



UNIVERSITY OF NAIROBI

DEPARTMENT OF ARCHITECTURE AND BUILDING SCIENCE

SCHOOL OF THE BUILT ENVIRONMENT

**STRATEGIES FOR LOCAL ECONOMIC DEVELOPMENT.
A CASE STUDY OF LANDI MAWE NEIGHBOURHOOD IN
NAIROBI CITY**

BY

JULIET WAIRIMU KABERE

B. Arch (Hons) UoN, MAAK (A), Reg. Architect

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DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

Signature: **Date:**

JULIET WAIRIMU KABERE

This research project has been submitted for examination with my approval as University Supervisor:

Signature: **Date:**

MAURICE ONYANGO OYUGI

Department of Architecture and Building Science

University of Nairobi

DEDICATION

This study is dedicated to my dear parents Mr and Mrs Daniel Kabere Njiru without whose sacrifice and prayers my education journey would never have reached these heights.

And to Moses, Abraham, Caleb, Cecilia, Triza, Jeremy and Abby, the inspiration for you to keep aiming higher, for your dreams shall surely come true.

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Special appreciation to my colleagues in the master's class and my very dear friends from Kenya Institute of Highway and Building Technology (KIHBT) whose great inspiration and encouragement have kept me going strong, thank you so much.

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ABSTRACT

The purpose of the study was to investigate and identify the urban management strategies that are vital in the enhancement of local economic development. The Landi Mawe neighbourhood within Nairobi city was identified as the case study. The study was guided by the following research questions: What is the role of urban design parameters and management strategies in the management and sustenance of local economic development? What is the correlation between local economic development and the sustenance of a 24 hour economic neighbourhood? Is Landi Mawe area economically viable to be sustainably transformed and maintained as a 24- hour economic hub? The study aimed to fill this information gap by examining and establishing the following issues as pertains to the local economic development of Landi Mawe: The nature and magnitude and spatial requirements of the economic activities undertaken? The existing infrastructure to support the local economic development? The viability of implementing a sustainable 24-hour economy in line with Kenya's Vision 2030.

Descriptive research design was used for this study because it provided for a deductive approach which allowed the researcher to conduct reconnaissance field surveys to observe and understand the nature of Nairobi's Landi Mawe neighbourhood both during the day and at night. Given the diversity of studying an entire neighbourhood, the study identified a spatial sample frame in which to focus the study. The spatial sample frame for the study was thus defined by the pedestrian spine running from the Bunyala/ Commercial Street roundabout across the Railway Footbridge to the intersection of Workshop Road with Haile Sellasie Avenue. Random purposive sampling technique was adopted for the spatial sample frame. The sample size as calculated and determined from the population size was 265. The sample population consisted of Landi Mawe residents, business owners, students and the general pedestrian population. The responses were thereafter coded into Statistical Package for Social Sciences.(SPSS) and analysis for quantitative and qualitative evaluation. Secondary data involved the systematic identification, location and analysis of documents containing information related to the research problem. The analysed data was then presented into tables and charts to give a clear picture of the research findings.

The first specific objective sought to establish the nature, magnitude and spatial requirements of the economic activities in Landi Mawe. From the various tools and observations analysed, the findings indicated that the highly ranked economic activity was retail shopping followed closely by grocery shops and eateries (restaurants and fast food kiosks). All this was attributed to the fact that majority of the respondents used the spatial frame as a pedestrian transit spine. Among the activities already available in Landi Mawe that were ranked lowest included the Numerical Machine workshop, the garage and spare parts shops and the hospital despite them occupying the largest spatial space along the spine.

The second specific objective identified that the existing infrastructure within Landi Mawe, greatly favoured walking as the most viable mode of transit, with 93% of the respondents saying they use the Railway Footbridge almost on a daily basis. 45% of the respondents also use the pedestrian spine past 8.00pm. 87% agreed that lack of adequate

security infrastructure was the highest hindrance to engaging in economic activities within Land Mawe both during the day and night. 89% of the respondents acknowledged that improvement of the pedestrian and transport system would provide a most conducive environment for local economic development esp. for a 24-hour economy.

The economic viability of Landi Mawe to sustain a 24-hour economy was justified by 97% of the respondents who supported its creation within Landi Mawe, whilst only 14% disagreed or remained neutral on the benefits of a 24-hour economy. It was worth noting that 41% of respondents have lived or worked in Landi Mawe for over 6 year and 57 % of them actually shop in the neighbourhood for their commodities. Though only 39% agreed that nigh shopping suited their consumer lifestyle, 89% agreed that a 24-hour economy would create job opportunities. Majority at 89% agreed that a 24-hur economy would improve the pedestrian transport system and experience, However all the respondents agreed this was only viable if appropriate infrastructure was put in place to guarantee adequate security all through for pedestrians, shoppers, business owners as well as the Lani Mawe residents.

