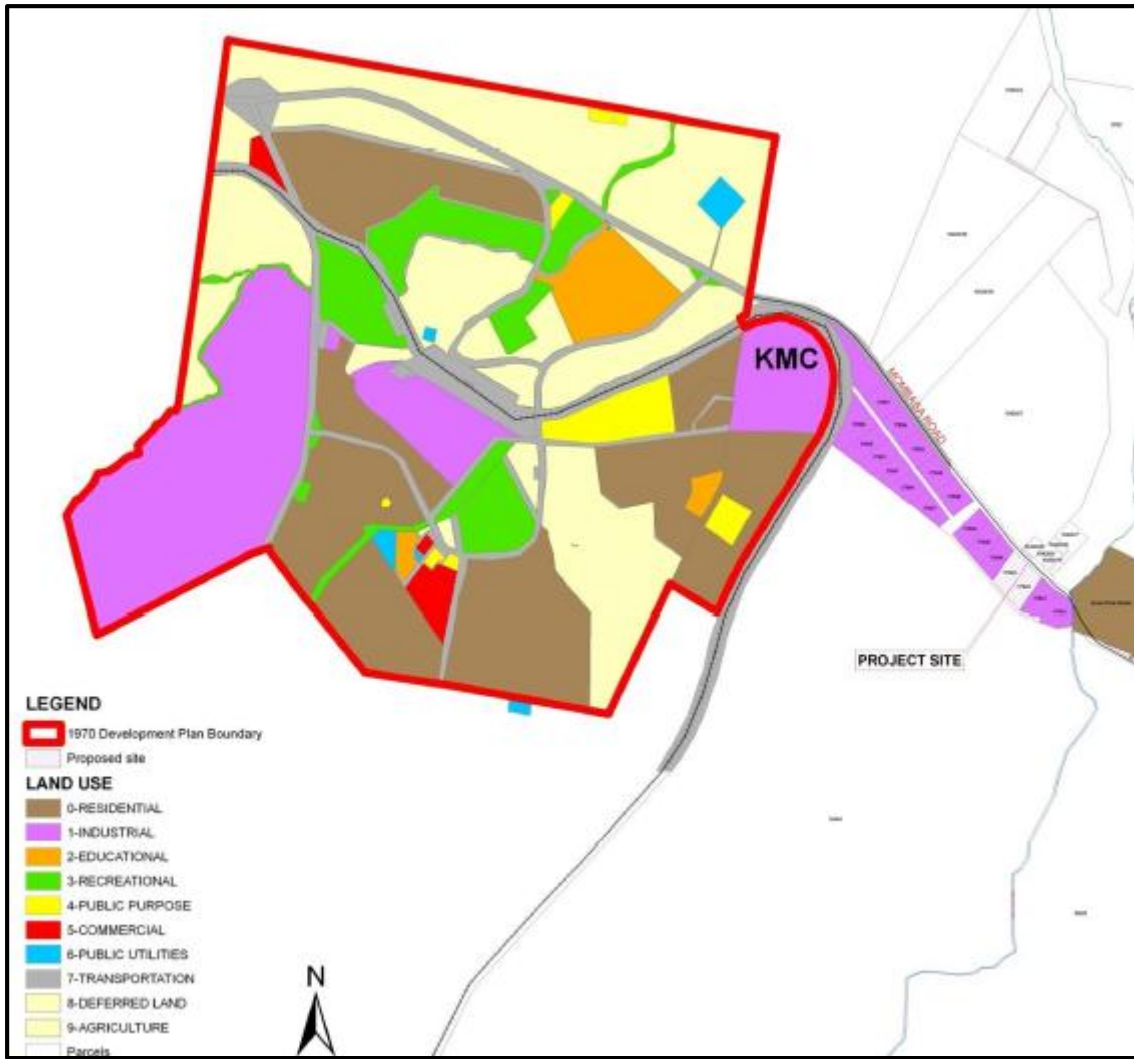
3.2.2 Physico-climatic Characteristics

Athi River is a transitional zone between the truly urban Nairobi city and a clearly rural area of Machakos County, hence experiencing rapid socio-economic transformation and environmental challenges related to the emergence of urban developments and activities in rural areas (UN-Habitat 2006). Furthermore, the study site poses new institutional challenges for socio-ecological planning and vulnerability assessment arising from the intertwined nature

of the rural/urban characteristics; the residents' heavy dependence on and exploitation of the natural resources; and the residents' relationships to environmental changes (Eakin et al 2010). The increase in impervious surfaces in the larger Nairobi metropolis affect the Athi River's hydrological systems because the area is low lying with a relatively flat surface of poorly draining black cotton soils, exacerbating the residents' vulnerability, thus necessitating better mitigation measures.

