THE INFLUENCE OF SOCIO-ECONOMIC FACTORS ON HOUSING SATISFACTION: THE CASE OF KIBERA SLUM UPGRADE PROJECT, KENYA.

TERESIA NYARIRO

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2013
DECLARATION

This research report is my original work and to the best of my knowledge has not been presented for examination in any other university.

Signature ____________________ Date ____________________

Teresia Nyariro

Reg. No: L50/63500/2010

This research paper has been forwarded for examination with my approval as university supervisor.

Signature ____________________ Date ____________________

Dr. Harriet Kidombo

Department of Educational Studies

University of Nairobi
DEDICATION

This research report is dedicated to my family; Mwende, Antonia and Kelvin. One would never ask for a better family than what you have been to me. I wish you luck in all that you do. I also dedicated the study to the people of Kibera slum who have had to endure the challenging life of slum dwellers and bravely faced that life and I hope they get greener fields.
ACKNOWLEDGEMENT

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<tr>
<td>IGA</td>
<td>Income generating activities</td>
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<tr>
<td>EGM</td>
<td>United Nation Expert Group Meeting</td>
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<tr>
<td>GoK</td>
<td>Government of Kenya</td>
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<td>KENSUP</td>
<td>Kenya Slums Upgrading Programme</td>
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<td>MoH</td>
<td>Ministry of Housing</td>
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<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>MDA</td>
<td>Millennium Development Agenda</td>
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<tr>
<td>UN-Habitat</td>
<td>United Nations Human Settlements Programme (formerly UNCHS)</td>
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<td>UNESCO</td>
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<td>MoPND</td>
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ABSTRACT

Kenyan urban centres, like many in the world, are characterised by huge slums. The Kibera Slum Upgrading Project was the first project to be undertaken by the Government of Kenya and various partners through the Kenya Slum Upgrading Programme (KENSUP) that aimed at providing better housing and improved livelihood to the slum dwellers as they lacked proper housing structures, water and sanitation, security and security of tenure and income generating activities. This research investigated the extent to which the residents of the Kibera slum upgrading project were satisfied with their new housing environment considering that they had been moved from the slum. The research sort to find out if the project was a success in terms of providing the residents with improved housing conditions in terms of socio-economic factors such as sanitation, water availability, security of tenure and security. This was based on the resident’s satisfaction with the various socio-economic factors. A survey was done using a self-administered questionnaire which was filled by the respondents and other was interviewed depending with their level of understanding. The likert questionnaire was on satisfaction levels of the respondents on the various issues influencing housing satisfaction. A sample size of 263 respondents was used and the Statistical Package for Social Science (SPSS) version 17 was used in data analysis and the results were presented in frequency tables. A correlation analysis was also done on the responses to determine the extent of their relationship to housing satisfaction in the kibera slum upgrading project. The survey in the Kibera slum upgrading project showed that a majority of the residents were satisfied with the upgraded housing units in terms of water and sanitation, security, security of tenure and few were satisfied with the availability of income generating activities and with a majority of the residents being satisfied the research concluded that the project was mainly a success as a majority of the residents were satisfied with the provided housing and based on the socio economic factors of availability of water, sanitation, security of tenure and security, but there are areas to improve on like the provision of income generating activities and security of tenure. The study recommends the government and partners to address the issue of income generating activities and security of tenure as this will improve on housing satisfaction.
CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Kenya’s urban population is at present 40% of the total population, and more than 70% of these urbanites live in slums, with limited access to water, sanitation, proper housing and secure tenure (Herr and Karl, 2003; Davis, 2006). The government and local authorities are faced with the serious challenge of guiding the physical growth of areas and providing adequate services for the growing urban population. Slums have poor environmental conditions and experience high crime rates. If the gap continues to grow between the demand and supply of urban service such as housing, the negative consequences of urbanization can become irreversible and therefore The Kenya slum upgrading programme was set up as a collaborative initiative that draws on the experience of a wide variety of partners in order to address this issue (ministry of planning 2006).

The term slum has many meanings and nuances. It has often been used to identify the poorest quality housing, the most unsanitary conditions; “vice” and drug abuse; a refuge for marginal activities including crime; a likely source of epidemics that devastates urban areas; a place apart from all that was decent and wholesome (Grubber et al, 2005). This study nevertheless used the word slum as defined by UN habitat (2003), in reference to a heavily populated urban area characterized by substandard housing and squalor. Ever since there have been cities, there have been poor quarters but only since the 16th century have there been slums, places that are ‘squalid, overcrowded and wretched’. Slums have been the only large-scale solution to providing housing for low-income people. It is the only type of housing that is affordable and accessible to the poor in cities where the competition for land and profits is intense, and the places where they must live if they have little income or no other options. (UN Habitat, 2003).

The world has urbanized even faster than originally predicted by the club of Rome in its Malthusian 1972 report “Limits of Growth” and the lives of millions of slum dwellers are threatened by the lack of access to the most basic human requirements: water, sanitation, shelter, health and education, and that the nature and extent of the daily challenges are not only
daunting, they are also life threatening (Davis, 2006); (Dastur 2008). More than 166 million people were found in slums in 2001 and slum dwellers make more than 72% of the urban population in sub-Saharan Africa. The numbers are expected to rise to more than 325 million by 2020 which is more than the current population of the United States of America (Dastur, 2008).

Africa has the highest urbanization rate. In 2001, 924 million people, or 31.6% of the world’s urban population, lived in slums. The majority of them were in the developing regions, accounting for 43% of the urban population, in contrast to 6% in more developed regions. Within the developing regions, sub-Saharan Africa had the largest proportion of the urban population resident in slums in 2001. Kenya’s slums are growing at an unprecedented rate as more and more people move to the cities and towns in search of employment and other opportunities the urban areas have to offer. There are approximately 2.5 million slum dwellers in about 200 settlements in Nairobi representing 60% of the Nairobi population, occupying just 6% of the land (UN-Habitat, 2003).

In the year 2005 alone, one billion people, one-sixth of the world’s population, lived in slums and thus were building enormous pressure on civic services and creating major bottlenecks in the proper development of cities (Whitehouse, 2005). The African situation is even more extreme. Africa’s slums are growing at twice the speed of the continent’s exploding cities and that an 85% of Kenyan population growth between 1989 and 1999 was absorbed in the fetid, densely packed slums of Nairobi and Mombasa (Herr and Karl, 2003; Davis, 2006).

1.2. The problem statement
The objective of the Kenya slum upgrading programme is to improve the housing conditions of the slum dwellers in Kenya as majority of the urban and town dwellers are living in slums (MoH, 2012). Having implemented the first pilot project, the Kibera slum upgrading project, it was necessary to find out if the residents were satisfied with the improved housing conditions so that the replica projects in other slums avoid mistakes made in Kibera and also have the ideal conditions to prevent them from moving back to the
slums. Statistics indicate that more than 13 million deaths annually are due to preventable environmental causes. Nearly one third of death and disease in the least developed regions is due to environmental causes. Over 40% of deaths from malaria and an estimated 94% of deaths from diarrheal diseases, two of the world's biggest childhood killers, could be prevented through better environmental health management (World Health Organization, 2006).

The above features characterize the deplorable environmental conditions under which the poor are subjected to as they inhabit the slums. This brought about the need for an evaluation to be conducted on how far the Kenya Slum Upgrading Programme has gone in addressing the problems it set out to mitigate at the onset of the program. This study therefore sort to investigate the socio economic factors that influence the level of satisfaction with housing within the Kibera Slum Upgrading Project.

1.3. Purpose of the study

The purpose of this study is to investigate whether the residents of the Kibera slum upgrading project are satisfied with the housing conditions in terms of socio economic factors such as water and sanitation, security, security of tenure and the availability income generating activities.

1.4. Objectives

This study is guided by the following objectives

1. To establish the influence of availability of water and sanitation on housing satisfaction in the Kibera slum upgrading housing project residents
2. To explore the influence of security on housing satisfaction in the Kibera slum upgrading project
3. To examine influence of security of tenure on housing satisfaction in the Kibera slum upgrading project.
4. To examine the influence of income on housing satisfaction in the Kibera slum upgrading project.
1.5. Research Questions
1. How does availability of water and sanitation influence housing satisfaction of residents in the Kibera slum upgrading project project?
2. How does security affect housing satisfaction in Kibera slum upgrading project?
3. How does security of tenure influence housing satisfaction in Kibera slum upgrading project?
4. How does income influence the level of housing satisfaction in the Kibera slum upgrading project?

1.6. Significance of the Study
The Kenya Slum Upgrading Program is a program of the Government of Kenya implemented by the ministry of housing and the relevant local authorities, complemented and supplemented by the UN Habitat. The broad goal of the programme, according to the GoK, is to improve the livelihoods of people living and working in slums and informal settlements in the urban areas of Kenya through; provision of security of tenure, housing improvement, income generation and physical and social infrastructure. An assessment of the achievement of the above stated objectives would help policy makers formulate effective designs for the implementation of similar programs in future. Furthermore, this study will add onto the already existing literature on the social economic determinants of housing satisfaction that will be used by academia in reinforcing the existing body of knowledge in matters touching on housing satisfaction in slum upgrading projects. Finally, the study will fill the knowledge gap on existing literature on housing satisfaction in Slum upgrading projects.

1.7. Delimitation of the Study
The study is delimitated to the owners of the housing units in the Kibera phase one upgraded units and no tenants were included and the sample population had to have lived in the Kibera slums before the upgrading and was also be delimitated to their satisfaction levels as influenced by water and sanitation, security of tenure, security and income generating activities.
The study covered the beneficiaries of the Kibera slum upgrading projects who were been randomly selected within the predetermined sample size. Variables covered were: access to water and sanitation, income generating activities, physical security, and security of tenure.

1.8. Limitations of the Study
The study faced the challenge of ensuring there was a high response rate among the selected respondents with some respondents not willing to give information at the beginning which slowed the research. The respondents were not willing to give information for fear of victimization and others wanted to be paid for the information as they said that was norm with previous researches. It took the intervention of the area officials for the respondents to give the information. Secondly, most respondents were not available for interviews in their homes during daytimes. The study went further and attempted to interview them at their places of work and some were contacted during the weekends and in the evening.