The proposed strategies for local economic development that the respondents ranked highly included the expansion of the Railway Footbridge to enhance pedestrian traffic, the introduction of Closed circuit Television (CCTV), lighting and street furniture along the spine. The conversion of the estate into an Small & Micro Enterprise (SME) business hub and a student zone with hostels and an open recreational park and public square followed closely as top strategies in that order. Renewal of the estate to a more modern residential neighbourhood, the inclusion of a vehicular thoroughfare and the introduction of offices blocks were all ranked poorly with the with the introduction of a bus transit hub being the least preferred strategy

To address the challenge of local economic development and sustainability of a 24-hour economy, the study recommends the need for increased support in strategies that addresses the mobility and infrastructure concerns facing pedestrians, businesses and consumers both residents and those in transit. This can be attained through the expansion, improvement and maintenance of a safe and vibrant pedestrian friendly street spine by introducing appropriate infrastructure that will improve the pedestrian experience as well as accommodate more economic activities tailored to meet the needs of the pedestrian population without compromising the needs and security of the residents within that neighbourhood. The greening of the entire spine as well as designing for cyclists and persons with disabilities will also enhance the sustainability of the 24-hour economy as well as enhance the overall pedestrian experience. It is this improved pedestrian experience that will enable business along the spine to thrive and create the impetus for increased and diverse economic activities within the entire neighbourhood which will then spur the local economic growth and development upwards.

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LIST OF ABBREVIATIONS

AfDB:	African Development Bank
CBD:	Central Business District
EAC:	East African Community
EMCA:	Environmental management & Co-ordination Act
EU:	European Union
GDP:	Gross Domestic Product
GNP:	Gross National Product
GOK:	Government of Kenya
ICT:	Information Communication & Technology
KIHBT:	Kenya Institute of Highways and Building Technology
KNBS:	Kenya National Bureau of Statistics
KWS:	Kenya Wildlife Services
LED:	Local Economic Development
NCAPD:	National Coordinating Agency for Population & Development
NUDP:	National Urban Development Policy
SACCO's:	Savings and Credit Cooperative Societies
SME's:	Small Medium Enterprises
SPSS:	Statistical Package for Social Sciences.
TUK:	Technical University of Kenya
UNCHS:	United National Centre for Human Settlements
UNEP:	United National Environmental Programme
UN- HABITAT:	United Nations Human Settlements Programme

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

History indicates that the greatest economic growth is driven by an increase in productivity. Local economic development implies a process of activation of specific territorial factors of transformation that will either improve the economic base of the community or/and promote the competitiveness of the enterprises. The transformations in this case would refer to the mobilisation and management of resources by the local authorities. The major objective would be in order to create wealth in a community by adapting solid economic policy measures and strategies that will be activated almost exclusively by the local actor thus also guaranteeing continuity and sustainability of the resource community.

A sustainable economic system exemplified by a functioning 24-hour economy enhances space utilization in urban setup towards improving local economic productivity (GOK, 2010). Nairobi plays an important role in the global, regional, national and local economy. The city is strategically located within the African continent and therefore makes it the ideal centre for international diplomacy, finance, banking, commerce and higher education. The city is a hub of road, rail and air transport networks, connecting eastern, central and southern African countries, and the potential for development is huge.

Although Nairobi employs 25% of Kenyans and 43% of urban workers in the country, generating over 45% of the national GDP, the Nairobi Central business District

Association (NCBDA) posits that most urban centres in Kenya operate at 30% capacity, (GOK 2009). Vision 2030, which is Kenya's development blue print, recognizes that a round the clock economy will ensure available resources are utilized more efficiently, creating greater job opportunities for available workers, especially the youth, who constitute a major portion of the working-age population.

“It means more jobs for the millions of Kenyans who are now jobless, more revenue and more security in urban centres,” said Vision 2030 chief executive Mugo Kibati.

The Kenya Private Sector Alliance (KEPSA) posits that when more people are engaged in productive work, the levels of consumer spending and investing will increase and this will inevitably stimulate the economy to greater growth. Local economic development entails the process of economic – led changes in a community which may stem from international, sectoral, national or local factors. The processes that generate the need for communities to adopt local economic led changes are numerous and often interrelated but nearly always inherent in the very nature of the communities and the physical and cultural attributes of a locale and locality reinforcing one another.

The Landi Mawe estate owned by the Kenya Railways and managed by the Kenya Railways Staff Retirement Benefits Scheme (KRSRBS) since 2006 is the core of the Landi Mawe neighbourhood. It was among the first low-density residential neighbourhood designed by the colonial government to serve as housing quarters for the railway workers. The Railway Footbridge is a landmark feature in this neighbourhood that acts as a dynamic and powerful non-motorised street spine connecting the Central Business District (CBD) to the greater Industrial area. The pedestrian population that uses

this footbridge has grown tremendously over the years transforming the Landi Mawe estate into a powerful urban spine with great and untapped economic potential.