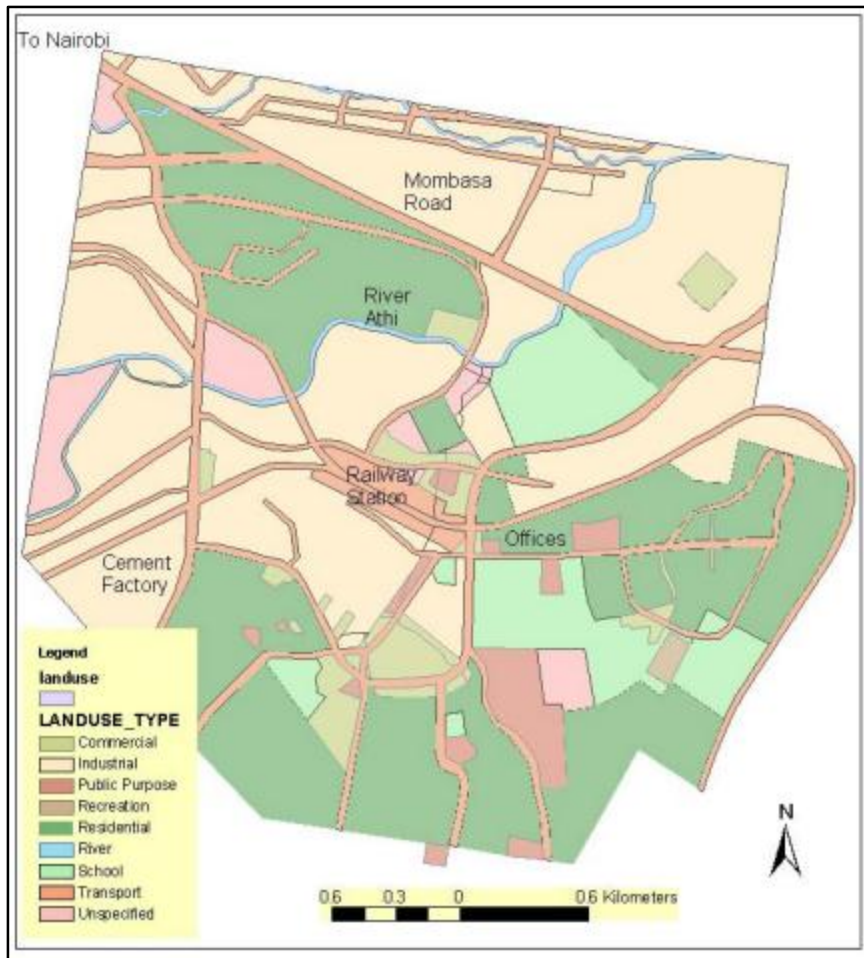
3.2.3 Land Use Activities in Athi River

Athi River is relatively industrialised, with six cement factories located within its vicinity. These include Bamburi Cement, Mombasa, East Africa Portland Cement Company, Savannah Cement, National Cement and Athi River Mining. The town is also a growing residential area due to its proximity to the capital (Population Census 2009). Mavoko Municipality covers an area of 693 km³. Land use within the Municipality is divided into 9 categories namely residential, commercial, industrial, recreational, educational, public purpose and public utility. The allocation and features of land use as per the Athi River Development Plan prepared in 1970 is captured shows the different land uses.



Source: Land Use Analysis Report (Gulf Power, 2010)

Figure 6: Athi River Land Use based on Development Plan for 1970



Source: Association of American Photographers, 2002

Figure 7: A 2002 Athi River Land Use Map

As shown in Figure 6 and 7, land use in Athi River, in Mavoko is primarily commercial, residential and industrial with a huge coverage of the industrial land being under mining and manufacturing industrial large scale plants. The areas is characterised by a number of wholesale and retail businesses, small and medium scale enterprises and commercial service providers. According to the 1970 Athi River Land Use based on Development Plan, an estimated 102 hectares comprising 1% of the total land area. The area is also home to a number of factories and industries including Kenya Meat Commission, Devki Steel Workd Company, Athi River rolling plant, Bamburi Cement, Athi River, Mombasa Cement and Export Processing Zone (EPZ) among others. The Athi River Land Use based on Development Plan of 1970 allocated an estimated 2,007 hectares representing

20% of the total land area. However, the development since 1970 has not conformed to the 1970 plan. The 1970 plan allocated around 2,722 hectares of land comprising 27% of the total land area. Other land uses include: educational, public purpose, public utilities, transportation and deferred land as presented below:

Table 1: Land Use Athit River Mavoko in 1970

Land Use	Allocation in 1970 plan (Ha)	% total area
Residential	2722	27
Industrial	2007	20
Educational	348	3
Recreational	818	8
Public purpose	250	2
Commerical	102	1
Public utilities	76	1
Transportation	510	6
Deferred	3230	32
Total	10067	100

Source: Land Use Analysis Report (Gulf Power Limited, 2010)

It is important to note that, an analysis of the current land use indicates the developments since the 1970 development plan do not conform to this plan. Development of gated communities is happening under residential land use.

3.3 Research Design

Research design is the way a study is planned and conducted, the procedures and techniques employed to address research problems or questions (Saunders et al. 2007). Creswell and Clark (2007) also define research design as a plan of action that links assumptions to specific methods. Both quantitative and qualitative data was collected. Quantitative data included the numerical aspects of the research collected using questionnaires, whereas qualitative aspects involved the collection of data through rapid appraisal methods (observations and key informant interviews).

3.3.1 Study Population and Sampling

The study population is a group of people, events and things of interest to be investigated by the researcher (Sekaran and Bougie, 2011). There are 40 gated communities in Athi River.

According to Mugenda and Mugenda (2003), a sample size of between 10% and 30% is a good representation of the target population and hence the 30% is adequate for analysis. 10% and 30% of the accessible population is enough and for experimental study, the percentage is required so as to minimise sampling errors. Borg and Gall (2003) also state that 30% of the accessible population is enough for the sample size. Proportionate stratified random sampling was used in the study.

