THE QUALITY OF AN URBAN RESIDENTIAL NEIGHBOURHOOD:

A CASE STUDY OF UMOJA I ESTATE, NAIROBI.

CECILY MURAGE

B63/68745/2013

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT FOR THE DEGREE OF MASTER OF ARTS IN PLANNING

UNIVERSITY OF NAIROBI

SCHOOL OF THE BUILT ENVIRONMENT

DEPARTMENT OF URBAN AND REGIONAL PLANNING

JUNE, 2019

DECLARATION

I declare,to the best of my knowledge, that this research project is my original work and has not been presented in this or any other university.

Signed: _____ **Date:** _____

MURAGE, CECILY WANJIKU

(CANDIDATE)

This thesis has been submitted for examination with our approval as the University supervisors.

Signed: _____ **Date:** _____

DR. MWAURA, ARTHUR MUNYUA

(SUPERVISOR) LECTURER

Signed: _____ **Date:** _____

DR. JEREMIAH NYABUTI AYONGA

(SUPERVISOR) SENIOR LECTURER

DEDICATION

To Moris, Jed and Lelani Mucheru.

ACKNOWLEDGEMENTS

I express my sincere gratitude to the people and institutions who contributed to, and facilitated in the writing of this thesis. To the University of Nairobi, DURP, I owe you immense gratitude for giving me a chance to study, and for according me a conducive environment in the writing of this research project report. I greatly appreciate the input and encouragement by my dedicated supervisors, Dr. Arthur Munyua Mwaura and Dr. Jeremiah Nyabuti Ayonga. I also appreciate the constructive critiques, timely feedbacks, advice and moral support accorded by the course coordinator Dr. Fridah Mugo, the Late Mr. Z. Maleche, Dr. Romanus Opiyo, Mr. Dadu Karisa, Dr. Karanja Mwangi, Madam Beatrice, Mildred, all the departmental staff and my fellow students.

To all those who worked as research assistants during the field survey and administration of household questionnaires, including but not limited to the graduate planners Cynthia Nekesa, Rose Munene and Faith Muchuche. Special thanks to Elder Benson Mwangi of P.C.E.A. Umoja community, for the guidance, introduction and for showing me the key entry points to Umoja Estate. I appreciate all the key informants especially Mucheru Mwaura (Architect, Umoja), staff of Nairobi County Council and Staff of Survey of Kenya, for the timely provision of relevant information.

Many thanks to my father Mr. Murage and mother Mrs. Murage, and My husband Moris for their moral and financial support, and to Dempsey Murage Principal Landscape Architect of Urban Green Landscapes for giving me time off the busy work schedules which unreservedly enabled me to pursue this Masters programme.

Finally, I give my utmost thanks to the Almighty God for according sufficient grace to complete this project despite the many challenges and transitions. He is good, and His mercies endure forevermore.

ABSTRACT

This research assesses the quality of an urban residential neighbourhood. This study aims to assess the status of quality in Umoja 1 estate. The premise guiding the study is that the quality of an urban environment is of essence to the residents, but the criterion is; analyzing the level of quality in Umoja 1 Estate. This had not been addressed by scholars, therefore, is a need for an appropriate methodological approach for managing urban residential neighbourhoods to maintain and enhance their quality of life. The research commences by conducting a thorough literature review on definitional, conceptual and theoretical perspectives that constitutes urban quality in the context of a residential neighbourhood. It reviews best practices for enhancing quality in urban residential neighbourhoods. A conceptual framework was then developed and used to create instruments for measuring quality in Umoja 1 Estate, from the residents' perspective. The key findings were that the physical and social infrastructure, economic vibrance, institutions and stakeholder participation, contribute the quality of an urban residential neighbourhood. The criteria for measuring quality included collection of primary and Secondary data. Secondary data was obtained from a review of past literature from libraries, resource centers, government agencies and the internet. Primary data was obtained by administration of household questionnaires, holding face-to-face interviews and use of an observation checklist. A sample of the research population were obtained through random cluster sampling. The unit of observation included the target group and all the spatial aspects of the quality in a residential neighbourhood. The population consisted of all the stakeholders, institutional, governmental, non-governmental and all the residents of Umoja 1 Estate. The empirical data was analyzed using spatial analysis, descriptive analysis and basic computation using SPSS and MS-Excel. The study findings show that socio-economic pressure has led to intensive urban densification, which leads to immense pressure on the existing infrastructure and deteriorating conditions of the transportation system, the sewerage system and supply of water. The study has established that the twin problems of socio-economic pressure and urban densification have compromised the environmental and physical quality due to loss of open spaces and an incommensurate increase in the social infrastructure. The study has established that this lowered quality of the neighbourhood character is attributable to non-compliance with development control regulations. The study concludes with the key recommendation of enhancing the quality by formulating an integrated development strategy that entails a public participatory urban renewal approach that is geared towards improving the physical, environmental, economic, institutional and social quality of Umoja I Estate.

TABLE OF CONTENTS

CHAPTER 3: SITUATIONAL ANALYSIS OF UMOJA I ESTATE

CHAPTER FOUR: THE QUALITY OF UMOJA I ESTATE

CHAPTER FIVE: ENHANCING QUALITY IN UMOJA 1 ESTATE

LIST OF BAR GRAPHS

LIST OF CHARTS

LIST OF FIGURES

LIST OF MAPS

LIST OF TABLES

LIST OF PLATES

LIST OF ACRONYMS & ABBREVIATIONS

AAK	Architectural Association of Kenya
CBD	Central Business District
CBO	Community Based Organization
CBS	Central Bureau of Statistics
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
HH	Households
IU	Intelligent Urbanism
MUD	Mixed Use Development
NCA	National Construction Authority
NCC	Nairobi County Council
NGO	Non-Governmental Organization
NSSF	National Social Security Fun
PWDs	Persons Living with Disabilities
QOL	Quality of Life
QOUL	Quality of Urban Life
RBO	Religious Based Organization
UN	United Nations
UNHABITAT	United Nations Human Settlements Programme
WILL	Work, Invest, Live and Leisure

CHAPTER ONE: INTRODUCTION

1.1 Background of the Problem

There is a growing body of research that suggests that quality of life in cities is directly commensurate with success of the economy. The links between the quality of life and the economic success of cities and were assessed and concluded that cities that are not livable are not likely to perform important economic functions in the future (Luger, 1996). Therefore, enhancing the quality of neighbourhoods are being employed as economic development tools.

The quality of a neighbourhood in this case is defined by performance of three main areas; environmental quality, physical form and functionality and individual well-being. The key elements of a livable city often include attractive public open spaces, which are walkable, mixed use, vibrant, sociable among others (Pavan, 2018). These attributes make places pleasant and easy to live. These initiatives are often met by environmental, economic and equity goals, which are also elements for the transition to sustainability (Bhatia, 2011).

Studies have shown however, that rapid increase of the urban population, has stretched the available services and infrastructure in developing countries (Ilesanmi, 2012). Physical infrastructure, social infrastructure and environmental quality has thus been affected (Ilesanmi, 2012). Studies on what really constitutes quality in urban residential neighbourhoods are rare and thus there is need to come up with a criterion for measuring quality.

1.2 Statement of the Problem

Umoja 1 Estate was constructed on a plan which borrowed heavily from Clarence Perry's Neighbourhood concept. However, neighbourhood units planned during the post-colonial period were meant for small communities and the population increase can no longer be contained in the original plans (Shihembetsa, 1989). The population has increased in such a great extent that the neighbourhoods are overcrowded and are losing their original look. The pressure for urbanising has led to the evolution of these urban areas whose physical development is not in sync with the physical development plans (Mwaura, 2002).

Unmanaged urban growth has contributed to the Environmental, social and economic problems which include informal settlements, shortage of decent housing, rising crime, vulnerability of

disasters like fire, collapsing of buildings and flooding, environmental degradation, poor infrastructure such as road transport, social amenities, poor drainage system and poor sanitation services (Mwaura, 2002).

Being over 100 years old, the strategy for dealing with housing has been based on population projections, density assumptions and calculations of land needs ((G.O.K.), 2007). The building standards adopted and the once planned neighbourhoods including Umoja 1, are rapidly transforming into unplanned settlements thus losing their neighbourliness.

The original plan for Umoja has rapidly changed, with only a few houses and public institutions showing traces of what would be a purely planned residential estate. The single dwellings that were, are now multi-storey concrete jungles. Areas meant for the public, such as the market areas are congested, the road network within the estate is in a deplorable condition and left-over spaces that served neighbourhood functions have been encroached by informal traders. There is a research gap on studies quality of the changing Umoja estate, and this study aims to fill this gap.

1.2.1 Research Aims and Objectives

The main aim of this research is to assess the quality of an urban residential neighbourhood with regards to physical, economic, socio-cultural, environmental, transport and institutional conditions in Umoja 1 estate. A subsidiary aim of this research is to propose planning interventions and policy options that can improve the quality of urban residential neighbourhoods. The specific objectives of the research re as follows;

1. To determine the indicators of quality in an urban residential neighbourhood.
2. Using the indicators in (1) above, to examine the quality condition in Umoja 1 estate.
3. To examine the level of fulfilment of the residents regarding the quality of Umoja 1 estate.
4. To propose planning interventions and policy options for improving the quality of Umoja 1 estate

1.2.2 Research Questions

The study raises a number of questions, which were addressed throughout the research which are;

1. What are the indicators of quality in an urban residential neighbourhood?

2. What are the prevailing quality conditions in Umoja 1 Estate?

3. What is the level of fulfilment of the residents in regard to the quality of Umoja 1 Estate?

4. What are the planning interventions and policy options for improving the quality of Umoja 1 Estate?

1.2.3 Research Hypothesis

The research hypothesis for this study is as follows**;**

H_a: There is a significant correlation between the quality of an urban residential neighbourhood and the residents' satisfaction.

Thus, the Null Hypothesis is as follows;

H_0: There is no significant correlation between the quality of an urban residential neighbourhood and the residents' satisfaction.

The two variables for which the magnitude of relationship is assessed, are the quality of an urban residential neighbourhood and the resident's satisfaction. The quality is the independent variable, while the fulfilment is the dependent variable.

1.3 Geographical and Theoretical Scope

The study is geographically limited to Umoja 1 area in Nairobi County, which is one of the post-colonial planned neighbourhoods. This study examines the quality of a residential neighbourhood from the residents' perspective. The research narrows down to study specifically the quality aspects of a residential neighbourhood and the criterion of measuring quality.

The study investigated different indicators of quality and examined the previous efforts, ongoing programmes and proposed programmes on improving quality of Umoja 1 Estate. This was accompanied by alternative neighbourhood planning interventions that can be adopted for the well-being of the residents in the study area and the residents of Umoja estates as a whole (Umoja 2, 3 and Inner core) as the area will not be examined in isolation from the neighbouring estates.

1.4 Justification and Significance of the Study

Studies on quality of neighbourhoods serve is an interesting research topic, which seek to address various issues brought about by the urban environment dynamics. The quality of life of urban dwellers is important as this forms a significant percentage of a country's productive population. This study is therefore necessary and relevant to the planning profession on

highlighting how quality relates to residents' fulfillment. According to Fang (2006), this information is significant in informing housing policy and planning interventions. It acts as a guide to policy makers to oversee the implementation of housing policies and possibly make the necessary improvements in providing quality neighbourhoods that meets the wellbeing of residents.

1.5 Research Setting and Methodology

This research adopted a qualitative methodological approach in assessing residential diverse needs and the quality of housing in a low-middle income environment. The study employed the case study method to examine the quality of housing and its ability to meet the diverse needs in Umoja 1 estate, Nairobi. The sampling procedure needs, and sources of data and the data collection methods are discussed as below.

1.5.1 Data Needs and Sources

The primary and secondary data needed for the research project was guided by the research objectives. The first research objective was to examine the indicators of quality in urban residential neighbourhoods. In order to understand quality in a residential neighbourhood, a comprehensive desk study was done so as to gain full knowledge of the concept of quality of housing. The data collected included definitional and conceptual issues, determinants of quality in a residential neighbourhood and the idea of a resident's perception of quality. The data sources of the desk study were mainly from the review of literature which was derived from scholarly journal articles on housing, previous research thesis and projects, reports and government documents on housing and housing needs in the world with special attention on Nairobi. Secondary data was availed through relevant pertinent literature on quality of housing in order to offer retrospective information on the topic. The data type was obtained through literature review of existing publications relevant to the topic of quality of housing and diverse needs of the residents. This assisted in the understanding of quality of housing and diverse housing needs and established what has been previously done by other researchers on the topic or in the same study area. The secondary data on quality of housing and diverse housing needs was sourced from books, journal articles, internet sources, government publications, unpublished thesis, conference proceeding reports, maps and other sources. The theoretical perspectives on quality of residential neighbourhoods were important in understanding the problems on the topic under study that made it justifiable.

The second objective was to examine the existing situation or the prevailing conditions of housing in Umoja 1 estate. The data needs included the historical background of the area, the

changing socio-economic tenancy and demographic trends of the residents, the housing typologies and building materials, the neighbourhood and its support infrastructure, conditions of the house units, resident community and rate and nature of occupancy. Primary data was obtained or collected by interviewing the community leaders, focused group discussions and administering household questionnaires to the residents while Secondary data is obtained by reviewing previous research and government documents on Umoja estate. Historical data on Nairobi and specifically that of housing was useful in providing background information on the origin of the study area and its environs. The changes that have taken place on the time scale are important in situating the housing estate within the historical context of when it was developed, developer's target population and the needs at that time. The conditions of the built and unbuilt structures of the dwelling units, neighbourhood facilities and services and social environment are examined through a physical survey and an observation checklist was used to guide this process.

The third objective was to examine the quality of the residential neighbourhood spaces in Umoja 1, form the residents' perspective and to come up with a criterion for measuring quality. The data needs concerned with the quality of housing versus the resident's diverse needs included the condition and accessibility of the infrastructure services within the estate and how related they are, either in meeting or not meeting the needs of the residents. The primary data required included establishing the number of people per household, the number of households per unit, characteristics of the residents such as age, place of work, education level, reasons for residing in Umoja 1 and efficiency of land use. Against those attributes, the residents were expected to describe whether they were satisfied with the quality, or not. The main source of this primary data was from field socio-economic surveys, mainly by observation and administration of household questionnaires. The households helped to unveil their interaction with the residential neighbourhood and the conditions within the estate including their reactions to the dilapidated state of the neighbourhood. Primary data was collected from the study area so as to provide empirical evidence of the existing status and the immediate problems and the felt needs and the level at which they have been met as perceived by the residents. The aspects to be examined in the study area included the existing physical and environmental situation, the housing and community facilities, infrastructure services. Social-cultural situation, Economic situation and political situation. Institutional frameworks are also examined of the internal and external environment of the study area, as they identify the levels at which residential needs have been met through the stakeholders that have potential stakes in Umoja

1. The key stakeholders include the households, community elders and leaders, neighbourhood and civil society groups and other external support agencies that have potential stakes in the residential neighbourhood.

The fourth objective was to propose the planning interventions and policy options for improving the quality of urban residential neighbourhoods in order to meet the diverse needs of residents in Umoja 1 estate. The synthesis of the primary and secondary data in the above objectives aided in the formulation of potential ways of improving the quality of housing in order to meet the diverse housing needs of the residents in Umoja 1 Estate.

The sampling procedure for obtaining a representative subgroup from the population's elements in order to obtain unbiased estimates of the population included dividing Umoja 1 estate into 14 blocks, which are Block A, C, D, E, F, G, H, J, K, L, M, N, P, and Q. A sample of the households was be obtained using randomly from each block. The total population sample was based on the original plans that were designed and built which are 3000 units on 62.2Ha. The sampling was done based on the original plans as the current developments and number of housing units could not be established due to massive illegal and unapproved extensions which are not recorded by the Nairobi County Planning department.

1.5.2 Data Collection Methods

The study takes a qualitative approach in the collection of primary and secondary data that is necessary in answering the main research questions and in achieving the objectives of the study. Collection of the secondary data includes literature review in order to build on what has already been done by other researchers on quality of housing in meeting diverse needs of the residents. Review of documents on Nairobi from various sources such as the County Government of Nairobi, National Housing Corporation and Ministry of Housing was highly relied upon. The main techniques used in collecting primary and secondary data included administration of household questionnaires, carrying out of interviews, conducting focused group discussions and carrying out physical surveys through observations of daily activity patterns and using mapping, photography and sketches.

Household Questionnaires

Prompts and questions were set and strucutured in order to gather information from a sample of the residents. The questionnaires were presented to the respondent and answered in written form. Structured questions were used in preparing closed and open-ended questions for the

survey. To avoid bias resulting from questionnaire design, the questions were constructed in such a way that they are direct, simple and familiar to the respondents. The level at which needs are met is allocated numbers 1 to 5 with 5 being the highest level of satisfaction. Open-ended and unstructured questions were however used to probe the respondent for more qualitative data for in-depth analysis of the residential neighbourhood diverse needs and how well they have been met from their view.

A pilot study was carried out after designing the questionnaires and before the main field work on a small number of residents. This was done in order to reveal possible problems that may not have been anticipated during the development of the field survey tools. The results from the pilot study were then incorporated in the final questionnaire to improve it.

Interview Schedules

Interview schedules were prepared for the key informants and stakeholders involved in the daily operations of the estate. A set of questions on quality of the neighbourhood and the residents' perception were asked by the interviewer to elicit information from the respondents. These included the local leaders, policy makers which in this case are the City County of Nairobi officials. An informative discussion was intended to evolve on issues related to the existing conditions of the facilities in Umoja 1 estate, the maintenance procedures in place and plans for the estate's future.

Observation, Mapping, Photography and Sketching

Systematic selection, observation and recording of the characteristics that could be depicted from the study area was done. Observations were recorded on a checklist, in order to complement the other field survey instruments. Spatial distribution of land uses was recorded in maps. Photographs and sketches of the area were taken to facilitate the analysis of the physical layout of the houses and other structures within the neighbourhood.

1.5.3 Techniques of Data Analysis and Presentation

Data analysis entails the use of appropriate methods to synthesis data to answer the research questions. Data analysis seeks to make meaning out of the data collected. At the end of the field work, all the data collected from the structured questionnaires was entered, coded, cleaned and analyzed using the Statistical Package for Social Science (SPSS). The analysis of both qualitative and quantitative data collected was presented using maps, plans, sketches, illustrations and photographs.

Sketches and photographs were equally used to illustrate the data that was discussed in descriptive analysis. The in-depth interviews, reviews of policies and regulations dealing with quality of residential neighbourhoods was analyzed and organized also. The overall information and findings were finally interpreted and synthesized to facilitate the writing and composition of the research project. All gathered information was synthesized and presented using simple tables, sketches, pie charts, bar graphs, maps and photographs into an integrated planning research project.

Hypothesis testing was guided by the different variables and the objectives. The Chi square method was applied to cross tabulate Expected frequencies from the Observed frequencies and the results used to make inferences useful to measuring quality.

1.6 Structure and Organization of the Report

The scope of this study was limited to the research on the urban spatial unit of Umoja 1 Estate Nairobi. The study was conducted in Umoja 1 estate located in the Nairobi Eastlands between Kangundo road, Umoja 2 and Inner Core areas. The study assessed the quality of housing regarding the dwellings and supporting services, public facilities and social environment with a subsidiary purpose of the study being to propose suitable planning interventions as potential ways of improving the quality of urban residential neighbourhoods. The study reviewed related and comparative case studies from other cities and countries so as to derive best practices. It collected all relevant information both at the household and community level. It further covered administrative and policy aspects with regards to institutions and stakeholders who are the custodians of the Estate.

The study was organized and structures into 6 chapters. Chapter One is the introduction of the study which offers relevant general information and global perspectives on residential neighbourhoods in an urban environment, their quality and housing needs of a neighbourhood's resident. In stating the research problem, the chapter highlight the urban problems in residential neighbourhoods especially the public housing estates in Eastlands that have really transformed in relation to resident's needs. The second part of the chapter outlines the research methodology applied to guide the study, showing the definition of the study area, units of observation, the data needs and their potential sources, methods of data collection and the techniques of data analysis and presentation.

Chapter 2 offers preliminary information on quality of neighbourhoods, definitional and conceptual issues, determinants of quality in an urban environment and potential ways of

meeting the diverse needs of the residents. A conceptual framework will also be developed which will guide the researcher on the conceptualization of the overall study.

Chapter 3 discusses the situational analysis of Umoja 1 Estate. It first gives a historical evolution of the estate. It then presents the land use patterns, locational setting and the administrative aspects of the estate. It describes the nature of the problem that include the changes that have occurred over time from the past to the present in Umoja Estate, with respect to housing and its different sectors such as physical, Economic, Infrastructural, environmental, social-cultural and institutional aspects of quality.

Chapter 4 investigates the fourth research objective on residents' perception of quality in Umoja 1 Estate. The detailed in-depth analysis of the primary data aims to outline the residents' perceptions of needs based on the determinants such as the Physical, Economic, Infrastructural, Environmental, social-cultural and institutional needs.

Chapter 5 outlines the overall framework for improving the quality of housing in Umoja 1 estate, Nairobi. The first section deals with the responses of the residents on how to enhance quality of housing in order to meet their needs. The remainder section envisions the future of neighbourhoods in Nairobi by illuminating on the various approaches that are plausible scenarios applicable in carrying out urban renewal as a possible instrument for enhancing the quality of housing.

Finally, chapter 6 makes a synthesis of the findings, draws recommendations and conclusions and outlines the areas for further research.

CHAPTER TWO: THE QUALITY OF A RESIDENTIAL NEIGHBOURHOOD

2.1 Introduction

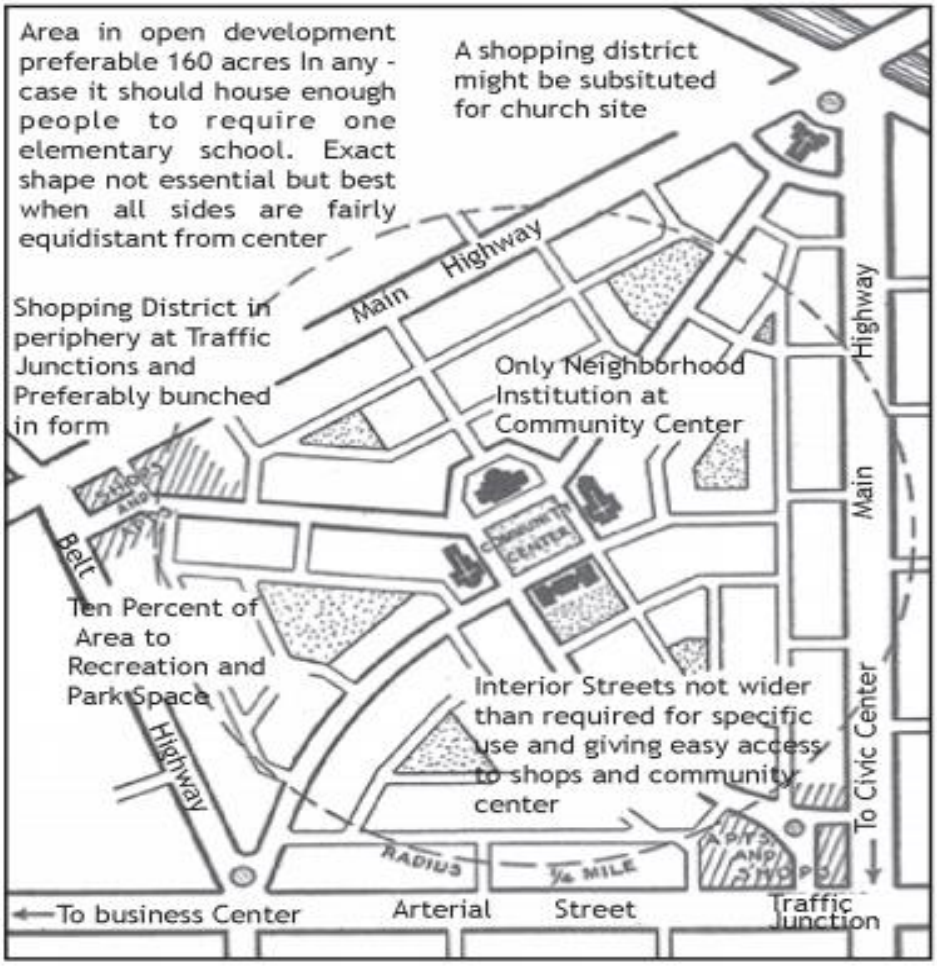
This chapter investigates the concept of quality in an urban residential neighbourhood and the fulfilment of residents that live therewith. It examines quality in a residential neighbourhood, explaining different concepts and theories that define spatial quality. The chapter also examines theoretical issues on sustainable residential neighbourhoods such as redevelopment and renewal. Quality aspects are examined in all the sectors, which include Physical, Transportation, Infrastructure, Environmental, Social-cultural, Economic and Institutional sectors.

2.2 Definitional and Conceptual Perspectives

2.2.1 Definitional Issues: The Idea of a Neighbourhood

A neighbourhood is a delineated area within physical boundaries, where people can identify their home and where they live out and organize their private lives (Rahman, 2012). It is an integrated and planned urban area related to the larger community of which it is part. It consists of residential districts, a school(s), open spaces, religious buildings, open spaces; physical infrastructure and supporting facilities. As Clarence A. Perry in 1929, defined a neighbourhood Unit as that populated area which would require schools to be at a walkable distance. At least 10% of the area would be allocated to recreation, served with traffic arteries and internal streets. The unit would also be served by shopping facilities, churches and a library being located hand in hand with the school (Meenakshi, 2011).

Plate 2.1: Clarence A. Perry's Neighbourhood Unit of 1929



Source: (Meenakshi, 2011).

Futuristic cities ought to build a different type of urban structure and space, where city life thrives, and the most common problems of current urbanization addressed (HABITAT). Neighbourhoods are thus an essential component of an urban structure and space. The basic concept of neighbourhood refers to a boundary where people lead their private lives, it's about a physical environment, economy and social-cultural sectors which constitute the sense of community and place attachment (Rahman, 2012). A neighbourhood quality is linked to neighbourhood attachment and satisfaction (Poortinga, 2017).

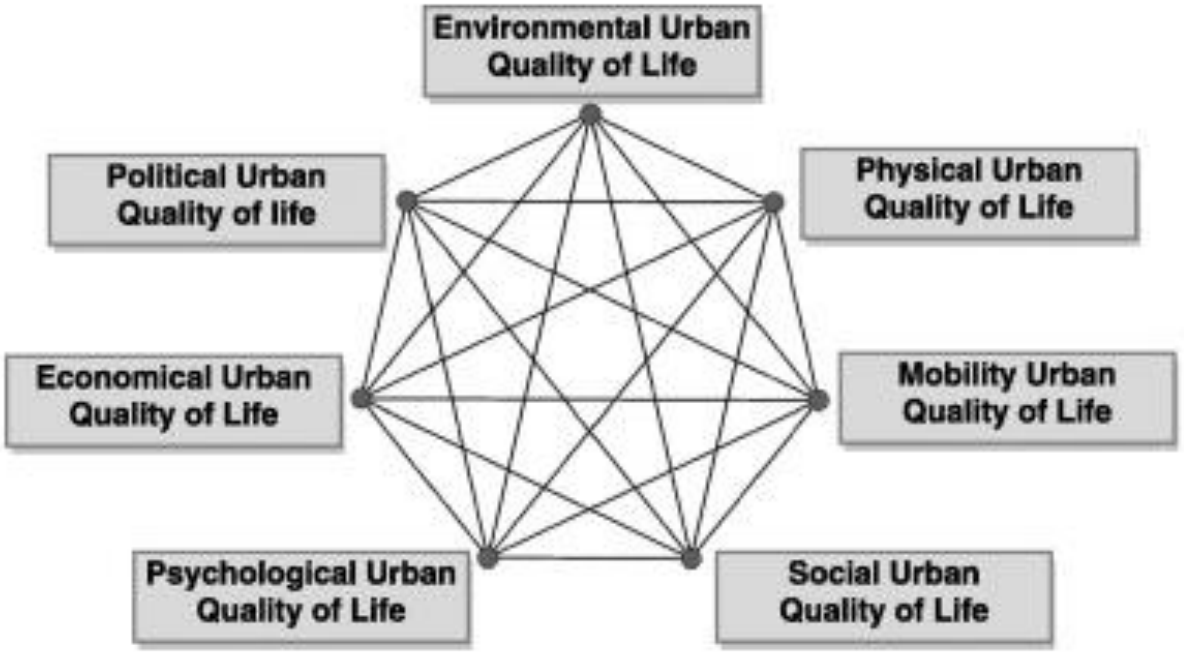
Neighbourhood changes for urban renewal, Urban regeneration and redevelopment are supposed to fulfill the people's needs and requirements, by improving the neighbourhood conditions such as neighbourhood quality, livable, healthy, sustainable, dynamic and self-stabilizing and safe neighbourhood (Poortinga, 2017).

An ideal neighbourhood is based upon the ideas where a resident can work, invest, live and have leisure. The developed nations' local governments are keen on continuous research on quality housing and how it can meet the diverse needs of its residents. Measuring housing quality against the diverse needs of residents is an important tool and local governments in the developed countries conduct regular resident satisfaction surveys in order to ensure that residents' needs are met and provided for.

2.2.2 Conceptual Perspectives: The Concept of Quality in an Urban Environment

Quality in an urban environment is a complex multi-sectoral concept that can be studied in various sectors including the Economic sector, Transportation sector, Infrastructure, Environmental and social-cultural sectors. The improvement and upgrading of these sectors is a continuous process for the need and requirement of residents in a neighbourhood (Norainah Abdul Rahman, 2012). Residents' perception is required in order to evaluate the quality of their environment, and the wide range of elements of urban quality such as social, economic and environment.

Figure 2.1: QOUL "Hexagon Shape"



Source: (Din, November 2012).

QOUL is a concept that has been discussed in various studies as a response to many problems facing the urban areas. QOL is considered one of the most essential dimensions for sustaining

any urban development, therefore, planning is important and should give a special focus and attention to it. The word quality is frequently used to refer to attractiveness or the excellence of a product. (Pacione, 2003), Defines quality of life as the conditions of the environment in which people live, which addresses issues such as air pollution, poor housing, mobility, health and education as shown in the QOUL 'hexagon shape' in the figure above.

In the context of place, time and society, some agreement can be reached on what would constitute the quality of life, as people's needs and fulfilment of their aspirations can be defined relatively within their cultural context (Hamam Serang El Din, November 2012). There are sufficient elements of quality of an urban environment held in common by members of a society for the concept of life to have meaning.

Quality of life observes the general well-being of residents, outlining the negative and positive features of life. It observes life satisfaction including physical health, family, education, employment, wealth, safety, security, freedom, religious beliefs, finance and the environment.

The world commission on Environment and Development (The Brundtland commission) defined the concept of sustainability as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Therefore, meeting the needs of residents is not only a precondition for sustainable development, but also for individual well-being and thus high quality of life. The concept of quality of life is therefore very relevant when considering sustainable development and vice versa. Sustainability implies a balance between the environmental, social and economic qualities, and policies that seriously guard it.

There are several ways of defining quality in a residential neighbourhood. Quality of life is a concept dates back to the ages of the famous philosopher Aristotle (384-322BC) who wrote about 'the good life' and 'living well' and how public policy can help to sustain it (Hamam Serang El Din, November 2012). QOL is a complex, multi-dimensional construct. It generally refers to good health, comfort, good relationship, rather than just money. It's the personal satisfaction with the cultural or conditions under which a person lives which may include, but not limited to clean air and water, good and usable open spaces, security and safety. QOL means that one lives a wholesome life, despite their challenges, be it physical handicapsy or being a minority.

Indicators of measuring QOL involve both objective and/or subjective indicators. Objective indicators are the visible and objective aspects of urban life defined by different elements such as health, institutions, unemployment rate, crime and environment green spaces (Solaimani, 2009). Subjective indicators measure the quantity of the citizens' satisfaction with accordance to the objective attributes.

QOL is identified as overall community wellbeing (Pacione, 2003). According to Oklahoma School of social work, indicators of QOL of a neighbourhood focuses on residential environment, also referred to as Neighbourhood or shelter.