1.9. Assumptions of the Study
The study assumed that the sample chosen is representative of the entire population, secondly the responses received were assumed to be a true representation of the actual situation. The data collection instruments were assumed to be valid and reliable and finally, the respondents were assumed to answer questions within the context they were asked.

1.10. Definitions of Significant Terms
The following terms are used in the paper with the definitions given.

**Housing** is used to define the physical structure that people live in and the environment around it.

**Satisfaction** is used in this paper to refer to approval of the housing environment in relation to the previous housing environment

**Housing satisfaction** is the contentment that one has toward their living environment
Slum defines residential area characterized by cluster of impoverished shanties with long lines of people crowding around few social facilities
A slum is also settlement where the inhabitants are characterized as having inadequate housing and basic services.
Slum dwellers are defined as individuals living in poor housing conditions with lack of clean water sanitation and other social amenities
Slum Upgrading refers to a process in which the livelihood of slum dwellers are improved by alleviating the poor living standards.
Slum upgrading is improving the living standards of the slum in terms of improved housing units and living conditions.
Security of Tenure describes an agreement between an individual or group on land and residential property which is governed and regulated by a legal and administrative framework.
Availability of water is the supply of clean drinking water at affordable price
Sanitation easy maintained toilet in each person’s home with provision for hand washing and the safe removal and disposal of toilet waste.
Security refers to lack of crime or disasters and availability of safety.
Income generating activities refers to activities that bring financial resources to the slum dwellers.

1.11. Organization of the study
The study has been organized as follows; Chapter one gives the following; background of the study, the problem statement, study objectives, research questions and significance of the study. Chapter two provides a review of both theoretical and empirical literature on the subject matter, thereafter the knowledge gap the study intends to fill is also identified. Chapter three gives an outline of the methodology that will be used to obtain data on the subject matter. Specifically, it describes the research design, identifies the target population, outlines the sampling technique to be used, describes the data collection methods, identifies the methods that will ensure validity and reliability of the data collected in the field and finally, gives the operational definition of variables while chapter four gives presents the analyse data. Chapter five gives a summary of the findings discussion, conclusion and recommendation.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction
In this section, a survey of both empirical and theoretical literature on the subject matter will be carried out to highlight the theoretical underpinnings of this study and to further explore the research gaps left by the previous empirical studies. The chapter is organized as follows; section 2.2 presents the theoretical background, 2.3 has the empirical literature survey that explores the work that has previously been done by other researchers and also included is the conceptual frame work.

2.2 Housing satisfaction
Housing satisfaction being a complex cognitive construct has been conceptualized in different disciplines such as economics, sociology, psychology, planning, or geography. Most notable is the fact that theories of housing satisfaction centre on the notion that housing satisfaction measures the difference between household’s actual and desired housing neighbourhood situations (Vera-Toscano and Ateca-Amestoy, 2007). It is postulated that individuals make judgments about residential conditions based on their needs and aspirations. Satisfaction with one’s residential situation indicates the absence of complaints and a high degree of agreement between actual and desired situations. The incongruence between actual housing and needed conditions may lead to dissatisfaction.

The Morris and Winter Theory of Housing Adjustment deals with how households think and behave in performing their household behaviour. The theory examines the complex process by which households make decisions about their housing and the ways in which the structure of society determines how families are housed, the consequences of housing for families and the decisions families make. Developed from a systematic functional model, the theory takes a sociological perspective and is focused on the micro-sociology of the household and if its housing is below the societal norms (a threat to respect) that household will feel dissatisfied and seek to change its situation (Stegell et al, 2001).
Major components of the theory define housing norms, constraints that affect the household’s ability to act and resulting household decisions and behaviours. When the household recognizes a household deficit, possible mitigation measures include; a) Housing adjustment such as moving to a new house or renovating the existing one b) Housing adaptation where the household itself makes adjustments by reducing needs, removing constraints, or reallocating current resources or c) Regeneration which could encompass disintegration and reorganization of the household or in social action focused on reorganization of the society. Research based on this theory of housing adjustment is often focused on relationships among specific variables or non-specifics such as the housing adjustment model. Ukoha and Beamish (1996) used the theory to examine housing satisfaction in Nigeria, Bruin and Cook (1997) studied constraints and residential satisfaction among low income single parent families while Crull, Bode and Morris (1991) used it in a study on determinants of residential mobility. Due to its relevance to this topic, this theory was used as a guide in selecting variables that would account for factors that influence housing satisfaction.

2.3 The Concept of a Slum

A slum is often not recognized and addressed by the public authorities as an integral or equal part of the city. Slums are areas characterized by overcrowding, poor or informal housing, inadequate access to safe water and sanitation and insecurity of tenure and this definition was adapted by UN in 2002. The term slum is used in the MDG’s in a general context to describe a wide range of low-income settlements and or poor human living conditions. These inadequate housing conditions exemplify the variety of manifestations of poverty as defined in the Programme of Action adopted at the World Summit for Social (UN-Habitat, 2002).

The operational definition of a slum that has been recently recommended by a United Nations Expert Group Meeting (EGM) held in Nairobi from 28 to 30 October 2002 for future international usage, defines a slum as an area that combines, to various extents, the following characteristics which restricted to the physical and legal characteristics of the settlement, and excluding the more difficult social dimensions; Inadequate access to safe water, inadequate access to sanitation and other infrastructure, poor structural quality of housing, overcrowding and finally, insecure residential status.
Slums basically result from the lack of urban planning or the loopholes in it. For a proper approach to planning the number of slum dwellers, areas under slums, slum-wise specific problems should be honestly listed and taken note of (UNCHS, 1999). Slums are said to be the products of failed policies, bad governance, corruption, inappropriate regulations, dysfunctional land markets, unresponsive financial systems and a fundamental lack of political will. Each of these failures adds to the toll of people already deeply burdened with poverty. This frustrates the enormous potential for human development that opportunities in urban life offer.

Urbanization has created a number of problems like shortage of dwelling units, mushrooming growth of slum houses, encroachment of public land and expansion of unauthorized residential colonies. The rapid growth of urbanization is creating a number of problems. Whenever a big project is commenced, a lot of workers migrate to towns in quest of employment. With no proper place to live, they usually encroach on public land and the sites earmarked for various developmental projects. This encroachment causes expansion of slums and slum dwellers. As of 2005, one billion people, one-sixth of the world's population, live in slums thus building enormous pressure on civic services and creating major bottlenecks in the proper development of cities (Whitehouse, 2005). Slum dwellers are defined as a group of individuals living under the same roof lacking one or more of the following conditions; access to improved water, access to improved sanitation facilities, sufficient living area not over crowded, Structural quality/durability of dwelling, security of tenure.

2.3.1 The concept of slum upgrading
“Cities without Slums” or “Target 11” of the Millennium Development Goal 7, “Ensure Environmental Sustainability” is the basis on which current slum upgrading is based as reported in the Ministry of planning and National development (2006). Improvement in the lives of slum dwellers according to EMG as specified in the Cities without Slums MDG, Target 11. These are: Proportion of urban population with sustainable access to a clean water Source, Proportion of urban population with access to improved sanitation, Proportion of urban population with access to secure tenure, Proportion of urban population with durable housing units and finally the Proportion of urban population with adequate living area.
The quality of living conditions features four product features states by Gulyani (2006): safety (crime), Tenure, housing units: quality, size, crowding, infrastructure access, and that current slum upgrading programs focuses on the four features. Early slum improvement efforts were a response to outbreaks of contagious diseases that were believed to originate in slums. There is a long literature linking housing deprivation with ill health later in life; even during the 1950s, morbidity rates in urban UK were higher than in rural areas. Many millions in slums suffer unhealthy living conditions, resulting in shorter life and chronic illness. The poorer general health of slum dwellers and the lack of access to medical attention increase their likelihood of dying from epidemic diseases such as AIDS and tuberculosis, while poor sanitation exposes them to waterborne diseases (Gulyani, 2006).

Currently, slum upgrading is a process through which informal areas are gradually improved, formalised and incorporated into the city itself, through extending land, services and citizenship to slum dwellers. It involves providing slum dwellers with the economic, social, institutional and community services available to other citizens. These services include legal (land tenure), physical (infrastructure), social (crime or education, for example) or economic. Significant improvement in slums is in 5 area as stated by Satterthwaite and Biggs (2005) and some of these are the same areas mentioned by as; Housing quality and more space per person, Secure tenure for renters tenants as well as owner occupier, Basic infrastructure and services including safe and sufficient drinking water, adequate provision for sanitation, drainage and solid waste collection and access to school and health service, Citizen entitlement that are linked to the house official address, police services and the rule of law and emergency services and finally, removal of exclusion and discrimination for slum dwellers (Gulyani, 2006).

Slum upgrading is not simply about water or drainage or housing. It is about putting into motion the economic, social, institutional and community activities that are needed to turn around downward trends in an area. These activities should be undertaken cooperatively among all parties involved—residents, community groups, businesses as well as local and national authorities if applicable. The activities tend to include the provision of basic services such as housing, streets, footpaths, drainage, clean water, sanitation, and sewage disposal. Often, access
to education and health care are also part of upgrading. In addition to basic services, one of the key elements of slum upgrading is legalising or regularising properties and bringing secure land tenure to residents. Ultimately, upgrading efforts aim to create a dynamic in the community where there is a sense of ownership, entitlement, and inward investment in the area.

Slum Upgrading consists of physical, social, economic, organizational, and environmental improvements undertaken cooperatively and locally among citizens, community groups, businesses, and local authorities. The actions included in slum upgrading are several: Installing or improving basic infrastructure, e.g. water reticulation, sanitation/waste collection, rehabilitation of circulation, storm drainage and flood prevention, electricity, security lighting, and public telephones. Most of the housing structures in slums are sub-standard and do not comply with local building codes. Often, slum dwellers lack legal ownership or any other legal security of tenure. Most of these and the myriad other problems associated with slums can only be dealt with effectively at the local level. Local authorities, in partnership with national government and the private sector, are therefore the key players in achieving the targets set out for this goal (Tebbal, 2003).