The growth of the Technical University of Kenya (TUK) from a National Polytechnic to a University College and finally to a public University has seen its student population significantly increase. With no accommodation facilities within its town campus, majority of the students either live in the student hostels in South B and the National Industrial Training Authority (NITA) hostels along Commercial Street in industrial area. This means that the Railway footbridge acts as the strongest link between the hostels and the University. It is also a fast and cheaper alternative compared to public transport and faster given the ever present traffic jams along Bunyala road and Uhuru Highway. Kenya Institute of Highway and Building Technology (KIHBT) is a training department in the Ministry of Transport and Infrastructure that has long expanded its mandate from purely staff training to technical training. It has thus opened its doors to the youth population willing to train in technical courses on a residential and non-residential basis. It has seen its student population expand over the years to the point that they cannot all be accommodated within the institutions hotel facilities. This thus leaves the majority of them with the option of commuting and the cheapest and fastest route once again becomes the railway footbridge. The growing student population in both the institutions has seen the demand for hostel facilities go up drastically over the years. This has made the Landi Mawe Estate house owners take advantage of the situation to sublet part of their houses or entire houses to students. The Railway has also devised ways to address the situation and recently converted one of its warehouses into hostel facilities.

Landi Mawe estate designed initially as a residential neighbourhood with provision for only one commercial facility that was popularly known as Duka Kubwa has over the years transformed into a mixed land use neighbourhood. This transformation however has been of an informal nature that has seen commercial activities mushrooming in the estate. The commercial activities commonly take place either within the houses, within the informal extensions from the main houses, in informal structures erected along pedestrian footpaths, streets, road reserves and open spaces within and around the neighbourhood. For a long time, street vendors have exercised their trade along the road that leads to the Railway footbridge in an effort to capitalize on the high pedestrian traffic. Part of this road is within the boundary of the Kenya Railways and thus in an effort to control the hawking activities, the railway prohibited street vending within its grounds. With time however the Kenya Railways constructed a mini shopping arcade within its grounds where it started renting out the commercial spaces to vendors. However beyond the Kenya Railway Boundaries, street vending and informal kiosks still thrive as they compete to meet the demands of the ever growing pedestrian population along this vibrant street.

1.2 Sustainable 24-Hour Economy within Landi Mawe Neighbourhood.

There are many characteristic features of the Landi Mawe Area that predisposes it to accommodate the dynamics of a 24-hour economy. However, these characteristics do not necessarily mean that embracing a 24 hour economy will make the neighbourhood more sustainable. Sustainability and prosperity can only be achievable if the right urban mechanisms and management structures are put in place before-hand to guide the 24 hour transformation process. The key indicators in the Landi Mawe neighbourhood that make

it potentially capable of accommodating a 24-hour economy include the already high traffic volume of pedestrians commuting to and from the industrial area and the Central Business District (CBD). The majority being students and those working in Industrial area and the CBD and also residents of the residential estates beyond Industrial area such as South B and C, Hillocks and Nairobi West among others. The proximity of Landi Mawe to the CBD and to industrial area as well as to major public transportation nodes such as the railway station and the Railway and Muthurwa bus terminus also strategically positions the neighbourhood. Another key indicator is the mixed land uses that are now evident in Landi Mawe and heavily characterised by the proliferation of informal commercial activities within the estate and along the street spine and the raising student accommodation facilities. The commercial activities range from the existing mini-mall, assorted retail outlets, eateries, fruit and vegetable kiosks, clothes vendors, chemists, service providers such as Mpesa, cyber cafes, stationery shops, mobiles repairs, car wash yards, beauty salons and barber shops among others. The services are tailored to meet the needs of the growing residential and pedestrian population. Student hostels have been created after the Railway Authorities began to convert some of their go downs and workshops into hostels. This was inevitable considering that most of the houses located in this area were already being sublet to students with the staff preferring to live elsewhere or building extensions to the main houses. Another strong indicator for a 24-hour economy is the expansion of evening classes both in TUK and KIHBT as well as other colleges in the CBD. This means that pedestrian traffic is still high in the late hours of the night. Given the scale and innovation capacity of the two technical based institutions there is a foreseeable trend towards the increased expansion of the evening classes and

other short courses. This is in the context that there is a global growing demand for technically trained personnel which has arisen due to a felt need created when the emphasis has been for a long time being on business and commercial courses. Considering also that these two technical institutions are closer to the CBD they attract the majority of trainees, both fresh students from high school and those already in the workforce who need to upgrade or improve their skills. This will inevitably make Landi Mawe neighbourhood a strategic location for a vibrant and dynamic economy that serves the needs of a growing urban student population. According to Sperling (2005), Cities with colleges and universities are healthier financially, because the local school provides a stable economic base.