Proportionate stratified random sampling was used in this research. Proportionate stratified random sampling is a modification of random sampling in which one divides the population into two or more relevant and significant strata based on one or a number of attributes (Saunders et al. 2007). The study used gated communities in Athi River as strata in order to group households according to shared attributes or characteristics in those stratas. A gated community is usually surrounding by perimeter wall, has shared social amenities and facilities within it and has a similar housing design and typology. These attributes were used in stratifying the gated communities. The study then selected respondents proportional to the stratum's size

when compared to the population as shown in Table 3. The sample size was 30% of the total number of gated communities in Athi River which was 12 gated communities. The different gated communities were used as strata where 30% of the total population (households) was sampled. The total population (total number of households) from the 12 gated communities was established as 577 households. 30% from each strata was sampled and therefore the sample size for this study was established as 173 households as shown in Table 2. The 173 households were randomly from the selected 12 gated communities in Athi River which formed the sample size.

Table 2: Sampling Table

Gated Communities (strata)	Target Population (total number of households in a gated community)	Sample Size (number of households)
Paradise Park Estate	48	14
Green Park Estate	31	9
Lukenya Hills Estate	46	14
Graceland Estate	50	15
Sunset Boulevard	60	18
Delta Heights	56	17
Everest Park Estate	47	14
Pine city	50	15
Iluluwe Estate	49	15
Hill View Estate	40	12
Valley View Park Estate	53	16
Ngimwa Estate	47	14
Total	577	173

Source: Athi River Gated Communities Association

3.4 Data collection

Both primary and secondary data was utilized in this study. Primary data was collected by use of close ended questionnaires which were administered by the researcher to obtain data from

respondents. Closed ended questions limit the answers of the respondents to response options provided on the questionnaire thus saving time and responses are easy to code and interpret. This is why close ended questionnaires were used. The study asked questions using a 5-point Likert scale format. The Likert scale developed by Likert (1932) is a principle of assessing people's attitudes by asking them to respond to a sequence of statements about a particular topic highlighting the degree to which they agree or disagree with them. This scale helps delve into the perceptive and affective components of attitudes. The scale uses fixed choice response formats developed to measure attitudes and opinions. The Likert scale is a five or seven point scale which is used to allow the respondent to express the degree to which they agree or disagree with a statement. The levels of agreement or disagreement include: 1= Never, 2= rarely, 3= Sometimes, 4= Very Often and 5 = Always. The Likert scale was chosen because it does not require a simple yes/no response from a respondent, but somewhat allows for levels of agreement or disagreement or no opinion at all. Consequently, quantitative data is obtained which can be evaluated with ease.

On functional integration, the study asked questions about job opportunities that have been available within gated communities so as to establish the kind of job opportunities provided by gated communities to the low income neighbours. In addressing social amenities within gated communities, the study asked questions about the types of social amenities provided and the kinds of work related opportunities that emanate from servicing these amenities. The study finally asked questions about the benefits made available through development of gated communities.

Secondary data was assembled through documents review, for example, literature, previous studies and reports on gated communities, books and social reports among others.

3.5 Data analysis

Data was arranged and analysed using both descriptive and inferential statistics. Descriptive statistics provides simple summaries of the respondents and the observations that have been made. The findings were presented in form of means, percentages and frequency tables.

In order to identify the relationship that exists between variables under study, the study conducted inferential statistics by use of multiple regression analysis. Multiple regression analysis was used since it is important for predicting the unknown value of a variable from the known value of two or more variables. Data from the Likert scale was analysed using mean and standard deviation. Data was manipulated using cross tabulations and means were computed for each variable by use of Statistical Package for Social Scientists (SPSS) in order to run a regression analysis.

The dependent variable was functional integration while independent variables included job opportunities, social amenities and economic externalities. The algebraic expression of the regression model which consists of the constant term coefficient and error term took the format below:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon_t \dots\dots\dots (2)$$

Where,

Y = Functional integration,

X1 = Job opportunities,

X2 = Social amenities

X3 = Economic externalities

α = Constant

ϵ_t = the Random error,

β = Variable coefficients.

The correlation test used as a basis for validating the relationships hypothesized in this study, as supported by Aldrich (1995), who explained that correlations are valuable tools because they show a predictive relationship which can be used in practice. To test the hypotheses Chi square 't' statistic was used. The research study used 95% significance level. The 95% significance level of $p=0.05$ was used since it is the generally accepted conventional level in social sciences research. This indicates that 95 times out of 100, the researcher is sure that gated communities provide benefits to low-income communities living in their vicinity and there is only a 5% chance that gated communities do not provide benefits to low-income communities in the vicinity.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the analysis and interpretations of the data collected. The main objective of the study was to establish the kind of interactions between gated and low income communities in the vicinity and how these relations promote functional integration in Athi River, Mavoko Municipality.