The legal system such as property rights and security of tenure are critical to sustainable approaches to upgrading. Most residents of urban slums live without any form of secure tenure, under constant threat of eviction, which obviates their ability to access credit and constrains their motivation to improve their homes and neighbourhoods. The transformation of a land administration system is a large undertaking in that it normally involves a number of separate agencies, it relates to power and patronage, and it requires extensive civil society debate at a national and local levels, it is cross-sectional and considered key to poverty alleviation. It often takes 11 years or more, for a country to get from discussing land policy to the point of implementing it at scale. There are also a number of discrete pre-titling steps in this process.
2.3.2 Water and Sanitation in housing satisfaction.

Water is one of the great necessities of human life (UN.HABITAT, 2003). A supply of clean water is absolutely necessary for life and health; yet, many people of the world do not have access to clean water or can only obtain it at high prices in time and/or money. In reference to Franks (2006) in his statement that without water, it is all just chemistry, but add water to the catalogue of genes and the proteins they code for and you get biology state that the simple fact that the human body on average contains 60% water, should to be enough to convince that the access to water is an absolute necessity (Franceys and Gerlach, 2008).

Lack of basic services is one of the most frequently mentioned characteristics of slum definitions worldwide. Lack of access to sanitation facilities and safe water sources is the most important feature, sometimes supplemented by absence of waste collection systems, electricity supply, surfaced roads and footpaths, street lighting and rainwater drainage (Gulyani, 2006). UN-Habitat (2003), reports that many cities do not have a constant, potable water supply. Even in cities which are supplied with clean water, households in some informal areas that are not connected to the network can only buy water from vendors at up to 200 times the tap price, so that much of family income is spent on water.

Adequate sanitation means an easy maintained toilet in each person’s home with provision for hand washing and the safe removal and disposal of toilet waste. Water sanitation and hygiene deficiency are in the centre of the environmental health problems experienced by deprived urban communities. The African Water Vision as reported by ADB (2010), proposes achievement of 95% access to drinking water supply and sanitation by 2025, whilst the more imminent Millennium Development Goals targets with respect to water and sanitation services are—to reduce by half, by the year 2015, the proportion of people who do not have access to safe drinking water and basic sanitation. The present water and sanitation coverage in Africa is poor, only about 60% of the total population in Africa has water and sanitation coverage. As a result, approximately 210 million people in urban areas will need to be provided with access to water supply services, and 211 million people with sanitation services, if
the international coverage targets of the MDG for 2015 are to be met. A similar number of people in rural areas will also need to gain access (McGranahan and Marcotullio, 2007).

It has been estimated as reported in that one third of the world’s urban population today do not have access to adequate housing, and lack access to safe water and sanitation. These people live in overcrowded and unserviced slums, often situated on marginal and dangerous land. They lack access to clean water, for which they will pay a premium. Their waste not only remains untreated, it surrounds them and their daily activities and affects their health, especially their children’s. This situation is not new. Since humanity first began to live in cities, the problems of inadequately serviced and overcrowded urban housing in which the poorer members of urban society live have been recognized as undesirable aspects of urban living. The more developed parts of the world have already undergone their primary urbanization, albeit at a smaller scale and at a considerably slower pace (McGranahan and Marcotullio, 2007).

Governments and international agencies need to recognize that urban areas have particular needs for water and sanitation that are distinct from rural areas and UNESCO (2003) states that one important way to extend provision for water and sanitation to low income household is to increase their capacity to buy, rent or build new accomplishment with better provisions. In Kenya water resources are polluted, degraded and over exploited as reported by the World Economic Forum Water Initiative (2011), in 2005, 39% of Kenyans lacked access to safe drinking water and 62% lacked safe sanitation. Overcrowded slums have few means of disposing excreta, let alone garbage. The situation in schools and health facilities is arguably worse: three hundred children may share one out house. This spreads diseases, affects school attendance and undermines performance.

2.3.3 Security of Tenure in housing satisfaction
Security of tenure can be defined in various ways: the degree of confidence that land users will not be arbitrarily deprived of the rights they enjoy over land and the economic benefits that flow from it, the certainty that an individual’s rights to land will be recognized by others and protected in cases of specific challenges; or, more specifically: The right of all individuals and groups to
effective government protection against forced evictions (GLTN, 2008). Land tenure is the mode by which land is held or owned or the set of relationships among people concerning land or its products as stated by (De Fillipe, 2009), and (UN-Habitat, 2007). Security of tenure prevents forced evictions. The House of Commons International Development Committee (2008-2009) reported that improving security of tenure is central to improving the lives of slum dwellers.

Tenure is often the most contentious issues in upgrading and therefore the housing tenure proposals have to be carefully crafted to suit the particular realities of a given situation (Dastur 2008). Land tenure involves a complex set of formal and informal rights, ranging from various rights of use, to conditional or full rights to dispose of the land according to Global Land Tool Network (GLTN, 2006). This is what the Global Land Tool Network calls a ‘continuum of land rights.’ Land tenure programmes should be designed with careful consideration of the local context in which they will be implemented, and should include a range of appropriate options that will best suit the needs of all residents, including the poor (GLTN, 2008).

Security of tenure is essential to improve (upgrade) the living conditions in existing squatter areas, slums, and other informal living areas, allowing residents to capture assets, make home improvements and seek credit (World Bank, 2001). A key aspect in achieving target 11 of the Millennium Development Goals on slums is the provision of secure tenure to the slum dwellers (Tebbal, 2003). The key challenge to the land sector is how to go about when giving tenure security to slum dwellers. To reach the target, new innovative tenure types will need to be developed which are affordable to the urban poor. Affordable, user friendly and transparent land administration and land management systems will have to be developed for city wide slum application. Slum areas that are not titled challenge existing land registration and cadastral approaches (Tebbal, 2003).

Secure tenure is the right of all individuals and groups to effective protection by the state against unlawful evictions. Security of tenure describes an agreement between an individual or group on land and residential property which is governed and regulated by a legal and administrative framework. The security derives from the fact that the right of access to and use of the land and property is underwritten by a known set of rules, and that this right is justifiable. The tenure can
be affected in a variety of ways, depending on constitutional and legal frameworks, social norms, and cultural values and, to some extent, individual preference. (UNCHS, 1999).

Security of tenure gives poor residents a better chance of realising land market gains after neighbourhood improvements (Tebbal, 2003). The provision of secure tenure to the slum dwellers is a key aspect in achieving target 11 of the millennium development goals on slums. Therefore, a key challenge to the land sector is how to go about when giving security of tenure to slum dwellers. To reach the target, new innovative tenure types will need to be developed which are affordable to the urban poor. Improving the living conditions of the poor depends most directly on having legal recognition to the use of property; freedom to trade and collateralize land; and acquisition of infrastructural services with minimal transaction costs. Security of tenure is essential to improve (upgrade) the living conditions in existing squatter areas, slums, and etc. allowing residents to capture assets, make home improvements, and seek credit. Access to land, services, and credit are central to many development agency programmes, and are important to the efforts to address the problems of the urban poor (Tebbal, 2003). Regularizing tenure also facilitates greater private sector involvement in the provision of services for the urban poor, and a wide range of projects and non-lending instruments have evolved to do so.

2.3.4 Neighbourhood Security in housing satisfaction

Slum neighbourhoods experience various socio-economic hardships. They are a concentration of social and economic deprivations, high population density, high numbers of broken families, high unemployment, and economic, physical and social exclusion and these characteristics have been recognized as causes of crime and violence and therefore have the potential of a violent time bomb if found in combination in dense urban areas (Gulyani, 2006).

There are crimes committed due to poverty, and sociological theory states that the rise of mega cities and the consequential ghettos and slums have brought about an increase in the crime ratio. Furthermore, the largest number of crimes is from slums and ghettos. The class difference between the two kinds of people living in the cities and slums lead to the latter, acting in a deviant way by indulging in criminal activities and the main reason is
that when people feel their personal space is violated, they tend to become violent (Zubed, 2009).

Rapid urbanization is generally coupled with decreasing levels of public safety, posing serious challenges to the provision of security and justice. Agnihotri (1994) states that there is a close relationship between slums and urban violence and crime. The incidence of crime in the slum is found in the later years of its development when the labourers increase in unorganized areas due to increased unemployment. It is sometimes found that the influential people living in the better parts of the cities are always in search of the under employed or self-employed slum dwellers who can be used for unlawful activities. Older inner-city slums with crowded conditions have higher crime rates than the peripheral slums. Higher density with higher number of disorganized people, high mobility and proximity with rich people are the factors which he says are responsible for the high incidences of crime in inner-city slums than in peripheral slums and that slums with railway stations are the ideal places for crime propagation.

Slums are often associated with crime; but in some places this is more a fabrication of the media than a reality. Places with strong social control systems will have low crime rates. The prevalence of both property crime and violent crimes is related to problems of economic hardship among the young, which increases during economic downturns. Violence against women is also related to economic hardship, but is also related to the low social status of women. Poor people suffer more from violence and petty theft, in cities where this is common, than rich people. In these circumstances, violence and security issues can be regarded by poor people as considerably more important than housing or income issues. The fear of crime has changed the nature of cities with a high level of violence, altering the open, interactive nature of the community, and enforcing segregation through gated communities and walled enclaves (UN-Habitat, 2003).
2.3.5 Income as necessary in housing satisfaction

The UN Millennium Project task force on improving lives of dwellers put first priority on providing improved housing, health care, education, transport, and access to drinking water and toilets. And that in as much as this are all important, there is no enough resources to actualize them all at once hence need for prioritization and to the task force income is key.

Polak (2009) argues that slum dwellers live in the poor conditions because they need jobs and income to survive and they have made rational decisions that they can find jobs in the cities than in their villages. There are thousands of informal grassroots enterprises that thrive in slums and need workers even if they pay miserable wages, and to him this is better than earning nothing allowing one to survive and keeping open the chance that life will improve. The fact that jobs and income are the main tools of inducement for people to live in slums seems to have made little impact on the action of most of the organizations devoted to improving the lives of the dweller.

2.4 The Need for Slum Upgrading

Upgrading projects focus on providing basic services to improve the well-being of low income communities, including a range of infrastructural interventions frequently undertaken in conjunction with social interventions, such as the regularization of areas which lack security of tenure. Other infrastructural improvements include water, sanitation, waste collection and disposal, housing, access roads, footpaths, storm water drainage, lighting, public telephones, schools, health posts and community centres. Social improvements can include better provision of health and education services, day care facilities, training, and social protection programs. With the projected increase in slum population, the demand for urban upgrading interventions is expected to grow.