Sustainable Development is a form of development that meets present day needs without compromising the ability of future generations to satisfy their own requirements. It aims at improving individuals' living conditions whilst preserving their environment in the short, medium and above all long term. The objective of sustainable development is therefore; development that is economically efficient, socially fair and environmentally sustainable. In urban design practice, compact walkable places are the most sustainable form of living. The combination of a mix of uses and services, a range of housing options, extensive train systems and the ability to walk and cycle as part of daily life enhances sustainable green living. Furthermore, provision of safe, clean renewable energy leads to sustainability results. Designing away the need for cars is the most important step in creating sustainable places. This has the triple effect of lowering energy uses, reducing global warming emissions and raising the quality of life in cities and neighbourhoods by increasing mobility and convenience.

The Five Principles of sustainable neighbourhood planning as outlined by the UN-Habitat discussion note 3 titled *A New Strategy for Sustainable Neighbourhood Planning* (2014) are: The provision of adequate space for streets and an efficient street network. The street network should occupy at least 30% of the land and at least 18 km of street length per km². Second is the presence of a high density with at least 15,000 people per km², that is 150 people/ha or 61 people/acre. Third is the integration of mixed land-use with at least 40 per cent of floor space being allocated for economic use in any neighbourhood. Fourth principle is the evidence of social mix which can be achieved through the availability of houses in different price ranges and tenures in any given neighbourhood to accommodate different incomes. A sustainable case scenario is whereby 20% to 50% (UN-Habitat, 2014) of the residential floor area should be for low cost housing and each tenure type should be not more than 50% (UN-Habitat,2014) of the total. And the last principle is limited land-use specialization which limits single function blocks or neighbourhoods. Thus single function blocks should cover less than 10% of any neighbourhood.

Urban design elements can influence the sustainable and economic success of a neighbourhood. Transport systems connect the parts of cities and help shape them and enable movement through the city. The balance of various transport systems is what helps define the quality and character of cities and makes them either friendly or hostile to pedestrians. The best cities and by extension neighbourhoods are the ones that elevate the experience of the pedestrian while minimizing the dominance of the private automobile. Streets are the connections between spaces and places as well as being spaces themselves. They are defined by their physical dimensions and character as well as the size, scale and

character of the buildings, public spaces and landscapes that line them. The pattern of the street networks is part of what defines a city and what makes each city or neighbourhood unique. The Five Principles promoted by UN-Habitat are meant to foster sustainable urban development by creating liveable and efficient neighbourhoods. Sustainable cities are prosperous, convenient, liveable, and safe. A sustainable city would possess the following key features, which the Five Principles contribute to: vibrant street life, walkability and affordability.

Landi Mawe neighbourhood is uniquely and strategically located to fully embrace the three key features of sustainable cities successfully. It has already, to a high degree, been able to eliminate the need for vehicular traffic as evidenced by its ability to attract high volumes of pedestrian movement. It has a well-defined and walkable street spine that has propelled its economic growth due to the ever growing pedestrian traffic especially along the Railway footbridge. The mixed-used developments albeit of an informal nature already increase the vibrancy of the street life. This vibrancy, although not structured, has contributed to the mobility of its residents and convenience of accessing services both within the neighbourhood and beyond into the greater CBD and Industrial area making Landi Mawe an affordable and accommodative low income neighbourhood.

This research highlights the potential of transforming Landi Mawe neighbourhood to operate on a 24-hour basis. As a key neighbourhood linking the Industrial area to the Nairobi CBD it is already exhibiting indicators that it can support a 24-hour economy within a well-structured sustainable neighbourhood. The research will explore the appropriate sustainable strategies guided by the principles for sustainable neighbourhood

planning that can aid in this transformation of Landi Mawe into a 24-hour economy. The research aims to showcase Landi Mawe neighbourhood as a pilot study neighbourhood for implementation of one of Vision 2030's goals of setting up of a 24-hour economy as a target of development, with the intention of positioning Nairobi as an all-around 24-hour, globally competitive business and tourism city whose residents would enjoy high quality of life.

1.3: Problem Statement

The pattern of concentration of economic activities within an urban area and the resultant progression has been found to be an important determinant to the national and local economic growth and development. Urban areas are usually organized around densely populated nodes with a true urban landscape and a historical core. Landi Mawe Neighbourhood has a strong historical core as it is among the first residential estates in Nairobi built by the colonial government to accommodate the East African Railways workers and thus its proximity to the railway line, workshops and station. Designed as a low density neighbourhood for low income African workers, the vehicular networks were inadequately provided for with emphasis on pedestrianization. This characteristic of it being a walkable neighbourhood coupled with its proximity to the CBD and Industrial area makes it potentially a high density node and spine that can sustain a vibrant local economy even within a 24-hour framework.