4.2 Results

4.2.1 Response Rate

The research was conducted on a sample of 173 respondents from a list of 12 gated communities in Athi River to which questionnaires were administered. However, out of the issued questionnaires, 160 were returned suitably filled in making a response rate of 92%, which was satisfactory for statistical reporting. According to Mugenda & Mugenda (2003) a response rate of more than 80% is sufficient for a study. The results are as presented below:

Table 3: Response Rate

Category	Frequency	Percentage
Responded	160	92%
Did not respond	13	8%
Total	173	100%

Source: Researcher's data, 2016

4.3 Profiling of Characteristics of Gated Community Residents

The study sought to establish the information on the respondents involved in the study concerning the gender, age, marital status, residency period and home owners. The bio data focusses on the respondents' appropriateness in answering the questions of this research.

4.3.1 Distribution of Respondents by Gender

With regard to distribution of respondents by gender, majority of the respondents 84 (52.5%) were males and 76 (47.5%) of the respondents were females. Table 4 indicates the findings:

Table 4: Gender of the Respondents

	Frequency	Percent (%)
Male	84	52.5%
Female	76	47.5%
Total	160	100.0%

Source: Researcher's data, 2016

4.3.2 Distribution of Respondent's by Age Group

From the analysis of the distribution of respondents by age group, 59 (36.9%) were of the age bracket 41-55 years followed closely by 58 (36.3%) of the respondents who were of age bracket 26-40 years. A sizeable number 23 (14.4%) were between 56-70 years while 20 (12.5%) were less than 25 years. The study deduces that majority of households in gated communities in Athi River are married people with families who have positive connotations regarding gated communities with regard to safety and security. The results are indicated below:

Table 5: Distribution of Repondent's by Age Group

Age	Frequency	Percent%
Less than 25 years	20	12.5%
26-40 years	58	36.3%
41-55 years	59	36.9%
56-70 years	23	14.4%
Total	160	100%

Source: Researcher's data, 2016

4.3.3 Marital Status

The findings on marital status of respondents included: 76 (47.5%) of respondents being married while 49 (30.6%) of the respondents were widowed. A small number of the respondents 23 (14.4%) and 12 (7.5%) indicated that they were single and divorced/separated respectively. The study deduces that majority of households in gated communities in Athi River are married. These group of people will potentially have families and therefore pay a lot of attention with regard to safety and security in places where they live.

As presented in section 4.3.3, majority of households in gated communities in Athi River are people from 26 years and above who are married people with families. The findings in this section depict that married households comprised of the highest percentage of the total gated communities population in Athi River. These groups of people would be interested in residing in a place where there is safety and security for their families as indicated below:

Table 6: Marital Status

Marital Status	Frequency	Percent%
Single	23	14.4%
Married	76	47.5%
Widowed	49	30.6%
Divorced/ separated	12	7.5%
Total	160	100%

Source: Researcher's data, 2016

4.3.4 Residency Period

With regard to residency period of people residing in gated communities 52 (32.5%) of the respondents had been residents of gated communities for 1-2 years, 37 (23.1%) of the respondents had been residents of the gated communities for 2-3 years, 35 (21.9%) of the respondents had been residents of the gated communities for 6 months to 1 year. Other respondents 25 (15.6%) and 10 (6.3%) indicated that they % had been residents of gated communities for 3-4 years and less than 6 months respectively. However, 1 (0.6%) of the respondents indicated that he had been a resident in a gated community for 4-5 years. These findings deduce that most of the households had been residents in gated communities for 1-2 years, thus had more knowledge on the kind of interactions between gated and low income communities in their vicinity and how these relations foster functional integration.

Table 7: Residency Period

Residency Period	Frequency	Percent%
Less than 6 months	10	6.3%
6 months to 1 year	35	21.9%
1-2 years	52	32.5%
2-3 years	37	23.1%
3-4 years	25	15.6%
4-5 years	1	0.6%
Total	160	100%

Source: Researcher's data, 2016

4.3.5 Home Ownership

The results on status of house ownership illustrated that 101 (63.1 %) of respondents rented the home in the gated community while 59 (36.9%) owned the home they resided in gated community. The analysis is presented below:

Table 8: Home Ownership

Home Owneship	Frequency	Percent%
Own	59	36.9%
Rent	101	63.1%
Total	160	100%

Source: Researcher's data, 2016

4.4 Job Opportunities provided by Gated Communities

4.4.1 Employment of Individuals residing in Low Income Neighbouring Communities

The findings show that majority of gated communities' residents 87 (54.5%) employ individuals from the low income neighbouring communities while 73 (45.6%) do not. The findings indicated that majority of households within gated communities employed individuals

from low income neighbouring communities thus providing job opportunities to the low income people in the neighbourhood and enhancing functional integration.

Table 9: Employment of individuals residing outside Gated Communities

Employment	Frequency	Percent%
Yes	87	54.4%
No	73	45.6%
Total	160	100%

Source: Researcher's data, 2016

In the research, it was established that, gated communities provide a number of different job types for those residing in the vicinity. 39 (24.4%) of the respondents stated maintenance services as the kind of jobs they employ neighbourhood populations often for. 20 of respondents (12.5%) stated that they employ individuals residing outside gated communities for security services and park guarding while 18 (11.3%) stated that they utilised transport services from neighbouring communities. 17 (10.7%) employ clubhouse attendants while 15 (9.4%) used slashing and lawn maintenance services from those outside the confines of a gate. Only 13 (8.1%), 8 (5%), 7 (4.4%) and 6 (3.8%) employ neighbouring communities for house cleaning, pest control services, catering service, health clubs (fitness centre) attendants, games training and teaching jobs respectively as shown below:

Table 10: Type of Jobs Offered to Low Income Communities in the Vicinity

Job Type	Frequency	Percent%
House cleaning	13	8.1%
Jobs in health club (for inspecting and training)	6	3.8%
Transport services (boda boda or taxi)	18	11.3%
Slashing and lawn maintenance	15	9.4%
Pool/hot tub cleaning	5	3.1%
Pest control services	8	5%
Teaching	6	3.8%
Catering services	7	4.4%
Security services and park guarding	20	12.5%
Club house attendants	17	10.7%
Games training	6	3.8%
Maintenance services (repair, plumbing etc.)	39	24.4%
Total	160	100%

Source: Researcher's data, 2016

The findings indicate that most households indicated maintenance services as the kind of jobs they employ neighbourhood population for often. However, gated communities also employ individuals from their low income neighbouring communities for a number of other jobs all of which are important in promoting the functional interactions between both communities. Through exchange of money for services the low income neighbouring are integrated into the wider economic society.

4.5 Social amenities provided within Gated Communities

4.5.1 Type of Social Amenities within Gated Communities

The study asked the respondents (those who reside within gated communities) to state the kind of social amenities provided within their communities. 78 (48.7%) of respondents indicated infrastructure (roads, street lighting, water) as the kind of social amenities mostly provided within their communities for their use while 59 (36.9%) indicated open spaces, gardens, games courts and children's playground as the second most provided amenities within gated communities. Schools 7 (4.4%), on site dining 5 (3.1%), community tuck shops 5 (3.1%), fitness centres and meeting places 3 (1.9%) as the third most offered social amenities. The availability of social amenities within gated communities provides that there is need for their servicing and maintenance. It is for maintenance of these services, that gated communities employ those individuals often residing in low income communities in the vicinity. The table presents the findings:

Table 11: Type of Social Amenities provided within Gated Communities

Social amenities	Frequency	Percent%
Schools (kindergarten and lower primary)	7	4.4%
Infrastructure (roads, street lighting, water)	78	48.7%
Open spaces/gardens/games courts/playgrounds	59	36.9%
On site dining (outdoors)	5	3.1%
Fitness centres (including workout machines)	3	1.9%
Meeting places (conference facilities)	3	1.9%
Community tuck shops	5	3.1%
Total	160	100%

Source: Researcher's data, 2016

The findings indicate that most gated communities in Athi River have a large number of social amenities and infrastructural amenities were cited as the most common social amenities within gated communities. These social amenities are usually meant to benefit the residents within these communities and foster functional interactions within the communities.

4.5.2 Economic Externalities emanating from Gated Communities

There are a number of positive economic externalities emanating from gated communities including development of public services and amenities (roads, schools, dispensaries) that benefit neighbouring communities and result in enhancement of functional integration. Other externalities include an increase in property values and housing costs both outside and within gated communities. Gating also diverts traffic and contributes to a reduction in burglaries and theft. However, gating diverts crime to communities outside gated communities. This diversionary spill over effects is often especially since when crime and traffic is barred from one place it is bound to divert to another.

From the table below, infrastructural amenities like roads are the most accessible externalities for neighbouring communities at 51.9%. Development of gated communities contributed to increase in property values and housing costs at 33.8% and diversion of traffic and prevention of entry accounted for 7.5% and 6.9% respectively.

Table 12: Type of Economic Externalities from Gated Communities

Economic externalities	Frequency	Percent%
Infrastructural amenities (roads, street lighting)	83	51.9%
Increase in property values and housing costs	54	33.8%
Diversion of traffic to neighbouring communities	12	7.5%
Prevention of entry	11	6.9%
Total	160	100%

Source: Researcher's data, 2016

This concurs with Sabatini and Salcedo (2005) who argue that the economic impacts of gated communities refer chiefly to effects on housing and land markets and on the local economy. The attraction of new services and infrastructure for gated community residents can improve the local economy and increase property values (Lemanski 2005). As provide in that table below

4.7 Inferential Statistics

4.7.1 Correlation Analysis

The researcher used Pearson Correlation Coefficient to examine presence or absence of correlation between job opportunities, social amenities and economic externalities as determinants affecting functional integration in Athi River, Machakos County. Correlation analysis ranges from +1 to -1 where 0-0.5 is a weak positive relationship and 0.5 - 1 is a strong positive relationship and vice versa. Table below illustrates the findings:

Table 13: Correlation Analysis

	Functional integration	Job opportunities	Social amenities	Economic externalities
Functional integration	1	0.561	0.688	0.611
Job opportunities	0.561	1	0.609	0.466
Social amenities	0.688	0.609	1	0.553
Economic externalities	0.611	0.466	0.553	1

Source: Researcher's data, 2016

From the findings, there was a strong positive relationship between functional integration and social amenities having a correlation coefficient of 0.688. This indicates that social amenities play a major role in functional integration. Availability and access to social amenities influence the degree of interaction with the neighboring communities in Athi River.

The results indicated that there was a positive relationship between economic externalities and functional integration with a correlation coefficient of 0.611. This result indicates that economic externalities were effective in bringing about better functional integration in that it brings about job opportunities, building of roads and sharing of social amenities in Athi River.