Huchzermeier (2006) reflected on the challenges presented by slum upgrading projects in Kenya for a balanced realization of the seven internationally recognized elements of the right to housing – security of tenure, access to services and infrastructure, affordability, habitability, physical accessibility, location, and cultural adequacy. Through an analysis of the distortions in the wider urban housing market, which underpinned the perpetuation of slum housing and the displacement of
the intended beneficiaries of slum redevelopment (often referred to as ‘slum upgrading’ in Kenya), the paper put forward suggestions that may lead to more successful improvements in Kenya’s urban slums. First housing rights awareness should be raised among the slum dwellers and the government officials involved in the implementation and secondly, housing rights activists and other actors could be developed among the dwellers. Finally these housing rights activists could also be developed from landlords or landladies.

Mayo, Malpezzi and Gross (1986) reviewed recent research on housing market behaviour in developing countries, including the demand for housing and the pattern of housing investment across countries, the financing of housing by low-income households, and the willingness to pay for secure tenure. Common housing policies were then examined, including public housing, sites and services projects, and slum clearance versus upgrading. Rent controls, measures to improve the supply of finance and infrastructure, and building codes and standards were also discussed. The creation of unrealistic and costly building codes and zoning regulations were found to increase costs, often without corresponding benefits, and encouraged development of illegal, informal areas.

Slum removal and urban renewal programs simply displaced the slums to other areas encouraged the development of larger and more militant squatter settlements. On the displacement of private investment by public activities studies indicated that public housing actually had a negative economic rate of return (it was worth less than what it cost to build it) (Murray 1983, Mayo and others 1980). Similar displacement effects and inefficiencies undoubtedly existed in many developing countries and should be avoided at all cost.

2.5 Conceptual Frame Work
The quality of living conditions features four product features states by Gulyani (2006): safety (crime), Tenure, housing units: quality, size, crowding, infrastructure access, and that current slum upgrading programs focuses on the four features and this were used to build the conceptual frame work. According to Kothari (2004) a conceptual framework defines the interrelationships between variables deemed important in a study and this study in it interest in socio economic factors influencing housing satisfaction showed the relationships indicated in table 2.0.
Table 2.0: The conceptual framework

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Intervening variables</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water and Sanitation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• availability of clean water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• affordability of clean water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Improved clean environment and</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• level of crime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• provision of security services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• protection disasters like fire</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Security of Tenure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• owning of housing unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• payment of rent</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income Generating Activity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Availability of Income generating opportunity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Amount of income earned.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Human factors**
- Human attitude
- Area politics

**Housing satisfaction**
Level of housing satisfaction

**Moderating variables**
- Government policies
2.7 Summary of study
This study aimed at investigating the extent to which the residents of the Kibera slum upgrading project were satisfied with their new housing environment considering that they had been moved from the slum. It sort to investigate the project’s success in terms of providing the residents with improved housing conditions in terms of level of sanitation, water availability, tenure system and security. An examination of the achievements of the above stated objectives would help policy makers formulate effective designs for the implementation of similar programs in future. To the knowledge of the researcher, no other study has been done in Kenya to determine the success rate of the Kibera slum upgrading project. A survey was done using a self-administered questionnaire which was filled by the respondents and other were interviewed depending with their level of understanding. A representative sample of 263 households was interviewed so as to make generalizations about the entire population of the Kibera slum upgrading project. The study used primary data as its source of information. The findings of the research will help highlight areas of improvement for the replica projects of slum upgrading in the rest of the country.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
In this section, the study outlines the various steps that were taken in studying the research problem. The research design, sampling technique, data collection and analysis methods are be outlined in this chapter.

3.2 Research Design
This study used a descriptive survey design; portray social and physical phenomena that determine the level of satisfaction in the housing project, determine the degree to which the variables are associated and finally will be used to make predictions or adjustments in future projects. Survey research seeks to obtain information that describes existing phenomena by asking individuals about their perceptions, attitudes, behaviour or values (Mugenda and Mugenda, 1999). The study was cross sectional as it was carried out among the beneficiaries of the slum upgrading project at that point in time. A survey was conducted amongst the beneficiaries in the Kibera Slum Upgrading project to determine their level of satisfaction with their new housing conditions. The questionnaire was semi structured and covered various aspects that other studies have found to be determinants of housing satisfaction (Zikmund, 2003).

3.3 Target Population
A population is the total collection of elements about which we wish to make some inferences (Cooper and Schindler, 2000). They also define a population as “the total population of the elements upon which inferences can be made. The population is the larger set of observations while the smaller set is called the sample. (Cooper and Schindler, 2001)
The population size in the Kibera slum project according to KENSUP from the Ministry of Housing website (2012) comprises of 17 blocks of 5 storey high flats totalling 600 households. The targeted population were the real owners of the houses and particularly those who moved from the slums and who own the houses either male or female and the chosen population had to have been residing in the upgraded units. The population was chosen as they
were able to tell the difference in terms of housing from the previous slum housing to the upgraded housing and they were the population directly affected by all the socio economic factors that influence the level of satisfaction in the area.

### 3.4 Sample and Sampling Technique

According to Mugenda (1999), when the population is more than 10,000 individuals, 384 of them are recommended as the desired sample size. The accessible population in this study is based on Mugenda’s recommended formula.

Mugenda and Mugenda (1999) recommend the formula:

\[
f = \frac{n}{1 + \frac{n}{N}}
\]

According to the above formula:
- \(n_f\) = desired sample size when the population is less than 10,000,
- \(n\) = desired sample when the population is more than 10,000,
- \(N\) = estimate of the population size.

Using the above formula sample size is:

\[
= \frac{384}{1.64} = 234.14 \approx 234 \text{ respondents}
\]

To cater for those subjects that would have decline to participate or dropped out during the process of investigation, the study proposed a sample size of 263. The people to participate in the study were chosen randomly from the target population. This is because random sampling gives each member of the target population an equal chance of being sampled and consequently reducing the researcher’s biasness (Cooper and Schindler, 2001). Random technique approach is appropriate as it eliminates bias and involves a selection process in which each element in the population has an equal and independent chance of being selected and the sample selected is representative of the population.
3.5 Methods of Data Collection

The tool that was used for data collection in this study was questionnaire. This tool was used to translate the research objectives into specific questions whose responses provided the data required to achieve the research objectives. The survey method was used, whereby there was direct participation by the respondent. Using a small sub-sample, pretesting was done to establish whether the data collection plan for the main study was appropriate. A semi structured interview was administered by an interviewer who then recorded the responses on the basis of the answers given by the interviewee. Data presentation was done on tables.

3.6 Validity and Reliability

This section discusses the validity and reliability of data collection instruments.

3.6.1 Validity

Validity refers to the ability of a scale or measuring instrument to measure what it was intended to measure. According to Mugenda (2003), validity of a questionnaire refers to the extent to which it measures what it claims to measure. Reliability on the other hand refers to the measuring instrument’s ability to provide consistent results in repeated uses. Validity of the questionnaire is in reference to content validity, predictive validity and constructs validity. Content validity which refers to the extent to which the measurement questions in the questionnaire provides adequate coverage of the investigative questions. Judgement of adequate coverage was made by using a panel of individuals to assess whether each measurement question in the questionnaire is essential, ‘useful but not essential’ or ‘not necessary’.

Predictive validity entails assessing the ability of the questions to make accurate predictions. The assessment was done by comparison of the data from the questionnaire with that specified in the criterion in some way. Construct validity which refers to the extent to which the measurement questions actually measure the presence of constructs it was intended to measure. Construct validity was established during the statistical analysis of the data when the empirical evidence generated by a measure is consistent with the theoretical logic about the concepts (Saunders & Thornill, 2009).
3.6.2 Reliability
Reliability refers to the robustness of the questionnaire and particularly whether, or not, it will produce consistent findings at different times, and under different conditions; for example, with different samples, or when questionnaires have been administered by different interviewers. This study used the internal consistency approach to ensure reliability. To also establish the reliability of the instrument, Cronbach alpha method was used.

This method was appropriate since it involved a single administration of the instrument therefore it yielded greater internal consistency. The most commonly used measure of reliability is Cronbach’s alpha (Cortina, 1993). It has values in between 0 and 1 where zero indicates no consistency at all and 1 perfect consistency, for formula see appendix 2. This is rare in practical situations and values close to 1 will indicate internal consistency in studies. Reliability, regardless of the strategy used to obtain it, is not a characteristic inherent in the test itself, but rather is an estimate of the consistency of a set of items when they are administered to a particular group of students at a specific time under particular conditions for a specific purpose (Brown, 2002).

Alpha is an important concept in the evaluation of assessments and questionnaires according to Dennick (2011). It is mandatory that researchers should estimate this quantity to add validity and accuracy to the interpretation of their data (Dennick & Tavakol 2011). For the study the Cronbach’s Alpha value is 0.757. This shows presence of internal consistency. The data was found to be reliable hence making the responses reliable.

3.7 Data collection
Primary data was used to obtain data necessary to realize the research objectives. Data were collected using semi structured questionnaire (see appendix 1). The questionnaire consisted of two parts. Part A consisted of the demographics; Part B consisted of questions relating to the influence of slum upgrading to housing satisfaction.

3.8 Ethical considerations
According to Schicktanz & Dusche (2011) ethical issues in the research processes are closely related with laws, rules as well as regulations and do not limit researchers in any of their research
activities. In research cases where the researcher is using questions to inquire about a certain research phenomenon from a respondent ethics have it that it is significant to seek the consent of that respondent and at the same time assure the respondent of his/her confidentiality. The research sorts the consent of the respondents before proceeding with the process of data collection; equally, the respondents were assured of their confidentiality as well as the use of their responses for the purposes of research only. This enabled the respondents to open up and share their genuine opinion without fear of being implicated due to their views. In the same vein, the study purpose was explained to the respondents in addition to being given an assurance that their participation in the research process was voluntary and as such had the power and right to withdraw their participation at any moment if they felt threatened. The respondents were also assured that their personal details will be taken only for research purposes and would be held as high confidential.