Improving the quality of housing does not only mean improving the quality of a physical building, but also the overall fulfilment with different planning characteristics such as transportation, public spaces, recreational opportunities, conformity with building codes and regulations, population densities, building densities, and ease of access to basic needs, services and public amenities. This also includes social attributes such as protecting public health, safety and security, education and social integration, promoting equality and respect for diversity and cultural identities, increased accessibility for persons with disabilities, preservation of historic, spiritual, religious and culturally significant buildings areas, promoting spatial diversification and mixed use of housing and services at the local level in order to meet the diversity of needs and expectations. Also, in addition to environmental aspects such as respecting the local landscapes and treating the local environment with respect and care.

2.3 Quality Indicators in an Urban Residential Neighbourhood

Housing quality is a composite concept consisting of different characteristics that are expressed differently and varies conceptually for different user groups. There are many ways of determining quality of housing. There are however four major ways in which we can use to determine the quality of a neighbourhood which include Housing consumption in terms of dwelling size and occupancy rates, connection to services in terms of levels of main infrastructure such as water, sanitation and waste disposal, neighbourhood characteristics such as playgrounds, open spaces and other community facilities, location characteristics which include trade-off between journey-to-work time and size of units (Ilesanmi, Housing, Neighbourhood Quality and Quality of Life in Public Housing in Lagos Nigeria, 2012).

Quality of a neighbourhood is individual's overall satisfaction with life and that satisfaction affects the resident's quality of life (Abdul Ghani Salleh, 2012). Satisfaction with social,

economic and physical features of the neighbourhood contributes to the overall satisfaction of the neighbourhood, which in turn positively affects the overall feeling toward life.

The quality of a neighbourhood therefore does not derive its measurement from the physical characteristics of housing units only, but also must embrace the total neighbourhood characteristics as discussed below.

2.3.1 Physical Quality

According to the building code, residents need side spaces, service areas, appropriate siting of buildings, accessibility to plots, non-obstructed views, ventilation and lighting which all together contribute to the physical quality of a neighbourhood. The building by-law (143) requires all residents in a neighbourhood to have access to sufficient wholesome clean water, connected and ready for use ((Njonjo, 2013).

Physical structures are a basic need for residents in a neighbourhood. Physical structures provide shelter for human activities. The built environment influences a people's health and well-being (Moore). All buildings, according to the building code by law (252) provides that all buildings should pass through an approval process before being erected. A sustainable neighbourhood should offer a wide choice of housing facilities to ensure long-term value and to create a balanced community over time (Arwari, 2016). The homes should cater for residents of different income ranges and different ages. The physical characteristics of the 'house' include the kitchen space, laundry, washing areas, living area, dining area, morphological configuration of the residence hall, number and levels of sockets, number of bedrooms, number of bathrooms and other aspects of housing by developers such as garbage disposal, safety, brightness and ventilation of the house (Nyaboe, 2016). According to a research conducted in Kuala Lumpur, Malaysia, the housing unit size has a positive correlation to satisfaction of residents in a neighbourhood.

Temperature, humidity, ventilation and lighting are major determinants of comfort. Ventilation is necessary to allow free flow of air for breathing. Good ventilation should ensure removal and dilution of pollutants emitted in spaces to reach an acceptable air quality (Dominique Bienfait, 1992). Exposure to pollutants in the air may provide certain health risks such as cancer. Organizations such as the World Health Organization (WHO) and NEMA have published air quality regulations that can be used to guide development in neighbourhoods.

Water supply should be sufficient to meet the water needs of different households, businesses and institutions in the study area. The building code of Kenya requires that all building developments should be approved to have a wholesome water supply. Different sectors of a neighbourhood use water for different purposes such as drinking, dilution of wastes, production of manufactured goods, growing food crops, producing energy among other uses (Gleick, 1996). Access to clean water is an important determinant to its use. The increase in urban population demands for an increase in the water supply or an improvement of the existing systems for a better future of a city.

Drainage is a vital element of the physical quality of a neighbourhood. A good drainage system exerts positive forces thus making it effective (Rugendo, 2012). A proper drainage system in Nairobi should end the flood menace that is always experienced in Nairobi during the rainy seasons (Njoya, 2018).

The neighbourhood also needs a well-connected sewer line and no buildings should be erected over it. Clogging and blocking is one attribute of most sewer lines in the city of Nairobi. These poor sewer systems cause flooding causing major damage to property and is a health hazard, exposing residents to water and food borne diseases.

Waste water management should also enhance a quality of a neighbourhood by not only eradication waste water from ablution blocks, but also integrate the reuse of wastes and water in a way that is beneficial to the residents, without harming the environment (Arwari, 2016).

This includes the quality of physical features such as buildings, homes, yards, Landscape in the neighbourhood, Street lighting, and nearness to neighbourhood facilities, crowding, and general quality of the physical environment. Poor housing poses a risk to the quality of life of residents including their physical, mental health and self-development (Sultan, 2013).

2.3.2 Transportation Quality

The neighbourhood transport concept should be based on accessibility, meaning that a resident need is accessible at a walkable distance. Walkability affects community, health economics and the overall livability of a town. It is not just being physically able to walk somewhere but about all things that influence one's choice to take care of daily activities on foot, which include safety, convenience, attractiveness and connectivity.

Walkability should not just be judged from a straight-line measurement. Separated Land uses, impasse boulevards, enormous squares, and ineffectively structured and organized developments imply that numerous spots are bothersome or perilous to stroll through. Supporting facilities such as termini should be planned to support all modes of transport, without affecting the flow of transport. A good neighbourhood transport system should reduce the resident's need to use vehicles, especially single occupancy car use as a mode of travel and reduce the need to travel. It should maximize opportunities for public transport, minimize additional levels of pollution and encourage walking, cycling and car sharing (Deddington Neighbourhood Plan, 2017). A good transport system should enhance the connectivity, land-use mix, proximity and sufficiently serve the residential density (Croucher, 2007).

In order to achieve internal connectedness within the sustainable neighbourhood, the whole neighbourhood requires sidewalks on both facets of the street and the distance between intersections needs to be noticeably short i.e. not more than 90-120metres. Most people, when walking as a mode of transportation, will not walk farther then ¼ mile or five to ten minutes from their origination location, when walking for transportation the route from the origination location to the destination should be as direct as possible (Yan-et-al: 2005). According to Rohe:2009 neighbourhood connectedness incorporates the following elements: A street system that uses a grid or undulating style to maximise property, a combination of compatible land uses that features housing, retail, and public facilities, single family homes set on the brink o the road, with front porches, and garages set to the rear, pedestrian amenities and public open spaces.

This includes the quality of roads, road markings, and traffic mix, parking facilities, traffic quality and congestion. The location of and ease of transport, circulation and accessibility determine the quality of a neighbourhood (UBANI Princewill, 2017).

2.3.3 Environmental Quality

The quality of the environment, its cleanliness and the housing stock in a neighbourhood have a positive effect on neighbourhood satisfaction (Permentier, 2011). Trash, litter, odour, dust, smoke, street noise, airplane noise, rundown and abandoned houses and industrial activities determine the quality of a neighbourhood (USDH, 1979).

2.3.4 Social Quality

The basis for Social Quality is provided with the aid of public policies, inclusive of financial policy, labour market coverage and social policy. Whilst the coveragecontext shapes Social

Quality, it is also formed in a way that exceptional human and social desires are fed lower back into the coverage process. A public policy informed through Social Quality would include but not limited to; financial policies that supply for independence; labour market policies that allow for participation; social policies for securing individual-dignity, fostering social solidarity, and; empowerment (enabled by schooling and health policies as well as consultative processes) to shape the area for action. Social Quality offers the foundation for a meta- principle for creating public coverage and for its implementation and permits us to perceive policies that might be relevant in this area (Wallace, 2011).

The indicators of Social Quality include, socio-economic security, social cohesion, social inclusion and social empowerment. Whilst these indicators are not exhaustive, they can give an indication of the relative weight of the four domains (Wallace, 2011).

Accessible and safe environments have a significant influence on the neighborhood residents. They enhance the residents' sense of well-being by providing opportunities for engagement with nature and social interaction. Such safe environments include access to green spaces such as parks, playgrounds and recreational facilities. People who have access to safe green spaces are more likely to be physically active and less likely to be overweight compared to those living in areas with limited access to such facilities.

The social environment really matters with the key elements being trust and reciprocity (Moore). Trust includes trust within established relationships and social networks, generalized trust in strangers and civic or institutionalized trust, which is basically having trust in the formal institutions of governance. Social neighbourhood quality is determined by integration with neighbours, community participation involvement, outdoor play areas, safety and crime level in the area, sense of privacy, accessibility to education facilities, religious institutions, health care facilities, entertainment and other community amenities.

Personal and household characteristics also determine the quality of the overall neighbourhood. Younger people have been found to be less satisfied with their neighbourhood than elderly people, possibly because they had less time to select themselves into a much pleasant environment (Permentier, 2011). It is also expected, according to studies that households with children put more value on living in safe and more spacious neighbourhoods. The presence of children also has a positive impact on the social interaction in the neighbourhood. Quality of amenities such as green spaces, environmental health or pollution, upkeep and cleanliness, pace of life contribute to the social environment's need of the residents of a neighbourhood.

2.3.5 Economic Quality

Individual economic well-being is represented as both glide and inventory variables such as income and wealth, and neighborhood economic fitness considerations such as industrial productivity, financial variety and profits distribution (Liu, 1977). Non-economic quality of life is assessed through urban population's satisfaction commensurate with the economic vibrancy and quality of the area.

The biggest advantage accrued to residents in planned neighbourhoods is that the resident can work (earn) and invest in their places of residence without travelling too far (they experience both economic and non-economic quality). Planned neighbourhoods lead to increased economic activities due to creation of new residential developments, industrial parks, business districts, which increase revenue leading to economic growth of a country. This includes the home value in the neighbourhood, cost of living in the community, socio-economic status, housing availability, housing cost, transport cost, income resources, housing quality, investment and employment opportunities (Segal, 1979).

Living in higher economic neighbourhoods has been found to lead to a higher neighbourhood satisfaction, which relates to a higher wellbeing of the residents, than living in poverty areas (Permentier, 2011). Socio-economic popularity variables such as household profits and education level have been observed to have a fine impact on QOL. A greater income and/or a greater level of training lead to more pride in the neighbourhood. Those with a high socio-economic reputation have extra choice on the housing market and for this reason greater probability to select a residence in a neighbourhood of their choice (Permentier, 2011). Presence of diverse people groups such as of different ethnicity or tribe affect the quality of a neighbourhood.

2.3.6 Institutional Quality

Quality institutions in a neighbourhood offer hands on management and long-term stewardship of the community. These include responsible neighbourhood organizations, such as housing associations, development trusts, RBOs, CBOs and NGOs. (Arwari, 2016).

Proximity to institutions such as schools, health facilities, police protection, fire protection, health facilities, religious institutions and management institutions determine the quality of a neighbourhood (USDH, 1979).

2.4 Theoretical Perspectives for Enhancing Urban Quality

Quality of housing tend to vary by housing type, tenure, countries and cultures. There are several theories however, that relate to quality of housing, both as a dwelling and the supporting services. According to studies as will be discussed below, the main theories related to quality of a residential neighbourhood smart growth, New Urbanism (A sustainable neighbourhood is where people want to live and work now and, in the future,), Intelligent Urbanism and Urban renewal. They look at sustainable neighbourhoods as places which meet the diverse existing and future needs, are sensitive to their environment and contribute to their quality of life. They offer safety, inclusive, well planned, and built and run services and equality of opportunity and good services for all. (Communities, 2005).

Components of sustainable communities include per se; active, inclusive and safe, properly-run, environmentally sensitive, nicely designed and built, well connected, thriving, properly served and truthful for every body (HABITAT). Sustainable communities embody the precept of sustainable development. Sustainable communities balance and combine the social, financial and environmental aspects of their community. They meet the needs of the present, without compromising the ability of the future generations to meet their own needs. They respect the needs of different communities in the in the cities and the hinterland to make the communities more sustainable.

In accordance to the projections of the UN Population division, every Urban area by 2030 will have more urban dwellers than rural dwellers (Sigh, 2012). And by 2050, two-thirds of the population is likely to stay in city areas. This unplanned urbanization has an effect on ecological, economic, social and overall sustainability. A stable environment in this case includes the wholesome cities and resilient cities (Sigh, 2012). Accordingly, in response to the growth, we must as planners, grant evidence-based recommendations on creation and management of green infrastructure, environmental agreeable practices such as recycling, low cost housing, and wise use of resources in investing in urban services.

Sustainable neighbourhoods have the potential to produce good quality housing at a price that is affordable both in the short and long term. (French, 2018) Sustainable housing should set its goal towards economic, social and environmental sustainability, right from the planning stage to implementation phase, while at the same time ensuring that housing is affordable, accessible and environmentally favourable (Bank, 2018). The coherent characteristics of such sustainable development should be of assistance to the minority, especially the poor, because they are left

with no option other than to destroy their environment, in order to sustain their livelihoods. Therefore, it is important to establish a self-reliant development that considers the natural environment and resources, establish cost-effective development without degrading the environmental quality or reducing the productivity in the long run, address issues on disease control, appropriate technologies, food security, clean water and shelter for all and provide participatory initiatives needed (Lynch, 1960).

Sustainable development seeks to address challenges such as slum or informal settlement development and skirting of unplanned settlements waste water and solid waste generation and water pollution, land resource and vegetation degradation, reduction in bio-diversity and green cover, traffic related air and noise pollution, sewage generation and pollution of water bodies, solid waste generation and climate change (Ding, 2013).

2.4.1 Smart Growth

Smart growth is a concept that seeks to address growth of a city. It aims at decreasing urban spraw while creating a compact, walkable, NMT friendly land use, including neighbourhood schools, complete streets and mixed- use development with a reasonable choice or range for housing options (Ritu Shrivastava, 2011). Smart growth shows the interconnections that exists between development vis a vis QOL. It invests in necessary resources in community and provides new life to center cities degenerate areas.

Smart growth considers ten principles which include; mixed land uses, compact building design, range of housing opportunities, walkable neighbourhoods, attractive communities with strong sense of place, preservation of open spaces and critical environmental areas, strengthening direct development, providing a variety of transport choices, making predictable fair and cost effective development decisions and encouraging community and stakeholder participation in making development decisions (CKPCD, 2013)

Mixed use-Development

Quality of housing puts into consideration MUDs, which are a characteristic of pedestrian-friendly developments that merges with two or more residential, commercial, cultural, institutional and industrial land-uses. The smart growth principle seeks to foster adoptive overall community design and development that serves the economy, health, social-cultural and environmental needs (Delaware, 2018). Mixed-use development in planning is viewed as a solution to confronting problems brought about by fragmented urban areas. Mixed use

improves quality of housing by providing physical and functional integration of land-use components and therefore a relatively close-knit and intensive use of land, including uninterrupted pedestrian connections and development in conformance with the physical plans (Schwanke, 2003).

A mix of housing types and lot sizes increases residential density which in turn helps to create a local population large enough to support a vibrant community. Vibrancy in this case include a broader range of services that can be supported within a walking or cycling distance. Mixed use also allows support of diverse range of population including special people groups such as people living with disabilities (PWDs), elderly persons, women and children.

2.4.2 New Urbanism: WILL

An ideal urban environment is guided by the concepts of new urbanism, which promotes the introduction of and restoration of varieties of walkable, compact, vibrant, MUDs among others. Housing, shops, entertainment joints, offices, businesses, schools, parks and other amenities are usually within an easy and walkable distance. (Rahnama, August 2012). It is ideally a place where one can WORK, INVEST, LIVE, and have LEISURE.

2.4.3 Intelligent Urbanism

Intelligent Urbanism promoted environmental quality by encouraging an ecological balance. IU considers the careful utilization of available and potential resources. This principle promotes environmental assessments to identify fragile zones, threatened ecosystems and habitats that can be enhanced through conservation, density control, land use planning and open space design (Wafula, 2011). This theory also considers aspects with historical value, cultural heritage and sense of a place. Planning choices must operate inside the confiscates of tradition. IU seeks to protect and conserve components and factors of the city pattern, signs and symbols that are expressed through art, city space and architecture (Bugadze, 2018).

IU moreover, emphasizes execution of building materials, development methods, infrastructural frameworks and extends the administration which is consistent with the local organogram. It advances dynamic social orders which are interactive, intelligent and offer individuals various choices and opportunities for meeting-up, assembly or gathering with one another. It energizes and encourages ideal sharing of public land and facilities, roads, streets, administrations and infrastructural systems, lessening per family costs, whereas, on the other hand expanding reasonableness, affordability, access and civic practicability (Ryan, 2011).

The foremost problem or point of concern of IU is the precept of transportation. IU, recognizes the comfort and convenience of NMTs. It tries to region costs such as costs of power consumption, vast paved areas, parking facilities, pollution associated morbidity and other aspects such as poor balance of trade and accidents. (Kuehn, 2013). What is considered as a good city planning exercise includes planning exercises that promote alternative modes of public transport, as opposed to over dependence on private cars.

The table below summarized the QOL and urban Planning Theories and approaches as discussed above.

Table 2.1: Urban Quality of Life Vs Urban Planning Theories and approaches

	New Urbanism	Smart Growth	Urban Village	Intelligent Urbanism
Environmental		• Preserve open Spaces and critical environmental areas	• Sustainable urban ecosystems	• A balance between nature and technology
Physical	• Mixed Land Use	• Mixed Land Use	• Mixed Use and Diversity	
Transport	• Pedestrian friendly • Well interconnected streets	• Walkable neighbourhoods • Variety of transport choices	• Walkability • Connectivity • Smart Transportation	• Balanced movement
Social, Political, Institutional	• Provide public gathering places and Civic buildings • Provide range of parks • Create a range of Housing types • Enhance safety and Security • Control Evolution	• Encourage Community Participation • Create a range of housing choices • Sense of Place • Making devpt. decisions • Fair • Cost-effective.		
Economical				Balance with tradition

Source: Author's construct, 2019.

2.5 Urban Renewal Approaches for Enhancing Residential Neighbourhood Quality

Urban renewal is a strategy that aims at improving the quality of housing whose main objectives include restructuring and re-planning concerned areas, designing more effective and environmental friendly local transport and road networks, redeveloping dilapidated buildings into new buildings of modern standards, promoting sustainable development, promoting timely maintenance and rehabilitation of buildings in need of repair, preserving buildings, sites and structures of historical and cultural significance, providing quality housing and accessibility for persons or groups with special needs, providing open space and community welfare services, as well as enhancing the attractiveness of the urban design in terms of aesthetics ((URS), 2011). Urban Renewal employs three main strategies which include; Redevelopment, Rehabilitation and Preservation and Conservation (Mwaura, 2002).

2.5.1 Redevelopment

The redevelopment approach considers the demolition and Relevance of redevelopment is considered where current or existing buildings are in a dilapidated state and very deteriorated in that they have no value. (Mwaura, 2002). The only solution to this would be demolishing and constructing afresh. This ensured the future relief and protection of the affected residents.

This concept was coined and developed during the industrial revolution, because of the need of maximizing land-use. In this era, there was a population boom and therefore a need to increase floor:area ratios to accommodate the increasing population. This went hand-in hand with the need to introduce better services including better infrastructure and increased business activities at the CBDs

The redevelopment approach, however, has several shortcomings, which are elicited by social, economic and environmental costs, which are a burden to bear. Such limitation as loss of cultural heritage, relocation and neighbourhood transformation beyond recognition are attributed to redevelopment. It can also lead to re-emergence of slum and informal housing and contribute to loss of job opportunities. It also exerts psychological losses and nostalgia to tenants and owners or developers.

2.5.2 Rehabilitation and Conservation Approach

Rehabilitation is applied where some parts are deteriorated, but some are as good as qualifying for conservation. It repairs what can be salvaged, conserves what is in good condition and if it is of great significance. Rehabilitation approach takes advantage of existing housing stock as a

valuable resource and adapts old houses to present-day life and acceptable standards by providing modern facilities (EU, 2005).

Community or citizen participation is a vital tool for rehabilitation, as the residents who live threr provide technical and human resource to fore see the projects. They also organize themselves and lobby for all the critical stakeholders that should oversee the successful completion of the project(s) (Mwaura, 2002).

2.5.3 Integrated Approach

The integrated approach harmonizes best approaches of rehabilitation and redevelopment. It brings together, both the redevelopment and rehabilitation approaches (Mwaura, 2002). It rehabilitates what can be salvaged, and in some parts, redevelop what is beyond repair. This approach had been considered as the most acceptable option in renewing old neighbourhoods.

The integrated approach considers financial repercussions of the project, existing social orders in the community and encourages community participation. It therefore results in creation of a very rich environment as it integrates both the new and the existing. The only limitation to this approach is that it is time consuming especially during the process of mapping out what is of utmost priority.

2.6 Case Studies on Enhancing the Quality of an Urban Residential Neighbourhood

The review of the best practice case studies helps to develop the benchmarks of sustainable neighbourhood planning. The reviews of the best practices of neighbourhood plans such as the city of Holbeck and Nyayo Estate may enable a better understanding of how neighbourhood quality in our country can be improved to enhance the satisfaction of residents' need in various neighbourhoods in the country.

2.6.1 City of Holbeck, Leeds, United Kingdom: Enhancing Neighbourhood Quality through Community participation

The city of Holbeck is in Leeds, West Yorkshire, United Kingdom. Neighbourhood planning is important in this city as it is seen as a holistic means of pulling together and making good on both historical and current ongoing initiatives to rejuvenate the area repeatedly. Residents in this area play a very big role in regeneration of this neighbourhood.

The neighbourhood has a huge potential as it has an engaged multicultural community, different community groups and an identifiable center. Despite these strengths, the city is however faced with some challenges.

Parts of the city of Holbeck were vacated in preparation for various regeneration initiatives, so some parts have suffered from a population exodus. The neighbourhood plan however brings change in the area. It is a tool that improves the city and a way for the community to have more control in the planning of the area. The planning process engaged the local community including the housing developers and social housing management. Local children were involved in naming new streets. A local primary school held a competition for children to draw their vision of Holbeck over the next 15-20 years. Other neighbourhood initiatives included annual community events, working men's' club, and play areas for families, care givers and children, weekly Lunch club for the elderly, charity-run breakfast club, local theater, and community center, among others.

The vision statement and key topic areas were developed with input from the local community. Such key topics included the History and heritage, environment and green spaces, traffic and access, business and employment, housing, community services and community issues. A questionnaire was designed to seek community views on the key areas. These then were crossed checked to see whether they were the right topics to focus on and sought other suggestions. The planners found that when they shared ideas and findings, the residents quickly came back with additional suggestions.

2.6.2 Lagos, Nigeria: Housing quality and quality of life in public housing.

Various problems were identified that affected quality of housing in Lagos Nigeria. Lack of consistent housing standards, and the ineffectiveness of existing ones; that is, policy statements on the acceptable types/quality of housing. There was failure to implement instituted policies by governments and their enforcement agencies, and lack of consistency due to frequent institutional changes and rapid turn-over of appointees. Corruption and lack of commitment/sincerity on the part of many housing sector stakeholders: policy and decision-makers, legislators, housing administrators, construction contractors, consultants, financiers, economists, researchers, and non-governmental organizations. Recommendations to the above problems included the development of mixed-housing that encourages residents of diverse income levels to co-exist, enhancing positive perceptions of community and quality-of-life. Housing, use of durable materials with appreciable local inputs in housing construction, in order to improve their visual and functional quality and promote residents' quality-of-life and safety provision of space for children's recreation to ensure wholesome human development. The recommendations also included promotion of community interaction through design features that facilitate social networks among neighbours: semi-public open spaces,

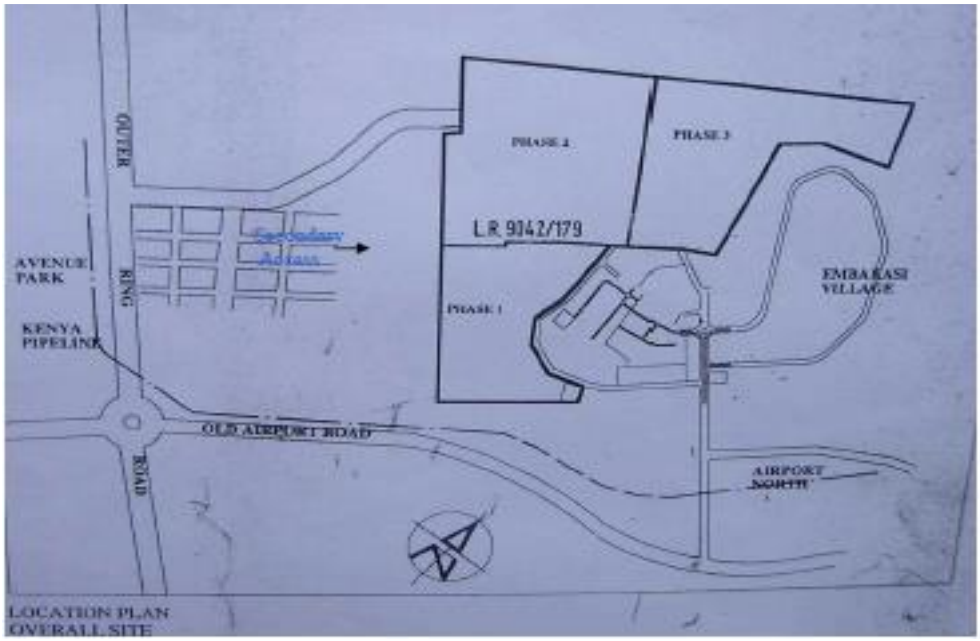
neighbourhood parks, facilities for organized youth activities, and recreational areas where people can safely walk surrounded by nature. Visual and physical characteristics such as aesthetics and building form, as well as social amenities such as shopping outlets, primary health facilities, and schools were also considered. The quality of institutions was enhanced through innovative estate management options, which ensure that prompt repairs are made to the housing units; and mutual rules are consistently enforced to improve resident/management relations.

2.6.3 Nyayo Estate Embakasi, Nairobi: Enhancing Quality through integrated approaches

Nyayo Estate is a residential neighbourhood located approximately 15km from the Nairobi CBD. It is located in Embakasi constituency, Nairobi County. The estate is as development of the National Social Security Fund (NSSF). Phase one included 992 apartments, 156 maisonettes and 8 shops. Phase 2 included 1,774 apartments, 288 maisonettes and 5 shops. Lastly, Phase 3 included 1,320 apartments, 255 maisonettes and 6 shops. The estates have an average population of 28,000people. The total development is on 25hactares of land.

Other facilities in the estate include a shopping center, Health center, public hall, Sports facility, Market, Nursery schools, primary schools, refuse collection center, secondary school, children play area, religious facilities and a fuel station. The initial idea of the scheme is still intact as the plans on paper reflect the actual developments on site. The estate is surrounded by industrial developments and informal settlements near phase III, Jomo Kenyatta international airport and Embakasi Police residences.

Figure 2.2: Nyayo Embakasi Estate Phases



Source: Arwari (2016)

Figure 2.3: Nyayo Embakasi Master Plan

Source: Arwari (2016)

The master plan of the estate as shown on Figure 2.4 above, assumes a grid layout that had been used to organize the built form.

Different land uses have been integrated to the transport system. The main circulation spine acts as the main artery with subsidiary access roads supplying the land uses. The streets are walkable as pedestrian walkways are provided as shown in the figure below. Both private and communal parking are provided.

Figure 2.4: Walkable Streets within Nyayo Estate

Source: Arwari (2016)

The development was planned to accommodate a variety of open spaces to connect humans to nature. Some of the open spaces are children play area (Phase II), Sports fields, individual and communal gardens. There was an attempt to construct these open spaces, but they were poorly articulated. The images below depict some of the open spaces at the Estate.

The main storm water drains in the development runs behind the housing blocks and is channeled to the main public roads. There is also presence of subsurface storm water drainage on the access roads to dispose the rainwater. There are primarily two types of storm water drainage in Nyayo Estate Embakasi: on surface and subsurface drainage. Storm water in Nyayo Estate is basically collected and disposed to the main public roads.

All the flats in Nyayo Estate Embakasi are connected to inspection chambers which drain black and grey water into manholes which link various clusters. Drainage channels in the blocks are in backside to enable linkage of two clusters. The wastewater is eventually emptied into the main sewer line. The sewage in Nyayo Estate Embakasi is collected and disposed into the main

sewer line. There are also efforts for refuse collection in the estate which has been subcontracted to a private firm. The same firm is also in charge of cleaning streets, outdoor spaces and maintaining the gardens, which takes care of the quality if the physical environment. All the refuse be it electronics, degradable waste and non-degradable waste is collected at the refuse chutes and transported to dump sites. Lighting and ventilation in the housing units is adequate, also the street lighting on the exterior spaces is adequate.

2.6.4 Synthesis of the Lessons Learnt

To realize the needs of residents in an urban neighbourhood, Professional planning skills must be employed in the process of planning and developing the actual neighbourhood. This ensures that best alternatives are chosen, best decisions are made and optimum landuses are achieved to satisfy all the residents, without compromising on quality.

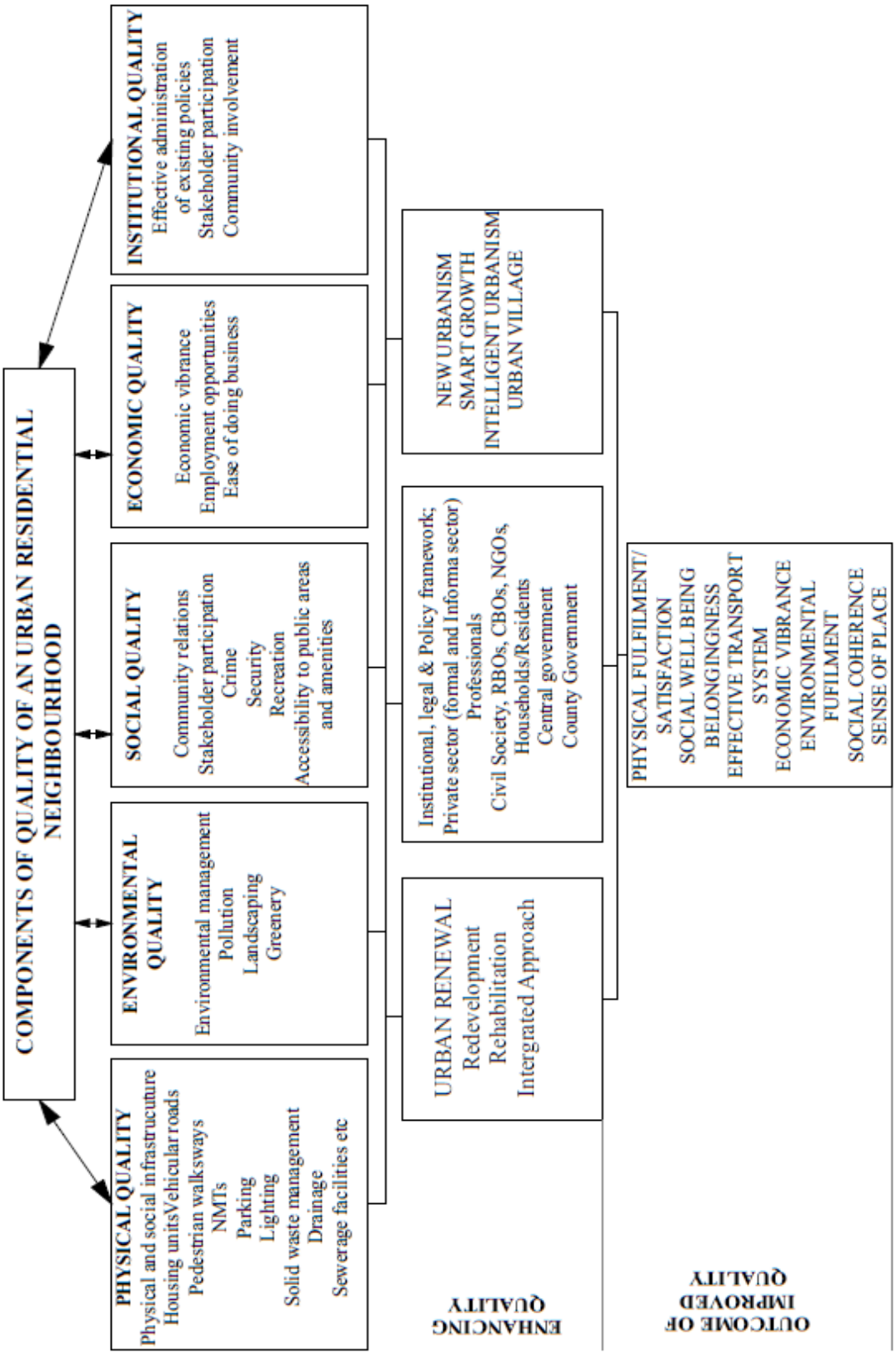
The conclusions drawn from these cases is that, an integrated understanding of urban housing systems based on multi and trans-disciplinary research platforms is required. There is the need for participatory approaches and enhanced collaboration between stakeholders to improve and maintain present housing and neighbourhood stock towards a sustainable future.