The results also indicated that there was a positive relationship between social amenities and job opportunities with a correlation coefficient of 0.609. This result indicates that the

availability and access to social amenities in gated communities by low income communities for servicing by low-income communities on the outside promotes functional integration.

The results further revealed that job opportunities are positively related to functional integration with a correlation coefficient of 0.561. An increase in job opportunities results in an increase in interactions between gated and ungated communities. This in turn impacts positively on functional integration between gated communities and low income neighbourhood populations.

4.7.2 Regression Analysis

Regression model was used during the study to predict the magnitude job opportunities, social amenities and economic externalities are determinants affecting functional integration in Athi River. The regression analysis shows how each independent variable influence the dependent variable individually. The table below presents the results of the regression model summary:

Table 14: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.799(a)	0.638	0.396	1.584

a Predictors: (Constant), Functional integration

The findings in the table above designated that independent variables which include job opportunities, social amenities and economic externalities had a 63.8% (R square= 0.638) predictive likelihood in functional integration. 63.8 % (R^2) means that the predictor variable explains 63.8% of the variation in functional integration which was attributed to job opportunities, social amenities and economic externalities. From the findings, 36.2% of the

variance is unexplained. This means that, functional integration is influenced by other factors other than job opportunities, social amenities and economic externalities.

Table 15: ANOVA (Analysis of Variance)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.024	3	1.2434	4.214	.000b
	Residual	98.431	156	0.5123		
	Total	108.455	159			

a. Dependent Variable: functional integration

b.

c.

d. Predictors: (Constant) job opportunities, social amenities and economic externalities.

ANOVA has been used to show the significance and reliance of the regression model. In the study, the value of P (significance level) is less than 5% level of significance as indicated by sign < 000. This meant that the regression model was significant and therefore fit for the study.

The regression model is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon_t$$

Where,

Y = Functional integration,

X1 = Job Opportunities,

X2 = Social amenities

X3 = Economic Externalities,

E_t = the Random Error,

Model		Unstandardized		Standardized		t	Sig.
		Coefficients		Coefficients			
		B	Std. Error	Beta			
1	(Constant)	.297	.096			2.314	.0000
	X1	.351	.028	.259		1.006	0.001
	X2	.399	.224	.090		1.351	0.002
	X3	.350	.252	.159		1.876	0.011

a Dependent Variable: Functional integration

β = Variable Coefficients

The coefficients of the regression model are illustrated in the table above.

The regression equation is:

$$Y=0.297+0.351X_1+0.399X_2+ 0.350X_3$$

From the equation above, it is clear to infer that functional integration was highly influenced by better job opportunities, social amenities and economic externalities. Given all the predictor variables constant at zero (0), functional integration is at 0.297.

The regression coefficient for job opportunities is 0.351. This means that the relationship between job opportunities and functional integration is positive. This implies that an

improvement in job opportunities rate leads to an increase in functional integration between those residing in gated communities and those residing outside and vice versa.

The regression coefficient for social amenities is 0.399. This means that the relationship between social amenities and functional integration is positive. This denotes that for an increase in functional integration, social amenities across gated communities in Athi River, Machakos County has to go up.

The regression coefficient for economic externalities is 0.350. This means that the relationship between economic externalities and functional integration is positive. This indicates that effective economic externalities in regard to neighbourhood population's demand result to a boom in functional integration.

4.7.3 Hypotheses Testing

The study used Chi-square to test the research null hypotheses because the study required the test of independence of variables in order to answer relevant questions.

1. H_0 : There is no significant relationship in provision of job opportunities by gated communities to low income communities in the vicinity and functional integration.

In order to test this hypothesis, the study sought to determine if gated communities employ individuals from the neighbouring low-income communities and the type of job opportunities they provide to these individuals.

The results are presented below:

Table 16: Provision of Job Opportunities to Low-Income Communities

Employment	Frequency	Percent%
Yes	87	54.4%
No	73	45.6%
Total	160	100%

Source: Researcher's data, 2016

Table 17: Type of Jobs Provided by Gated Communities to Neighbouring Low-income Communities

Job Type	Yes		No	
	Frequency	Percent %	Frequency	Percent %
House cleaning	138	86%	22	14%
Transport services (boda boda or taxi)	133	83%	27	17%
Slashing and lawn maintenance	127	79%	33	20%
Security services and park guarding	140	88%	20	13%
Club house attendants	141	88%	19	12%
Maintenance services (repair, plumbing etc.)	121	76%	39	24%

Source: Researcher's data, 2016

Table 18: Provision of Job Opportunities to Low Income Communities

	Value	df
Pearson Chi-Square	16.846a	6

a 6 cells (50.0%) have expected count less than 5. The minimum expected count is .20.

In this case, the calculated p value is 16.846. This value is greater than the critical value which is 7.82 at 0.05 significance level; hence the null hypothesis is rejected and the alternative hypothesis adopted that states that there is a significant relationship in provision of job opportunities by gated communities to low-income communities in the vicinity and functional integration.

2. H_0 : There is no significant relationship in provision of social amenities by gated communities to low income neighbouring communities and functional integration.