To this end, Schicktanz & Dusche (2011) also observe that ethical considerations ensure that the research respondents are consulted throughout the research process; in this vein, the research put in place extra measures of keeping in touch with the research respondents to ensure that they clearly understood the different research issues which were at stake in the entire research process.

3.9 Data analysis
Data was analysed using descriptive analysis in accordance with the objectives of the study. Frequencies and percentages were used and the presentation was done using tables as a summary. This was used to group the respondents with regard to their demographic background. To establish the existence of relationships between the researched factors, chi-square test of independence was used and Pearson correlation coefficient to establish the direction and strength of the associations. Statistical Package for Social Scientists (SPSS) version 18 was used to analyse the data.
3.10 Operational Definition of Variables

Indicators were denoted by the main variables under the study in order to render them measurable.

The variables were in reference to Gulyani (2006) four features of quality of leaving safety (crime), Tenure, housing units: quality, size, crowding, infrastructure access, and also influenced by the objectives of the KENSUP (MoH2012) of slum upgrading. Slums are areas characterized by overcrowding, poor or informal housing, inadequate access to safe water and sanitation and insecurity of tenure and this definition was adapted by UN in 2002 and this are the indicators used in operationalization of the variables.

Table 3.0 Operational Definition of Variables

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>TYPE OF VARIABLE</th>
<th>INDICATORS</th>
<th>MEASURE</th>
<th>LEVEL OF SCALE</th>
<th>TOOL OF ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and sanitation</td>
<td>Independent</td>
<td>-availability of clean water</td>
<td>-The number of water points available in the estate, or availability of running water in the taps</td>
<td>Nominal</td>
<td>Frequencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-affordability of clean water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Improved clean environment and access to a toilet</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-Presence of running water in the toilets</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>Independent</td>
<td>-crime rate</td>
<td>The number of insecurity incidences reported</td>
<td>Nominal</td>
<td>Frequencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-provision of security service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-protection from disasters like fire</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security of tenure</td>
<td>Independent</td>
<td>-ownership of housing unit</td>
<td>-Receipts showing payment</td>
<td>Nominal</td>
<td>Frequencies</td>
</tr>
</tbody>
</table>

26
<table>
<thead>
<tr>
<th>Category</th>
<th>Type</th>
<th>Description</th>
<th>Level</th>
<th>Measure</th>
</tr>
</thead>
</table>
| Income generating activity     | Independent | -payment of rent  
-availability of opportunity  
-amount of income from the activities | The number of enterprises established by tenants | Nominal     | Frequencies              |
| Human factors                  | Intervening | -people’s attitude toward the project  
-area politics | The number of individuals interested in being beneficiaries | Ordinal     | Percentages              |
| Income levels                  | Moderating | The viability of business enterprises in the area  
-Business activity  
-affording education  
-electricity and hospitals | The promptness with which they pay rent | Interval    | Frequencies, percentages and Pearson correlation |
| Government Policy              | Moderating | The rules and regulations governing the eligibility of beneficiaries  
-The tenancy rules in the project | -The tenancy rules in the project | Ordinal     | Frequencies              |
| Level of housing satisfaction  | Dependent | People’s attitude towards the houses  
-The number of occupants in the project  
-The rate of movement out of the project | -The number of occupants in the project  
-The rate of movement out of the project | Ordinal     | Frequencies and percentages |
3.11. Summary

Water and sanitation refers to the availability and affordability of clean water, access to a clean toilet that will enhance the cleanliness of one’s environment. This category is measured by the number of water points in the estate and the availability of running water in the toilets (UN-Habitat, 2003). Security refers to the crime rate in the area, the presence of risks such as fire etc. Security or lack of it therefore, measured by the number of insecurity incidences reported. The security of tenure refers to the ownership or payment of rent within the housing estate; it is indicated by receipts of payment of rent or title deeds. The number of enterprises established by tenants indicate the availability of Income Generating Activities (GLTN, 2006). Human factors determine the willingness of individuals to be beneficiaries of the project; these are people’s attitude and the area politics. Income level of the residents determines the viability of business because it will determine effective demand of goods and services in the estate (UNCHS, 2003). Government policy is meant to create fairness for all residents living in the estate; this is in reference to eligibility for tenancy and ownership of the houses (Polak, 2009). All the above factors determine the level of housing satisfaction which was measured by the number of tenants in the project and their rate of movement in and out of the project.
CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction
In this section the study highlights the results obtained from the data analysed in terms of frequencies and percentages so as to give a numerical description of the nature of data obtained. To gain a firm understanding of the researched factors chi-square test of independence was used to explore dependence and correlation to determine the direction and strength of the association. The results of Descriptive Statistics; frequencies and percentages; Reliability Analysis; and Correlation Analysis will be presented as analysed and calculated by the Statistical Package for Social Scientists (SPSS 17.0), in which data was entered.

4.2 Response rate
The objective of the research was to establish the influence of slum upgrading on the level of housing satisfaction in Kibera slum upgrading project and a sample size of 263 respondents was targeted based on Mugenda and Mugenda (1999). A total of 263 questionnaires were administered with 100% return with most of the questions were answered. Missing response was less than 1% in some questions.

4.3 The demographics characteristics of the respondents of Kibera slum upgrading project
The research sought to find out the demographic characteristics of the residents of kibera slum upgrading project that also affect their level of satisfaction with the project. From the study findings, age, gender, marital status, number of years the slum upgrading project, place of residence prior to moving to the project. Their responses were summarised as shown in the table below.

Table 4.1: Ages of respondents

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30</td>
<td>154</td>
<td>58.6</td>
</tr>
</tbody>
</table>
The demographics revealed that 58.6% of the beneficiaries in the project were aged between 18-30, 27% were aged between 31-40, 8.7% 41-50 and finally 5.7% were 50 years and above as shown in table 4.1. Majority of the owner were thirty years and below as this is the youth age in which everyone is economically active and they can easily embrace change. Most people tend to buy houses especially in their youthful age and also in this age they have longer period to pay the house rates.

**Participation by gender**

Table 4.2 shows the gender of the respondents

<table>
<thead>
<tr>
<th>gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>153</td>
<td>58.2</td>
</tr>
<tr>
<td>Female</td>
<td>107</td>
<td>40.7</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The respondents were 58.2% male while 40.7% were female as shown in table 4.2. The majority were male as they were the heads of family and also a majority of them were having some source of income.

**Participation by marital status**

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>88</td>
<td>33.5</td>
</tr>
</tbody>
</table>
In terms of relationship status, 60.8% of the residents were married, 33.5% were single, and 2.3% were separated while 1.1% was divorced as shown in table 4.3.

### Participation by previous residence

**Table 4.4: Previous residential areas of respondents**

<table>
<thead>
<tr>
<th>Previous residence</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soweto East</td>
<td>260</td>
<td>98.9</td>
</tr>
<tr>
<td>Laini Saba</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In table 4.4, the respondents were asked to state their previous residential area and almost all the respondents (98.9%) were from Soweto East before moving into the project while the rest (1.1) were from Laini Saba. The reason why a majority were from Soweto East is because the upgrading was being done in Soweto East and therefore the people in the area were the ones given priority for relocation. The 1.1% that were from Laini Saba was because the area had little separation between the zones.

### Participation by years of tenure

**Table 4.5: Duration of stay in Kibera slum upgrading units**

<table>
<thead>
<tr>
<th>Duration of stay</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 yrs.</td>
<td>8</td>
<td>3.0</td>
</tr>
</tbody>
</table>
The residents who had stayed in the estate for more than 2 years were 94.7% while 3% had resided there for less than 2 years as shown in table 4.5. The project had been completed in 2010 and that’s why a majority (94.7%) had live in the area for more than two years. The few (3%) who had live in the area for less than two years had gotten the property from the original tenants or some had inherited from parents who had relocated.

### 4.4. Influence of security on the level of housing satisfaction

The study sought to establish the influence of security on the level of housing satisfaction.

#### Table 4.6: Ease of contacting the slum upgrading officials

<table>
<thead>
<tr>
<th>How easily have you been able to contact the slum officials</th>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very easily</td>
<td>81</td>
<td>30.8</td>
</tr>
<tr>
<td></td>
<td>It was easy</td>
<td>62</td>
<td>23.6</td>
</tr>
<tr>
<td></td>
<td>Took some time</td>
<td>91</td>
<td>34.6</td>
</tr>
<tr>
<td></td>
<td>Not accessible at all</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>Never tried</td>
<td>26</td>
<td>9.9</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

On the issue of contacting slum upgrading officials as shown in table 4.6, 30.8% of the residents felt that it was very easy to contact the slum officials and this they felt was due to the fact that the slum officials had an office in the area and with an overseer who worked five days a
week in the area, 23.6% felt that it was easy, 34.6% felt that it took some time to contact the slum upgrading officials and this they felt was because they had to deal with the area overseer who in turn had to communicate with the head office and that was the reason for the long wait for assistance. While 1.1% felt that they weren’t accessible at all and this way as they had to deal with the overseer not the office directly, while 9.9% of the respondents had never tried to contact the officials at all as they had no issues to be assisted on.

**Table 4.7: Responses on received information about all housing and building services**

<table>
<thead>
<tr>
<th>Were you informed about all housing and building services</th>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>231</td>
<td>87.8</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>22</td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>.8</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>2</td>
<td>.8</td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>98.9</td>
<td></td>
</tr>
</tbody>
</table>

The respondents who acknowledged that they were informed about the housing and building services were 87.8% while 8.4% said they didn’t have such information as shown on table 4.7. The majority, 87.8% said they were informed and advised on every step of the upgrading project and even after the relocation they are always advised on any improvement to be done and on steps being done on the main project. These residents felt they had all the information needed about the project. The few (8.4%) who said they were not informed of the building services said mainly they relied on information from the other tenants and not from the office directly and some said they didn’t get information directly due to their absence in meetings.
### Table 4.8: How satisfied residents are with the state of repair of their home

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>15</td>
<td>5.7</td>
</tr>
<tr>
<td>Satisfied</td>
<td>36</td>
<td>13.7</td>
</tr>
<tr>
<td>Acceptable</td>
<td>65</td>
<td>24.7</td>
</tr>
<tr>
<td>Not very satisfied</td>
<td>85</td>
<td>32.3</td>
</tr>
<tr>
<td>Not satisfied at all</td>
<td>62</td>
<td>23.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>263</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Majority of the residents were not very satisfied with the state of repair of their homes; 32.3% said they were not very satisfied, 24.7% were averagely content with the state of repair, and 23.6% weren’t satisfied at all with the state of repair in their homes as shown in table 4.8 while only 13.7% were satisfied with the state of repair within the project and 5.7% were extremely satisfied with the state of repair within the project. A majority of the residents who were not satisfied with state of repair felt they had to do most of the small repairs on their own and that they didn’t receive assistance from the slum upgrading office while the satisfied residents attributed their satisfaction to the repairs done generally by the slum upgrading office to the entire area including areas like roofing and pavement and they were also satisfied that the area was generally well built and needed minimal repair and that maintenance was done well to reduce damage.