2.7 Conceptual Framework

The conceptual framework is developed from the literature that quality of a neighbourhood is related to residents' well-being and fulfilment of the quality indicators. This framework indicates the elements that compose a quality neighbourhood, as seen in the review. Best practices of ensuring quality include urban renewal strategies, new urbanism, smart growth and mixed-use development. Good governance and policy framework also contributes to the quality of a neighbourhood as it ensures the provision and maintenance of major infrastructure and social amenities.

The components of quality consists of the Physical, Social, Economic and Institutional quality. The outcomes of this quality include the overall residents' fulfillment and satisfaction with their neighbourhood, as summarized in the figure below.

Figure 2.5: Conceptual Framework



Source: Author's construct, 2019 (Developed from literature reviewed)

2.8 Legal, Policy and Institution Framework for Enhancing Quality in Umoja 1 Estate

2.8.1 Central and County Government Authorities

The central government is responsible for ensuring security and safety of its citizens and for the administration of the country. It spells out national development policies through sectoral objectives. It constantly revises policies, formulates programmes and monitors and evaluates their post-implementation phases (Kenya, 2000). In the context of urban renewal, the central government will play the role of creating an enabling environment within which the households, the private sector, nongovernmental organizations (NGOs), community-based organizations (CBOs), the local authorities, the international agencies and other actors in the housing sector will play complementary roles in the realization of the desired renewal goals.

Physical Planning Act

Nairobi City County promotes order and development of the county. It has the power to control or prohibit land subdivision of existing plots and to approve all developments and grant permissions as stated under section 29 18 and 30 of the physical planning Act. The Nairobi City County as the concerned institution has not risen to the occasion of carrying out its duties of controlling upcoming developments at Umoja1 estate, resulting to numerous illegal high-rise flats and informal commercial activities along the streets and fronting residential buildings.

County Council By-Laws

The County Council of Nairobi under the county Government Act is mandated to formulate by laws to govern the city. However, the situation on the ground indicates very little enforcement of these by laws. For instance, there are numerous illegal and unauthorized buildings that are not approved by the former City Council of Nairobi (currently Nairobi City County) Moreover, the council does not play an adequate role in the estate with regards to service provision, planning and the maintenance of the built and physical fabric of the neighborhood.

Environmental Management and Coordination Act

This Act promoted safe, clean and healthy environment. Sections (4) and (7) of the Act establishes (NEMA) which is responsible for safeguarding the environment. Some of the restricted activities in the Act include erection, reconstruction, placement, alteration, extension, renewal or demolition of any structure or part of any structure on land.

This act stipulates the carrying out of an EIA in any development that is deemed to affect the environment. EMCA is a recent statute as it was established in 1999 but became operational in 2002 thus it was not applied during the establishment of Umoja 1 estate. As a result, no EIA was carried out before the initiation of the estate. Thus, measures are needed to address issues to do with pollution, greening and public awareness on the environmental impacts of the residents' activities. Moreover, the provisions of this Act with regard to waste disposal and environmental protection are not observed on the ground. This is evident from the many profiles of solid waste lying on the ground all around the estate as well as the many uncontrolled developments erected to supplement housing facilities and house some informal businesses.

Millennium Development Goals

Kenya is geared towards the achievement of the aspirations of the Kenya millennium development goals (MDGs). The United Nations millennium development goal 7- ensuring environmental sustainability is aimed at integrating the principle of sustainable development in country policies and programs, reversing the loss of environmental resources; reducing ecological footprints among others. Localizing the Millennium Development Goal No. 7 in Umoja 1 Estate would help conserve the environment by installing proper waste collection and disposal mechanisms as well as eradicating the many upcoming illegal housing developments, thus improving the quality if the neighbourhood for the good of the residents.

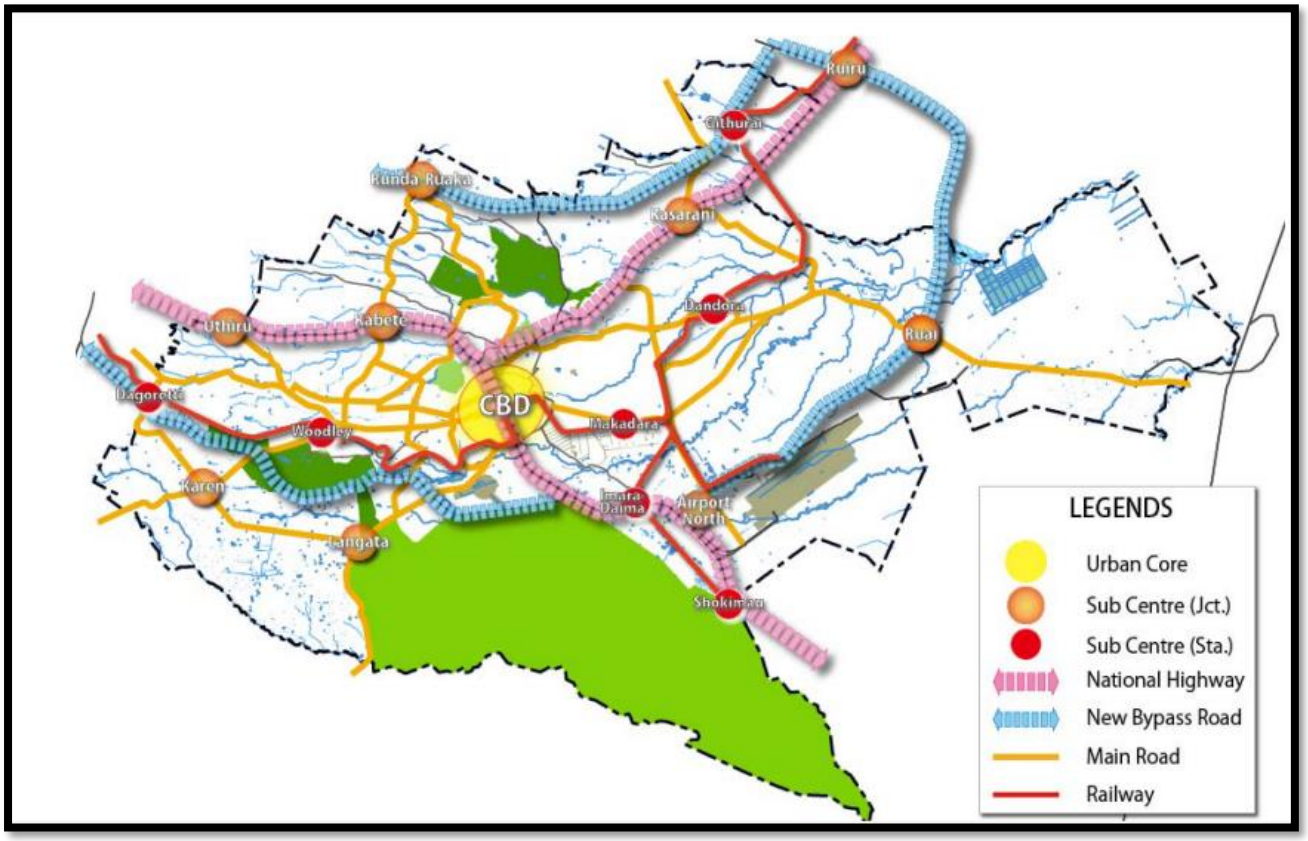
Nairobi Integrated Urban Development Plan

This plan addresses pertinent facts about Nairobi and why a new Urban development plan is required (Nairobi City County, Japan International Coopertation Agency (JICA), 2014). The plan points facts such as population growth, unresolved urban problems such as perennial traffic congestion, expansion of slum areas, insecurity, poor urban governance and environmental deterioration.

The project reviews and develops concepts on sustainable urban development and improvement of living conditions based on an integrated Urban Development Plan for Nairobi City. The scope of work included formulating an integrated urban development master plan to 2030. It also included formulation of an implementation and management programme, selecting priority areas and priority projects, reviewing and formulation of policies, rules and guidelines for local government.

Map 2.1 : The Project on Intergrated Development Master Plan for the City of Nairobi in the Republic of Kenya

Sub-Centre System (Bi-polar Corridor Development)



Source: JICA Study Team (JST), 2014.

The principle policies of the NIUPLAN include decentralization of businesses, administrative and commerce functions, expanding and renovating the CBD, conserving agricultural activities, preservation and restoration of green and water environment to create ecological network, to restructure the industrial area and beautify the city for Kenyan pride.

Some of the high priority projects highlighted include Urban transport development program. Infrastructure development program and environmental Development program. The environmental Improvement program looks into stormwater drainage and sewerage, Solid waste management, and City-wide air quality management.

Table 2.2: Principal Policies for Land Use Plan 2030

1 **Decentralise business,administrative and commerce functions**	• Sub-centre system will be adopted with new urban transport network to disperse business functions from the centre. • Land use regulation for sub-centre areas will be revised to activate its function and to accommodate growing population. • CBD should be re-developed to revitalise the city centre.
2 **Expand and renovate CBD**	• KRC's railway yard to be developed as new urban core
3 **Preserve and restore green and water environment to create ecological network**	• Existing forests and woods should be preserved. • River and river banks will be restored to open recreational space.
4 **Conserve agricultural activities**	• Agricultural activities should be conserved for diversification of the land use.
5 **Restructure industrial area**	• New industrial areas will be allocated in the southern part of the city.. • Existing industrial area should be re-developed for new urban function.
6 **Beautify the city for Kenyan pride**	• Urban landscape regulation should be established to keep historical beauty for the citizen.

Source: JICA, 2014.

The Big 4 Agenda

President Uhuru Kenyatta on his second term, revealed the 'BIG 4' agenda, the four pillars that would guide his administration. The pillars include expansion of manufacturing sector, affordable housing, affordable health care and food security. This encompasses the physical, economic and social aspect of quality to the citizens of Kenya.

Affordable housing is one of the agendas and it intends to have 500,000 Kenyans owning their own homes by 2022. According to the president, this could be done by empowering citizens economically, for example by reducing the mortgage and raising low cost funds in both private and public for investment in large scale house construction and cutting of the cost of construction by use of innovative ways and materials (Paul Odhiambo, 2018).

In provision of affordable housing, the government has kept their eye on design of the housing plans, quality assurance, standardization of documentation processes by bringing all institutional and agencies involved in the construction industry under one stop shop. This translates to assuring the quality of housing is achieved; not just the physical; structure, but also the overall construct of interwoven sectors.

2.8.2 Households

Households are primarily the target population for quality in a residential neighbourhood. They are the residents on site. Demographic trends, socio-economic, socio-cultural and socio-political impacts and characteristics play the role of guiding the needs, demand and supply quality housing. The needs emanate from either the net additions to population, whether through natural increase or migration or of people who are inadequately housed or without any housing of any kind at the present time. The households' sizes, their characteristics including other demographic variables play the role of guiding housing demand and its future projections (Shihembetsa, 1989). The role played by these HH in the subsequent planning process is that it enables them to get involved in planning and decision-making since they provide information on their way of life, their socio-economic situation, their attitudes, norms and values.

2.8.3 The Private Sector

The formal private sector includes a wide range of enterprise types, varying from small and micro-enterprises to large business establishments. In an urban renewal programme, various forms of public-private sector partnerships may be forged to provide capital, management and organizational capacity, labour and technical skills. The role of the building finance institutions, commercial banks, insurance companies, building societies, employers and the co-operative movement is to enable urban residents mobilize savings and increase their access to housing finance and credit towards purchase of land, building materials and house ownership.

The informal private sector consists of unregistered, activities or businesses out by residents, either as an individual or a group. The role of the informal private sector is to extensively provide labour and market for the products of the formal private sector. In an urban renewal programme, the formal private sector should contribute to any programmes aimed at improving the quality of both households and small and micro-economic activities in a low income residential neighbourhood (Mwaura, 2002). The informal private sector enterprises, which provide a vital source of income to the low-income households are located or integrated with the housing units. Their role of providing employment opportunities and income generation and thus poverty alleviation should, therefore, be given ample sensitivity in an urban renewal programme. The principles of the integrated approach in urban renewal should support both the housing and working function in a mixed-use redevelopment programme.

2.8.4 Civil Society Organizations

In Kenya, the civil society includes a whole array of organizations such as socio-economic and professional organizations, neighbourhood, kinship and traditional welfare association, co-operative societies, intermediary NGOs, RBOs, CBOs, self-help groups, unions, foundations and trusts (Aleksandrina V. Mavrodieva, 2018).

Most civil society organizations equally sprung up in response to State withdrawal from the provision of services. In Kenya, civil society organizations have played the role of piloting a number of projects in service provision, especially housing, education, sanitation and refuse removal. Although these projects are done on a very limited scale, the context of urban renewal, will extend and increase the validity of their service and existence.

CHAPTER 3: SITUATIONAL ANALYSIS OF UMOJA I ESTATE

3.1 Introduction

The chapter outlines the historical background and existing situation in umoja 1 area. The land use patterns of the study area with regards to space use is discussed, in addition to the physical environment, population, demographic characteristics, institutional and legal framework.

3.2 Historical Background

Nairobi was initially established as a transportation center serving the Kenya-Uganda railway. It was made an administrative center after its growth as many railway workers, Asians and Europeans settled here. It was then made the Kenyan capital in 1900 but was officially recognized in 1907 after the railway headquarters were transferred from Mombasa to Nairobi. This had a subsequent effect on the growth of the area, including business premises and residences. The post-independence government made efforts in providing planned settlements for its residents. The study area is in Nairobi's Eastlands area in Embakasi division, Nairobi County. There are several institutional and private neighborhood housing estates including Buruburu, Jericho, Nasra estate, Tena estate, Donholm estates, Jacaranda and Greenspan estates. These areas have an average density of about 600-900 persons per hectare. Umoja 1 estate is located within the larger Umoja Estate in Nairobi County.

Umoja Estate is one of the planned residential estate by the County government of Nairobi after independence. The project was funded by United States Agency for International Development USAID, which was conceived in 1971 (Mwangi, June 1988). The project however commenced in September 1975, after loan negotiations, formulation of objectives. Signing purchase-seller contractual agreements and other similar matters related to the project were resolved.

The project initially was based on the Sites and Services Tenure system, where 3000 expandable one, two and three bedroomed semidetached bungalows were provided. It was intended for low to middle income earners and the specific plans and designs for the housing unit were permitted.

The initial layout of the estate included low lying semidetached bungalows, taking a hexagonal grid, with roads at the periphery and controlled access. The site and services scheme provided that a housing unit would be designed to have three rooms and a Kitchen. Private open spaces were provided. However, when executing the plan on ground, sites and services system provided one service plot with a kitchen and one room, and the developer would follow the

plan to modify and expand the same. Subletting of the expandable space was not allowed according to the project policy. Due to the magnitude of the project, an autonomous management unit for the project was formed to act as the policy making body. Members of Umoja Project Committee represented and managed the project in all relevant city council meetings (Mwangi, June 1988).

The original plot area was meant to hold only one single dwelling unit. Due to population increase and cultural considerations, the policy was revised, and residents were allowed to put up a servant's quarter not more than a quarter larger than the main house which was supposed to cover 50% area of the plot. The scheme also included supporting elements of a neighbourhood such as religious institutions, schools, roads and a common market area as shown in the table below, which indicates the land utilization proposal according to USAID (1980).

Table 3.1: Allocation of Land uses in the intended plan of Umoja 1 Estate

Component	Hectares	% of total acreage
Residential	62.22	43.6
Community facilities	15.25	10.7
Open space	8.20	5.7
Roads	52.35	36.7
Special purposes	4.70	3.3
Total	**142.72**	**100**

Source: Masiga (1975)

The planning concept of the project included allocation of land, giving priority to and for house plots and circulation within the estate. Housing occupied 62.5% of the land, while circulation occupied 37.5% (Mwangi, June 1988). The plan included one main spine road, and a network of secondary and plot access roads, including paths and private open spaces on individual plots as shown in Table 3.1 above.

The estate was planned to be self-sufficient in most public, community and social infrastructural facilities. There was a public open space that had been allocated between Umoja 1 Estate and Umoja Innercore Estate.

The expected density was 25 units per hectare, while the population planned for, was expected to maintain a household size of 4 persons.

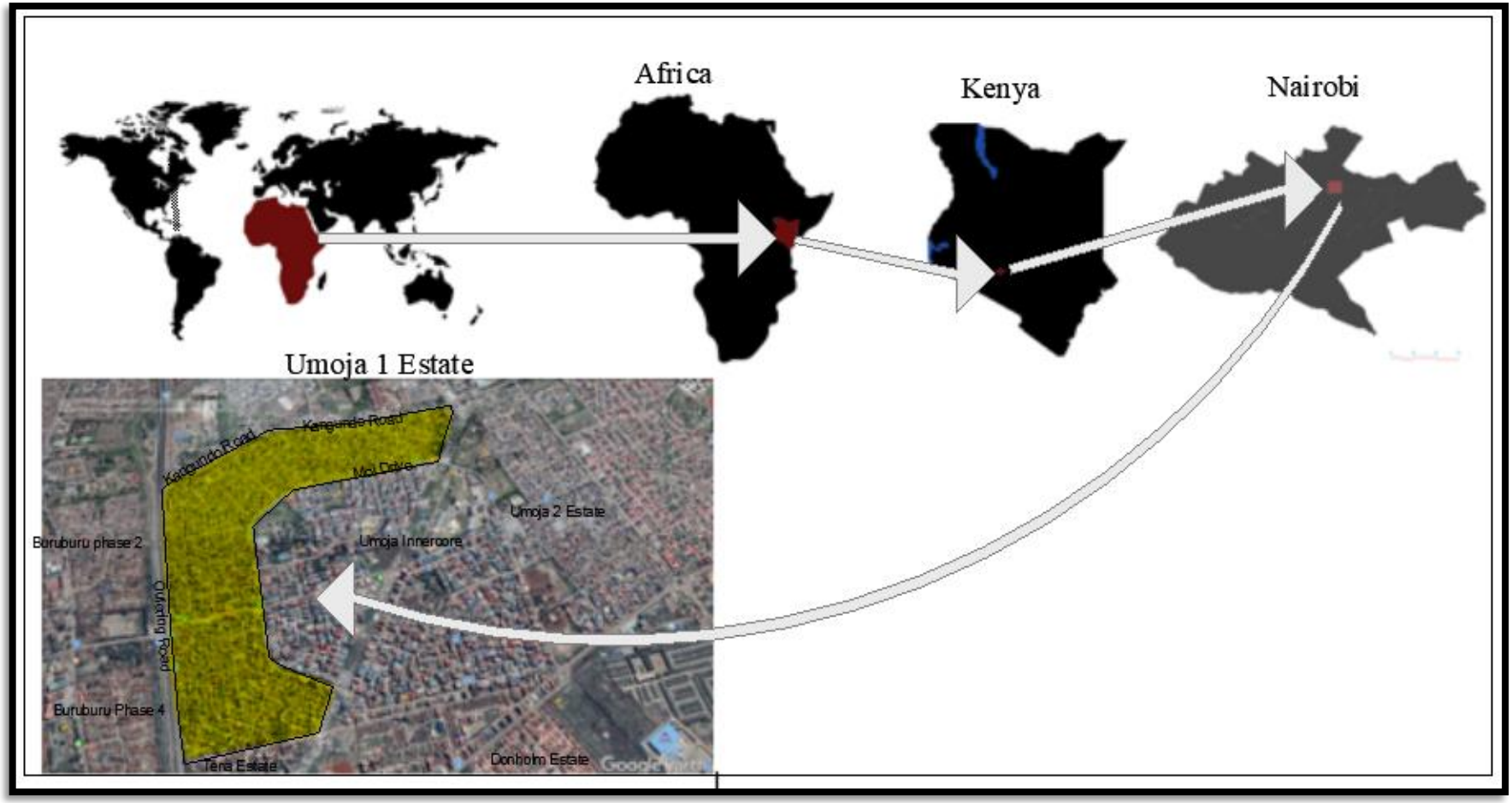
3.3 Geographical location

Umoja 1 Estate is located approximately 7kilometres East of Nairobi CBD, as indicated in the plate 3.1 below. The Estate covers an area of 125ha. The initial planned housing units for the project were 2924, but a physical survey carried out in the field for this study indicated that there were more than 5000 housing units in 2019. The total population density planned for was 100 persons per Hectare, therefore, the total population that was planned for was estimated to be 12000 persons.

The Estate takes a crescent-like shape, aligned in a North-East to South-East direction, along the recently expanded outering road. The South East of the Estate is in proximity to the industrial area and Kenya Pipeline Company. Donholm Estate is located due to South as shown in the maps 3.1 and 3.5 below and in between is a 20Ha Tena Estate, which was a housing scheme intended for Nairobi Teachers' Association's Housing Scheme. To the East, neighbours Umoja Innercore Estate, which was established 10 years after Umoja 1 Estate. To the North, Umoja 1 Estate is in proximity to Dandora Phase 1 and Buruburu Estate Phase 4.

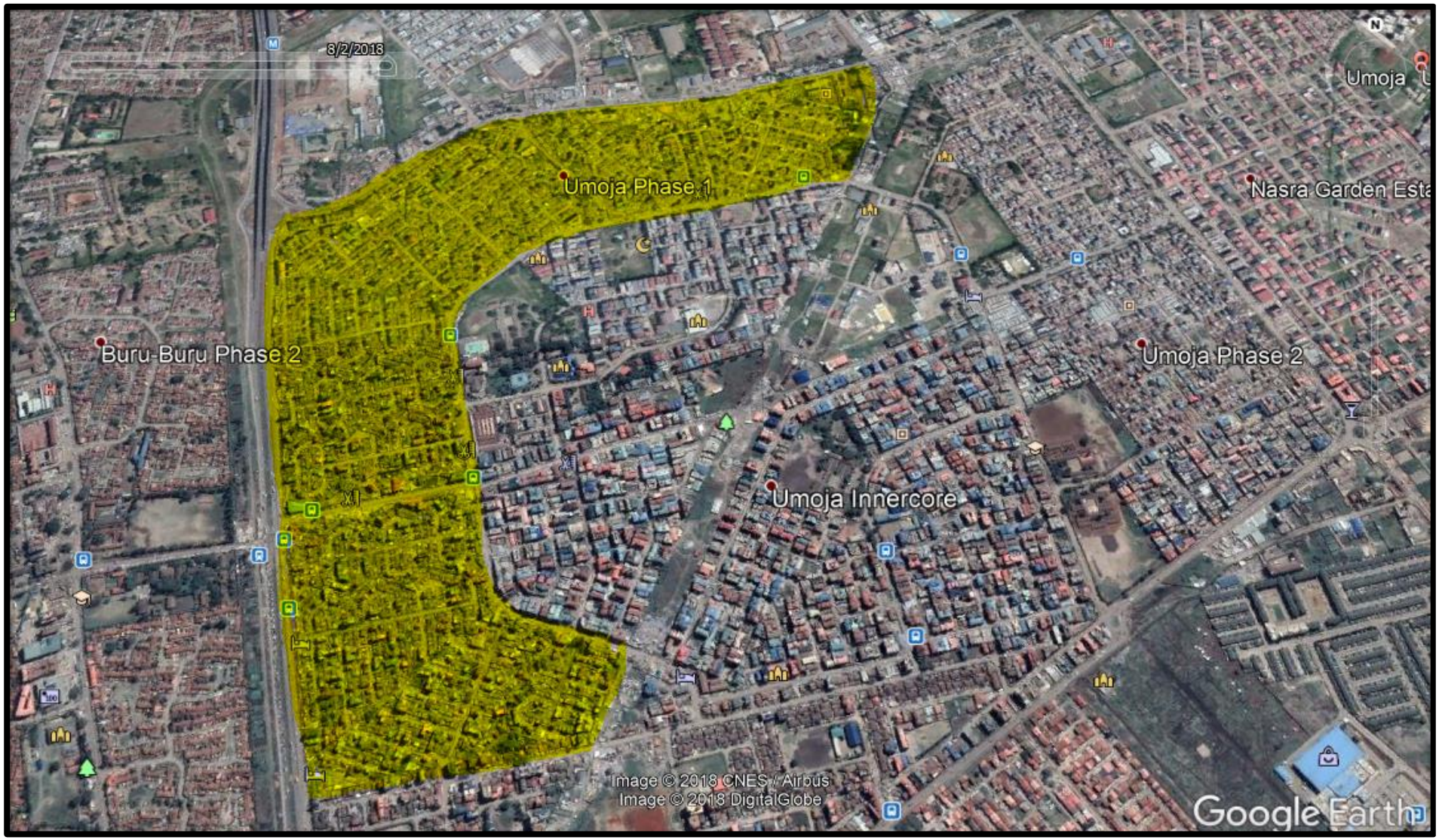
Umoja 1 estate is therefore located in the midst pf numerous pre-planned residential neighbourhoods in the greater Eastlands. The estate also is near the CBD and the main Nairobi Industrial Area and smaller industrial sites such as Dandora and Kariobangi.