However the residential neighbourhood that is Landi Mawe has over the years been haphazardly transforming into a mixed used economic hub. This transformation has prompted the growth of informally organized commercial activities within the estate and

predominately along the non-motorised pedestrian street spine defined by the railway footbridge. The commercial activities have resulted greatly as a result of several factors key among them being: the availability of demand and market for goods and services due to the ever increasing student population of TUK, KIHBT and institutions of higher learning, the massive pedestrian traffic that uses the railway footbridge, the strong backward and forward linkages that Landi Mawe offers due to its proximity to both the CBD and the industrial area, the ever growing residential population within the estate as well as the availability of low value and underdeveloped space as compared to the greater city.

Unfortunately the economic development has not been supported by any laid down urban planning and management strategies and principles that can contribute to its vitality and sustainability. The study therefore aims to investigate and highlight development strategies that can be implemented within Landi Mawe neighbourhood to both enhance the sustainable local economic development that is already taking root as well as aid in its transformation to a 24-hour economy. The study also aims to formulate an implementation framework that can be applicable to Landi Mawe as well as to other low-income neighbourhoods that have potential for sustainable 24-hour economic growth and development.

1.4: Objectives of the Study

1.4.1: General Objective

The overall objective was to investigate and identify the urban management strategies that are vital in the enhancement of local economic development of Landi Mawe neighbourhood within Nairobi city.

1.4.2: Specific Objectives

- i. To establish the nature and magnitude of economic activities being undertaken within Landi Mawe neighbourhood
- ii. To evaluate the spatial requirements. of the economic activities being undertaken within Landi Mawe neighbourhood
- iii. To examine the existing infrastructure in the neighbourhood.
- iv. To recommend the formulation of an implementation framework for a sustainable 24-hour local economic development in line with vision 2030.

1.5: Research Questions

This study sought to answer the below stated research questions:-

- i. What is the role of urban design parameters and management structures, policies and strategies in the management and sustenance of local economic development?
- ii. Is there correlation between local economic development and the sustenance of a 24 hour economic neighbourhood?
- iii. Is Landi Mawe area economically viable to be sustainably transformed and maintained as a 24- hour economic hub to serve the growing student population and the greater Nairobi CBD and Industrial Area?

1.6: Research Assumptions

In its effort to address the research questions, the study made the below stated research assumptions:-

- i. The rapid population growth in the city means that those zones adjacent to the CBD, became alternatives for residential and commercial developments. Landi Mawe

enjoys the proximity of the Nairobi CBD and is already a residential zone that can fully embrace and support vibrant commercial development.

- ii. Urbanization will continue to play a major role on economy, environment and people's lives. The challenge is to live with urbanization while using its benefits and developing resilience for undesirable and negative impacts. Landi Mawe already exhibits characteristic features that can be maximized to benefit its local economic development as well as allow it to better fit into the urban fabric that lies in its immediate neighbourhood of the CBD.
- iii. Creating a 24-hour economy is part of Kenya development blueprint vision 2030. It recognizes that a round the clock economy will ensure that available resources are utilized more efficiently, more jobs for the millions of Kenyans, more revenue and better security in urban areas. Landi Mawe is thus a viable urban zone for the implementation of a sustainable 24-hour economy.
- iv. Urban centres are mainly deemed to be centres of inventions and innovations for a better life. Though the 24-hour idea is not necessarily a new innovation, its implementation in Landi Mawe can spur more innovations and inventions especially given its context of having an ever growing student population.

1.7: Justification

The urban development corridor concept involves transforming a city's thoroughfare into strategic business hubs that promote commercial and neighbourhood activities. Urban neighbourhoods such as Landi Mawe are good examples of how corridors with a mixed land-use typology can present high densities and promote passenger and pedestrian transport and provide opportunities for growth and change into more sustainable

neighbourhoods. The research is justified in advocating for a 24 hour economy since there is evidence of availability of slack capacity since Kenya's economic capacity is underutilised in terms of many resources. Kenya's Vision 2030 proposes that the country's economy can be boosted highly by integrating a 24 hour economy. This system allows citizens to produce, retail, consume and participate in legal and formal business activities beyond the typical 8 hour working day. 24 hours economies have thrived in certain cities in developed and developing countries over the years and are an indicator that a city's night life does not necessarily have to be exclusively relegated purely to the entertainment industry amidst the allure of darkness, insecurity and illegality of trading activities.

It is therefore within this context that this study is to be undertaken. Emphasis will further be laid on the demand for a structured and streamlined 24 hour hub. In addition, since cities are ideally suited to experiment with and implement economic initiatives the Land Mawe Area of the city creates an ideal opportunity to be transformed into a 24 hour economy. This can be done by putting structures, policies, supportive facilities and amenities to tap into the intensified opportunities and potentials on offer due to the high concentration of students and resources.