### Table 4.9: How satisfied residents are with the local neighbourhood

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>83</td>
<td>31.6</td>
</tr>
<tr>
<td>Satisfied</td>
<td>78</td>
<td>29.7</td>
</tr>
</tbody>
</table>
The residents of the Kibera slum upgrading project who were extremely satisfied with the local neighbourhood were 31.6% as they felt the environment had minimal crime rate, was cleaner and they had security of tenure, 29.7% were just satisfied with the neighbourhood while 14.1% found it acceptable, 19.4% were not very satisfied while 5.3% were not satisfied at all as shown in table 4.9. The 5.3% who were not satisfied felt the environment was the same as that in the slums as they were surrounded by the slums and in as much as they had better housing units, the security was compromised because of the slums around them and that their units were target to robbery as they were viewed as being wealthier than the rest in the slums. The residents who were satisfied with the local neighbourhood felt the slum upgrading had changed the whole area to an improved area in terms of infrastructure and security.

<table>
<thead>
<tr>
<th>Frequency Percent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>249</td>
<td>94.7</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>261</td>
<td>99.2</td>
</tr>
<tr>
<td>System Missing</td>
<td>2</td>
<td>.8</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Majority of the residents seemed to be comfortable with security in their residence; 94.7% were comfortable while 4.6% were not. The majority who were satisfied with the security of the area said security was improved as they had a gated and fenced units that was different from the
slums that was open to all. They felt that accessing the compound for non-residents was not easy and that since they were many units, there was collective responsibility towards security. They also felt that the buildings were stronger and made of better materials unlike before where for instance the doors and walls were weak making them vulnerable to robbery and other disasters. The few residents (5.3%), who were not satisfied felt the residents were an easy target to robbery as they were perceived to be living well compared to the other slum dwellers as they had better housing units and that there were no security officers assigned to the area.

Table 4.11: How safe residents within their home

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>250</td>
<td>95.1</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>4.2</td>
</tr>
<tr>
<td>Total</td>
<td>261</td>
<td>99.2</td>
</tr>
<tr>
<td>System Missing</td>
<td>2</td>
<td>.8</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The residents of Kibera slum upgrading project who felt safe within their homes were 95.1% and while 4.2% concluded that safety was bad in the area. The majority of the residents who felt safe within their homes attributed the safety to the enclosed residence and the improved unit. They felt the availability of gates and wall fence had contributed to the security as did their improved housing structure. They also felt the enclosed compound minimised the number of non-residents getting into the place. The minority (4.2%) of the residents who felt they were not safe within their homes felt that they were vulnerable to attacks as the rest of the area perceived residents of the upgraded units to be well off and that there was no security agents guarding the upgraded units.
4.5 The relationship between security of tenure and level of housing satisfaction

The study sought to find the relationship between the security of tenure and level of housing satisfaction in the Kibera slum upgrading and the findings were as below.

Table 4.12: How residents rate the services they get for rent paid

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>2</td>
</tr>
<tr>
<td>Excellent</td>
<td>90</td>
</tr>
<tr>
<td>Very good</td>
<td>57</td>
</tr>
<tr>
<td>Good</td>
<td>56</td>
</tr>
<tr>
<td>Average</td>
<td>52</td>
</tr>
<tr>
<td>Bad</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
</tr>
</tbody>
</table>

In the findings shown in the table 4.12 below, 34.2% of the residents felt the services given for rent paid was excellent, 21.7% rate the services as very good, 21.3% rated the services as good while 19.8% rates the services given as average. Few of the respondents, 2.3%, rates the services offered as bad while 0.8% didn’t respond. The majority who felt the services offered were excellent, very good or good attributed their satisfaction to the availability of security, better housing units and the availability of water and electricity. The few who were not satisfied with the services offered mainly felt the rent amount paid was high and that there were few income generating activities in the area and that the maintenance and repairs of the units had to be done by the residents.

Table 4.13: How satisfied residents are with planned maintenance program

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>40</td>
<td>15.2</td>
</tr>
</tbody>
</table>

37
The planned maintenance program of the housing estate had 15.2% extremely satisfied response, 41.4% satisfied, 30.4% found it acceptable while 28.1% were not very satisfied with it as shown below. The cumulative majority who felt satisfied with the planned maintenance felt that though minimal maintenance had been done, there were plans that the whole area will be inspected after a while and repairs done and they were hopeful it will be done. The few residents who were not satisfied with the maintenance plans felt that the maintenance will not be done as so far they had to do the small repair works on their own.

### 4.6 Influence of availability of water and sanitation on level of housing satisfaction of Kibera slum upgrading housing project residents

The study sought to establish the influence availability of water and sanitation on the level of housing satisfaction.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>91</td>
<td>34.6</td>
</tr>
<tr>
<td>Satisfied</td>
<td>92</td>
<td>35.0</td>
</tr>
<tr>
<td>Acceptable</td>
<td>46</td>
<td>17.5</td>
</tr>
<tr>
<td>Not very satisfied</td>
<td>26</td>
<td>9.9</td>
</tr>
<tr>
<td>Not satisfied at all</td>
<td>8</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The planned maintenance program of the housing estate had 15.2% extremely satisfied response, 41.4% satisfied, 30.4% found it acceptable while 28.1% were not very satisfied with it as shown below. The cumulative majority who felt satisfied with the planned maintenance felt that though minimal maintenance had been done, there were plans that the whole area will be inspected after a while and repairs done and they were hopeful it will be done. The few residents who were not satisfied with the maintenance plans felt that the maintenance will not be done as so far they had to do the small repair works on their own.

### Table 4.14: How satisfied residents are with the water system

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>91</td>
<td>34.6</td>
</tr>
<tr>
<td>Satisfied</td>
<td>92</td>
<td>35.0</td>
</tr>
<tr>
<td>Acceptable</td>
<td>46</td>
<td>17.5</td>
</tr>
<tr>
<td>Not very satisfied</td>
<td>26</td>
<td>9.9</td>
</tr>
<tr>
<td>Not satisfied at all</td>
<td>8</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>
A majority of the respondents were satisfied with the availability of water in the upgraded units with 35% being satisfied, 34.6% were extremely satisfied while 17.5% of the respondents felt the availability of water was acceptable. A few of the respondents, that is 9.9 were not very satisfied with the availability of water while 3.0% were not satisfied at all as shown in the table below.

### Table 4.15: How satisfied residents are with the sanitation system

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>97</td>
<td>36.9</td>
</tr>
<tr>
<td>Satisfied</td>
<td>89</td>
<td>33.8</td>
</tr>
<tr>
<td>Acceptable</td>
<td>55</td>
<td>20.9</td>
</tr>
<tr>
<td>Not very satisfied</td>
<td>22</td>
<td>8.4</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

On sanitation, 36.9% of the residents were extremely satisfied with the sanitation system, 33.8% were satisfied, 20.9% found it acceptable while only 8.4% were not very satisfied with the sanitation system. Those residents who were satisfied with sanitation in the area felt there was improved sewer system and availability of water and this had let to the improved sanitation. They also felt that the number of toilets were more compared to the slums as they had a toilet in every unit. The others felt that the sanitation was compromised by the number of units in the area as they were many units and thus the sewerage system was over strained and also the surrounding slum where there was no sewer system also compromised the sanitation in the upgraded area.
4.7. Influence of income generating activities on level of housing satisfaction in the Kibera slum upgrading project.

The study sought to examine the influence of income generating activities on the level of housing satisfaction in Kibera slum upgrading units.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>54</td>
<td>20.5</td>
</tr>
<tr>
<td>Satisfied</td>
<td>84</td>
<td>31.9</td>
</tr>
<tr>
<td>Acceptable</td>
<td>54</td>
<td>20.5</td>
</tr>
<tr>
<td>Not very satisfied</td>
<td>51</td>
<td>19.4</td>
</tr>
<tr>
<td>Not satisfied at all</td>
<td>20</td>
<td>7.6</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

On the availability of electricity, 20.5% of the respondents were extremely satisfied, 31.9% were satisfied, 20.5% felt the availability of electricity was acceptable, 19.4% were not very satisfied, and finally 7.6% were not satisfied at all. The cumulative majority of the slum upgrading project dwellers who were satisfied with the availability of electricity attributed this to the fact that they had to use alternative sources of lighting before and they felt that the alternative sources were not reliable and in the long run expensive. They also felt that the electricity is needed in most daily business operation. The dwellers who were not satisfied with the availability of electricity mainly felt the rates were higher than they could easily afford and also felt that that availability of electricity was also affected by vandalism in the slums around and thus they could not rely on the electricity for business operations.
Table 4.17: How satisfied the residents are with the availability of medical facilities

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing results</td>
<td>3</td>
</tr>
<tr>
<td>Extremely satisfied</td>
<td>13</td>
</tr>
<tr>
<td>Satisfied</td>
<td>70</td>
</tr>
<tr>
<td>Acceptable</td>
<td>49</td>
</tr>
<tr>
<td>Not very satisfied</td>
<td>56</td>
</tr>
<tr>
<td>Not satisfied at all</td>
<td>72</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
</tr>
</tbody>
</table>

On the availability of medical facilities only 4.9% were extremely satisfied, 26.6% were just satisfied, 18.6% found it just acceptable, 21.3% were not very satisfied, and finally 27.4% were not satisfied at all. There was minimal difference in the cumulative number of residents who were satisfied with the availability of medical facilities and the cumulative number that were not satisfied. The residents who felt satisfied with the availability of medical facilities felt that, though there were no new medical facilities in the area, the government medical facility in the area was accessible while those who were not satisfied felt that the medical facilities were the same they had in the area before the upgrade and that they were overcrowded hence service delivery was slower and that the rates were also high. For the residents to carry out their daily duties well and also carry out income generating activities, they need to be in good health and thus the availability of medical facilities is necessary.