In order to test this hypothesis, the study asked questions on the kind of social amenities gated communities provide within themselves and how these amenities are serviced by those residing in the vicinity of gated communities through the job opportunities provided and how this promotes interactions between the two communities. The findings are presented below:

Table 19: Social Amenities provided within Gated Communities

Job Type	Yes		No	
	Frequency	Percent%	Frequency	Percent%
Schools (kindergarten and lower primary)	128	80%	32	20%
Infrastructure (roads, street lighting, water)	116	73%	44	28%
Open spaces/gardens/games courts/playgrounds	149	93%	11	7%
On site dining (outdoors)	152	95%	8	5%
Fitness centres (including workout machines)	134	84%	26	16%
Meeting places (conference facilities)	127	79%	33	21%

Source: Researcher's data, 2016

Table 20: Provision of Social amenities

	Value	df
Pearson Chi-Square	65.656a	9

a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is .20.

In this case, the calculated p value is 65.656. This value is greater than the critical value which is 9.83 at 0.05 significance level; hence the H_0 hypothesis is rejected and the alternative hypothesis adopted that states that, there is a significant relationship in provision of social amenities by gated communities to low-income communities in the vicinity and functional integration.

3. H₀: There is no significant relationship in provision of economic externalities and the impact these has on functional interactions between gated and low income neighbouring communities.

In order to test this hypothesis, the study asked both residents within and without gated communities how these developments impact on housing costs and land property values. From the analysis, it was presented that, gated communities raise the cost of housing and land property values and this is not usually to the disadvantage of ungated communities. Increase in housing and property land prices enhances high end developments which come with a lot of advantages in times of economic development (infrastructure, shopping centers, supermarkets, recreational areas and schools among other). This also increase the land values of even those residing in low income neighbourhoods and this means that the land values also appreciate and if they were to sell, then they would get more value for money.

Table 21: Economic externalities from Gated Communities

Economic externality	Yes		No	
	Frequency	Percent%	Frequency	Percent%
Development of public services and amenities	116	73%	44	28%
Increase in property values	111	69%	49	31%
Increase in burglaries and theft	128	80%	32	20%

Source: Researcher's data, 2016

Table 22: Gated Communities' Economic Externalities

	Value	df
Pearson Chi-Square	21.638a	6

a. 7 cells (25.0%) have expected count less than 5. The minimum expected count is .80.

In this case, the calculated p value is 21.638. This value is greater than the critical value which is 7.82 at 0.05 significance level; hence the H_0 hypothesis is rejected and alternative hypothesis adopted which states that, there is a significant relationship in provision of economic externalities by gated communities to low-income communities in the vicinity and functional integration.

4.7.4 Discussion of Findings

This study aimed at looking into the following objectives:

- i. To determine the types of job opportunities that gated communities provide to low income neighbouring communities in the vicinity and how provision of these opportunities fosters functional integration.
- ii. To determine the types of social amenities that gated communities provide to low income neighbouring communities in the vicinity and how provision of these amenities promotes functional integration.
- iii. To establish the types of economic externalities emanating from gated communities and how externalities impact on functional integration.

Under objective 1, the study found out that job opportunities are strongly related to functional integration. It found that an improvement in job opportunities rates within gated communities lead to more functional interactions and consequently functional integration and vice versa. Availability of job opportunities in gated communities provides low income communities in

the vicinity with opportunities for work and therefore exchange of money for services provided. This resulted in the rejection of the null hypothesis and acceptance of the alternative hypothesis which states that there is a significant relationship in provision of job opportunities by gated communities to low-income communities in the vicinity and functional integration. The findings of the study also concurs with UN DESA (2009) which states that permanent employment, self-employment or adequately remunerated work is an effective method of combating poverty and promoting functional integration and social inclusion. It further argues that when members of society have work, they automatically become stakeholders in the economic realm. Engagement in and access to the labour market is therefore the first and most important step in participation in the economic processes of society. Employment opportunities depict the most salient aspects of economic inclusion. Employment also acts as a source of identity and gives access to social networks (UN DESA, 2009).

Under objective 2, the study found out that social amenities are strongly related to functional integration and this lead to the acceptance of the alternative hypothesis which indicates there is a significant relationship in provision of social amenities by gated communities to low-income communities in the vicinity and functional integration. The study revealed that for an increase in functional integration, social amenities within gated communities have be present. Availability of these amenities within gated communities ensures that there is opportunity for work for those residing on the outside. According to Salcedo and Torres (2004), the most important positive effects on urban space identified in the literature are the provision of services Cabrales, Barajas and Canosa (2001) also argue that public infrastructure such as roads and streets are common. In affluent developments, gated communities have shared meeting spaces and recreational facilities. Full-service master planned, gated communities offer shopping malls, schools, industry, hospitals, recreational departments and the police which benefit individuals residing in gated communities as well as those residing in their vicinity. Provision

of social amenities to those in gated and low income often ungated neighbouring communities on the outside enhances functional integration in the sense that interactions are increased.

Under objective 3, the study results revealed that there is a positive relationship between the economic externalities emanating from gated communities to neighbouring communities and that these promote functional integration. It found out that effective economic externalities, for instance, the development of public services and amenities (roads, schools, dispensaries) that benefit neighbouring communities populations result in enhancement of functional integration. This concurs with Sabatini and Salcedo (2005) who argue that the economic impacts of gated communities refer chiefly to effects on housing and land markets and on the local economy. The attraction of new services and infrastructure for gated community residents can improve the local economy and increase property values (Lemanski, 2005). The study therefore rejected the null hypothesis and accepted alternative hypothesis which states that there is a significant relationship in provision of economic externalities by gated communities to low-income communities in the vicinity and functional integration.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of the findings, conclusions, recommendations and suggestions for further studies drawn from the findings of the study.