Plate 3.1: Geographical context of Umoja 1 Estate



Source: Google maps, 2019

Map 3.1: Umoja 1 Estate in 2019

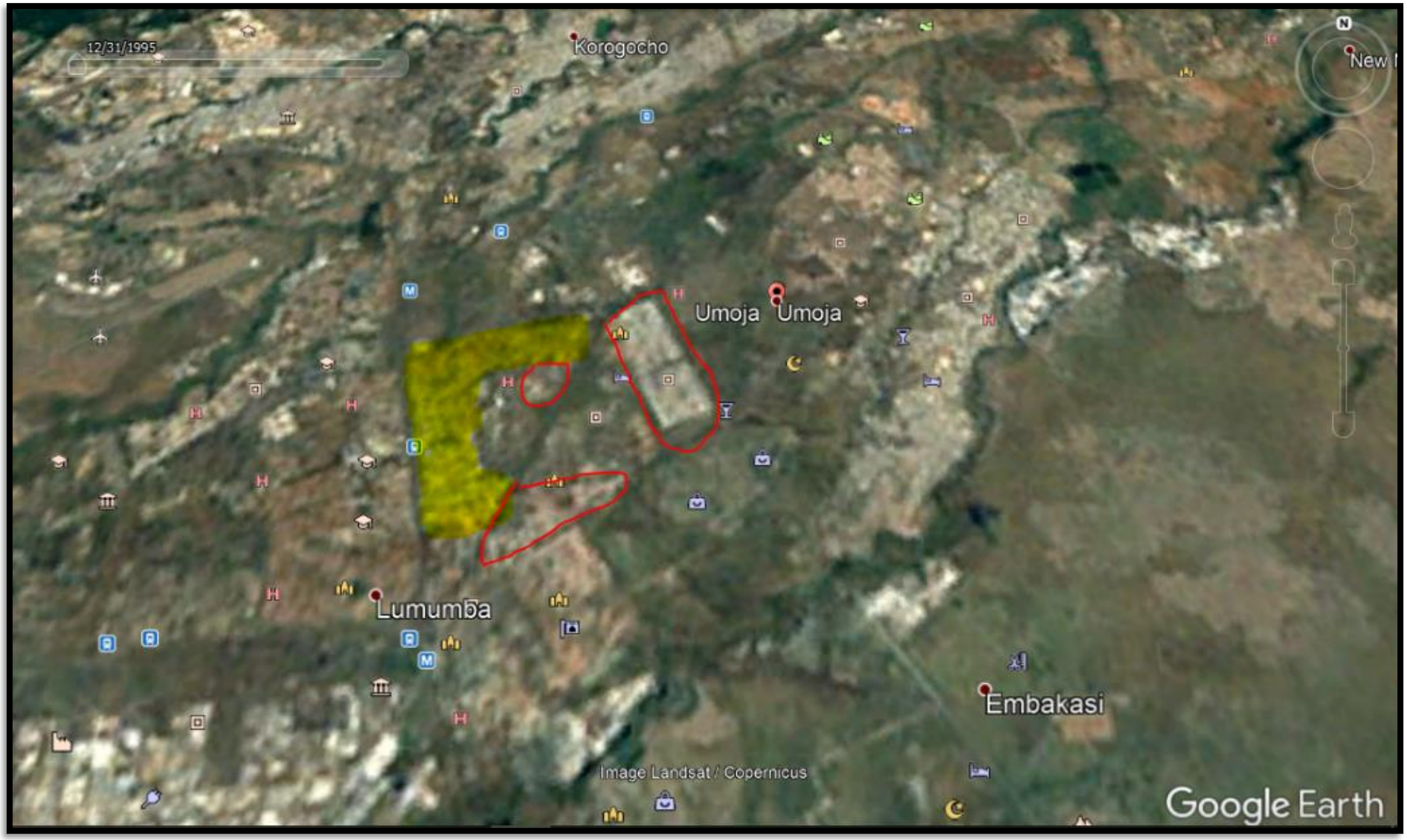


Source: Google Maps, 2019

Map 3.2: Umoja 1 Estate in 1984

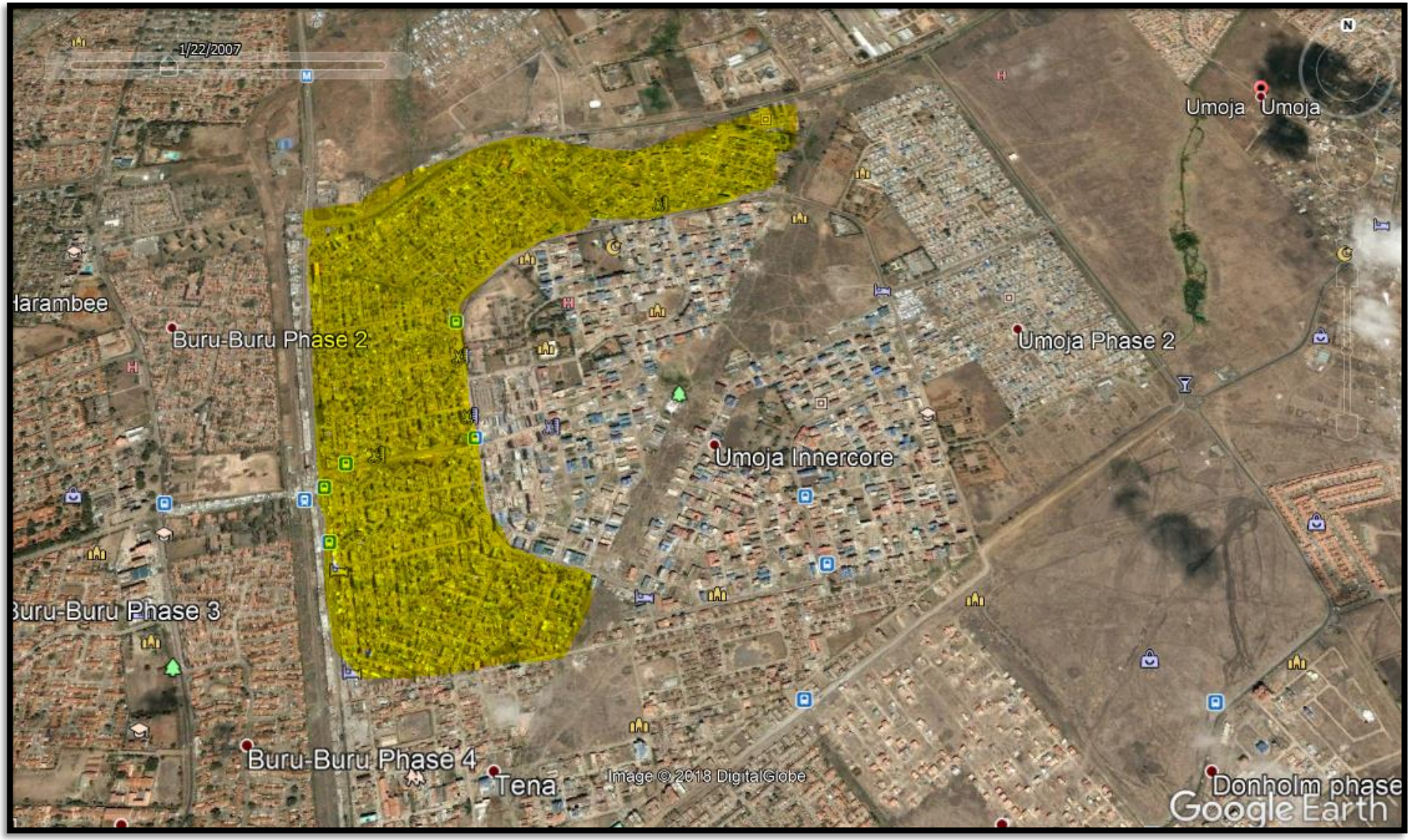
Source: Google Maps, 2019

Map 3.3: Umoja 1 Estate in 1995



Source: Google Maps, 2019

Map 3.4: Umoja 1 in 2007 before the expansion of Outer ring Road



Source: Google Maps, 2019

Map 3.5: Umoja one Estate in 2018 showing the densification

Source: Google Maps, 2019

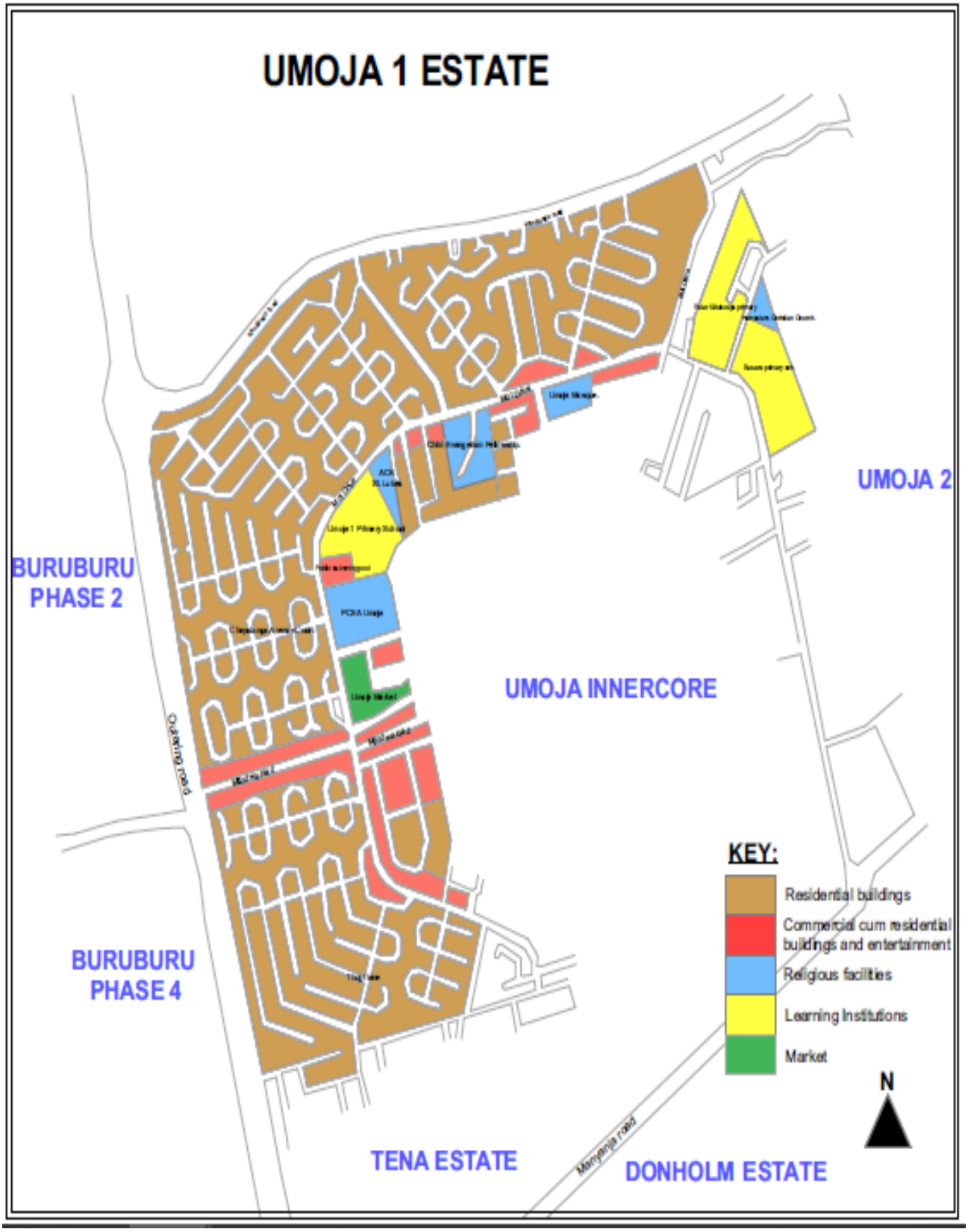
3.4 Existing Land Uses in Umoja 1 Estate

The land uses surrounding Umoja 1 Estate are mainly residential, residential cum commercial, commercial, transportation, public purpose, public utility and community facilities. The initial planning for Umoja 1 was predominantly a residential neighborhood inclusive of a few commercial, community and social amenities done on strategic points within the estate. The land uses that were observed in Umoja 1 Estate were:

Residential land-uses which comprises of mainly flats and apartments with a few maisonettes and bungalows. Residential cum Commercial uses which comprises of developments constructed of both residential and commercial use, with the commercial element basically occupying the ground floor, while the residential element which are basically residential flats occupying the upper floors of the building. Transportation Land use which comprises of the vehicular roads and pedestrian paths within the estate such as the main spine road Moi drive.

Commercial Land use which ranges from the informal commercial kiosks/sheds and stalls all over the estate to the formal commercial activities along Moi drive to include the Cooperative bank, Umoja market and the various supermarkets. Public purpose which include: Umoja clinic, P.C.E.A. Umoja Church, ACK Umoja and Umoja Catholic church. Educational land use which comprises of Umoja 1 primary school and other private schools including Sir Dixons Mixed secondary school. Social amenities which include a swimming pool and fun park area in Umoja 1 primary school that is open to the public on Saturdays and Sundays.

Map 3.6: Umoja 1 Existing Land uses



Source: Author, 2019.

3.5 Physical Environment Characteristics

3.5.1 Topography

The study area is located on a gently sloping ground which enables infrastructure facilities and services to be easily maintained. Nairobi River lies to the southern part of the study area. The topography of Nairobi County falls from rift valley approximately at a height of 2,300 to 1,500m(Morgan 1967).

3.5.2 Climatic Characteristics

Temperature

Umoja 1 Estate‘s climate is moderate, classified as sub-tropical highland climate under the Koppen climate classification. The evenings can be chilly especially in the June/July season when temperatures can drop to 100 C. The sunniest and warmest parts of the year are from December to March, when a temperature averages mid-twenties during the day. The mean maximum temperature for this period is 24 degrees (World Meteorological Organization, 2011).

Rainfall

There are two rainy seasons, but rainfall is moderate. Long rains are between months of March-May and the short rains are between October and November. As Nairobi is situated close to the equator, the differences between the seasons are minimal. The seasons are referred to as the wet and dry season. The timing of sunrise and sunset varies little throughout the year due to Nairobi ‘s proximity to the equator.

3.6 Vegetation

Nairobi County having black cotton soil with moderate rainfall makes it favorable for high growth of vegetation. The area of study consists of shrubbery, trees, and groundcovers. Also, it has planted flowers and hedges (http://www.unhabitat.org/content.asp).The study area has a substantial vegetation cover, as more than 40% of the land is occupied by open spaces which are characterized by different typologies of vegetation.

3.7 Socio-demographics Profile

The following section examines the demographic and socio-economic profile of the Umoja 1 estate residents. It investigates the population trends in terms of the initial target group, the changes that have occurred over time and the current status of the households.

3.7.1 Population Growth and Household Composition

The population of Nairobi results was 2,143,254 according to the 1999 Census. There was a 46% increase in population to 3,133,518 persons, according to the 2009 census. The population is projected to have approximately more than 5million people by 2019 census. The initial plan for Umoja 1estate was to accommodate 3000households that translated to less than 10,000 people. This has been overtaken by the rapid urbanization and growth of Nairobi by the evident multi storey developments that have replaced the original semidetached bungalows. Umoja 1 has achieved a high housing demand due to its close proximity to the Central Business District of the City of Nairobi, good connectivity to Thika Superhighway, Airport and opportunity for employment within the estate.

CHAPTER FOUR: THE QUALITY OF UMOJA I ESTATE

4.1 Introduction

This chapter analyses the findings as obtained for Umoja 1 Residential neighbourhood., both from primary and secondary data. A sample survey data and inferences are addressed as well as related hypotheses presented.

This study mainly focused on the quality conditional of the estate, taking into consideration the economic, environmental, social, physical and institutional quality as indicators. The chapter is concluded by outlining of emerging Issues. All these were compiled from primary data collected from the field through questionnaires, interview schedules, observation lists and other methods of primary data collection.

4.2 Response Rate

An overall response rate of 70.1% was achieved during the fiels study, as summarized in the table below. According to (Hofe, 2007), a response rate of above 50% is sufficient.

Table 4.1: Response Rate

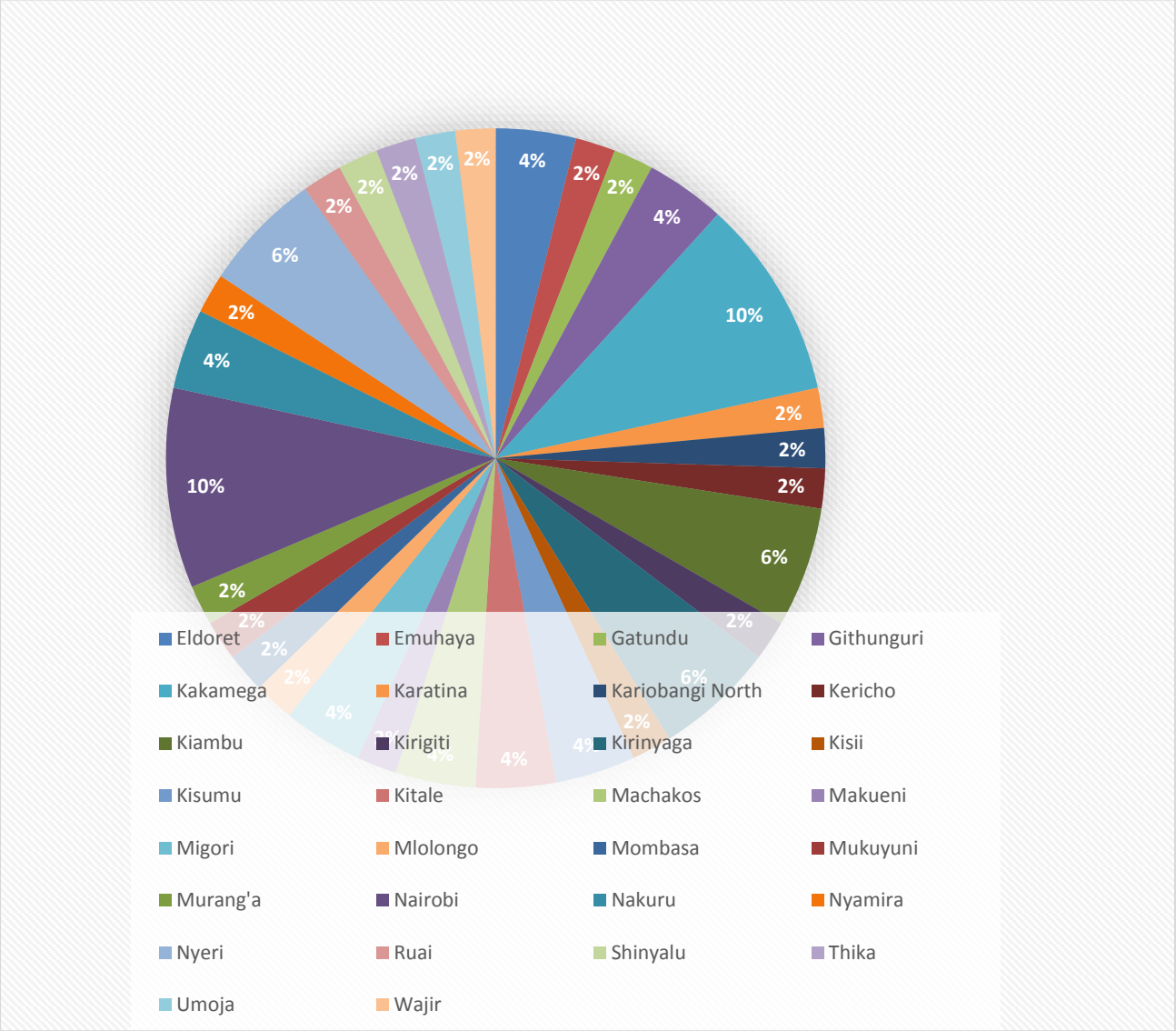
Research Instrument	Expected Responses	Actual/Received responses	Response rate
Household Questionnaires	100	65	65%
Checklists	14	14	100%
Interview Schedules	3	3	100%
Total	117	82	70.1%

Source: Author, 2019.

4.3 Demographic Structure

The figure below shows the ethnic backgrounds of residents in Umoja 1 Estate, where the demographic structure of the residents is analyzed based on the origins and ethnic backgrounds of the residents including the durations that they have lived in Nairobi. The pie chart indicates the ethnic backgrounds of the respondents.

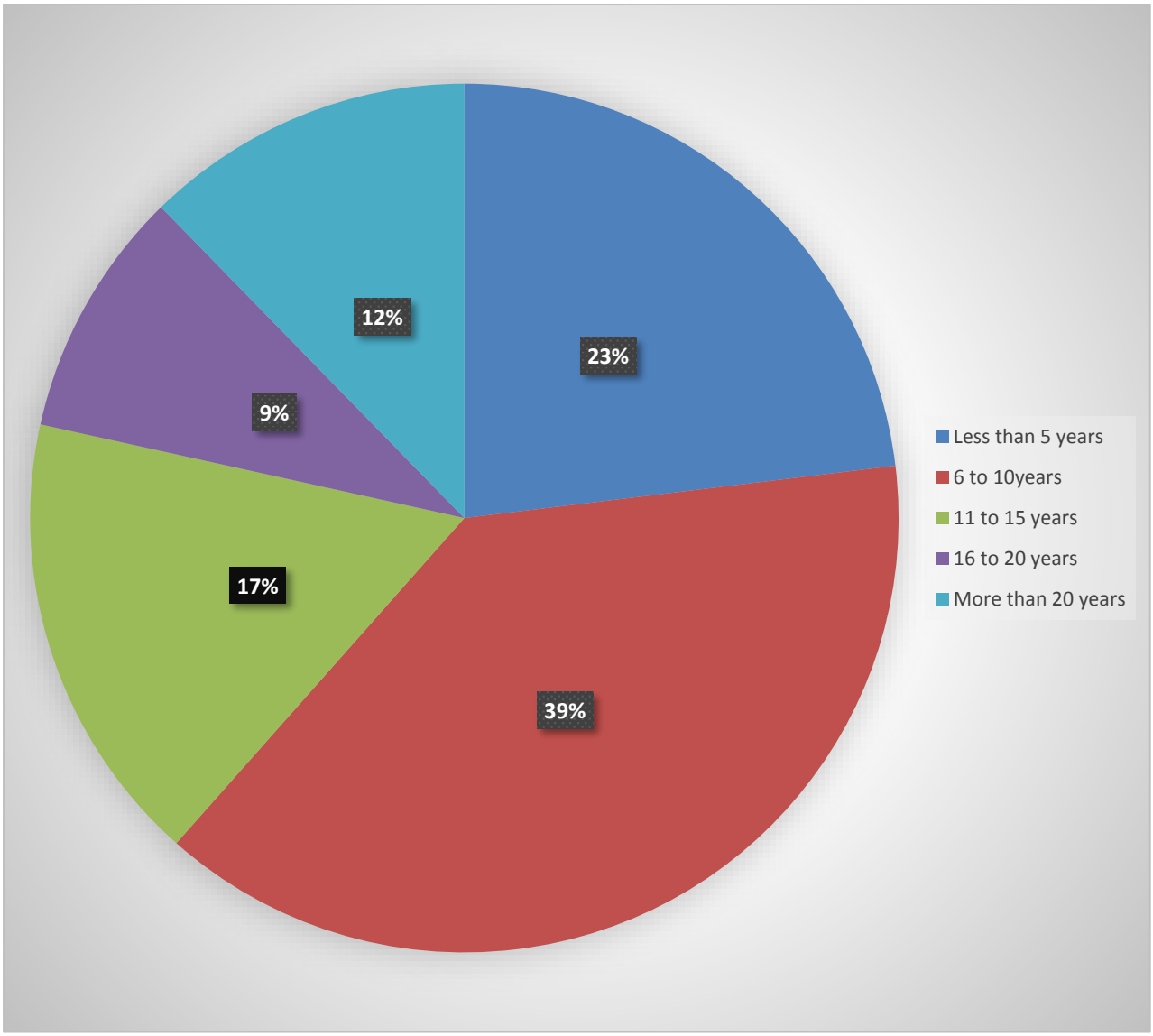
Chart 4.1: Place of Birth



Source: Field Survey, 2019

The results shows that the population in this neighbourhood is heterogeneous. The regional backgrounds of the respondents are confirmed by their places of birth. Data also shows that the 77% of the respondents have lived in Nairobi for more than 5 years. Most of the respondents (39%) have lived in Umoja 1 estate between 5 and 10 years. The pie chart below illustrates the following;

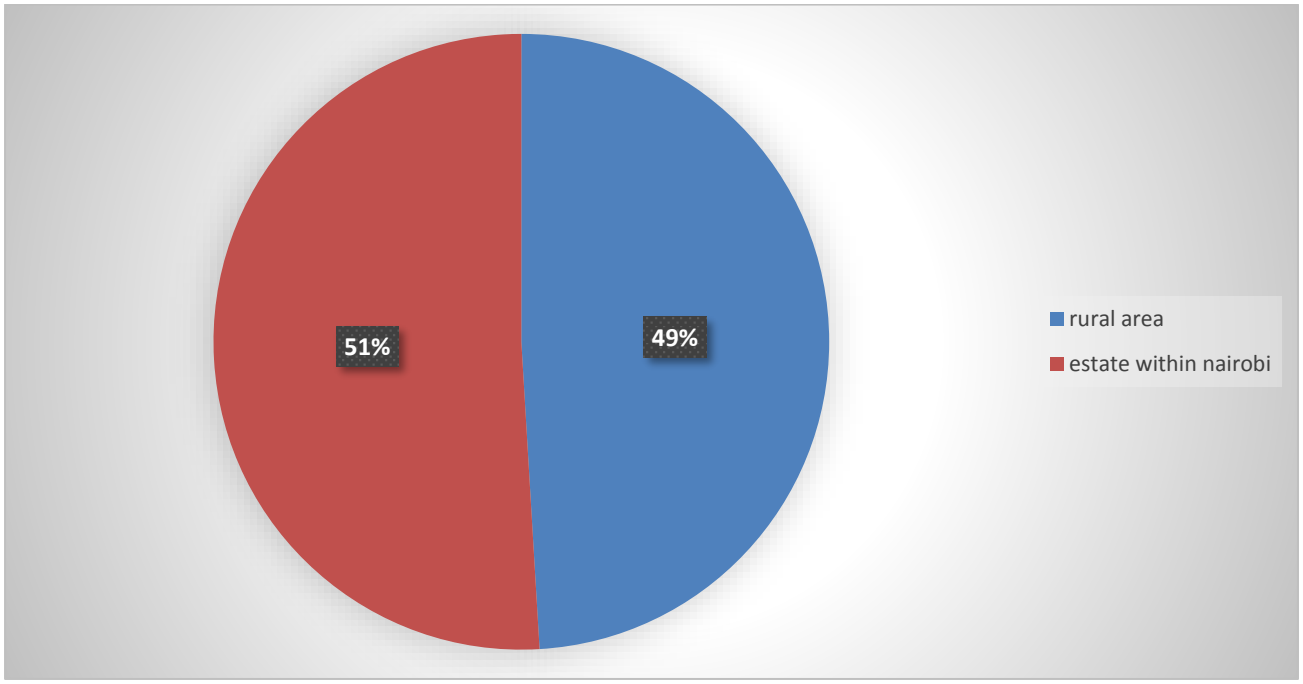
Chart 4.2: Duration Lived in Umoja 1 Estate



Source: Field Survey, 2019

The minority groups of the respondents have lived in Nairobi between 0-5 years (23 per cent). These results depict that the majority groups of respondents are long-term residents of Nairobi rather than recent migrants to the city which implies they have sentimental attachments to their housing units.In regards to urban mobility trends, the results indicate 49 per cent have in-migrated from a rural areas while 51 per cent of these respondents have lived in another estate within Nairobi before moving to Umoja 1 estate. In addition, an estimate of about 10 per cent of them are actually born and raised in Umoja 1 estate. These results demonstrate inter-urban dynamic migration patterns of the respondents.

Chart 4.3: Mobility Trends

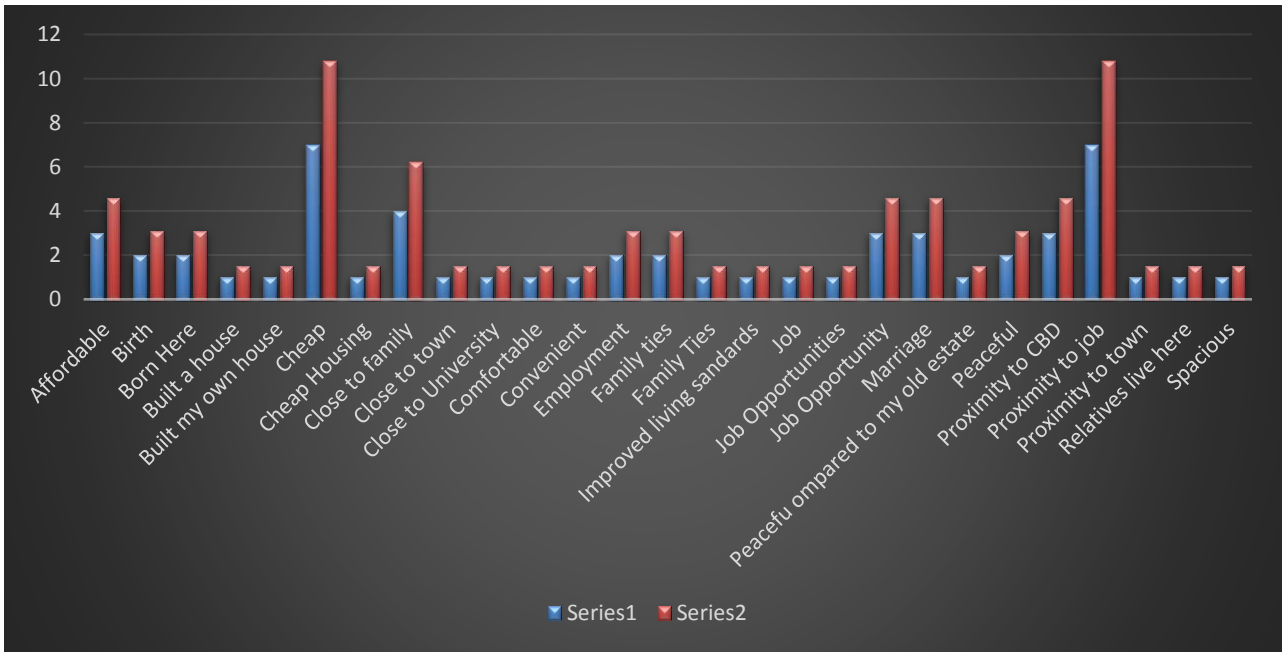


Source: Field Survey, 2019

4.3.1 Tenancy History

The table below illustrates the different reasons advanced for moving and settling in Umoja 1 Estate.

Bar Graph 4.1: Reasons for Settling In Umoja 1 Estate



Source: Field Survey, 2019

27.6% of the respondents indicated to have moved to Umoja 1 because of its proximity to work, proximity to CBD, school and higher learning institutions. 17% of the respondents have moved to Umoja 1 either for the purpose of joining their spouses, relatives or for marriage reasons. However others have chosen to move to Umoja 1 due to its quality are actually inherent such as lower/cheap rents, less congestion and improved social status. 6.2% of the respondents were actually born in here.

Preferences of the residents to their housing units

According to the field survey, 27.7%of the respondents would be prefer to continue to stay and 64.6% would pass on the housing unit to a relative or a kin. However, 4.6%of the respondents prefer to hand over or transfer the house back to the Nairobi City County and a mere 3.1% would sell it to a new tenant. We can therefore deduce from the statistics that there is sentimental attachment to the housing units, a close-knit community structure and values linked to the quality of Umoja 1 residential neighbourhood. These qualities need to be maintained to avoid potential social and economic disruptions.

4.3.2 Household Characteristics

This section analyses the household characteristics in terms of their sizes, the age and sex distribution of the respondents, marital status, levels of education and Occupation types.

Average Household size

Table 4.2: Household Size

No. of persons	Frequency	Percent
1	18	27.7
2	14	21.5
3	17	26.2
4	9	13.8
5	2	3.1
6	4	6.2
7+	1	1.5
Total	65	100

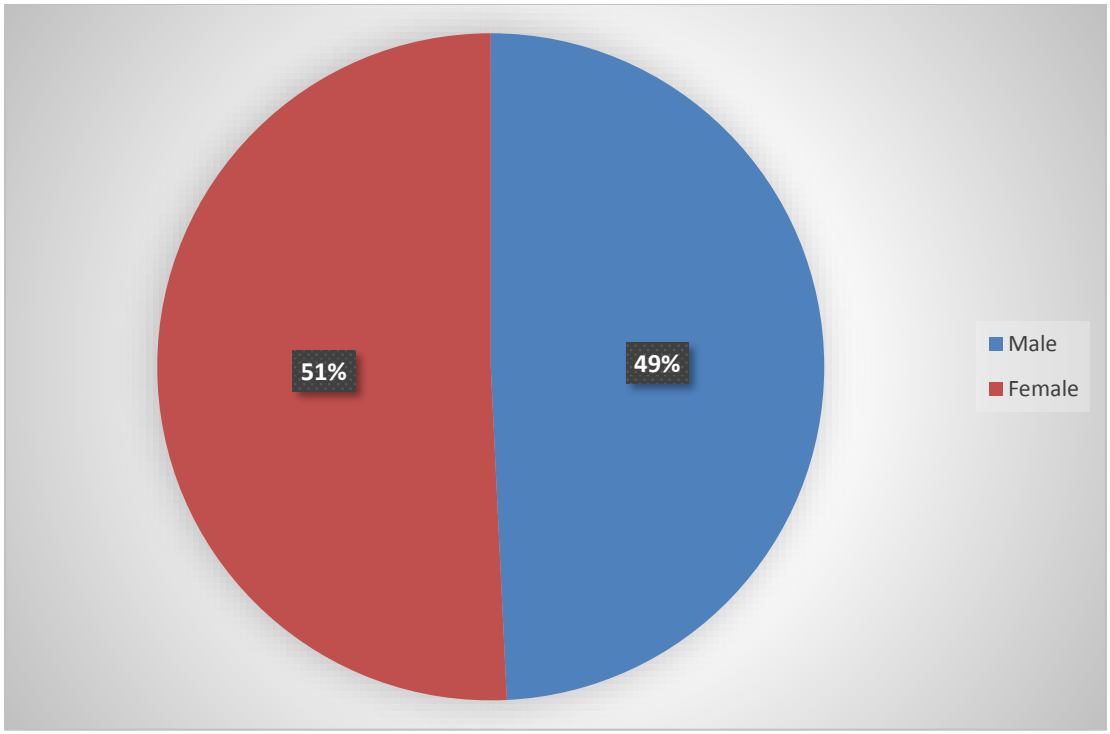
Source: Field Survey, 2019

According to the survey, 75.4% of the households dwell between 1 to 3 persons, translating to an appropriate density for the predominant single rooms, one and two bedroom housing units. The prevailing status of the housing unit reveals the pattern of development that has taken place over time, overshadowing the original plans of Umoja 1 Estate.

Gender distribution of the respondents

The entire study area yields a representation of both male and female respondents. Data collected from the household questionnaires indicate that most of the respondents were female 50.8% (33) while the male respondents were 49.2% (32). The result, therefore, indicates that both genders were equally represented in the study.

Chart 4.4: Respondents' gender



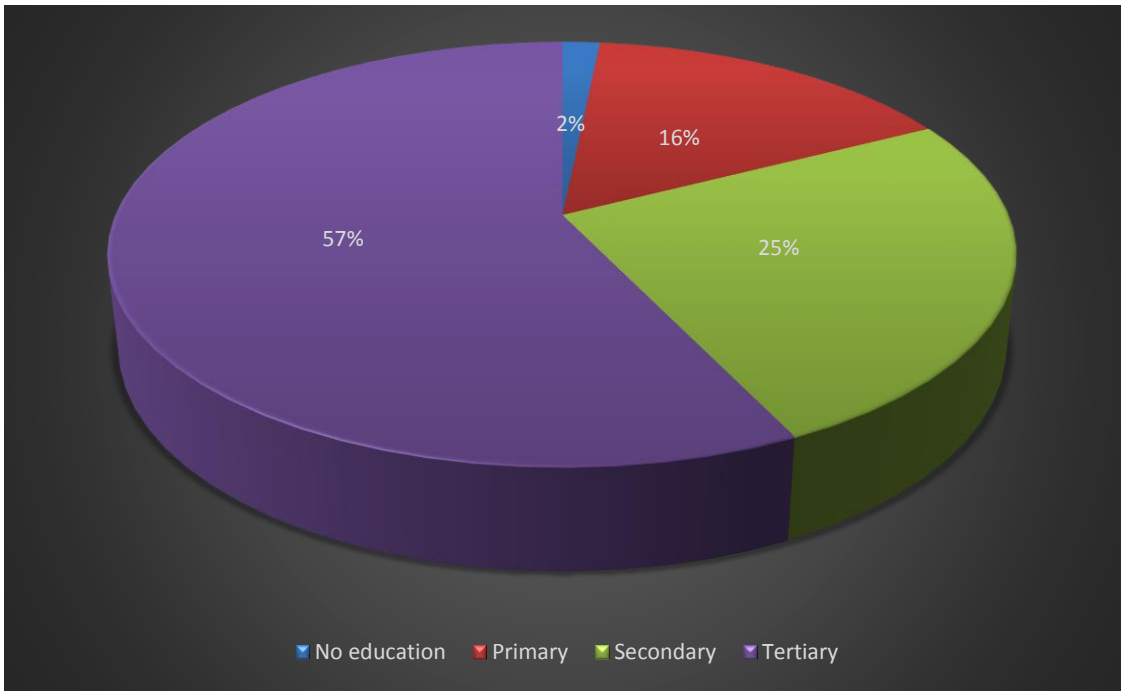
Source: Field Survey, 2019

Education level of the Family Head

Majority (57%) of the respondents have had undergone tertiary education. This therefore tallies with the result that found out that most respondents have access to formal employment, or have formally registered their businesses. 25% percent had secondary education while 16% had

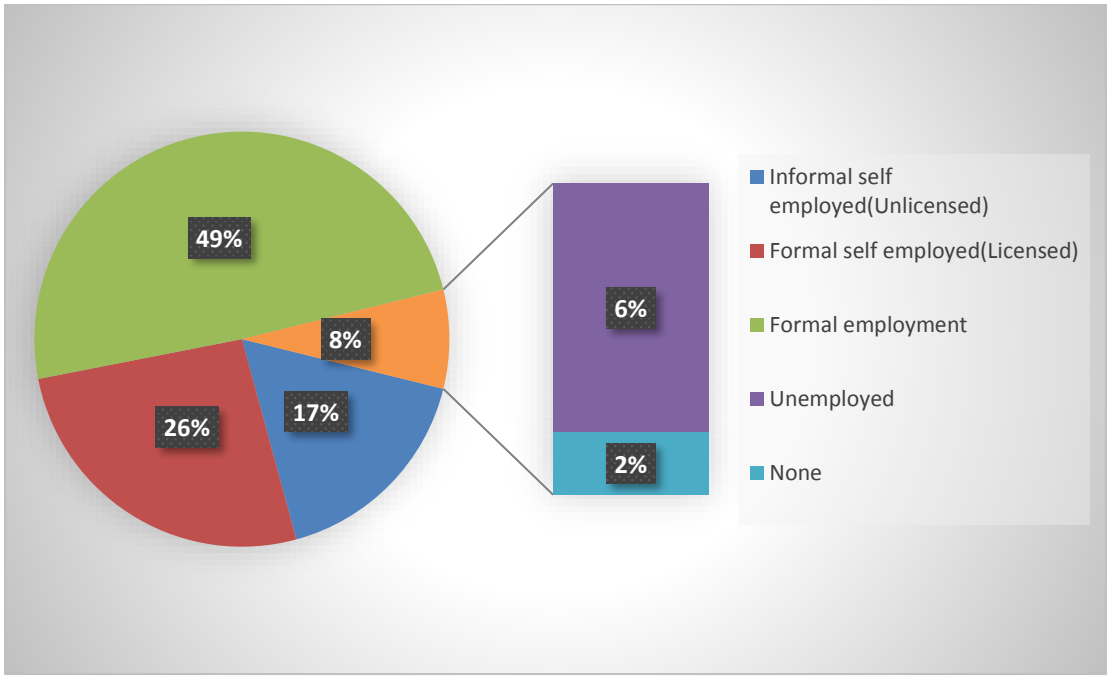
primary education. The high level of literacy in Umoja 1 estate could be attributed to the quality of education facilities in the area.