The research is also significant in further advocating for the philosophy that urban design can influence the economic success and social economic composition of a neighbourhood. Whether it encourages local businesses and entrepreneurship; whether it attracts people to live there; whether the costs of housing and travel are affordable and whether access to job opportunities, facilities and services are equitable, urban design can

influence health and the social cultural impacts of a neighbourhood: how people interact with each other, how they move around and how they use a place.

Given the geographical location of the study, the research highlights the importance of the organization of some of the key urban design elements to 24-hour economic development. The urban design elements include buildings, public spaces, streets, transport, landscape and nodes. The research will focus on transport systems and streets and hopes to generate interest in further research that will focus on the other elements and their contribution to the local development of 24-hour economic hubs in cities.

1.8: Scope and Limitations of the Study

The geographical scope of the research will be Nairobi's Landi Mawe area. The focus will be the area defined by the street running from the Commercial Street roundabout, across the Railway Footbridge to the intersection of Workshop road with Haile Selassie Avenue.

Key focus in this research will be to explore how the transport systems and streets within Land Mawe have contributed towards the growth of economic, social and academic activities that can operate on a 24 hour system within the neighbourhood. This attempt will however be supported by existing research on the economic potential of the entertainment industry in the Nairobi CBD's night life and the already vibrant transformation of Landi Mawe from a residential neighbourhood to a mixed-use economic hub. The focus will be on the socio-economic potential of the transport network and the tertiary and higher education sector that both have the potential to

further transform Landi Mawe into a on a 24-hour neighbourhood if the appropriate urban design parameters and management structures are put in place.

Therefore the variable scope for this study will thus focus on those parameters that would make the 24-hour economy a reality within Landi Mawe Estate. These include, but not limited to, the spatial development process, the land uses as per existing structures and policies, infrastructure and services, residential typologies, economic and social activities, security, transport linkages, street furniture and the street frontages.

1.8.3: Limitations of the Study

- i. Limited resources including time especially for data collection and conducting cases studies of successful 24-hour economies within and outside the country.
- ii. High levels of insecurity during the night when conducting field surveys in Landi Mawe and in other neighbourhoods that already have an operational 24-hour working system.
- iii. Difficulty in convincing strangers to participate in the study especially the pedestrian population of transit.

1.9: Operational Definition of Terms Used in the Study

24-Hour Economy: This is an economy where people work for a twenty-four hour period. This could be in three 8-hour shifts or off hours during the weekends, holidays, early mornings and late evenings (Iraki et al., 2009).

Development: Pursuant to Section 3 (a) of the Physical Planning Act (CAP.286) the term denotes making of any material change, alteration of density of any building or land or the subdivision of any land (GOK 1996)

Development Controls: The mechanisms through which entire process of urban development is regulated to achieve the objective of promoting overall benefit of the society and creating a distinct image of the city. It includes guiding the development and use of land, curbing misuse of land and promoting rational and orderly development of the built environment.

LEED Certification: Leadership in Energy and Environmental Design. A system of measurement which rates new buildings (or their plans) on their level of energy use and environmental consideration. It is meant to encourage new developments to become more energy efficient and environmentally sensitive.

Local Economic Development: Local development refers to the mobilisation and management of resources in order to create wealth in a community. This is linked to the economic policy measures adopted by the authorities in a community or a region.

Mixed Use: Can be broadly defined as development comprising more than one use and values on a single plot or within a single building or an area where sites and buildings of different uses and values are grouped together (UN Habitat)

Pedestrian Orientation: The characteristics of an area where the location and access to buildings, types of uses permitted on the street level and storefront design are based on the needs of persons on foot.

Sustainable Development: The concept of sustainable development first came into prominence in 1980. It was subsequently popularized by the Brundtland Report of 1987 through the publication of 'Our Common Future'. The Brundtland Commission defined sustainable development as the "development that meets the needs of the present without

compromising the ability of future generations to meet their own needs”. (Brundtland Report 1987: 245)

Urbanization: The conversion of land from a natural state or managed natural state (such as agriculture) to cities; a process driven by net rural-to-urban migration through which an increasing percentage of the population in any nation or region come to live in settlements that are defined as 'urban centers.

Walkable: A condition of a system of routes which are barrier free, interesting, safe, well-lit, comfortable and inviting to pedestrian travel.