Table 4.18: How satisfied the residents are with the availability of schools

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>29</td>
</tr>
</tbody>
</table>
On the availability of schools, 11% of the residents were extremely satisfied, 34.2% were just satisfied, 21.3% found the availability of schools to be just acceptable, 8.7% were not very satisfied, and 24.7% were not satisfied at all. The majority of the residents who felt satisfied with the availability of schools felt that the area was surrounded by several schools while the ones who were not satisfied mainly they felt that though the schools were available, they were few, overcrowded and that they fees charged was also not affordable to the slum dwellers.

Table 4.19: How satisfied are you with the availability of IGAs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely satisfied</td>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>Satisfied</td>
<td>43</td>
<td>16.3</td>
</tr>
<tr>
<td>Acceptable</td>
<td>69</td>
<td>26.2</td>
</tr>
<tr>
<td>Not very satisfied</td>
<td>99</td>
<td>37.6</td>
</tr>
<tr>
<td>Not satisfied at all</td>
<td>42</td>
<td>16.0</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

A majority of the respondents were not very satisfied with the availability of income generating activities in the upgraded units with the number of those not very satisfied being 37% of the total responses, 26% of the respondents felt the availability of IGA was acceptable, 16.3% were satisfied with the availability of IGA. The residents who were not satisfied with the availability of income generating activities felt that the project did not have designated area for business activities and thus they had to rely on their previous businesses.
and that the lack of designated business areas makes them carry out business activities in the slums competing with the other slum dwellers.

4.8 Housing preference

Table 4.20 shows response on housing preference by the residents of Kibera slum upgrading project.

Table 4.20 preference for upgraded housing to the slum housing

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>257</td>
<td>97.7</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The research sought to establish the influence of slum upgrading on housing satisfaction and a majority of the respondents (97.7%) of the respondents as shown on table 4.20 preferred the upgraded units to the slums while 1.1% preferred the slums while another 1.1% were indifferent; they didn’t prefer the slums or the upgraded units as they felt life had not changed for them. The majority of the residents who were satisfies with the upgraded units were influenced by the availability of water and better sanitation, the improved security in the area and the security of tenure for their houses. While the minority who were not satisfied mainly was due to the rates that they felt were high and due to the lack of income generating activities.

It was agreeable among majority of the respondents that they preferred the new housing units and therefore there need for correlating the independent variables to the satisfaction in the new housing to find out if the satisfaction was based on their relationship.
**Correlation analysis**

To explore the existing relationships chi-square test was used to detect any dependence and further Pearson correlation was used. Chi-square test of independent tests was used to test whether the independent variables had a relationship with dependent variable. The null hypothesis for this test states that the proportions are independent of one another implying that they are not associated (Mathews 2002). For formula see appendix 2. Pearson’s correlation analysis is used to measure the statistical dependence of two broad categories of relationships (Agresti 2007). (For formula see appendix 2). Mathematically if performed correctly getting a result where the values perfectly fit -1, 1 or 0 is not possible however the results are defined by the manner through which they lie closer to each of the values. Values 0.5-1.0 or -0.5 to 1.0 would be indicative of a high correlation. 0.3 to 0.5 or -0.3 to 0.5 would indicate a medium correlation, 0.1 to 0.3 or -0.1 to -0.3 would be indicative of a low correlation (Field 2000).

**There is a relationship between water and sanitation and housing satisfaction in the Kibera slum upgrading project.**

The null hypothesis stated that level of satisfaction does not depend on availability of water and sanitation. The chi-square test yield \( \chi^2 = 18.562, \ P<0.005 \). This shows that we reject the null hypothesis. Level of satisfaction depends on availability of water and sanitation. The Pearson correlation coefficient for the two variables is 0.878. This is a positive strong coefficient.

The relationship with between housing satisfaction and availability was further explored across the demographics captured in the study: age, gender, marital status. The null hypothesis for the three demographics stated that the level of housing satisfaction was uniform across the individual groups. For age, gender, and marital status the chi-square tests yield \( \chi^2 = 4.562, \chi^2 = 2.78, \chi^2 = 4.162 \) respectively with \( P>0.005 \) in all the tests. The null hypotheses was accepted. This shows that gender, age and marital status do not influence housing satisfaction when explored in the scenario of water and sanitation availability.

**There is a relationship between security and housing satisfaction in the Kibera slum upgrading project.**

The null hypothesis stated that security and level of housing satisfaction are independent, the chi-square test yields \( \chi^2 = 17.431, \ P<0.005 \). With a p value less than alpha we reject the null
hypothesis. This shows that level of house satisfaction depends on availability of security. The Pearson correlation coefficient between the two factors is 0.782. This a positive coefficient showing that an increase in security results in an increase in satisfaction with housing conditions. The dependence relationship between security and housing satisfaction was explored across the demographic groups. The null hypothesis states that the level of housing satisfaction is uniform across the demographics in security situation. The yielded $X^2$ for age, gender, and marital status respectively with all P values >0.005. The null hypothesis was accepted. The influence of security on housing satisfaction does not vary with gender, age and marital status.

There is a relationship between security of tenure and housing satisfaction in Kibera slum upgrading project.
The null hypothesis of dependence test stated; security of tenure does not influence housing satisfaction. The chi-square test yields $X^2 = 15.762$, P<0.005. The null hypothesis was rejected. Security tenure influences level of housing satisfaction. The Pearson correlation coefficient between the two factors is 0.512. This is a positive coefficient. Further the dependence was explored across the demographic groups. The null hypothesis stated that security tenure influence on housing satisfaction is not affected by gender, age or marital status. The chi-square tests yielded $X^2 = 4.291$, $X^2 = 3.354$, $X^2 = 4.783$ with all P values more than 0.005. The null hypothesis was accepted. The influence of security of tenure on housing satisfaction is not affected by gender, age or marital status.

There is a relationship between income and housing satisfaction in the Kibera slum upgrading project.
The null hypothesis in the chi-square test of independence stated that level of housing satisfaction is not affected by presence of income generating activities. The chi-square test yields $X^2 = 12.762$, P<0.005. This shows that housing satisfaction is influenced by presence of income generating activities. The Pearson correlation coefficient is 0.511. This shows that the two factors have a positive association. On testing the dependence relationship across gender, age and marital, the P value for gender was 0.005 while for age and marital status were less than 0.005. This showed that the level of housing satisfaction in relation to presence of income generating activities is not affected by gender but affected by marital status and age.
The table below provides a summary of the explored relationships with relation to housing satisfaction and further dependence over the three demographics captured.

**Table 4.21 Relationship summary**

<table>
<thead>
<tr>
<th>Relationship with Housing Satisfaction</th>
<th>Relationship over demographic</th>
<th>Chi-square and Pearson Correlation</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>availability of water and sanitation</td>
<td></td>
<td>X₂:P&lt;0.005 r=0.878</td>
<td>Significant dependence and correlation</td>
</tr>
<tr>
<td>Gender</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td></td>
<td>X₂:P&lt;0.005 r=0.782</td>
<td>Significant dependence and correlation</td>
</tr>
<tr>
<td>Gender</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
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<tr>
<td>Security of tenure</td>
<td></td>
<td>X₂:P&lt;0.005 r=0.512</td>
<td>Significant dependence and correlation</td>
</tr>
<tr>
<td>Gender</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
<td></td>
</tr>
<tr>
<td>Availability of income generating activities</td>
<td></td>
<td>X₂:P&lt;0.005 0.511</td>
<td>Significant dependence and correlation</td>
</tr>
<tr>
<td>Gender</td>
<td>X₂:P&gt;0.005</td>
<td>No significant dependence</td>
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<td>Age</td>
<td>X₂:P&lt;0.005</td>
<td>Significant dependence</td>
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</tr>
<tr>
<td>Marital Status</td>
<td>X₂:P&lt;0.005</td>
<td>Significant dependence</td>
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</table>
4.9 Summary
This Chapter documented the results of this research project. The data obtained from the questionnaires and entered into SPSS software was critically analysed and examined to detect and determine patterns and relationships. Results from individual test items were presented. As per the general objective set it is thus determined that a majority of the respondents (94.9%) had lived in the upgraded units for more than two years since it was completed and most of the respondents (97.7%) preferred the upgraded units to the previous slum housing as there was increased security, there was improved water and sanitation and also security of tenure. Majority of the residents were satisfied with the upgraded units on issues of security, availability of water and sanitation and security of tenure and the residents whereas a majority were not satisfied with the availability of income generating activities.
CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
In this section the study discusses the findings in Kibera slum upgrading project while comparing and contrasting it with other studies done in the world on the same topic. This section also provides conclusions based on the research findings and previously reviewed literature. Recommendations on ways of improving the project are suggested as per the responses obtained from the interviews.

5.2 Summary of the Results
The purpose of the study was to establish the influence of socio-economic factors on the level of housing satisfaction in Kibera slum upgrading project, Kenya and the study was guided by the following objectives: to establish the influence of availability of water and sanitation on level of housing satisfaction of Kibera slum upgrading housing project residents, to explore the relationship between security and level of housing satisfaction, to assess the relationship between security of tenure and level of housing satisfaction and to examine the influence of income generating activities on level of housing satisfaction in the Kibera slum upgrading project.
A survey was done using semi structured questionnaires to collect data from a sample of 263 households and the data was analysed to obtain percentages and frequency and test of relationships (chi-square statistics and correlation coefficient) in which among the findings was that a majority of the residents were found to be satisfied with the housing units. The section below presents a discussion of the findings.