Chart 4.5: Education level of the first person



Source: Field Survey, 2019

Chart 4.6: Employment of the First person



Source: Field Survey, 2019

Majority of the respondents indicated that they were either formally employed or self-employed. 49% of the respondents are formally employed, 26% are formally self-employed (licenced), and 17% are in informal self-employment (unlicensed), while only 8% of the respondents are either retired or unemployed.

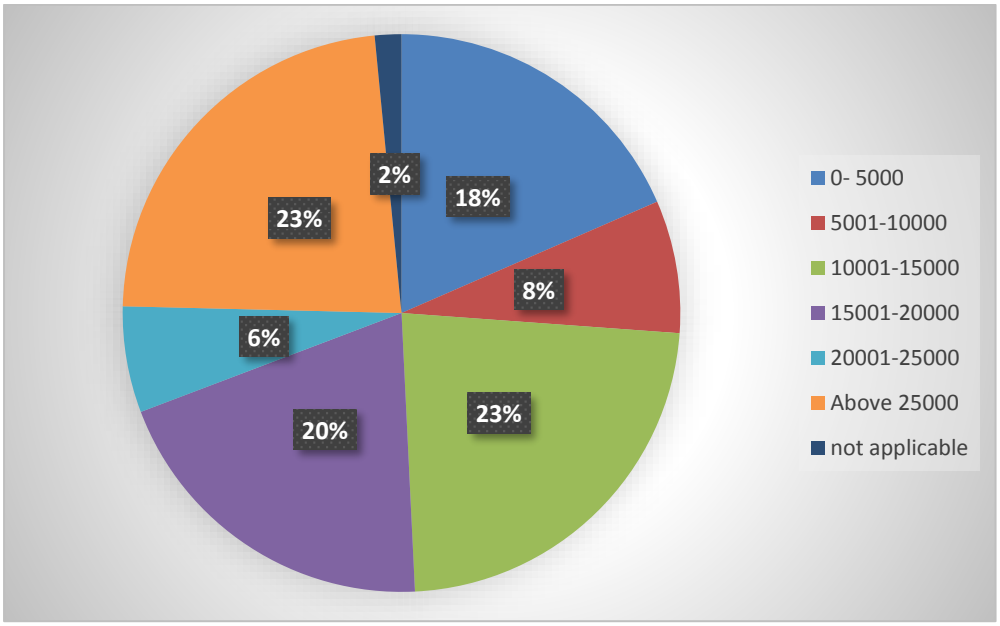
Table 4.3: Level of Education and Type of Occupation of Household Heads

Education Level of the First Person			**Type of Employment**		
	Frequency	**Percentage**		**Frequency**	**Percentage**
No Education	2	3.1	**Informal self Employed**	11	16.9
Primary level	7	10.8	**Formal Self employed**	17	26.2
Secondary Level	16	24.6	**Formal Employed**	32	49.2
Tertiary Level	40	61.5	**Unemployed**	5	7.7
Total	65	100	**Total**	65	100

Source: Field Survey, 2019

Income status

Chart 4.7: Personal Average Monthly Income

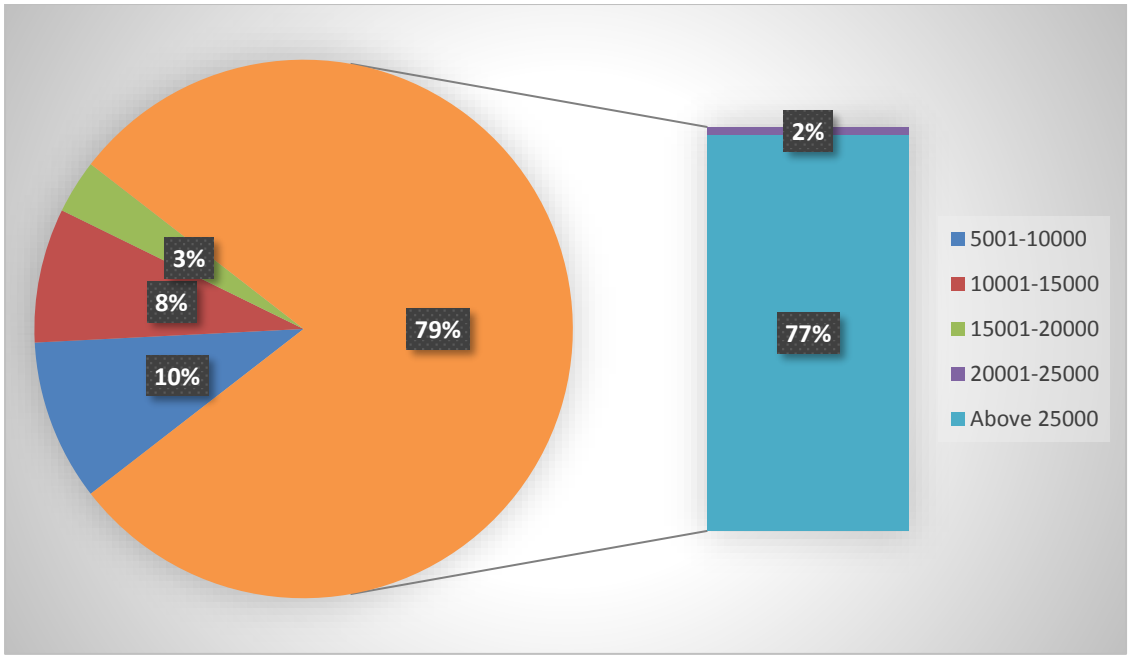


Source: Field Survey, 2019

Majority of the respondents' personal monthly income ranges between Kes.10, 000 to Kes 15,000. This constitutes of 23% of the respondents. 20% earn a personal monthly income of between Kes.15,000 to Kes.20,000, while only 8% between Kes.5,000 and Kes.10,000. This goes hand in hand with the respondent's preference of why they chose to live in Umoja, one of the reasons being ease of doing business and proximity to job opportunities and employment. Approximately, according to the respondents, a substantial amount of 48% goes to house rent and daily expenses including food and water. Most respondents spend less than 5% of their earnings on transport, electricity and garbage collection. 76% of the respondents spend less than 5% of their earnings to maintain their dwellings.

The respondents defined their income has been increasing over the time they have lived in Umoja 1 Estate. 60% of the respondents' income has increased over time they have been living in Umoja 1 Estate. This can be attributed to the economic vitality and quality of the area. 52.3% of the respondents also indicated that their achievement of their financial needs has been improving over the time they have lived in Umoja 1 Estate.

Chart 4.8: Total; Household Average Monthly Income

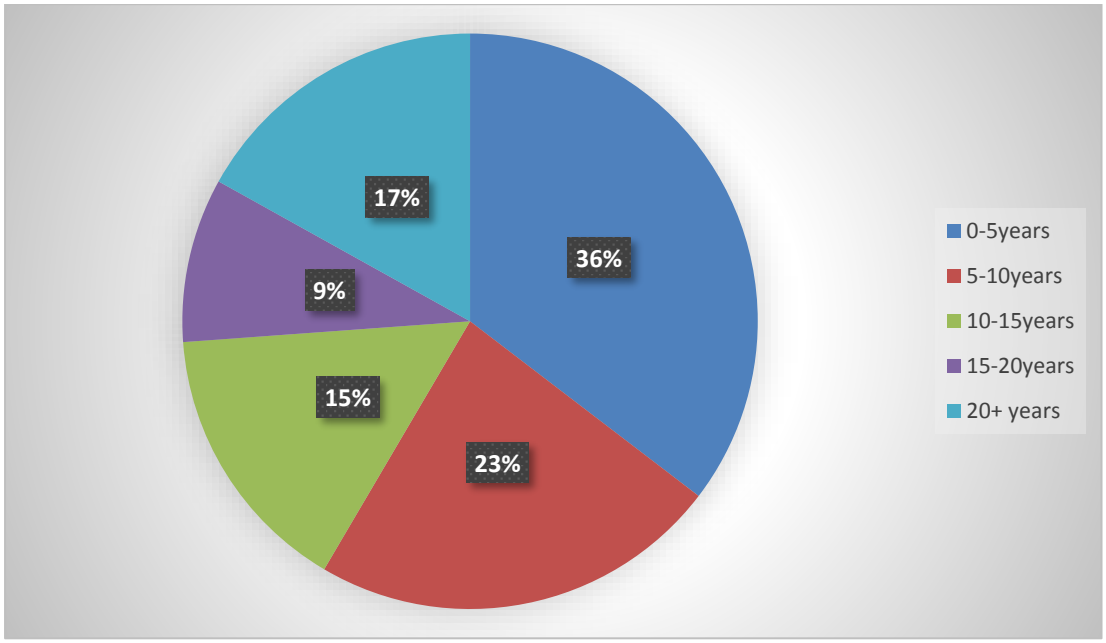


Source: Field Survey, 2019

Residence Characteristics

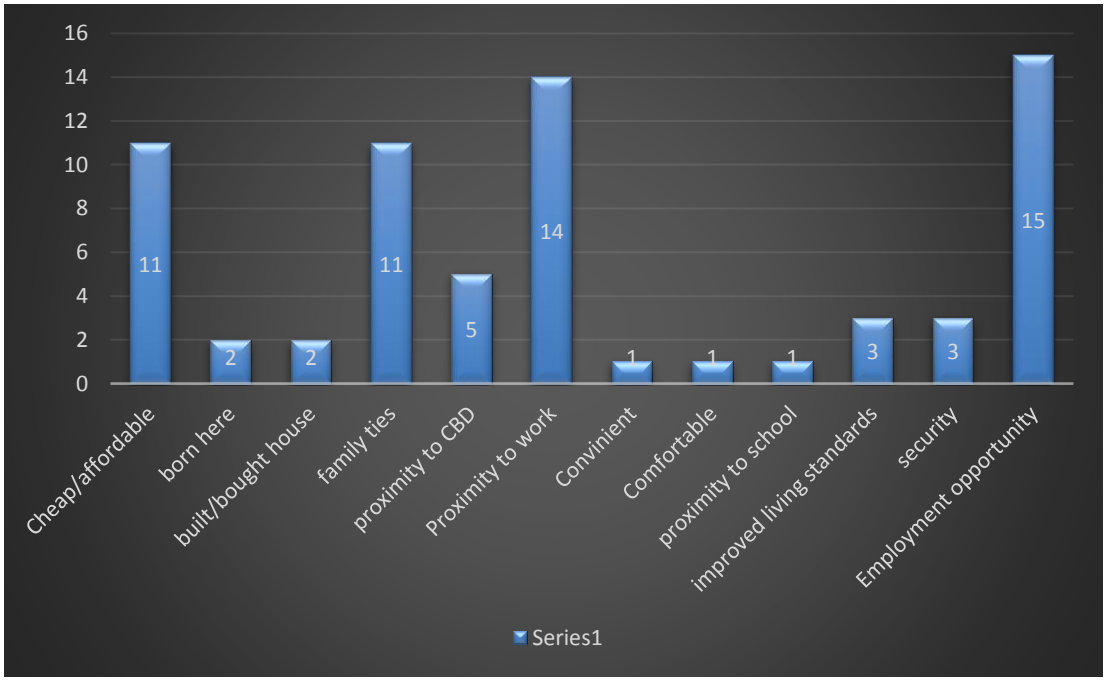
64.6% of the respondent have lived in Umoja 1 Estate for more than 5 years. Their long stay in the area could depict an attachment due to the quality of the neighbourhood.

Chart 4.9: Duration Lived in Umoja Estate



Source: Field Survey, 2019

Bar Graph 4.2: Reasons for Moving to Umoja 1 Estate

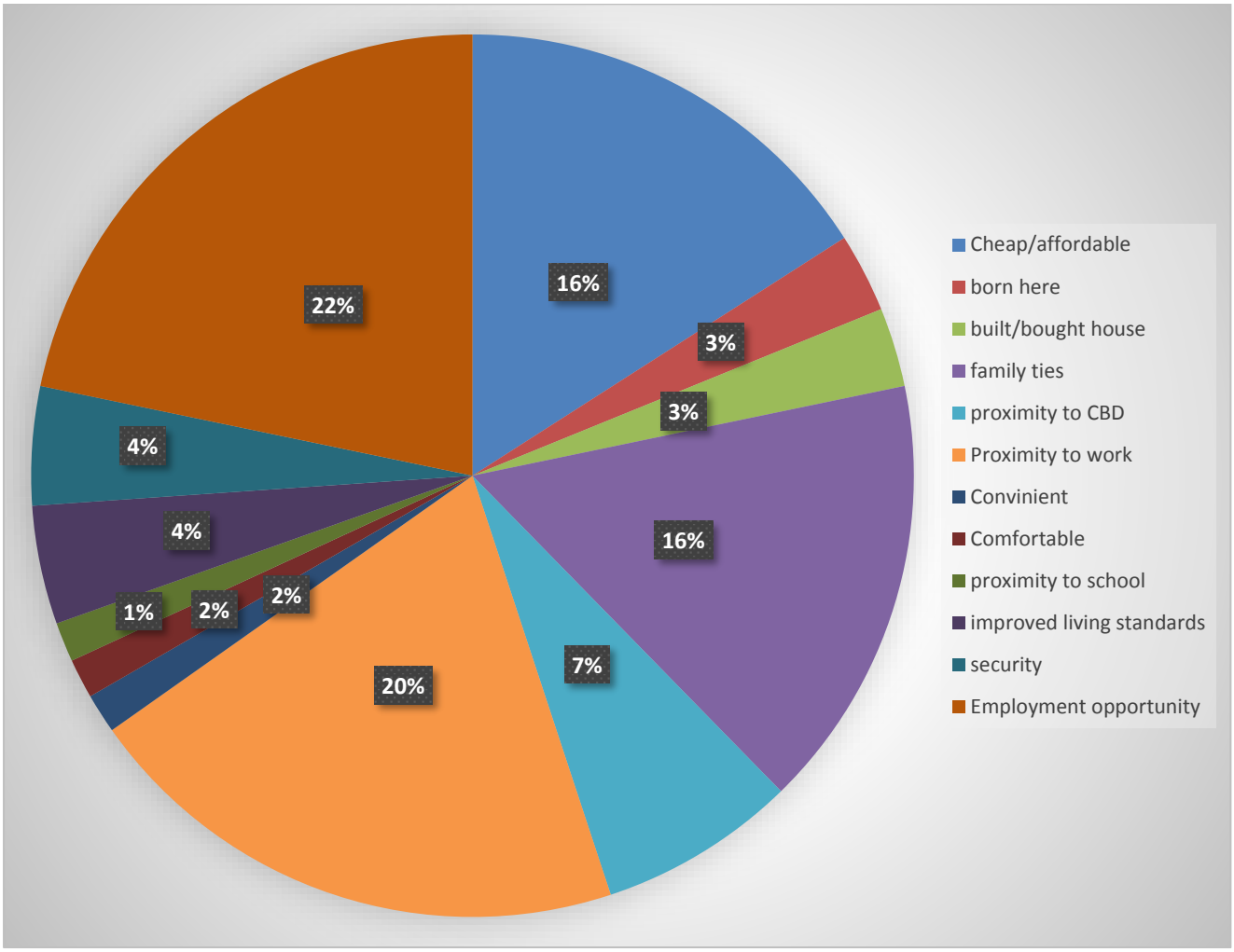


Source: Field Survey, 2019

As presented on the table above, 22% of the respondents attributed for living in Umoja 1 Estate due to availability of employment opportunities. These include opportunities within the estate, in the nearby central Business district and Industrial area. 20% percent of the respondents attributed their stay in Umoja 1 estate because of its proximity to work. One of the respondents, Mwaura who lived in Block D Umoja one Estate, noted that the estate is located conveniently and well connected to Thika Superhighway and the airport through the newly built outering road. He also mentioned that Expansion of Kangundo road was underway, thus improving access and the transport system.

Other reasons for living in Umoja 1 Estate, as stated by the respondents include, Proximity to CBD, cheap and affordable rents and transport expenses, family ties, improved living standards and Security, among others.

Chart 4.10: Reasons for Staying In Umoja 1 Estate



Source: Field Survey 2019

4.4 Physical Environment and Infrastructure Quality

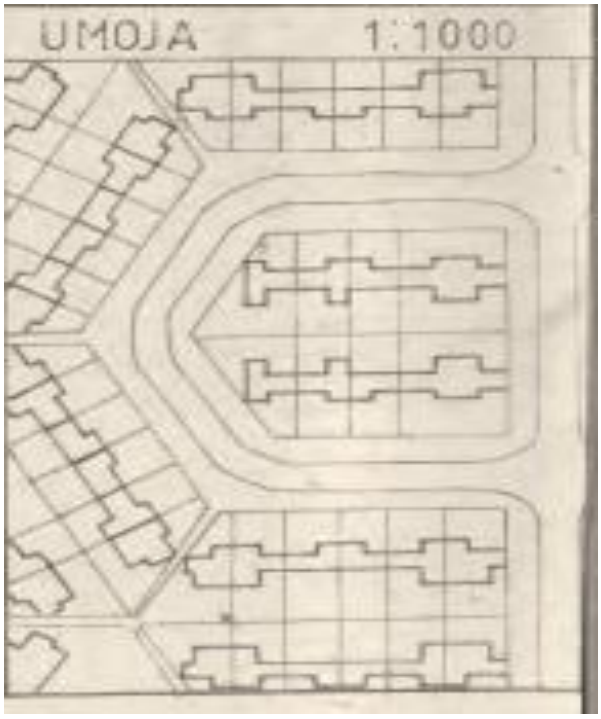
This section studies the physical quality of Umoja 1 Estate in order to examine further into the prevailing conditions of this residential neighbourhood.

4.4.1 Housing Units

Umoja 1 Estate's housing units were initially developed by the government through the site and service scheme with aid from the USAID in the form of a comprehensive scheme and thus adopting the varying type plans, with the various infrastructural facilities put in place, as per the zoning requirements at that time. The housing project could not match the rapid urbanization, even though not fully completed the development of multi storey development came up and thus leading to the loss of the original units that had been built, overstretching and dilapidation of existing infrastructure including roads and water supply.

Umoja 1 estate's housing unit of two and three semidetached houses were almost completed according to the plans, but this is not evident today of Umoja1, 2, 3, and inner core estates, which were to fall under the same plan.

Plate 4.1: Typical plan of the Original Courts in Umoja 1 Estate



Source: Masiga (1975)

Figure 4.1: A Panorama of Traces of the Planned Houses

Source: Field Survey, 2019

Subletting of the expandable spaces was not allowed according to the project policy. The original plot area was meant to hold only one single dwelling unit. Due to population increase and cultural considerations, the policy was revised, and residents were allowed to put up a servant's quarter not more than a quarter larger than the main house which was supposed to cover 50% area of the plot. It was noted that respondents noted that the building process used to extend original houses is substandard as the high-rise building are built fast (are not allowed to cure) and not aesthetically finished on the exterior.

Figure 4.2: Informal Buildings along Way Leaves and Pedestrian Walkways

Source: Field Survey, 2019

Figure 4.3: Pure Residential Apartment

Source: Field Survey, 2019

Figure 4.4: Residential Apartment with shopping facilities at the Ground Level

Source: Field Survey, 2019

Circulation and Road networks

48% of the respondents indicated that pedestrian paths, even though sufficient, were in a bad condition as in the table below. This was evident from the poorly maintained pedestrian paths, with overgrown vegetation, encroachment by street vendors, flooded alleys and some had domestic waste dumped on them.

Figure 4.5: Encroachment of Pedestrian Paths by informal structures at Block D bus stop

Source: Field Survey, 2019

Figure 4.6: Condition of pedestrian paths

Source: Field survey, 2019

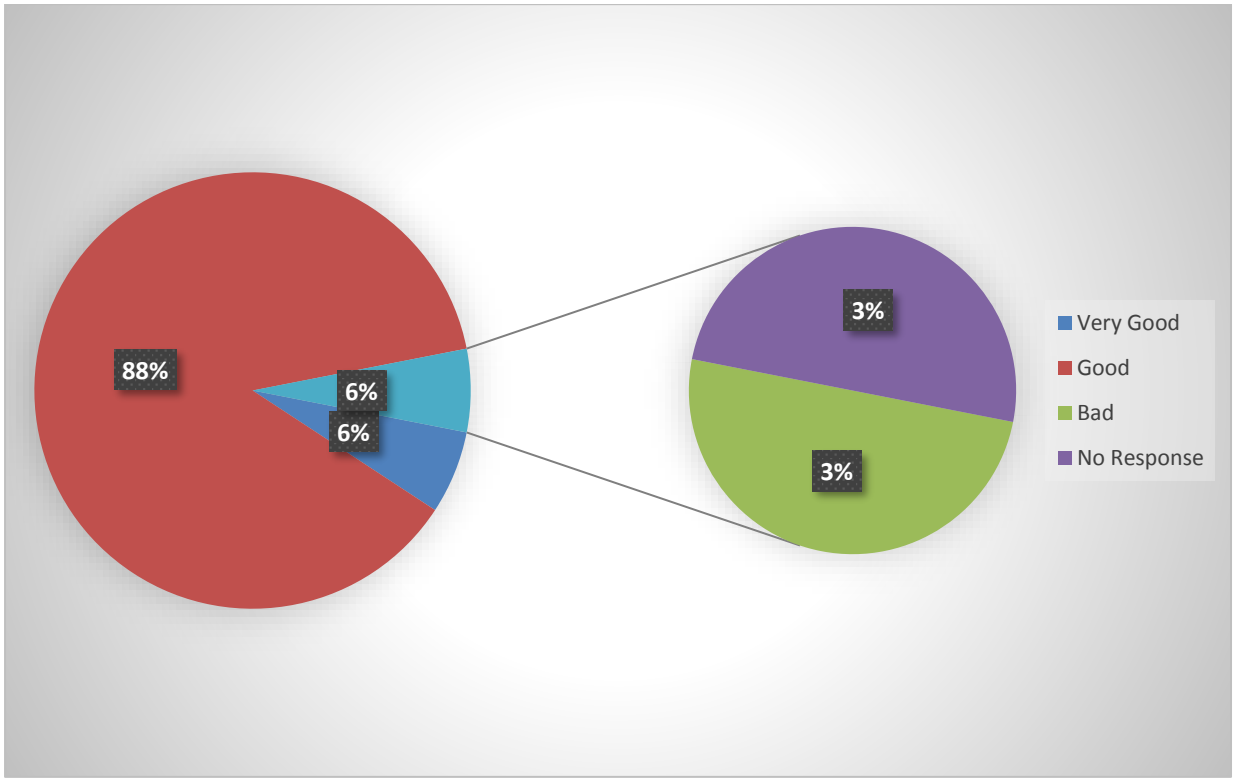
Table 4.4: Condition of Pedestrian Paths and Storm Water Drainage

Condition of Pedestrian Paths			**Condition of Storm Water Drainage**		
	Frequency	**Percentage**		**Frequency**	**Percentage**
Good	26	40	**Good**	30	46.2
Bad	31	47.7	**Bad**	23	35.4
Very bad	6	9.2	**Very Bad**	10	15.4
No Response	2	3.1	**No Response**	2	3.1
Total	65	100	**Total**	65	100

Source: Field Survey, 2019.

The respondents indicated that physical condition of vehicular roads was good but felt that the circulation of vehicles within the estate was poorly managed. This was evident by the traffic experienced along Kangundo road and Moi drive, mostly attributed to matatus picking and dropping passenger along the road instead of doing so along designated bus stops.

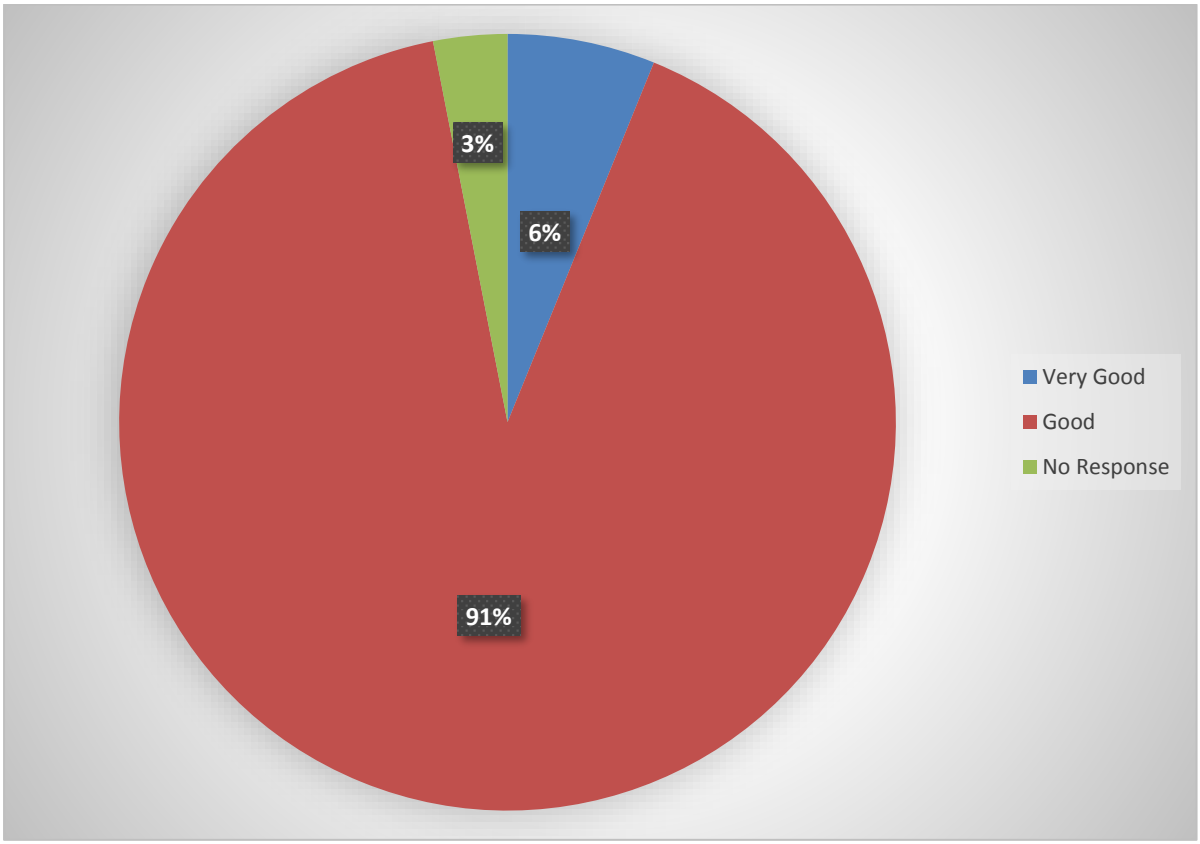
Chart 4.11: Condition of Vehicular Roads



Source: Field Survey, 2019

Street Lighting

Chart 4.12: Condition of Street Lighting



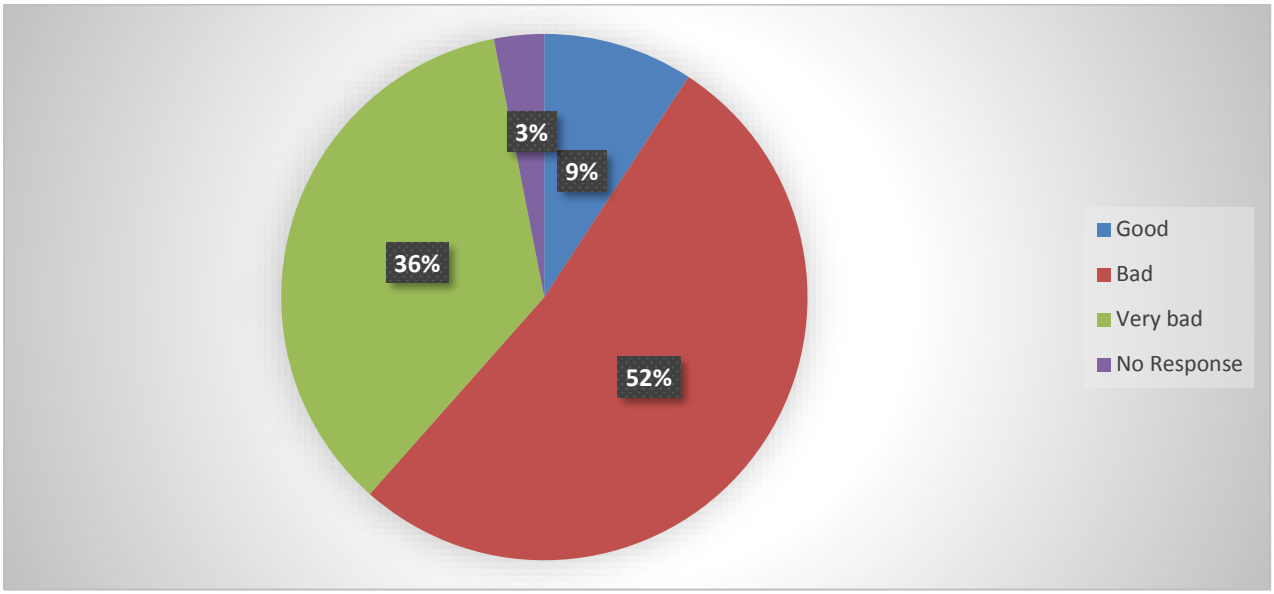
Source: Field Survey, 2019

91% of the respondents felt that the condition of street lighting was good. This was evident by the streetlights along the road and flood lights present in the market area. This was in addition to security lights at the household level that was observed.

Sewer and Wastewater Management

52% of the respondents indicated that the sewer and water management system was bad. 36% indicated that the water and sewerage system was very bad. This was evident from the observations made along the drainage systems and the flooding at various parts of the estate. The respondents attributed this to the mushrooming of high-rise buildings that accommodate so many residents and the sewer system put in place in the 1970s does not match the development.