2.0: Organization of the Report

Chapter one presents the general overview of the study as well as the problem statement and the aim and objectives of the research. The significance, scope and expected limitations of the research are also discussed in this chapter. Chapter two presents the background information of the study area including and not limited to its geographical location, size, ownership and tenure system, zoning, development control and planning regulations that govern the study area. It examines the nature and magnitude of the economic activities undertaken in the Landi Mawe neighbourhood and their spatial and legal requirements. Chapter three discusses and reviews the literature related to local economic development theories and models and the parameters necessary to create a functioning and sustainable 24-hour economy. It also discusses case studies of functioning 24-hour economies that shed light on the benefits and impacts they have had on local economic development in their respective urban cities. The chapter concludes with the formulation a conceptual framework. Chapter four discusses the research methods and materials used by the researcher and justifies the choices made. The chapter

describes the data collection techniques and sampling procedures and present templates of the structure interviews and other data collection tools that the researcher used which are part of the appendices. It describes the data analysis methods used and the methods used for data presentation. Chapter five analyses, discusses and presents the data collected in different methods as described in chapter four. This chapter was guided by the specific objectives that the researcher sought to achieve. Chapter six discusses the finding obtained from the data analysis and makes recommendations for the formulation of an implementation framework for a sustainable 24-Hour local economic development. The chapter relates the findings to the literature review and the case studies reviewed and any other previous research done with the aim of drawing tentative conclusions or deductions or new theoretical insights.

CHAPTER TWO: THE STUDY AREA

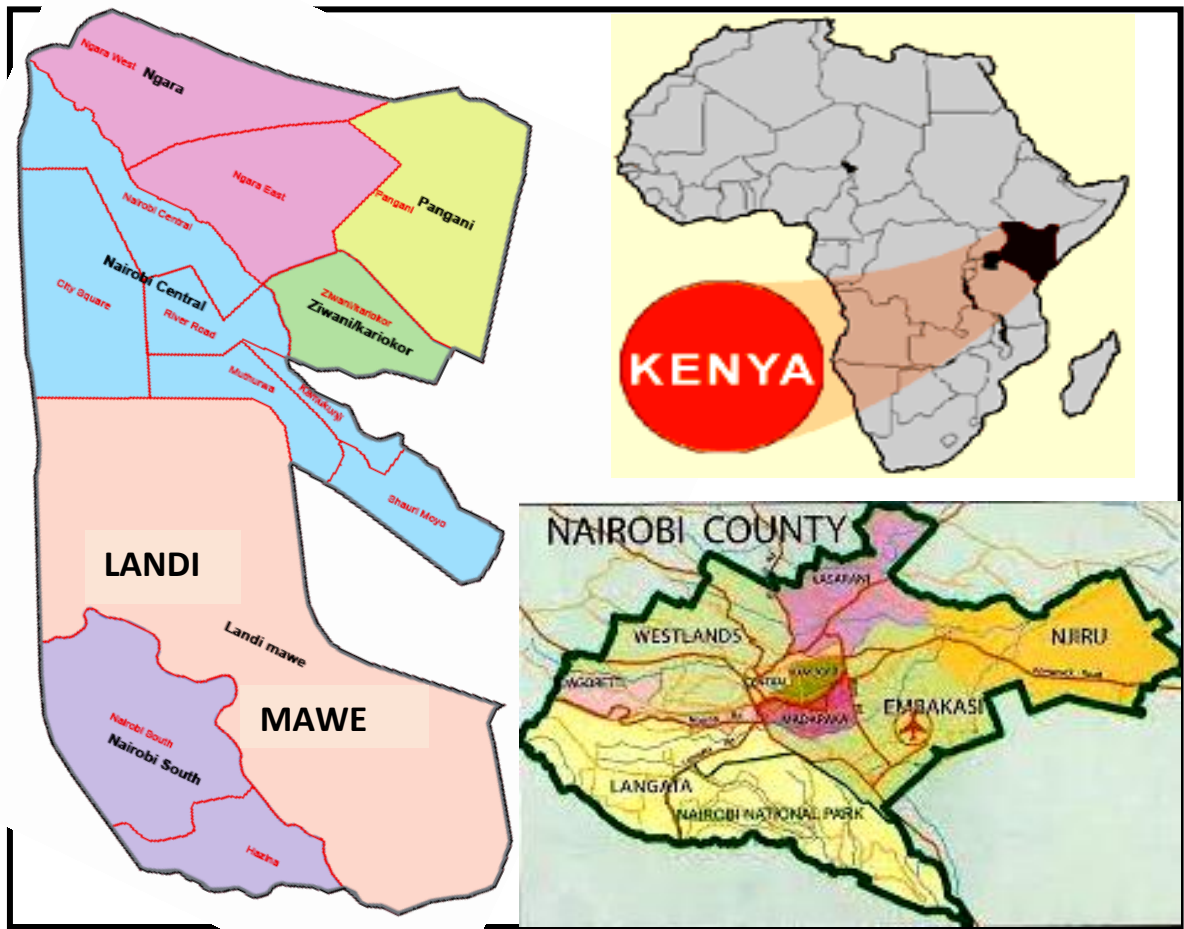
2.1: Introduction

This chapter presents the background information of the study area including its geographical location, size, historical background, and its ownership and existing tenure system. The chapter highlight salient features that have influenced and perpetuated the commercialization of Landi Mawe area especially in light of the zoning, development and planning controls and regulations governing the study area. The profiling of both the residential function and the socio-economic activities been undertaken in the neighbourhood and their spatial and legal requirements was also undertaken in this chapter. The chapter highlights the pedestrian spine along Workshop Road and it impact on the local economic development of the neighbourhood as well as its potential to sustainably support this growth.