5.2.1 Water and Sanitation in the Kibera slum upgrading project
Cumulatively, a good proportion of the residents i.e. 69.6% were satisfied with the water system within the residence. Out of the 69.6% who were satisfied, a further 34.6% of these were extremely satisfied with the availability of water in the residence. Only 12.9% of those interviewed were not satisfied with the availability of water while 17.5% felt the availability of water was acceptable. Access to water is a very important feature for any household and most
slum residents have been deprived of this. UN-Habitat (2003) reported that many cities do not have a constant, potable water supply. Even in those that are supplied with clean water, households in some informal areas that are not connected to the network can only buy water from vendors at up to 200 times the tap price, so that much of family income is spent on water. Findings from this study indicate that the project was successful in the provision of water to the residents. Similarly, a good majority, i.e. 70.7%, were satisfied with the sanitation conditions within the project, while only 8.4% were not satisfied with the sanitation conditions in the project.

5.2.2 Security of tenure in the Kibera slum upgrading project
Most of the residents were satisfied with the security situation in the project as 95.8% felt that they had security of tenure within the neighbourhood. Improving security of tenure has been found to be central to improving the lives of the slum dwellers. It enables slum dwellers to invest in the improvement of their own homes and living conditions and to access essential services, thereby eliminating the threat of forced eviction that inhibits investment and places people in a constant fear that their homes may be demolished. This project has therefore satisfied the residents in terms of security of tenure within the residence.

5.2.3 Neighbourhood security in the Kibera slum upgrading project
Slum neighbourhoods normally experience various socio-economic hardships. Some of these hardships include social and economic deprivations, high population density, and high numbers of broken families, high unemployment, and economic, physical, and social exclusion. It is these characteristics that have been recognized as causes of crime and violence and therefore have the potential of a violent time bomb if found in combination in dense urban areas (Gulyani, 2006). This study revealed that 94.7% of the residents were satisfied with their neighbourhood security while only 4.6% were not satisfied with it. This data proves that majority of the residents feel secure and thus are satisfied with the project’s security.

5.2.4 Availability of Income in the Kibera slum upgrading project
Availability of income would be important in turning around the lives of slum dwellers. Polak (2009) postulated that slum dwellers live in the poor conditions because they need jobs
and income to survive and they have made a rational decision that they can find jobs in the cities than in their villages. The informal grassroots enterprises in slums need workers even if they don’t pay handsomely, they give opportunity for survival and keeping open the chance that life will change. Since the lack of sustainable income is always the main inducement for people to live in slums, the chance to earn through entrepreneurship within the project would increase the residents’ satisfaction. Within this project, there appeared to be little satisfaction with the availability of Income Generating Activities within the project. Cumulatively, 53.6% of the residents were not satisfied with the availability of Income Generating Activities within the project and perhaps this could be attributed to the lower population compared to Soweto East or Laini Saba where they previously resided.

5.3 Discussion of the slum upgrading housing satisfaction

Vera-Toscano and Aseca Amestoy (2007) recognized housing satisfaction as a complex cognitive construct that measured the difference between the actual and desired housing situations. Slum upgrading on the other hand is a process through which informal areas are improved, formalized, and incorporated into the city itself. Significant improvement in the slums has been identified to be in five areas; quality of house and more space per person, secure tenure for tenants as well as owner occupiers, basic infrastructure and services including safe and sufficient drinking water, adequate provision for sanitation, drainage and solid waste collection, access to school and health services (Satterwhite & Biggs, 2005).

This study set out to establish the level of housing satisfaction within the Kibera Slum upgrading project on four fronts; the influence of availability of water on housing satisfaction, the influence of security on housing satisfaction, the role of security of tenure on housing satisfaction and finally the influence of IGAs on housing satisfaction. Almost all of the residents from the sample were from Soweto East and accounted for 98.9% of tenants. A big percentage of the residents that is 94.7% of them, had stayed in the project for more than two years, thus had adequate knowledge of housing conditions in the estate and the research showed that the socio economic factors influence satisfaction in housing.
5.4 Conclusion
This study set out to establish whether the beneficiaries of the slum upgrading project were satisfied with the new housing project based on the following fronts; the availability of water and proper sanitation services, the presence of security within the housing estate, security of tenure in the new housing projects and finally the availability of income generating activities within the projects. Out of all the above areas in which the level of housing satisfaction was examined, residents were found not to be satisfied with the availability of income generating activities within the project. The residents were otherwise satisfied with the availability of security, provision of water and sanitation services, security of tenure within the project and finally the state housing structures within the project. The residents would, however, prefer to have other social amenities close to them within the project. These are namely; playgrounds for their children, schools and hospitals. The study concludes that the residents are satisfied with the new housing project.

Housing satisfaction is therefore affected availability of water and sanitation, security, security tenure and presence of income generating activities. The dependence is uniform across gender, age and marital status but for presence of income activities which is affected by age, marital status and previous residence.

5.5 Recommendations
Based on the findings, the study came up with the following recommendations to improve the conditions in the slum upgrading project and for future consideration in similar exercises;

1. As a policy, slum upgrading projects should have plans to designate areas for carrying out business activities within the estate, perhaps a shopping centre as this would enable the dwellers of the upgraded units to have income generating activities that would enable them to earn a living and pay the rent; this is one of the objectives though wasn’t implemented, and the rent should also be set after considering the average of the targeted beneficiaries’ income as this will prevent some of the upgraded unit dwellers from reselling or renting out their units and going back to the slums as they are unable to afford the rate.

2. For good operations, plans should be made to construct schools and hospitals close to the upgraded housing project specifically to benefit the project residents as this will be a
practise that will truly transform the slum life. This should be done by any company construction housing units.

5.6 Areas for further study
The study recommends that in future, further research be carried out to establish possible ways of enhancing entrepreneurial opportunities in the slum upgrading projects. Providing income generating activities is one of the objectives of slum upgrading. Lack of good income is one of the reasons that make people live in the slums as they cannot afford better housing and therefore for them to be truly empowered economically, and this will prevent them from moving to the slums, is by providing the dwellers with skills and knowledge in entrepreneurship. This income generating activities will help the dwellers to earn a living and also pay for the upgraded units.

Another area of future study is on tenure system in the slum upgrading project. The slum upgrading project is about giving the previous slum dwellers security of tenure and hence research needs to be done on possible best ways of providing the security of tenure that is within the economic means of the dwellers.
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Appendix 1: Research Questionnaire

Dear Respondent, you are hereby invited to participate in this Research Study. The study aims to find out the influence of slum upgrading on level of housing satisfaction in Kibera slum upgrading project. For us to examine this phenomenon you are kindly requested to complete this questionnaire. The Researcher wishes to assure you that the information you will give will be handled with highest confidentiality and the identity of the respondent will remain anonymous.

PART 1: Employee Demographics

1. Name of the Tenant: ________________________________

2. Please indicate your Gender: Male [ ] Female [ ]

3. Please indicate your Age from the ranges below:
   18-30 [ ] 31-40 [ ] 41-50 [ ] Above 50 [ ]

4. Marital status:

5. Address: ____________ Code: ______ Town: ___________ Estate: ______________ Telephone: _________________ Email: ______________________

6. Previous area of residence _____________________________

7. Please indicate how long you have live in the Kibera slum upgraded units:
   1-2 years [ ] More than 2 years [ ]

PART 2: Main Questionnaire

Instructions: Please tick or circle the appropriate response.

1. Were you informed about all housing and building services?
   a) Yes
   b) No
2. Do you feel safe within your local community?
   a) Yes                  b) No

3. Do you feel safe within your home?
   a) Yes                  b) No

4. How would you rate the services you get for the rent paid by you?
   a) Excellent            b) Very Good      c) Good
   d) Average              e) Bad           f) Poor

   In this section please tick the appropriate box for each statement in the Likert scale to indicate whether you extremely satisfied (ES), Satisfied (S), Acceptable (A), Not very satisfied (NVS) OR Not satisfied at all (NS).

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<thead>
<tr>
<th></th>
<th>ES</th>
<th>S</th>
<th>A</th>
<th>NVS</th>
<th>NS</th>
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</table>

57
11. How satisfied are you with the availability of electricity within the housing estate?

12. How satisfied are you with the availability of medical facilities within the housing estate?

13. How satisfied are you with the availability of schools in the housing estate?

14. How satisfied are you with the availability of income generating activities within the housing estate?

Thank you for participating
Appendix 2. Formulas

This shows the formulas for the statistics used in the study.

1. The Chi-Square formula:

The value of the test-statistic is

\[
\chi^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i}
\]

Where:

- \( \chi^2 \) = Pearson's cumulative test statistic, which asymptotically approaches a \( \chi^2 \) Distribution;
- \( O_i \) = an observed frequency;
- \( E_i \) = an expected (theoretical) frequency, asserted by the null hypothesis;
- \( n \) = the number of cells in the table.

**Step 1**: calculate the "expected frequencies"

- Total number of responses
- Expected frequencies = \( \frac{\text{Total number of responses}}{\text{Number of categories}} \)

**Step 2**: subtract, from each observed frequency, its associated expected frequency (i.e., work out \( O - E \))

**Step 3**: square each value of \( O - E \):

**Step 4**: divide each of the values obtained in step 3, by its associated expected frequency:

**Step 5**: add together all of the values obtained in step 4, to get your value of Chi-Square:

To compare the significance of chi-square

**Step 6**: calculate degrees of freedom (\( df \)):

\( (\text{Number of Rows} - 1) \times (\text{Number of Columns} - 1) \)

**Step 7**: look up the tabulated chi-square corresponding to the chosen alpha
and the degrees of freedom alpha. If the computed is greater than the tabulated reject the null hypothesis otherwise accepted.

Mathews (2002).

2. Pearson correlation

\[ r = \frac{\sum_{i=1}^{n}(X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^{n}(X_i - \bar{X})^2} \sqrt{\sum_{i=1}^{n}(Y_i - \bar{Y})^2}} \]

Where \(X\) and \(Y\) are the two variables one wishes to determine correlation. The values of the correlation range between -1 to 1.

Agresti (2007)

3. Cronbach’s Alpha

The Cronbach’s alpha for a quantity \(X\) which is a sum of \(K\) components \(X = Y_1 + Y_2 + \cdots + Y_K\). Cronbach’s \(\alpha\)

\[ \alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^{K} \sigma^{2}_{Y_i}}{\sigma^{2}_X} \right) \]

Where \(\sigma^{2}_X\) is the variance of the observed total test scores, and \(\sigma^{2}_{Y_i}\) the variance of component \(i\) for the current sample of persons.

The theoretical value of alpha varies from zero to 1, since it is the ratio of two variances.