Chart 4.13: Sewer and Wastewater Management Condition

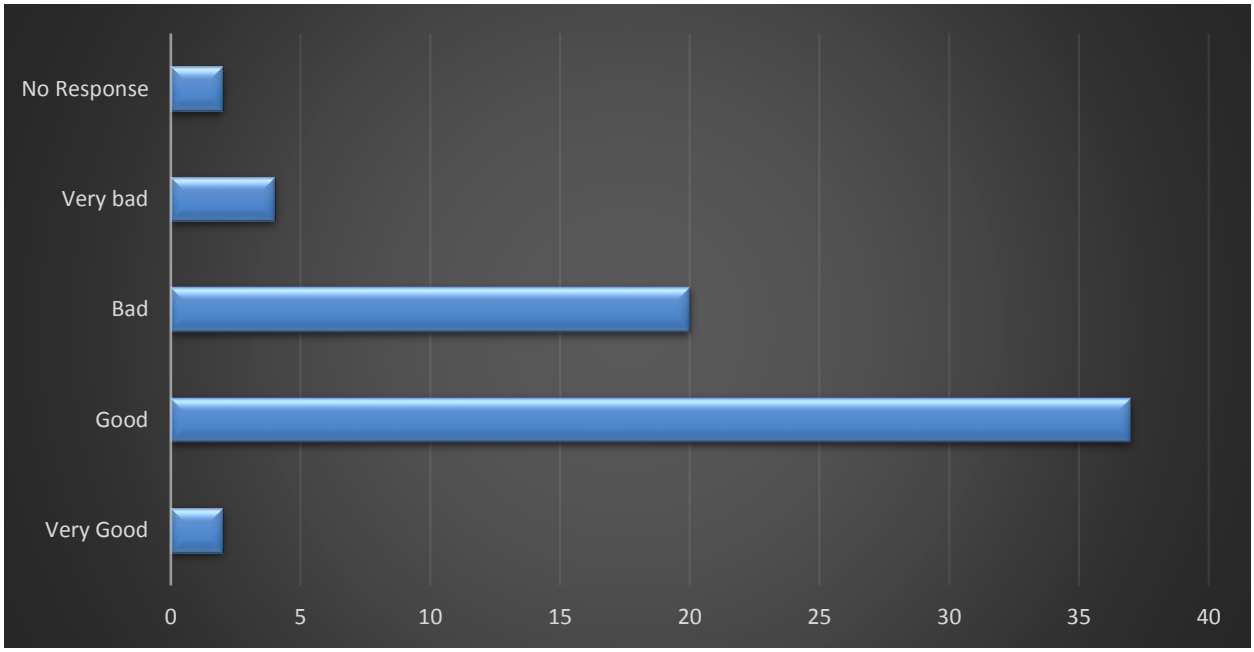


Source: Field Survey, 2019

Solid Waste Disposal

Some residents engage the activities of private garbage collectors for solid waste management who charge them a monthly fee per household Out of the respondents interviewed.

Bar Graph 4.3: Condition of Solid Waste Management



Source: Field Survey, 2019

56% of the respondents appreciated the fact that most of their household solid wastes is disposed of properly by the Youth organisation in the estate. 30% of the respondents viewed the state of solid waste management as bad and 4% as very bad. It was observed however, that there are hardly any disposal bins in public areas and there is no selection and separation of wastes at the household level.

4.5 Social Infrastructure Quality

This section examines the existing nature of the social and community facilities in the residential neighbourhood.

4.5.1 Education Facilities

According to the initial plan, the design provided for education facilities that were meant to serve the estate, depending on the anticipated population. The education facilities present include both public and private nursery schools and kindergartens, primary schools, secondary schools and tertiary institutions that are accessible from the Estate. Some of the primary schools accessible to Umoja 1 Estate include; Umoja day Nursery, Umoja 1 Primary, Unity primary school, Kifaru Primary school, Peter Kibukosya Primary.

4.5.2 Community Facilities

The community facilities present at Umoja 1 Estate include religious facilities such as a P.C.E.A. Umoja church, A.C.K Umoja church, Umoja Catholic Church among other denominations located within or close to the estate.

The estate is mainly served by one commercial center located around Umoja 1 Market. There are also provisions for shopping facilities within the multi storey buildings in the estate. Most businesses are located along the main spine road (Moi Drive) which include green grocers, beauty and hair salons, bars and restaurants, carpentry, welding and fabrication among other retail outlets.

Umoja 1 Estate is served mainly by Umoja dispensary ran by Nairobi City county and other private clinics available within the estate.

There is no provision for public spaces within the estate. It was observed that children play along private roads, and Primary school playgrounds, which are open to the public during weekends and public holidays. There however a need to provide for such spaces that are readily available to the public for their vitality and wellbeing.

4.6 Quality of Transport and Infrastructure Services

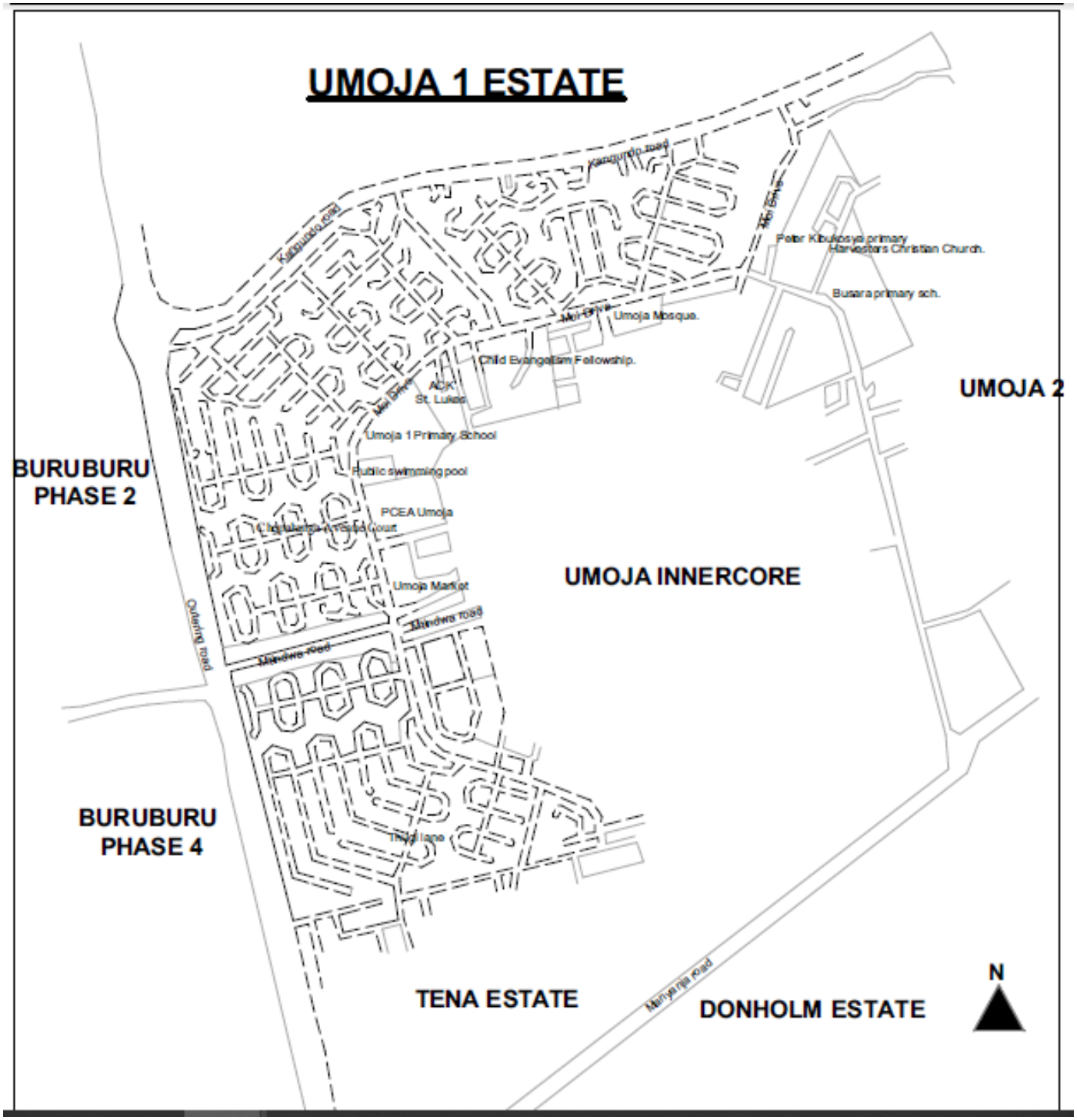
This subsection includes the identification of vehicular and pedestrian circulation, electricity and street lighting, provision of water, sewerage and storm water drainage services, the management of solid waste and the provision of firefighting facilities.

4.6.1 Quality of The Transport System

Moi Drive is the main spine road that connects Umoja one to Outering road, Kangundo road and other estates including Umoja Innercore and Umoja 2 Estates. There are also access roads and streets within the estate. The transport system was laid according to the initial plan, thus quite satisfactory. The estate is easily accessible to public transport mainly through public vehicles (Matatus and buses) especially those that ply the Eastlands route through Jogoo road to Kangundo road and Moi drive.

However, respondents felt that the streets within the estate were not well maintained and had potholes and were prone to flooding during the rainy seasons. There is also no provision for NMTs and where this has been provided, it has been encroached by informal traders. This also causes traffic jams along the Moi drive, especially at the Umoja Market Junction due to the inadequacy of bus parking facilities to pick and drop off passengers.

Map 4.1: Vehicular Transport in Umoja 1 Estate



Source: Field Survey, 2019

4.6.2 Electricity and Streetlights Provision

The quality of street lighting was perceived to be adequate, as there are streetlights all along the spine roads and access roads. There is also provision of flood lights at certain areas such as the Umoja 1 market.

4.6.3 Water and Sewerage Services

The houses are connected to tap water, but the condition is fairy poor. Individual houses have access to tap water two days a week, but sometimes the water pressure from the taps in too low and the residents must purchase water constantly from 'mkokoteni' vendors, for daily household needs. Some residents have invested in storage tanks and water pumps to partly mitigate the problem.

The inadequacy of water supply and its erratic frequency lead to unhygienic and unsanitary conditions. The inadequacy of the water supply could be attributed to the growth and erection of multi-storey buildings, which do not match the initial water pressure meant for the bungalows.

Bar Graph 4.4: Water Vendors Evident in Umoja 1 Estate

Source: Field Survey, 2019

The estate is well connected to the county's main sewer lines that are occasionally serviced and maintained.

4.6.4 Storm Water Drainage

The sewer and drainage channels are well installed that connect to the county council mains. However, open drains along the courtyards are frequently blocked, especially during the rainy

Bar Graph 4.5: Covered 'open' drains and poorly maintained streets

Source: Field Survey 2019

season due to vegetation overgrowth, over siltation and erection of kiosks over the drain channels. The blockage also is attributed to poor maintained of the drainage channels. The blockage also could be attributed to the increased capacity of the generated sewage as the sanitary lanes were constructed to hold a certain amount of sewage generated by the target population of 3000 housing units.

4.6.5 Solid Waste Management

The quality of managing solid waste is fair. This is attributed to the local arrangements made by community-based organized youth group and private entrepreneurs who have been contracted to provide garbage collection services. Households pay monthly garbage collection fees averaging Kes.150/-.

4.6.6 Firefighting Facilities

There are no firefighting facilities present in the estate. The estate however relies on the services provided by the County Council of Nairobi and other private security companies including such as Securex ltd, G4S, and KK security (fire safety department).

4.7 Quality of the Social Environment

This section examines the social environment in Umoja 1 residential neighbourhood, in relation to community ties(social cohesion), social inclusion and social emporwement.

4.7.1 Community Ties (Social Cohesion)

Respondents in Umoja 1 Estate were asked to state how many people they regarded as family friends in their residential environment. This survey was to establish the type of relationship that exists between the residents in Umoja 1 residential neighbourhood. Family friends were defined as those who the members of the family can go for whichever help that is needed. This friendship also reflected trust among the friendly families. It was established that most of the residents have general friends in the neighbourhood. These are the people they could talk about general things as well as personal matters.

Over 50% of the respondents had 1 to 5 friends in the estate while about 2 % had over 10 friends. However, the definition of a friend in this context may have to be taken with caution because not all the respondents could interpret this concept clearly. What the findings show, is that there is at least some positive relationships between the residents.

4.7.2 Social activities (Social Inclusion)

20% of the respondents are involved in community activities that bring people together, which include religious gatherings, self-help and other community-based groups. It was observed that the older residents of Umoja 1 estate have stronger community and social ties as compared to the younger residents who have lived in the estate for less than 5 years.

4.8 Emerging Issues

Summary of key emerging issues include

Table 4.5 : Summary of Key Emerging Issues

Quality Indicator	Emerging Issues
Physical	- Population growth - Densification - Change of Housing typologies - Pressure on physical and social Infrastructure - Dumping of solid wastes along roads and open drains - Erection of unapproved builds along pedestrian paths and public areas - Diversion of grey and black water into drainage swales

	- Flooding - No designated bus bays and bus park - Poor maintenance of vehicular roads - Poor Aesthetics
Social	- Poor community ties - No social hall - Lack of public open spaces - In adequate public recreational facilities
Economic	- Informal businesses
Institutional	- Laxity of NCA and NCC on ensuring development control compliance on ground - Poor Community and stakeholder participation

Source: Field Survey, 2019

4.9 Hypothesis Testing

The Hypothesis testing sought to achieve objective 3 on coming up with a criterion for measuring quality. In this study, the Chi-square model and contingency tables were used to carry out significance testing. Each of the hypotheses was tested in two stages as shown in tables below.

4.9.1 Umoja 1 Estate residents' perception of Physical Quality

The first specific hypothesis was tested, and the results obtained are as shown below;

H_o: There is no significant correlation between the physical quality of an urban residential neighbourhood and the residents' satisfaction.

Table 4.6: Observed Frequencies (O_i) on Perception of Physical Quality

	Current physical structure	Original physical structure	Total
Perception of satisfaction with physical quality	40	5	45
Perception of dissatisfaction with physical quality	7	13	20
Total	47	18	65

Source: Field Survey, 2019

Table 4.7: Calculations of expected frequencies (Ei)

	Observed Frequencies (O_i)	Calculations	Expected frequencies (E_j)
1	40	$\frac{47x45}{65} = \frac{2115}{65} = 32.54$	32.54
2	7	$\frac{47x20}{65} = \frac{940}{65} = 14.46$	14.46
3	5	$\frac{18x45}{65} = \frac{810}{65} = 12.46$	12.46
4	13	$\frac{18x20}{65} = \frac{360}{65} = 5.54$	5.54

Source: Field Survey, 2019

Table 4.8: Expected Frequencies (Ei) on Perception of Physical quality

	Current physical structure	Original physical structure	Total
Perception of satisfaction with physical quality	32.54 (1.71)	12.46 (4.47)	45
Perception of dissatisfaction with physical quality	14.46 (3.85)	5.54 (10.05)	20
Total	47	18	65

Source: Field Survey, 2019

Calculation of the X^2 value

$X^2 = \sum_{i=1}^{n} \left(\frac{Oi - Ej)2}{Ej} \right)$ Chi Square model

$= \frac{7.46^2}{32.54} + \frac{-7.46^2}{14.46} + \frac{-7.46^2}{12.46} + \frac{7.46^2}{5.54}$

= 2.0943+3.8487+ 4.4664+ 10.0454

X^2= 20.6524

P value is 0.000007

Taking the critical value as 0.05 and the (df) as 1, the result is significant as $p < 0.05$

The Chi-Square statistic with Yates correction is 17.4798. The P value is 0.000029. Significant at $p<0.05$

There is a strong evidence against the null hypothesis (Ho).

4.9.2 Umoja 1 Estate residents' perception of Environmental Quality

The specific null hypothesis tested stated as follows;

H_o: There is no significant correlation between the Environmental quality of an urban residential neighbourhood and the residents' satisfaction.

Table 4.9: Observed Frequencies (O_i) on perception of Environmental Quality

	Current physical structure	Original physical structure	Total
Perception of -ve consequences on Environmental quality	32	18	50
Perception of +ve consequences on Environmental quality	5	10	15
Total	37	28	65

Source: Field Survey, 2019

Table 4.10: Calculations of Expected Frequencies (Ei)

	Observed Frequencies (O_i)	Calculations	Expected frequencies (E_j)
1	32	$\frac{37x50}{65} = \frac{1850}{65} = 28.46$	28.46
2	5	$\frac{37x15}{65} = \frac{555}{65} = 8.54$	8.54
3	18	$\frac{28x50}{65} = \frac{1400}{65} = 21.54$	21.54
4	10	$\frac{28x15}{65} = \frac{420}{65} = 6.46$	6.46

Source: Field Survey, 2019

Table 4.11: Expected Frequencies (Ei) on perception of Environmental Quality

	Current physical structure	Original physical structure	Total
Perception of -ve consequences on Environmental quality	28.46 (0.44)	21.54 (0.58)	45
Perception of +ve consequences on Environmental quality	8.54 (1.47)	6.46 (1.94)	20
Total	37	28	65

Source: Field Survey, 2019

Calculation of the X^2 value

$$X^2 = \sum_{i=1}^{n} \left(\frac{Oi - Ej)2}{Ej} \right)$$ Chi Square model

$$= \frac{3.54^2}{28.46} + \frac{-3.54^2}{8.54} + \frac{-3.54^2}{21.54} + \frac{3.54^2}{6.46}$$

$$= 0.4403 + 1.4674 + 0.5818 + 1.9399$$

$$= 4.4294$$

The P Value is 0.35409. The result is significant at $p<0.05$.

4.9.3 Umoja 1 residents' Perception on Economic quality

The specific hypotheses tested stated; **H_o**: There is no significant correlation between the Economic quality of an urban residential neighbourhood and the residents' satisfaction.

Table 4.12: Observed Frequencies (Oi) on perception of Economic quality

	Transformed physical structure	Original physical structure	Total
Perception of -ve consequences on Economic quality	6	11	17
Perception of +ve consequences on Economic quality	30	18	48
Total	36	29	65

Source: Field Survey

Table 4.13: Calculation of expected frequencies (Ei)

	Observed Frequencies (O_i)	Calculations	Expected frequencies (E_j)
1	6	$\frac{36x17}{65} = \frac{612}{65} = 9.42$	9.42
2	30	$\frac{36x48}{65} = \frac{1728}{65} = 26.58$	26.58
3	11	$\frac{29x17}{65} = \frac{493}{65} = 7.58$	7.58
4	18	$\frac{29x48}{65} = \frac{1392}{65} = 21.42$	21.42

Source: Field Survey

Table 4.14: Expected frequencies (Ei) on Perception of Economic quality

	Current physical structure	Original physical structure	Total
Perception of -ve consequences on Economic quality	9.42	7.58	17
Perception of +ve consequences on Economic quality	26.58	21.42	48
Total	36	29	65

Source Field Survey, 2019

Calculation of the X^2 value

$$X^2=\sum_{i=1}^{n}\left(\frac{Oi-Ej)2}{Ej}\right)$$ Chi Square model

$$= -\frac{3.42^2}{9.42} + \frac{3.42^2}{26.58} + \frac{3.42^2}{7.58} + \frac{-3.42^2}{21.42}$$

$$= 1.2377 + 0.4400 + 1.5430 + 0.5461$$

$$= 3.76668$$

The result is not significant at $p<0.05$. The Chi-square statistic with Yates correction is 2.7399. The P-value is 0.097868, thus not significant at $p<0.05$.

4.9.4 Umoja 1 Estate residents' perception on social Quality

The specific hypotheses tested stated; **H_o**: There is no significant correlation between the Social quality of an urban residential neighbourhood and the residents' satisfaction.

Table 4.15: Observed frequencies on perception of Social quality (Oi)

	Current Physical Structure	Original Physical Structure	Total
Perception of -ve effects on Social Quality	39	6	45
Perception of +ve effects on Social Quality	6	14	20
Total	45	20	65

Source: Field Survey, 2019

Using the Chi- Square calculator, the following were the results

Table 4.16: Expected frequencies on Perception of Social Quality (Ei)

	Current Physical Structure	Original Physical Structure	Total
Perception of -ve effects on Social Quality	31.15 (1.98)	13.85 (4.45)	45
Perception of +ve effects on Social Quality	13.85 (4.45)	6.15 (10)	20
Total	45	20	

Source: Field Survey, 2019

The Chi-square statistic is 20.8722. The P-value is 0.000005. This result is significant at $p<0.05$. With the Yates correction, the chi-square statistic is 18.2968, the p-value s 0.000019, thus the result is significant at $p<0.05$.

4.9.5 Discussion

The calculated Chi-square values vis a vis the P value, all set at $\alpha = 0.05$ and the degree of freedom (df) = 1. It was noted that both hypotheses tested were rejected, but one had an almost perfect relationship. The most serious phenomenon that is affecting the quality of Umoja 1 Residential neighbourhood arises from the physical transformation of the Estate from the original plans. 99% of the streets meant for pedestrians, out of the sample's courts observed, had extensions of informal business. 50% of the residents interviewed mentioned that they moved into Umoja because of the available of employment and job opportunities, coupled with affordable rents and costs of living. On the other hand, the residents were dissatisfied with the physical quality of the area.

CHAPTER FIVE: ENHANCING QUALITY IN UMOJA 1 ESTATE

5.1 Introduction

This chapter highlights the planning implications and overall framework for enhancing the quality of a residential neighbourhood. This section envisions the future of Umoja 1 residential neighbourhood by giving possible scenarios in carrying out urban renewal and redevelopment as a possible instrument for enhancing the quality of a residential neighbourhood.

5.2 Summary of findings

In reference to Chapter Two, the major challenge facing Umoja 1 residential neighbourhood is the poor development change of the original housing typology, which has been replaced by haphazard residential developments. This and other challenges highlighted in the chapter arise due ignorance by developers to adhere to building regulations, decline in public and social amenities, laxity of the NCC in controlling illegal developments in the estate, increase in housing demand and occupancy rate, as well temporary structures for informal business activities.

The effects of these are: erection of illegal and uncontrolled developments with poor and unsafe housing, overstretching of the existing infrastructural facilities, poor environmental performance, increased dumping of solid wastes and reduction of children play areas, increased insecurity due to the emergence of informal business activities and buildings.

Through stakeholder's involvement including Nairobi City County, area residents, member of county assembly and member of parliament as well as the relevant policy review of the NCC By-laws, Physical Planning regulations and guides, various interventions can be achieved. These includes: partial redevelopment of the illegal housing units, thorough enforcement and development control measures to be applied, formalization and sensitization programmes and projects to be introduced by the County government, establishment of police posts and community policing measures in the area and upgrading of the existing infrastructural facilities in the area.

Chapter Three identified vital models that should be incorporated in the planning of sustainable neighborhoods which include well designed and built physical developments, environmental sensitivity, connectivity and economic and social oriented neighborhood.

Some of the crucial findings include the following;

a. Increase in development density of housing units.

Development density in the area has been increased due to the emergence of multi storey residential and commercial houses that go up to 6 floors on plots that were meant for the construction of single dwelling bungalows.

b. Uncontrolled housing developments

Some developments in the Estate are unauthorized and are built illegally without obtaining the required approvals from the Nairobi City County or the National Construction Authority. The result of the above has been contributed by the rising population that does not match the housing provided.

c. Sprouting of illegal/informal commercial/shopping facilities

Street trading and informal commercial activities are evident in the neighbourhood, with structure such as Retail kiosks, green grocers, M-pesa, pubs and food restaurants, timber yards, charcoal vendors and garages among other businesses having been constructed on road reserves and spaces meant for the public and without any approval from the Nairobi City County nor the National Construction Authority (NCA).

d. Degradation and poor maintenance of the existing infrastructural facilities

Umoja 1 Estate has got infrastructural facilities that are functional including sewer system, tarmacked roads, storm water drainage channels, domestic water supply system, electricity supply lines and street lighting. But these facilities are becoming degraded due to poor maintenance and overstretching due to the increase in population and uncontrolled utilization.

e. Changes in house typology;

There has been rapid development of houses, mushrooming of multi storey building and change in the kind of building design, and the factors contributing to these changes were marked as population increase, high demand for housing and scarcity of land. Some of the houses are unapproved by the City Council or the NCA.

f. Poor infrastructure and services;

The Infrastructure facilities is overwhelmed by the rapid population increase which leads to inconsistent water supply and sometimes water shortages, poor waste management services leading to sewer blockages, poor drainage systems especially during rainy seasons where water

run offs on pedestrian paths and vehicular roads is frequent. The residents have been forced to have storage water tanks and electric water pumps to have additional storage to curb water shortages.

g. Poor Aesthetics and scarce greenery.

There was an observation of poorly maintained streets and public areas. The open spaces have drastically reduced due to building extensions. The vertical extensions are also poorly finished, there is poor ventilation and lighting, and other problems associated such as theft and thuggery have increased in a commensurate rate. The dwindled private open spaces have discouraged social interactions among the residents, thus leading to poor social interaction among the residents. It was observed that even next door neighbours in the extended apartments hardly know each other. Recreation and sports facilities and Open spaces accessible to the public all days of the week**.**

h. Traffic mix;

The traffic mix is not NMT friendly and does not favour people with special needs. There are no designated bus parks and the bus bays are not sufficient as demand dictates. This has led to traffic congestion, especially in the peak hours.

5.3 Cause-Effect Analysis of Problems Identified

The factors to the above problems were attributed to the following;

a. Increase in Population

Increase in population creates a demand for housing, therefore leads to increase in housing density, thus more occupants per unit area of land. Umoja 1 Estate was planned for single dwelling bungalows to accommodate between 2 to 6 people per dwelling unit. This density has thus changed over time and can accommodate approximately 100persons per residential units (apartment).

With this increase in density, it is commensurate to the overstretching the capacity of existing infrastructural facilities such as water, pipes, drainage channels and sewer lines. Increased demand for water cannot be met by the existing pipe system, which has resulted in water rationing and shortages. Other problems attributed to increase in population include pipe bursts, blockages in sewer lines and flooding.

b. Role of Nairobi City Planners

Uncontrolled development can be attributed to laxity in the county council of Nairobi and National construction Authority in controlling upcoming developments. The CNN UNCER

Cap 286 of the Physical planning Act is mandated to oversee and control developments within the county of Nairobi in order to ensure that all building that come up are in sync with order. Control measures include regular inspections and monitoring, enforcement and compliance and approval of development. Some developments have plan approvals from the CNN, but the construction is done contrary to the approved drawings. There laxity from the CNN and NCA officials to approve buildings and inspect the upcoming developments on the area.

As observed from (Mwangi, June 1988), the planning process of the project excluded the city planners from the formal plan implementation stage. This omission was detrimental, as the effects are felt to date.

c. Umoja 1 Residents

These problems can also be attributed to ignorance by property owners and residents in following development regulations. The process of building approval is deemed cumbersome and costly to the developer; thus, they chose to avoid the whole process of approval, either through shortcuts or bribery. Ignorance by property owners and residents has resulted to Sprouting of Illegal and informal businesses.

With the increased human population and increase in development densities in the area, it has been realized that the existing infrastructural facilities needs to be properly maintained and upgraded to enable it to effectively handle the capacity of the population increase and housing densities. It is the mandate of the Nairobi City County to ensure that drainage channels and road carriageways are properly cleaned and maintained; sewer system and domestic water supply are provided to residents in a satisfactory manner in conjunction with the Nairobi Water Company ensuring that there is adequate water supply to residents.

Spaces that were reserved as pedestrian paths and way leaves have been encroached and used up to erect illegal structures, that include retail shops, Retail kiosks, green grocers, M-pesa, pubs and food restaurants, timber yards, charcoal vendors and garages among other businesses.

5.4 Alternative Future Policy Approaches for Planning Umoja 1 Residential

Emerging issues from the analysis indicate that the quality of Umoja 1 Estate needs to be improved. Sustainable urban renewal is necessary to enhance the physical, economical, transport, social and institutional quality in Umoja 1 Estate

5.4.1 Sustainable Neighbourhoods

Components of sustainable communities as discussed in the Literature review Chapter, are active, inclusive and safe, well run, environmentally sensitive, well designed and built, well

connected, thriving, well served and fair for everyone. Sustainable communities embody the principle of sustainable development. Sustainable communities balance and integrate the social, economic and environmental components of their community, they meet the needs of existing and future generations, they respect the needs of other communities in the wider region or internationally also to make their communities sustainable.

The principles such as walk ability, connectivity, mixed use and diversity, mixed housing, quality architecture and urban design, increased density and sustainability and the guiding concepts such as well designed and built form, environmental sensitivity, well connected and economic thrive give us a clear picture on the planning process towards enhancing the quality of Umoja 1 Estate.

5.5 Urban Renewal and Redevelopment as An Instrument for Enhancing Quality In A Residential Neighbourhood

Urban renewal is a program of land development in areas of moderate to high density urban land use. It involves the relocation of business, the demolition of structures, the relocation of people and the use of government purchase of property for public purpose), as a legal instrument to take private property for city-initiated development projects. Some of the possible alternatives to improving the quality of Umoja 1 Estate include redevelopment, conservation, rehabilitation or an integrated option.

5.5.1 Nil Intervention

This option does not recognize the problems of the residential neighbourhoods already highlighted in the preceding sections. As a possible scenario, it assumes that the present socio-economic, physical and environmental shortcomings are acceptable to the local community. It assumes that a dead end exists making them to do nothing about the existing situation or that a feasible financial framework is absent to revitalize the residential neighbourhood. For this reason, no serious measures will be undertaken. The status quo will, therefore, be allowed to prevail upon any planning intervention measures. The results of this research indicate that a paltry 27.7 per cent of the residents cited the need to retain the units as they are without any alterations at all.
In the short-term period, the residential neighbourhoods will continue to remain a very low-density but still highly overcrowded island with very close proximity to the Central Business District and the Industrial Area. This will present an inconsistency between underutilized prime land in an inner city low-income residential neighbourhood and shortage of affordable residential land for the rapidly growing population of the urban poor. The growing

population arising from unprecedented rates of urbanization and the dynamic demographic and socio-economic trends will result in residents erecting semi-permanent structures to accommodate their households or to undertake informal economic activities in total disregard of any planning standards and regulations. The emerging human settlement will be haphazardly and spontaneously developed without any authorization from the NCC and without any legal rights.

In the long-term period, the requirement for continuous and rapid response to the enormous demand by the urban poor to supply low-cost housing will largely remain unmet. This will effectively leave the urban poor to continue to provide their own housing. This unplanned housing will be unmatched by adequate supply of basic infrastructure services and community facilities. The sporadic growth of the residential neighbourhoods with total neglect by the policy makers and technical experts will culminate in high-density squalid tenements characterized by miserable living conditions; far-reaching ecological conflicts between man and his habitat and it will eventually become inhabitable. The social environment will persistently degenerate

The spontaneous development of semi-permanent structures will be met by simultaneous diminishing supply and under provision of basic social and community facilities, infrastructure services such as water supply and storm water drainage, sanitation facilities and adequate solid waste management. The entire urban poor population in these residential neighbourhoods will be prone to periodic infections, chronic diseases and parasitic infestations, which are the main characteristics of unplanned settlements.

The deteriorating standards of living will continue to elicit products of the weak institutional framework, failed policies, bad governance, resource mismanagement and fundamental lack of political goodwill. Incessant neighbourhood agitations will characterize resistances towards the increase of house rents. The interests of the tenants against further rent increase will be strongly supported by the area members of Parliament and councilors. There will, therefore, be no imminent threats to the existing tenants since the rents will remain stable without any substantial increments.

The social and economic quality of the households will retrogress as a result of diminishing incomes and the inadequacy of employment areas. This economic degeneration will cause poverty in the entire residential neighbourhoods to spirally

increase and afflict all and sundry. The vulnerable groups, mainly retrenchees, school dropouts and housewives, constitute most of the unemployed people in the active working-age group. They will find an unregulated informal sector within a restrictive framework for growth, which is unprepared to absorb them into gainful employment. The existing management-by-crisis maintenance of the residential neighbourhoods adopted by the landowners of public rental housing will continue to prevail. The low rents accrued will not make any justification for the landowners to make any appreciable increase in the amount of funds allocated to finance any renovation and general improvement works. This overall dysfunctional rent market and unresponsive financial system to enable an adequate maintenance of the physical fabric will steadfastly lead to dilapidation of the aggregate residential neighbourhoods.

In the long-term period, the total built and natural environment of the residential neighbourhoods will eventually become un-maintainable, un-habitable and with pronounced accents of environmental degradation. The social and economic environment will tremendously degenerate and evince glaring manifestations of deep-rooted urban poverty reminiscent of 'slums' and/or unplanned informal settlements. The overall image of the city will be an eyesore and the urban community will certainly incur unprecedented latent social costs.

5.5.2 Redevelopment Approach

The study examines the possibility of redevelopment of Umoja 1 estate. This would comprise of demolition of unauthorized buildings, It would also include re-use of cleared land inorder to implement new projects that abide by the current zoning requirements of the area. This is the only solution for providing comfort and safety for residents of Umoja 1 Estate. From the findings, the existence of encroachment on public spaces such as buildings constructed on sewer lines, road reserves, and open plays grounds, as well as unapproved buildings that are not in sync with the building code, would be demolished or removed.

The positive impact of this alternative would lead to controlled housing development, control in use of land meant for the public and amenities and proper participatory planning.