5.2 Summary of the Findings

From the first objective on how provision of job opportunities by gated communities' foster functional integration with their neighbouring low income communities, the study concluded that most households within gated communities employ individuals from the neighbouring communities' for various jobs. The study also concluded that maintenance and security services were the most common job opportunities that gated communities provided to low income neighbourhood communities. Security services are mostly needed by gated communities because of fear of crime thus making tenants of public housing to accept enclosure of their communities.

In relation to the second objective which states that provision of social amenities by gated communities' foster functional integration with neighbouring low income communities, the study concluded that most gated communities within the communities in Athi River had a large number of social amenities that provided job opportunities to low income neighbouring communities. The servicing of social amenities within gated communities by those living on the outside provide work opportunities and offers opportunity for exchange of money and services which consequently fosters functional integration.

In relation to the third objective on economic externalities, the study concluded that, there are a number of economic externalities emanating from gated communities that benefit low income neighbouring communitiies including infrastructural amenities (roads, street lighting) mainly on the outside of gated communities and increase in property values and housing costs which

are beneficial to neighbouring communities but sometimes pull them away based on the capacity to afford. Gated communities also divert traffic to neighbouring communities through construction of perimeter walls that wade off neighbouring communities. These walls also prevent entry of outsiders into gated communities. The positive economic externalities promote functional integration in the sense that, they enable low income communities to access gated communities for work and other services that are compensated in monetary terms.

5.3 Recommendations

The study recommends that the gated communities' management bodies should consider putting up more social facilities and infrastructure within and outside their gates to increase job opportunities available for those living outside gated communities. This can be done through the enhancement in design of gated communities. We are seeing more of this in the development of mega projects that strive to include all people in economic development for example, Tatu City.

It also recommends that gated communities put in place social amenities more especially infrastructural facilities that can be accessible to every individual inside and outside the community even if at a fee.

The study recommends that gated communities' managements take major reviews of the positive economic externalities that they indirectly provide so as to ensure that developers and property owners get the highest and best possible social cohesion values to foster functional integration.

5.4 Suggestions for further Research

From this research, it was established that independent variables job opportunities, social amenities and economic externalities have a 63.8% (R square = 0.638) predictive likelihood of influencing functional integration between individuals within gated communities and those

residing in low income neighbouring communities. This means that 63.8 % (R^2), the predictor variable, explains 63.8% of the variation in functional integration which was attributed to job opportunities, social amenities and economic externalities. However, 36.2% of the variance is unexplained. This means that, it would be imperative to carry out another study that investigates other factors that have an influence on functional integration other than access to job opportunities, social amenities and economic externalities.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

GATED COMMUNITIES AND FUNCTIONAL INTEGRATION: A CASE STUDY OF ATHI RIVER, MACHAKOS COUNTY

SECTION ONE: BACKGROUND INFORMATION

1. What is your gender?

Male Female

2. How old are you?

Less than 25 years 26 – 40 Years 41 – 55 years

56 – 70 Years Over 71 years

3. What is your marital status?

Single Married Widowed Divorced/separated

4. How long have you been a resident of this community?

Less than 6 months 6 months to 1 year 1 year to 2 years

2 years to 3 years 3 years to 4 years 4 years to 5 years

More than 5 years

5. Do you currently rent or own the home in this Community?

Own Rent

SECTION TWO: JOB OPPORTUNITIES

6. Do you employ anyone from the neighboring communities or elsewhere?

Yes No

7. Which kind of jobs do you employ them for?

If Yes, which ones? _____

Please tick as appropriate [✓]

House cleaning []

Health Club (fitness center) inspecting and training []

Transport services (boda boda or taxi) []

Slashing and Lawn maintenance []

Pool/hot tub cleaning []

Pest control services []

Teaching []

Catering services []

Security services and Park guarding []

Clubhouse attendants []

Games Training []

Maintenance services (repair, plumbing etc.) []

8. In the table below, please check the box that applies to how often you use each of the following amenities in your community.

Job opportunity	Always	Very Often	Sometimes	Rarely	Never
House cleaning					
Health Club (fitness center) inspecting and training					
Transport services (boda boda or taxi)					
Slashing and lawn maintenance					
Pool/hot tub cleaning					

Pest control services					
Teaching					
Catering services					
Security services and park guarding					
Clubhouse attendants					
Games Training					
Maintenance services (repair, plumbing etc.)					

SECTION THREE: SOCIAL AMENITIES

9. Which kind of social amenities do you get within your community?

Schools []

Swimming pools []

Tennis courts []

Open spaces/gardens []

On-site dining []

Children playground []

Exercise Centre including workout machines []

Spa []

Community shopping Centre []

Clubhouse []

Chapel []

SECTION FOUR: ECONOMIC EXTERNALITIES

10. What is the impact of gated communities on property values and the cost of housing?
11. What is the impact of gated communities on cases of burglary and theft?
12. How does your gated community contribute to the welfare of neighboring communities positively or negatively?

Provision of public services []

Provision of job opportunities []

Provision of schooling opportunities []

13. Does your gated community impact neighboring community negatively in anyway?

Yes [] No []

If Yes, how (please explain):