The negative impact however of this alternative would reduce the housing stock which would not meet the demand for the increasing population in the area. It would also have a negative

impact on social and community ties. This alternative is also costly, and it would call for demolitions, relocation and planning.

5.5.3 Rehabilitation and Conservation Approaches

The study also considers the possibility of rehabilitating and conserving Umoja 1 estate. Rehabilitation which is also known as conservation and preservation will be based on preserving, repairing and restoring the environment of the existing estate. This will be the result of the need to improve existing buildings for new condition of use and formalizing them through a program adopted by the Nairobi City County as regularization program.

This option includes structural repairs, painting, upgrading mechanical systems which eventually leads to the physical alterations on the buildings such as alterations and additions, expansion of parking spaces and measures to comply with temporary health and safety requirements, and changes and extension of use. Rehabilitation could take several forms such as restoration, remodeling, stabilization and reconstruction.

5.5.4 Evaluation of and Choice of Urban Renewal Approaches

The options described above both have advantages and disadvantages. A critical analysis therefore is crucial to choose the best renewal alternative. The first option which is Nil Intervention had the advantage of retaining the status quo of the estate and it is cheap with regards to cost. It however has many limitations of encouraging informality, encouraging social degeneration, cause health problems, diminishing incomes, cultural maladjustments and an overall management crisis of the neighbourhood.

The second option which is total redevelopment has a number of advantages and so adopting it can help developers to: optimize on land use, provide a mixed land use structure, control on development and thus adopting a common housing character of the area that allows for a satisfactory utilization of infrastructure. Disadvantages will include high costs of demolition and planning, destruction of existing housing stock, destruction of community and social systems and high environmental costs among others. The second option also has its own advantages such as preservation of existing housing stock, community participation and awareness, reduction in costs of demolition by the government or county council. Its disadvantages will include technical difficulty in research work, maintaining of unstable and unsafe buildings which have negative impacts to the residents and the environment.

Option three entails merging the positive elements of option one and two and coming up with an integrated approach to solve the problem in a sustainable manner. Since not all the buildings

in Umoja 1 neighbourhood are unauthorized, then this option can be used to formalize those that can be approved, demolish those that are completely unsafe and unstable for human habitation, and conserve, renovate and repair the approved ones and possibly adopt a comprehensive approval of buildings depending on the common residential character of that area.

5.5.5 Integrated Approach

The study also considers the redevelopment of some sections of Umoja1 Estate and rehabilitation of other sections of the same estate.

5.6 Organization and Management of Urban Renewal

The study recommends an integrated approach, among other alternative strategies, as it allows for the combination of rehabilitation, densification of the low-density housing, and redevelopment of decayed areas. The integrated approach has an additional benefit of phasing the development by systematic application of each approach. This allows for flexible project implementation effectively, as it enables the preservation of traditionally built and natural environment while achieving respectable densities in Umoja 1 residential neighbourhood.

The study investigated the organization and management of the integrated approached, based on its higher score on its rank among other alternatives. Its therefore regarded as the preferred policy option in the vision of the future of enhancing the quality of Umoja 1 Residential Neighbourhood. There is therefore a need to have adequate organization and management in order to ensure efficient and effective administrative coordination of all the various institutions. Guidelines must be laid to enable a legal and regulatory framework, and a feasible framework for financing the integrated approach programme. There is also need for designing an appropriate methodology of continuously monitoring the overall planning process.

5.6.1 Institutional Framework

It is of utmost importance to come up with a framework that will ensure the employment of the integrated approach. The recommended institutional framework addresses the shortcomings of the existing framework. The framework is divided into three major levels that includes, locals, County Government and National Government.

There is need for the mentioned institutions value and to be committed towards efforts of renewing Umoja 1 Residential Neighbourhood, in order to improve and maintain its quality, as it forms the basis of the planning unit. A stakeholder partnership approach has been employed

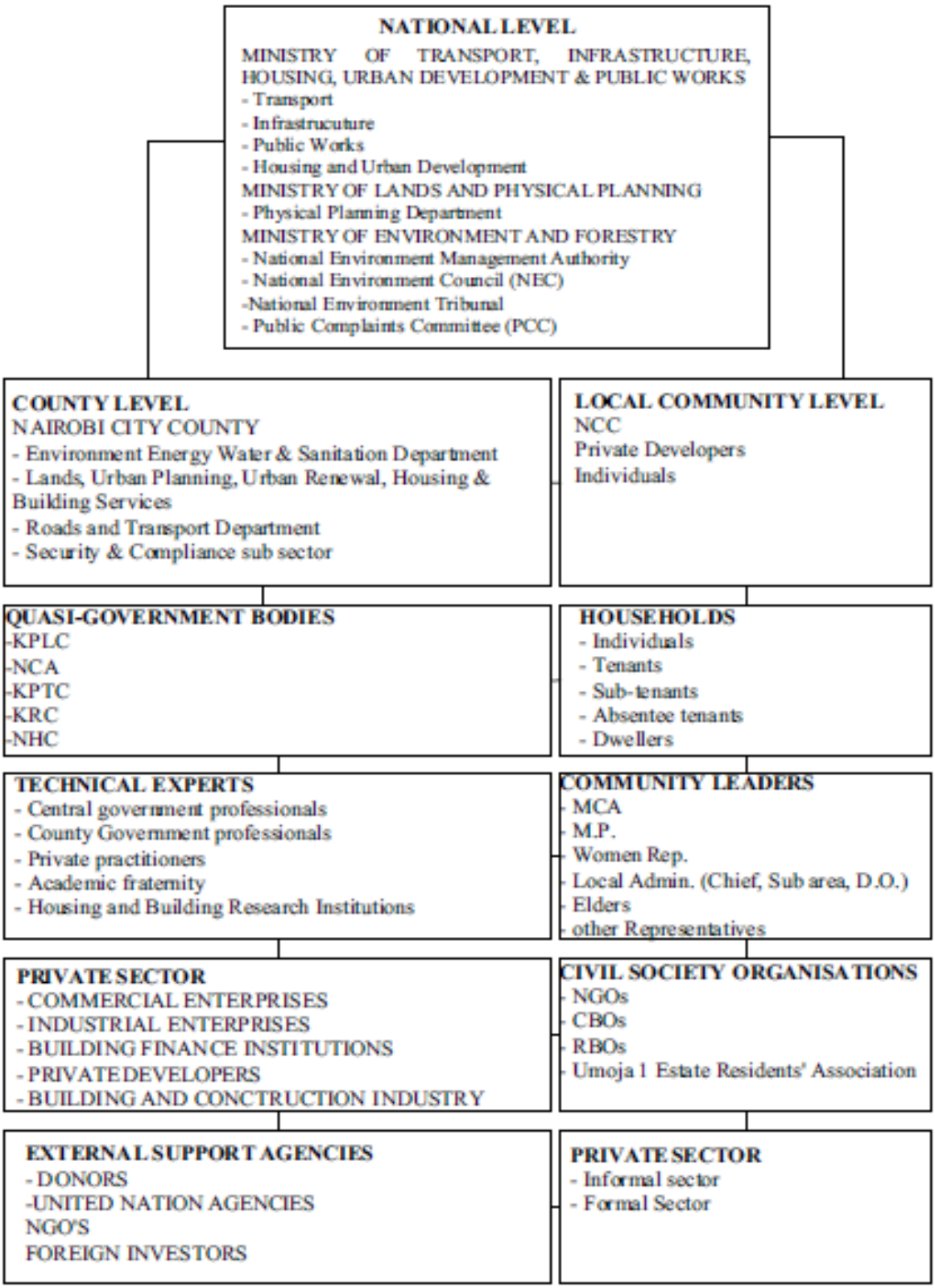
at the community level involving experts, policy makers, private sector, external support agencies as well as representatives from the residents.

Community participation or the involvement of the local community will help in clearly defining the problems and felt needs. They also assist in giving ideas on problem solving. This will enhance the projects' quality and success, as the residents have a sense of ownership and belonging. The community is vital in helping to identify the available material and human resources within the community, and they also help to determine the kind of solutions that are applicable to them.

NGOs, CBOs and RBOs, will help in lobbying for the rights of the residents, to the county and national governments, in order to ensure they provide the required technical, financial and any other vital assistance. They will help to air the needs of the minority including children and people living with disabilities. They also play a vital role in voicing out the evils within the local and County government, such as, corruption and misappropriation of funds, thus making the concerned individuals in such working groups to be accountable towards enhancing the quality of Umoja 1 Residential Neighbourhood.

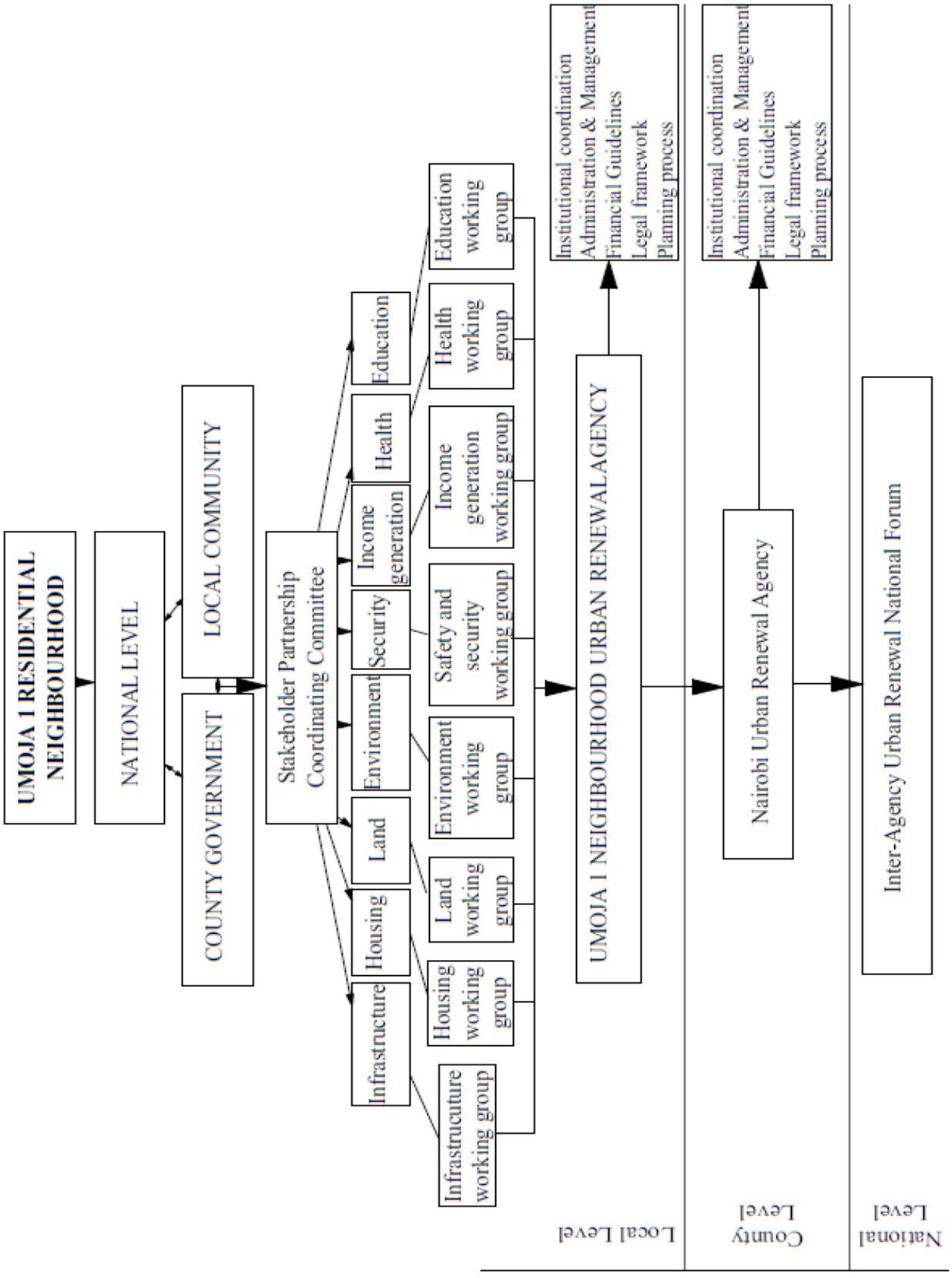
The stakeholder partnership model and the proposed Institutional framework shown in the figures below, respectively.

Figure 5.1: Stakeholder Partnership Model for Umoja 1 Estate's Urban Renewal



Source: Author, 2019

Figure 5.2: Proposed Institutional Framework for Urban Renewal in Umoja 1 Residential Naighbourhood



Source: Author, Adopted from Mwaura, 2002

5.6.2 Legal and Regulatory Framework

The legal and regulatory framework will ensure consolidation of various acts of parliament governing quality of housing and land use planning, in order to come up with a new legislation that governs the neighbourhood. These Acts, regulations and guidelines include; The Physical planning Act (1996), The County Government Act, Urban Areas and Cities Act, The environmental Management Act, The Building code Adoptive by-laws, The Government Lands Act, The Trusts Lands Act, The Land Registration Act, the Land Titles Act and The Constitution of Kenya, The millennium development goals, the NIUPLAN and the president's Big Four (4) Agenda.

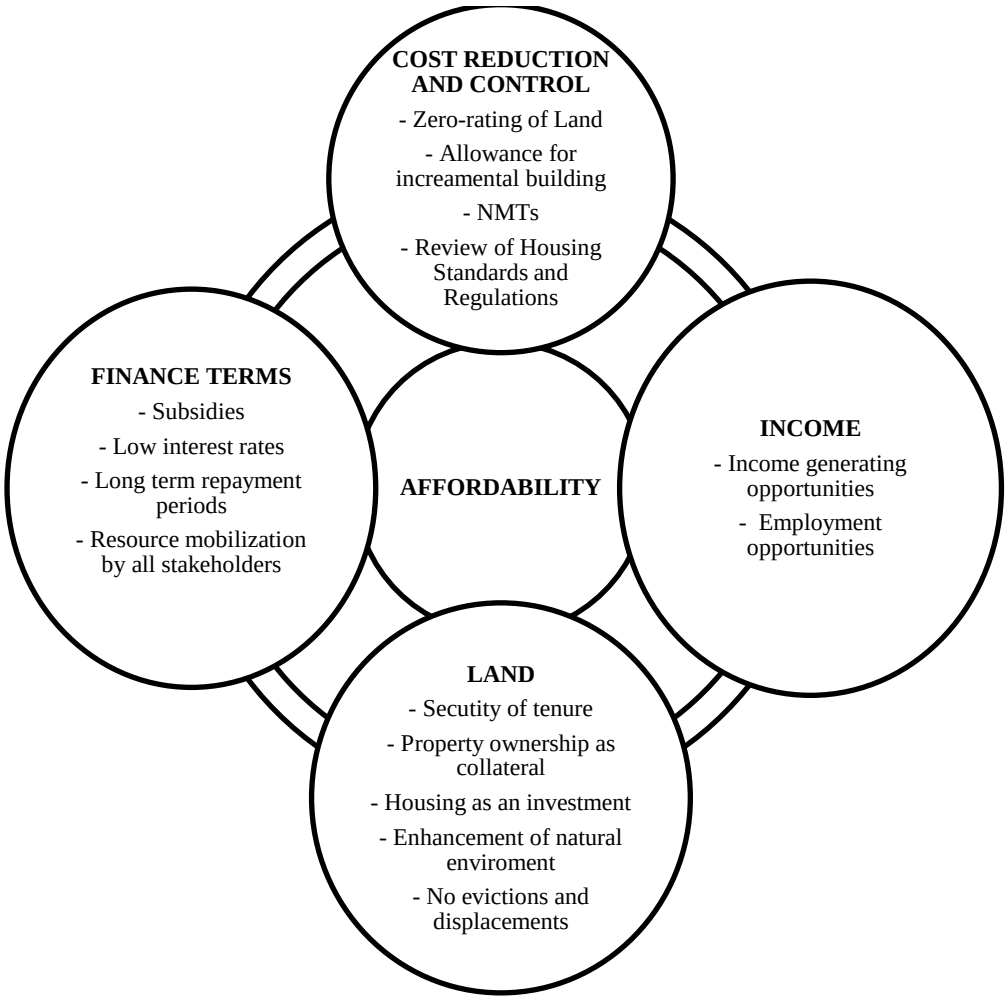
The Legal framework will also seek to institutionalize the involvement of all the stakeholders in participatory planning and decision-making process in order for it to be well understood and received and sustained for future urban renewal plans. This reform will address the revision of existing land uses and planning standards, such as housing densities and application of new building technologies.

5.6.3 Financial Framework

The integrated approach will demand a vast financial framework, to enhance the practicability of the implementation of the rehabilitation, densification and redevelopment programmes. The present levels of funding and provision of house allowances have been proven unsustainable in the long-term period bearing in mind the mismatch between low-income levels and the prime value of the land with very close proximity to the CBD and the Industrial Area.

The financial framework must seek to enhance affordability to the residents and other stakeholders at the local community level. The figure below shows how this will involve the inclusion of different components of affordability.

Figure 5.3: Housing Affordability



Adopted from Mwaura, 2002

This research recommends that urban renewal agency must be to achieve inclusive reduction of costs to the entire integrated approach process. This would be achieved by making acquisition of land easy, whose ownership is dominated by private developers, Nairobi County Council, as well as the Central Government, such as Ministry of Public Works and quasi-government bodies such as the Postal Corporation of Kenya. These public agencies will require zero-rating the cost of land as their input to the integrated approach process. A review of planning and building standards and regulations will equally go a long way in reducing the cost of building and construction of housing, community facilities and infrastructure services. The fact that most of the physical fabric is structurally sound, the urban renewal agency will initially need to assess the viability of incremental building through self-help aid to ensure that the existing low-density units can be densified.

This study recommends increase of income, by inclusion of income-generating and employment opportunities at the local community level. The restructuring process will require integrating the functions of housing and transportation with small and micro-enterprise economic activities. The informal sector will need to be supported by the planning for cottage industries, home-based economic enterprises and markets, among other employment areas. In addition, the These deliberate efforts of boosting household incomes will be mutually reinforcing effects of ensuring that the residents find the integrated approach programmes bearable on completion. This is because they will be required to service loans advanced to the urban renewal agency to finance the programme.

This research recommends that affordability be improved by the flexibility and relaxation of terms and conditions in the access of credit to finance the integrated approach programmes. The joint efforts of both the private sector (building finance institutions, commercial banks, commercial and industrial entrepreneurs and co-operatives) and the Government (the Exchequer, National Housing Corporation) will need to institute and support monetary policy reforms. The softening of lending conditions through measures such as reduction of interest rates, allowance for long-term repayment periods and lower and irregular monthly installments including alternative forms of collateral as security among other intervention measures sympathetic to the urban poor will go a long way in enhancing the viability of implementation. In addition, the entry of upper income groups without recourse to gentrification will enable the cross-subsidization of costs by selling new infill units and by renting them at quasi-market rates or by selling commercial plots to the private sector. The institutionalization of the urban renewal agency will enable the mobilization of resources from all the various stakeholders. The Central Government and the Nairobi City Council will play the role of increasing the allocation of development expenditure towards low-income housing programmes. The Central Government will require reviewing fiscal and monetary policies that foster initiatives for private sector participation and incentives for foreign investments and sustained linkage between informal and community-based financial institutions with formal financial institutions.

The research also recommends security of tenure of Umoja 1 residents. Policy guidelines need to be clearly laid out and defined in order to address the enhancement of quality.

5.6.4. Planning Process

Urban renewal will be a continuous process as long as, people are living and interacting in urban areas. Community participation of interest groups will promote accountability and

transparent collaboration and networking between and among these various interest groups. All these groups in Umoja 1 residential neighbourhood will be required to perform their individual roles with a common vision of meeting the needs of the respective constituencies by improving the overall social, economic and physical environment conditions of the Estate.

There is potential that exists for the involvement of households in the integrated approach programme where more than 60 per cent of the residents indicated that they would prefer to be involved as active participants in the entire planning and decision-making process, in order to voice out their concerns as partakers of the estate.

Problem identification will require to be properly assessed by all the stakeholder partnership interests at the community, county and even national levels. The problems and needs will lay the broad framework in addressing the issues that afflict the resident community in Umoja 1 Estate, as identified in the physical and social surveys. Similar surveys will require to be undertaken in order to familiarize all the actors with all the conditions of the residential neighbourhoods. The collection of both secondary and primary data and its subsequent analysis will bring out the emerging critical planning issues.

This will set a platform for the setting of the common integrated approach goal. This common vision and aspiration by all the stakeholders in renewing Umoja 1 neighbourhood, will be defined by the specific objectives set by all of them. The various spatial and sectoral aspects will represent the diverse objectives.

The identification of the constraints and inherent opportunities will enable the sharpening and development of strategies to enable the achievement of sectoral objectives. The modeling for alternatives to find out the strong and weak points will follow the development of strategies. It is at this stage that it will be relevant in identifying the cost, time frame and resource mobilization for each of the alternative programmes in the integrated approach. It is at this stage, too, that it will be pertinent in critically analyzing the implications and viability of rehabilitation and conservation, densification and redevelopment for each residential neighbourhood. It is at this stage that the stakeholders will select the phasing of the integrated approach's preferred plan. Cross-sectoral coordination of the various programmes is expected to realize the necessary benefits to the target beneficiary groups, which is the local community. By the time of the implementation stage, it is expected that the various conflicting interests and objectives operating at different levels have been resolved to realize an integrated approach pact. It is expected too, that a legal and regulatory framework has institutionalized the stakeholder partnership and that a feasible financial guideline is in place to enhance the viability of implementation of the integrated approach

During the monitoring and evaluation stages undertaken at critical times of the post-implementation phase a review of the stated problems will be done to find out whether the set integrated approach goals and objectives have been achieved. It is at this stage that the urban renewal agency will need to step up its tenets of management of the residential neighbourhoods. The continuous monitoring of the post implementation phase will ensure that changing social and economic needs and spatial implications are promptly accommodated. The appropriate maintenance and constant coordination of the various working groups will safeguard any deterioration of the built and natural environment besides social and economic degeneration.

CHAPTER 6: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of Emerging Issues

This study was aimed at assessing the quality of Umoja 1 Estate and the resident's fulfilment of the quality of their neighbourhood. Neighbourhood quality was measured in terms of Physical, Transport, Environmental, Economic and Institutional sectors. The overall result indicates that the respondents were not fulfilled by the quality of their neighbourhood. Planning interventions therefore is needed in order to ensure overall improvement of quality in Umoja 1 Estate.

From the main Findings, the following are the emerging issues;

Slackness by the County council of Nairobi and the National Construction authority in oversight of developments taking place within the estate, therefore leading to uncontrolled development, unapproved buildings, and not following approved plans on ground during construction. This is due to ignorance of property owners to follow due diligence as the process is cumbersome and costly.

Sprouting of informal economic activities some that stretch existing infrastructural facilities, such as erecting stalls along pedestrian paths and along drainage lines. Encroachment of public areas such as pedestrian paths and streets, Increased housing densities and change in housing typologies from single dwellings to apartments, overstretching of existing infrastructure causing problems like flooding and water supply shortages and Overall poor maintenance of the physical environment, including housing and landscape.

6.2 Summary of Recommendations

The study set out to achieve two main objectives, with the main aim of this research being to assess the quality of an urban residential neighbourhood with regards to physical, economic, socio-cultural, environmental, transport and institutional conditions in Umoja 1 estate. The specific objectives were;

The first objective was to determine the indicators of quality in an urban residential neighbourhood. This was established by literature review that revealed and backed up the assumption of quality encompassing physical, environmental, social, economic and institutional factors. The second objective was to examine the prevailing quality condition in Umoja 1 estate, which was established by a field survey of all the factors informed from the

literature review. The fourth objective was to examine the level of fulfilment of the residents regarding the quality of Umoja 1 estate. This objective was attained by testing of the specific hypothesis that that involved the view of quality from the residents' perspective. The last objective was to propose planning interventions and policy options for improving the quality of Umoja 1 estate, which will be approached in the following section.

6.2.1 Integrated Approach to Urban Renewal; Enhancing the Physical, Environmental and Economic Quality

After evaluation of the change in housing typology in Umoja 1 estate, it was established that the use of land and construction of buildings in the estate is not sustainable. Densification involving the construction of multi dwelling housing development without due regard to the laid down policy guidelines is unacceptable and can only be allowed if it meets the laid down requirements for development. The study recommends for a total redevelopment approach of urban renewal of the estate, which will involve complete demolition and revitalization of the estate by creating new housing design, preferably multi dwelling units designed up to five levels. Redevelopment plan prepared in consultation with the Nairobi City County, private developers, business owners, residents and other stakeholders in the estate can be used as a guide to further development in the area. Also, the Nairobi City County can come up with an appropriate strategy or a master plan that will be used to guide future developments in the area.

Housing type plans will be established should allow for flexibility and variety in their planning and design dimensions in consideration to the size of plot in which it is to be constructed, so as to create harmony when constructed. The house types should also be of multi-dwelling type preferably for flats and apartments done to a maximum of five levels so that it addresses appropriately the issues of housing demand in the area and the entire county.There is need to educate tenants and developers on issues of housing safety standards, planning requirements and provision of amenities. Tenants and sub tenants are usually encouraged to form a collective bargaining association in order to safe guard the future of the neighbourhood, which will also act as an integral regulatory mechanism in terms of development control and ensure that buildings are coming up in accordance with the current planning standards and thus be conversant with issues such as plan approvals and occupation certificates.

Tenants on the other hand view the housing sector as a market where intensity of investment is directly proportional to returns. Withies view in mind, the said developers literally overdevelop their properties by utilizing all the spaces available without giving thought to the impacts of such developments on such small spaces, resulting to overstretching the existing

amenities. Developers should also be educated on the implications of such massive densification which also causes depreciation in the value of real estate development, congestion and possibly decay of such buildings, and therefore they should be encouraged to implement the laid down regulations, policy guidelines and zoning requirements.

6.2.2 Enhancing Transport and Infrastructural Quality

The existing infrastructure and service facilities in Umoja 1Estate will require improvement, so as to transform their conditions to reasonable and updated standards. The whole of the 25M wide Moi drive needs to be widened, re-carpeted and improved by marking lanes and bumps, creating bus/ matatu lay bays in order to reduce the huge traffic that usually occurs during peak hours of the day.

Also, access roads leading to the estate need upgrading possibly by tarmacking or compacting them to enable the smooth flow of vehicles and pedestrians into the estate.

Sewer system needs to be expanded for them to accommodate the large amount of sewer emanating from the large buildings. Drainage channels need to be cleaned frequently so as to allow for easy flow of storm water and reduce blockages especially during rainy seasons.

6.2.3 Enhancing Institutional Quality

The Nairobi City County has already put in place standards and policy guidelines to ensure harmony in developments and provided for development control measures and enforcement actions for developments that are put up without approvals. Distribution and nature of developments in Umoja 1 Estate will require rationalization.

This study identifies the need to boost the capacity of various institutions in order to ensure they possess adequate capacity to regulate development within the estate, and thus create an atmosphere for controlled development, especially the need for capacity building among organs of the Nairobi City County entailing an increase in the workforce, digitization of the development control section to fasten the process of plan approvals, adequate remuneration of the officers in order to reduce corruption, budgetary allocation adequacy to facilitate operations of the County, especially when carrying out statutory inspections to ensure development are put up as per the approved building plans. NEMA enforcement team should also ensure that multi-storey residential developments carry out an EIA audit report and approval should be obtained, to control on the negative impacts the development would have on the environment.

6.2.4 Enhancing Social Quality Through Public Participation

Stakeholder participation at all levels of the planning is an important factor for the success of any programme. A strong emphasis should be put on the public, private and community participation. Thus, the involvement of the residents, community, along with the policy makers and technical experts, during the entire decision-making process is crucial. This will provide a broad framework for plan implementation through the organization and management structure of the institutional arrangements. It will also enable the harnessing, stimulation and mobilization of the natural, material, financial and human resources needed for the plan implementation.

6.3 Conclusion

Changes in development exist and are experienced in every part of the world. The residential environment of Umoja 1 Estate has metamorphosed since its initial establishment, following the high-rise developments that have come up with time, without due consideration of the supporting infrastructural facilities available as well as lack of enforcement of existing standards. Domestic water supply and sewer system has been a big problem in the area because the existing one was initially made for the supply of a low to medium density population, but the estate has fast changed into a high-density area and thus exerted a high population pressure. Apart from overstretching of the existing infrastructure, the lack of ample space for expansion of networks such as roads, water reticulation system, sewer system and other building developments has posed a major challenge to the Nairobi City County and the private developers.

6.4 Areas of Further research

Though this study has worked to address issues of quality in a residential neighbourhood, and subsequently giving appropriate guidelines in enhancing quality of Umoja 1 Estate, it however, has not been exhaustive and areas of further research can address the following;

1. Philosophies of transformation and gentrification
2. User needs and satisfaction of the neighbourhood, and
3. Assessment of the neighbourhood meeting the needs of people with disabilities

REFERENCES

Abdul Ghani Salleh, N. B. (2012). Quality Of Life In Urban Neighbourhoods Of Pulau Pinang, Malaysia. Journal Of Construction In Developing Countries, 117-123.

Aleksandrina V. Mavrodieva, R. I. (2018). Role Of Civil Society On Sustainaible Urban Renewal .

Arwari, S. K. (2016). Sustainable Urban Design In Nairobi Eastlands: The Case Of Kaloleni Estate.

Bank, W. (2018). Atlas Of Sustainable Development Goals: Froms World Development Indicators. Washington Dc: World Bank.

Benninger, C. C. (2001). The Primciples Of Intelligent Urbanism. World Society Of Ekistics Symposium. Berlin .

Bhatia, R. (2011). Building Healthy Communities. Case Study: San Franscisco's Use Of Neighbourhood Indicators To Encourage Healthy Urban Development.

Bugadze, N. (2018). Theory And Practice Of 'Intelligent Urbanism'. Bulletin Of The Georgian National Academy Og Sciences.

Communities, G. A. (2005, March). Www.Communities.Gov.Uk/Index.Asp?Id=1139866.

Croucher, K. (2007). Health And The Physical Characteristics Of Urban Neighbourhoods: A Critical Literature Review. Glasgow Centre For Population Health.

Deddington Neighbourhood Plan. (2017). Retrieved From Movement And Transport: Http://Www.Deddingtonneighbourhoodplan.Org/Movement--Transport.Html

Delaware, U. O. (2018, March Thursday). What Is Mixed-Use Development. Retrieved From Www.Completecommunities.Org: Http://Www.Completecommunitiesde.Org/Planning/Landuse/What-Is-Mixed-Use-Development/

Development, C. O. (2013). The Benefits Of Smart Growth Planning Principles. Kirkland.

Ding, G. (2013). Strategies For Sustainable Housing Development-The Challenges From Renewable. International Journal For Housing And Science, Vol. 37(No. 4), 239-248.

Dominique Bienfait, K. F. (1992). Indoor Air Quality And Its Impact On Man. Luxembourg, Italy: Commission Of The European Communities.

Eu, E. U. (2005). Handbook 2: Approaches To Urban Rehabilitation. Luda Project, Improving The Quality Og Life In Large Urban Distressed Areas.

French, D. (2018). Sustainable Development Goals; Law Theory And Implementation. Northampton, ,Massachusetts: Edward Elgar Publishing Limited.

Gleick, P. H. (1996, June). Basic Water Requirements For Human Activities: Meeting Basic Needs. Water International, 83-92. (G.O.K.), G. O. (2007). Kenya Vision 2030. Nairobi: Government Printers.

(G.O.K.), G. O. (2007). Kenya Vision 2030. Nairobi: Government Printers.

Habitat, U. (N.D.). A New Strategy Of Sustainable Neighbourhood Planning: Five Principles.

Hamam Serag, A. S. (2013). Principles Of Urban Quality Of Life For A Neighbourhood. Hbrc Journal, 86-92.

Hamam Serang El Din, A. S. (November 2012). Principles Of Urban Quality Of Life For A Neighbourhood. Cairo University, Faculty Of Engineering , Department Of Architecture. Housing & Building National Research Centre (Hrbc), Egypt., 87.

Hofe, X. W. (2007). Research Methods In Urban Planning. Beijing: Tsinnghua University Press And Springher-Verlag Gmbh Berlin Heidelberg.

Ilesanmi, A. O. (2012). Housing, Neighbourhood Quality And Quality Of Life In Public Housing In Lagos Nigeria. International Journal For Housing Science, 36(No. 4), 231-240.

Ilesanmi, A. O. (2012). Housing, Neighbourhood Quality And Quality Of Life In Public Housing In Lagos, Nigeria. Ile-Ife, Nigeria.

Jordan, R. (2013). Urban Sustainability In Latin America And The Caribean. Cstd 2012-2013 Inter-Sessional Panel. Lima, Peru: Economic Commission For Latin America And The Carribean (Eclac).

Kuehn, S. S. (2013). Intelligent Urbanism. Convivial Living In Smart Cities, (Pp. 556-570). Fort Worth, Texas, Usa.

Liu, B.-C. (1977, July). Economic And Non-Economic Quality Of Life: Empirical Indocators And Policy Implications For Large Standard Metropolitan Areas. The American Journal Of Economics And Sociology.

Luger, M. I. (1996). Quality Of Life Differences And Urban And Regional Outcomes: A Review (Vol. 7). Universisty Of North Carolina: Fannie Mae Foundation.

Lynch, K. (1960). The Image Of The City. Massachusetts: M.I.T. Press.

Masiga, E. S. (1975). The Neighbourhood Concept And Its Application To Planning. Nairobi, Kenya: University Of Nairobi.

Mbataru, W. (2018). Umoja Estate, Nairobi, And The Fight For Democracy. Nairobi: Daily Nation.

Meenakshi. (2011). Neighhbourhood Unit And Its Conceptualization In The Contemporary Urban Context. Institute Of Town Planners, India Journal, 81-87.

Moore, D. T. (N.D.). The Impact Of Neighbourhood Physical And Social Environments On Child And Family Well-Being. Melbourne: Centre For Community Child Health.

Mwangi, I. K. (June 1988). An Appraisal Of Plan Implementation And Development Control In Nairobi: A Case Study Of Umoja 1 Estate. Nairobi: University Of Nairobi.

Mwaura, A. M. (2002). A Framework For Urban Renewal In A Low Income Residential Neighbourhood: A Case Of Kaloleni, Makongeni And Mbotela, Nairobi, Kenya. Nairobi, Kenya.

Nairobi City County, Japan International Coopertation Agency (Jica). (2014). The Project On Integrated Urban Development Master Plan For The City Of Nairobi (Niuplan). Nairobi: Nippon Koei Co. Ltd, Idcj Inc., Ejec Inc.

Njonjo, K. S. (2013). Exploring Kenya's Inequalities . Nairobi, Kenya: Kenya National Bureau Of Statistics (Knbs) And Society For International Development (Sid).

Njoya, W. (2018, March 17). Leaders Should Push For A Proper Drainage To End The Flood Menace. Daily Nation.

Njuguna, G. N. (2007). Environmental Planning And Management: Towards A Better Envorinmental Law, Management, Evaluation And Impact Assessment. Nairobi.

Norainah Abdul Rahman, D. O. (2012). Deternimant Factors Of Neighbourhood Quality. Journal Of The Malaysian Institute Of Planners, 1.

Nyaboe, S. (2016). An Assessment Of Residential Neighbourhood Satisfaction: A Case Of Bahati Estate, Nairobi, Kenya. 30-36.

Osiolo, J. G. (2017). Delivering Affordable Housing In Kenya Reduires A Paradigm Shift. The Kenya Institute For Public Policy Research And Analysis.

Pacione, M. (2003). Urban Environmental Quality And Human Wellbeing-A Social Geographical Perspective. Landscape And Urban Planning, 19-30.

Paul Odhiambo, J. G.-K. (2018). Policy Monitor; Supporting Sustainable Development Through Research And Capacity Building. Nairobi: Kenya Institute For Public Policy Research And Analysis (Kippra).

Pavan, C. G. (2018, February). Evaluating Urban Quality: Indicators And Assessment Tools For Smart Sustainable Cities. (I. University Of Cagliari, Ed.) Suatainability, 2-18.

Permentier, M. (2011). Determinants Of Neighbourhood Satisfaction And Perception Of Neighbourhood Reputation. Urban Studies, 977-996.

Rahnama, D. M. (August 2012). Use Principles Of New Urbanism Approach In Designing Sustainable Urban Spaces. International Journal Of Applied Science And Technology, Volume 2(No. 7), 196-202.

Ritu Shrivastava, A. S. (2011). Smart Growth: A Modern Principle.

Rugendo, K. J. (2012). Sustainable Urban Drainage System: Nairobi Case Study. Bangkok, Thailand.

Ryan, B. D. (2011). Reading Through A Plan. Massachussetts: M.I.T. Press.

Schwanke, D. (2003). Mixed Use Development Handbook (Second Edition Ed.). Washington D. C.: The Urban Land Institute (Uli).

Segal, D. (1979). The Economics Of Neighbourhood. Havard: Academic Press.

Shihembetsa, L. (1989). Neighbourhood Units In Nairobi: A Survey Of Bahati And Ofafa. Nairobi: Hrdu.

Sigh, V. S. (2012). Balancing Environment With Urban Growth In India. Sustainable Housing.

Solaimani, S. L. (2009). An Assessment Of Urban Quality If Life Bu Using Analytic Hierachy Process Approach (Case Study: Comparative Study Of Quality Of Life In The North Of Iran). Journal Of Social Sciences, 5(2), 123-133.

Sultan, C. B. (2013). Home Sweet Hoome: The Determinants Of Residential Satisfaction And Its Relation With Well-Being.

Ubani Princewill, A. D. (2017, July). Determinants Of Residential Nighbourhood Choice In A Nigerian Metropolis. Journal Of Humanities And Social Science (Iosr-Jhss), 22(7), 01-11.

Un-Habitat. (2001). The State Of The World Cities. Nairobi: Unchs.

Unhabitat. (2017). A New Strategy Of Sustainable Neighbourhood Planninng: Five Principles. Urban Planning.

Usdh. (1979). The Determinants Of Neighbourhood Quality. U.S. Department Of Housing And Urban Development, Office Of Policy Development And Research. (Unchs), U. N. (1996). An Urbanising World: Global Report On Human Settpements. Walton Street, Oxford 6dp: Oxford University Press.

(Urs), U. R. (2011). Urban Renewal Strategy: People First, A District-Basesd And Public Participatory Approach To Urban Renewal. Hong Kong: Government Logistics Department Hong Kong Special Administrative Region Governement.

Wafula, N. (2011). Planning And Managing Urbanisation In Kenya Following The New Constitutional Dispensation Promulgated In August 2010. Bridging Gap Between Cultures.

Wallace, P. A. (2011). Social Quality: A Way To Measure The Quality Of Society. Social Indicators Research Springer.Com.

Wouter Poortinga, T. C. (2017). Neighbourhood Quality And Attachment. Validation Of The Revised Residential Environment Assessment Tool, 256.

APPENDICES

Appendix 1: Household Questionnaire

UNIVERSITY OF NAIROBI

COLLEGE OF ARCHITECTURE AND ENGINEERING

SCHOOL OF BUILT ENVIRONMENT

DEPARTMENT OF URBAN AND REGIONAL PLANNING

RESEARCH TOPIC: ASSESSING THE QUALITY OF AN URBAN RESIDENTIAL NEIGHBOURHOOD: A CASE STUDY OF UMOJA I, NAIROBI.

HOUSEHOLD QUESTIONNAIRE

DECLARATION: The information provided is strictly for academic purposes only and will be treated with utmost confidence.

Questionnaire No…… Date of interview……..

Time of interview……... Location of interview……...

SECTION A: RESPONDENT'S CHARACTERISTICS

Name of Respondent _____

Place of Birth_____

Age

(1) 24yrs and under, (2) 25–34yrs, (3) 35–44yrs, (4) 45-54yrs, (5) 55–64yrs, (6) 65+ yrs

Gender (1) Male (2) Female

Ethnic Background_____

Marital Status (1) Married (2) Single (3) Separated (4) Widowed (5) Divorced

Education Level (1) No Education (2) Primary (3) Secondary (4) College (5) Other ___

SECTION B: DEMOGRAPHIC TRENDS – URBAN MOBILITY TRENDS

How long have you been living in Nairobi?

_____

Have you been living here ever since you moved to Nairobi? (1) Yes (2) No

Where did you come from before occupying this house?

(1) Rural area_____ ___ (2) Estate within Nairobi_____ (3) other (specify) _____

Why did you move here?

_____

How long have you lived in Umoja 1 estate

_____

Why did you prefer to live in Umoja 1 estate?

_____

SECTION C: TENANCY TRENDS

Household characteristics

PERSONS LIVING IN THE HOUSING UNIT		INCOME STATUS				
	GENDER	AGE	EDUCATION LEVEL	OCCUPATION	LOCATION	INCOME

1. Type of employment
   (1) Informal self-employed (unlicensed) (2) Formal self-employed (licensed) (3) Formal employment (4) Unemployed (18-55) (5) Other (specify)----------
2. Do you have any other occupation (1) Yes (2) No
   If yes, what is the average income?----------
3. Total household income in Ksh
   (1) 1-5000 (2) 5001-10000 (3) 10001-15000 (4) 15001-20000 (5) 20001-25000 (6) Above 25000
4. How can you define your income and achievement of your financial needs over the time you have lived in Umoja 1 Estate (Tick where appropriate in the table below)

Income			Achievement of financial needs		
Increasing	Not changing	Decreasing	Improving	Not changing	deteriorating

SECTION D: QUALITY OF THE PHYSICAL RESIDENTIAL UNIT

5. How long have you lived in Umoja 1 Estate?

   (1) 0-5 years (2) 5-10years (3) 10years-15years (4) 15-20years (5) 20years and above

6. How many rooms were originally in this housing unit

7. Are the number of rooms enough for your household needs

   (1) Yes (2) No

   If NO, how many rooms would be appropriate for your household needs?

   ---

8. Are there any alterations done since (1) yes (2) No

   If yes, why?----------

9. Are you the original occupant of this house or you took over from a previous tenant?

(1)Original (2) Second tenant (3) Third tenant (4) Share with another tenant (5) Other__

10. What do you intend to do to this housing unit after you retire (For owners only)?

    (1) Transfer back to NCC (2) sell to new tenant (3) Pass on to relative (4) Continue to stay

11. What are the major problems that you experience during your tenancy this housing unit in Umoja 1

12. How can you describe the condition of your house and how can you describe the change?

Condition of the dwelling unit				Type of change		
(1) Very good	(2) Good	(3) Bad	(4) Very bad	(1) Positive	(2) Neutral	(3) Negative

13. How do you cope with the above problems?

---

14. Do you undertake any maintenance of the house to maintain its quality?

(1) Yes (2) No

If YES

explain……

If NO

explain…….

SECTION E: NATURAL AND PHYSICAL ENVIRONMENT

15. How can you rank the condition of the following infrastructure and services within Umoja 1 estate?

Service/Infrastructure	Condition (tick as appropriate)				Specific Problems
	(1) Verygood	(2) Good	(3) Bad	(4) Very bad	Challenges arising from these conditions
Vehicular Road					
Pedestrian paths					
Street/security lights					
Storm water and Drainage					
Piped water supply					
Sewer system					
Solid waste management					
Grass, Flowers, Trees, Fences					
Firefighting facilities					

16. What are the causes and effects of prevailing infrastructure services conditions in Umoja 1 estate and the nature of change of these conditions?

Service/Infrastructure	Causes of change in condition/state	Effects of quality	Nature of change (tick as appropriate)		
			(1) +ve	(2)Neutral	(3)-ve
Vehicular Road					
Pedestrian path					
Sewer and drainage system					
Piped Water supply					

Solid waste management					
Grass, Flowers, Trees, Fences					
Electricity in the unit					
Firefighting facilities					

SECTION F: COMMUNITY AND SOCIAL FACILITIES

17. How can you rank the quality of the following community and social facilities? How can you describe the changes in quality over the time you have lived in Umoja 1 estate?

Facilities	Distance	Condition/state (tick as appropriate)				Changes in Quality		
	In KMs	(1) V good	(2) Good	(3) Bad	(4) V Bad	(1) +ve	(2) Neutral	(3) -ve
Pre-schools								
Primary schools								
Secondary schools								
Higher learning institutions								
Library								
Health center								
Maternity clinics								
Employment areas								
Social halls								
Open spaces								
Recreational facilities								
Police station/ post								
Administrative facilities								
Social halls								
Sports facilities								
Shopping facilities								

Market								
Communication facilities								
Transport facilities								
Post office								
Religious facilities								
cemetery								

18. How would you rank the condition of the facilities below in how they serve their purpose?

(1)Very good (2) Good (3) Bad (4) Very bad

Facility	Rank	Remark
Location of the estate		
Proximity to outer-ring road		
Public transport access to the estate		
Distance to CBD		
Distance to work place		
Distance to markets/shopping areas		
Cleanliness of public areas		
Automobile parking spaces		
Disaster management in the estate		
Maintenance, repair services in the estate		

19. How can you rank the following social-economic issues?

Social-economic indicators	Changes in quality			Condition /state				Main challenges arising from change in quality
	(1) +ve	(2) Neutral	(3) -ve	(1) Vgood	(2) Good	(3) Bad	(4) V Bad	

Security at home								
Security in public areas								
Dilution of culture								
Relationship with neighbours								
Membership in a community based organization								

SECTION G: ENHANCING THE QUALITY OF NEIGHBOURHOOD IN SUSTAINABLE REDEVELOPMENT

20. Would you support or oppose an urban sustainable redevelopment programe in this neighbouhood that is geared towards improving it?
21. What are your fears about sustainable redevelopment?
    (1) Lack of involvement and total exclusion in the decision making process
    (2) Gentrification – displacement by higher income group
    (3) Eviction by Nairobi city council with no relocation agenda
    (4) Ploy or trick by Nairobi County Council to sell the existing land and houses or the completed units to the elite, politicians, wealthy people wirh exclusion of current tenants
    (5) Inability to afford new housing units, therefore programme would not respond to the needs of the users,
    (6) Other (specify)…….....

22. What kind of redevelopment would you prefer
    (1) Units to remain as they are with no alteration on them

(2) Upgrading with minor adjustment, alterations and additions to the existing housing units, community facilities, infrastructure and services without affecting the current residents

(3) Densification- in filling the existing open-space pockets to accommodate more people

(4) Demolition of all units and reconstruction of new housing units consisting of bungalows front and back yards/ semidetached/ row housing maisonettes

(5) Apartments- not more than 4 floors, more than 4 floors with lifts

(6) Conservation of all desirable urban architecture

(7) Privatization

23. What potential benefits would you like fulfilled for yourself and the estate in the urban redevelopment programme?

(1)Security of tenure for land and/or housing

(2) Improved social and cultural conditions by improving the quality of life

(3) Improved economic conditions –more employment areas and higher per-capita-incomes

(4) Aesthetically pleasing physical environment –New or improved buildings / Solid waste management

(5) Improved infrastructure and services – better vehicular tarmac, better pedestrian footpaths, Streetlights provision

(6) Direct representation of tenants in decision-making towards factors and issues that affect our lives

(7) A stakeholder partnership approach to the solution of urban planning task

Appendix 2: Interview Schedule

UNIVERSITY OF NAIROBI

COLLEGE OF ARCHITECTURE AND ENGINEERING

SCHOOL OF BUILT ENVIRONMENT

DEPARTMENT OF URBAN AND REGIONAL PLANNING

RESEARCH TOPIC: ASSESSING THE QUALITY OF AN URBAN RESIDENTIAL NEIGHBOURHOOD: A CASE STUDY OF UMOJA I, NAIROBI.

INTERVIEW SCHEDULE FOR THE CITY COUNTY GOVERNMENT OF NAIROBI

DECLARATION: The information provided is strictly for academic purposes only and will be treated with utmost confidence.

Date ……..

Name (Optional)……. …….

Office Tel. No…….

Director of urban planning

1. What are the roles and responsibilities of city county government of Nairobi in the overall management of Umoja 1 estate Nairobi?

2. Kindly fill in the table below on the initial planning provisions for Umoja 1 estate

Population density	Ground coverage	Plot ratio	Housing typology	Income levels of residents	Building materials	Total No. of housing units

3. Who is the owner of the land where Umoja 1 estate is located?

_____

_____

4. How can you rank the quality of the following services and community facilities and how they have been changing over time?

Service/community facility	Quality				Change over time		
	(1) V good	(2) Good	(3) Bad	(4) V Bad	(1) +ve	(2) Neutral	(3) -ve
Housing unit							

Security							
Economic levels							
Population density							
Open spaces							
Grass, Flowers, trees, fences (aesthetic value)							
Community and social facilities							

5. What are the planning efforts that have been applied in Umoja 1 estate?

Name of the physical plan	Year of preparation	Implementation status (tick as appropriate)		Reason for the implementation status
		Yes	No	

6. What are the major planning weakness and threats in Umoja 1 Estate?

7. What are the major planning strengths and opportunities in Umoja 1 Estate?

Appendix 3: Interview Schedule

UNIVERSITY OF NAIROBI

COLLEGE OF ARCHITECTURE AND ENGINEERING

SCHOOL OF BUILT ENVIRONMENT

DEPARTMENT OF URBAN AND REGIONAL PLANNING

RESEARCH TOPIC: ASSESSING THE QUALITY OF AN URBAN RESIDENTIAL NEIGHBOURHOOD: A CASE STUDY OF UMOJA I, NAIROBI.

FOCUS GROUP DISCUSSION/ ELDEST RESIDENT KEY INFORMANT

A. SOCIAL QUALITY

1. How did the name of the Estate originate? Who were the first inhabitants? Were they from one or different ethnic background (s)?
2. What specific and critical events have taken place over time in the life of this housing estate? How has population and customs changed over time? Perceptions of Residential Neighbourhood Satisfaction in the estate
3. How do you generally perceive the social environment in terms of adequacy and condition and how would like it improved?

B. ECONOMIC QUALITY

4. What income group was the estate meant for? What were their main occupations?
5. Does this original target group generally continue to reside here?

C. PHYSICAL QUALITY

6. What was the year of construction of this estate? Who were the developers?
7. What is the total number of housing units? And what are the typologies? How many rooms and of what category?

How do you generally perceive the residential unit in terms of adequacy and condition and how would like it improved?

D. ENVIRONMENTAL QULAITY

8. How do you generally perceive the environmental condition in the estate? What would you want improved, maintained or eliminated?

9. **E. INSTITUTIONAL QUALITY**What are the main constraints and problems that residents of this housing estate face?
10. What are the main opportunities that the residents of this housing estate face?

Appendix 4: Observation Checklist

UNIVERSITY OF NAIROBI

COLLEGE OF ARCHITECTURE AND ENGINEERING

SCHOOL OF BUILT ENVIRONMENT

DEPARTMENT OF URBAN AND REGIONAL PLANNING

RESEARCH TOPIC: ASSESSING THE QUALITY OF AN URBAN RESIDENTIAL NEIGHBOURHOOD: A CASE STUDY OF UMOJA I ESTATE, NAIROBI COUNTY.

OBSERVATION CHECK LIST

BLOCK ----------

Checking on the observable indicators of quality in each of the 14 blocks of Umoja 1 Estate.

A. PHYSICAL STRUCTURE (DWELLING UNITS)

1. Age of building: I) below 10 years
   II)10-19 Years
   III)20-29 years
   IV)30-39 years
   v) 40 years and above
2. Renovation and maintenance of the dwelling unit in terms of;
   i. Floor,……
   ii. Walls,……
   iii. Roofing…… …….
3. Alterations to original building (Dwelling modification) ……..
4. Are other semi-permanent units in the form of dwelling units and business enterprises developed considered to be elements compromising the physical quality?
5. Mode of construction and maintenance
6. No. of car parkings
7. Presence or adequacy of outdoor space
8. Lighting and ventilation

B. INFRASTRUCTURE SERVICES

9. Condition of the sewer system……

10. Condition of the drainage system……

11. Condition and level of the Solid waste……..

C. TRANSPORTATION SYSTEM

12. Road Conditions……..

13. Road sizes……..

    - Traffic issues……

D. SOCIAL AMENITIES AND COMMUNITY FACILITIES

14. Availability and state of recreational facilities
    - Children's playground……..
    - Old and disabled……..
    - Youth……

15. Condition and the state of the shopping centre area on;
    - Solid waste management……..
    - Renovation and maintenance of shopping stores……
      ……

E. ENVIRONMENTAL QUALITY

16. Condition and state of aesthetic attributes ……..

17. Environmental pollution: air, water, noise etc…….

18. Environmental planning……

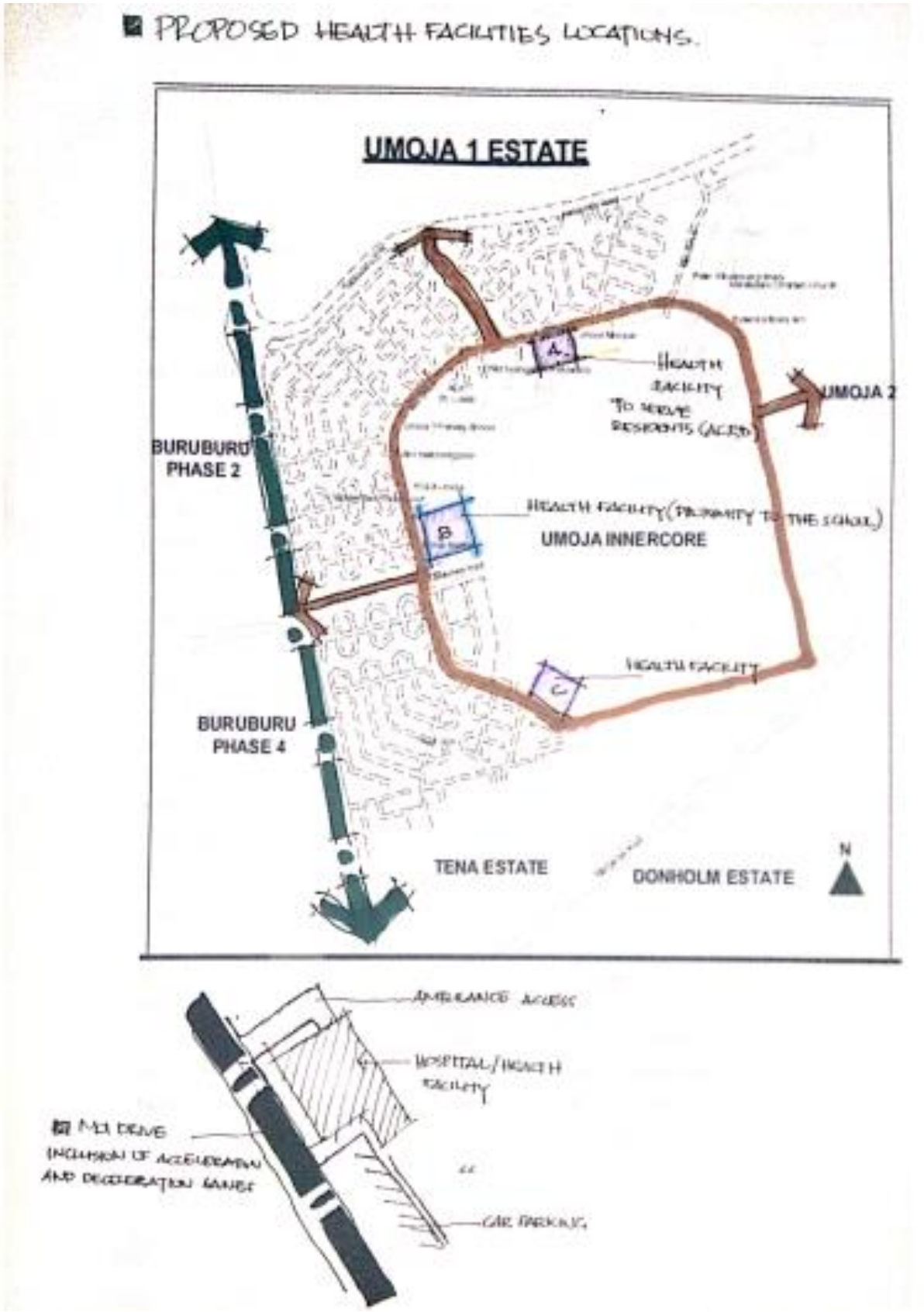
19. Cases of uncontrolled weeds, shrub and grass growing……

20. Is the property generally well maintained free from rubbish, fire hazards

Map 0.1: Integrated Land uses to Enhance Physical Quality of Umoja 1 Estate

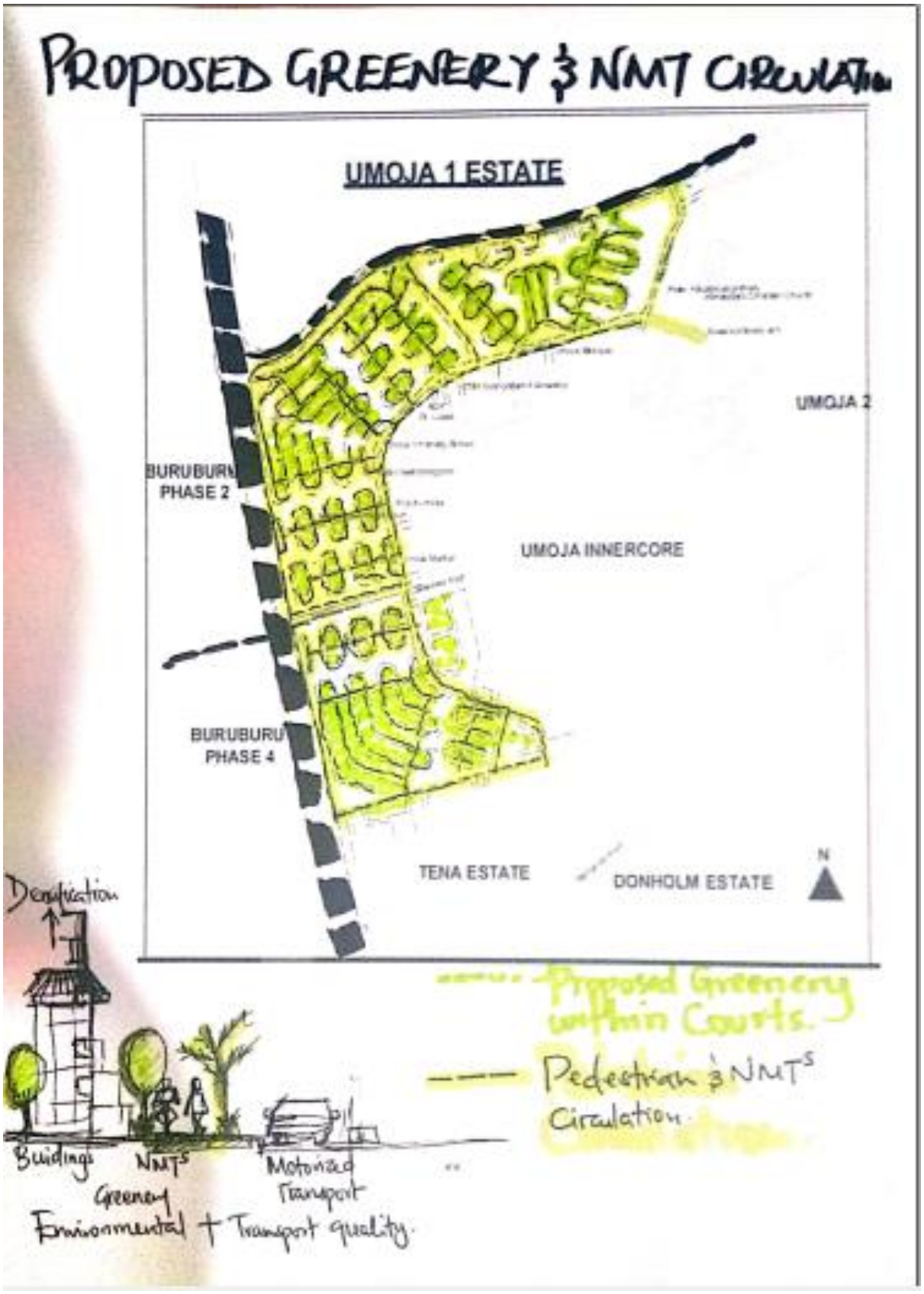
Source: Author, 2019

Map 0.2: Proposed Health Facilities Locations



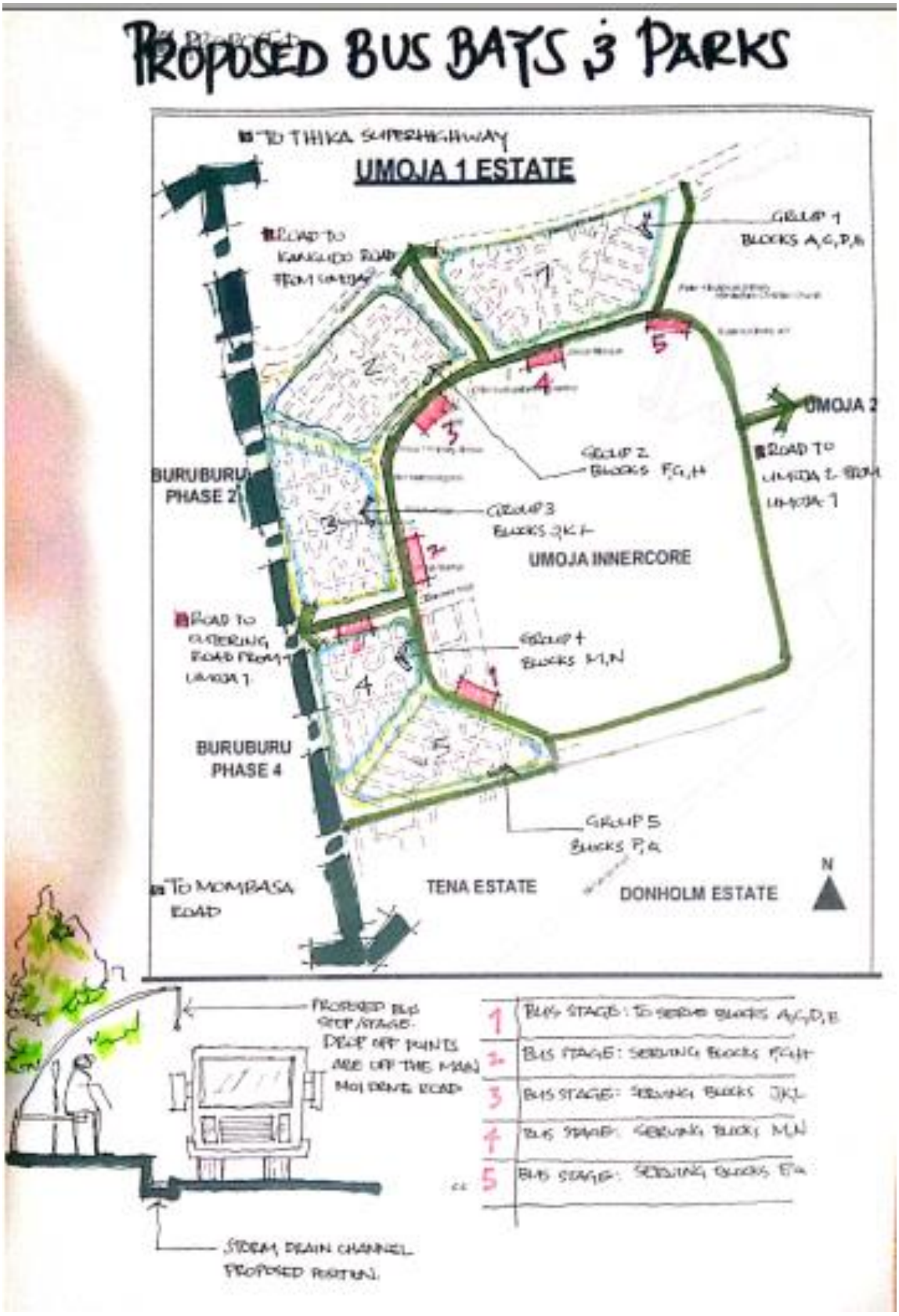
Source: Author, 2019

Map 0.3: Proposed Greenery and Pedestrian/NMTs Circulation



Source: Author, 2019

Map 0.4: Proposed Bus Bays and Bus Parks to Enhance Transport Quality



Source: Author, 2019