2.2: Location and Size of the Study Area

Landi Mawe neighborhood is located within Nairobi city and is in Makongeni location, Makadara division in Starehe constituency in the administrative county of Nairobi. Nairobi city is situated at 1°09'S 36°39'E and 1°27'S 37°06'E and is approximately 1660 metres above sea level and spatially its total area is approximated at 694 square kilometers (GOK, 2010). As per the Nairobi city planning zone guidelines the neighborhood would be zoned similarly to Makongeni whose developments largely constitute old City Council housing ripe for high-rise high density redevelopment. The area together with other areas such as Jericho, Shauri Moyo, Bahati among others are categorized as Special Scheduled Areas for Nairobi City Council's NCC Site-and-service Schemes as Low-Income Housing.

Figure 2.1: Map Showing Location of Landi Mawe Neighbourhood.



Source: Author, 2017

Landi Mawe is located approximately 4 kilometres from the CBD and is easily accessed from Haile Selassie Avenue either through Workshop Road (formerly Whitehouse Road) or through Bunyala Road via Uhuru Highway. The neighbourhood is approximately 5.55 square kilometres and its northern extents are defined by the Kenya Railway train station and tracks. Its eastern boundary extends towards Muthurwa Market and is defined by the tracks and workshop, while its southern boundary is defined by Factory Street that marks the start of industrial area and parallel to Commercial Street. Its western boundary

which is very critical to this study is defined by Workshop Road that runs from the Haile Selassie Avenue through the Railway Footbridge to its junction with Commercial Street Roundabout in industrial area. Landi Mawe is strategically located between the vibrant CBD and the busy industrial Area has its anchor in the Kenya Railways Estate in which it was originally built as part of the colonial governments Official Housing. The emerging commercial activities in this residential neighbourhood have predominately occupied the frontages of the Workshop Road and the junction of Factory Street with Enterprise Road in the East. The commercial activities which continue to grow albeit in an informal way by continually converting residential units and workshops into commercial spaces are what make Landi Mawe an ideal study area as a pilot for 24 hour economy within Nairobi.

2.3: Historical Background of Landi Mawe Neighbourhood.

Nairobi is the capital city of Kenya and it is not only the largest urban Centre in Kenya but also one of the largest cities in Africa as well. Nairobi has strong colonial origins, which have shaped its structure and management as a city both in its pre and post-independence phases. Nairobi was born of the European colonial project and was a means of entry into newly colonized land via the railway line (Blevin & Bouczo 1997). Nairobi was first established as a transportation centre, which later grew to become an administrative centre. The site was chosen by the Kenya-Uganda Railway (KUR) constructors in June, 1899 (when the rail line reached Nairobi) because just as its name means it was a place of cool waters amongst many other reasons. Once the railway depot was established, certain spatial patterns began to emerge – the railway station, a shopping centre, housing quarters and the Indian bazaar (Obudho and Owuor 1991). By the end of

1899, the colonial government of Kenya had selected a site on the high ground north of the Nairobi River and away from the railway station to be the administrative headquarters. This marked the beginning of Nairobi's growth into an administrative and transportation centre (Achola 2002; Morgan 1967) Nairobi was going to be a railway town for Europeans with a mixed European and Asian trading posts. It laid the foundation of the physical appearance of Nairobi as it is today, directly expressing the notions of segregation of the towns functions as well as segregation by class and race (Emig & Ismail, 1980).

The city of Nairobi became a township in 1900 and this marked the birth of the local government in the town (Tiwari 1981). The city was already a large and flourishing area with settlements consisting mainly of the KUR buildings, separate residential areas for Europeans and Indians, and a small African settlement in Eastlands (Owuor & Obudho 1997). Nairobi became the capital of Kenya in 1905 and was divided into seven distinct zones. These were the railway centre, the Indian bazaar, the European business and administrative centre, the railway quarters, the dhobi or washerman's quarters, the European residential suburbs, and the military barracks outside the town (Tiwari 1981). The change of Nairobi from a railway town to an administrative and commercial centre within the British Protectorate prompted the emergence of cultures of urbanism for the first time. The economic and socio-cultural functions of the new city saw the development of a pre-colonial urbanism within the region. However, even so, after the initial bursts, rates of urban growth tended to be slow somewhat and the African societies remained overwhelmingly rural in orientation (Nevanlinna 1996).

2.3.1: Role of the Railway Line to the Residential Fabric in Nairobi

Once the KUR was completed, there was an increase in the number of European and Asian settlers moving to Kenya which made the city expanded rapidly, both in size and population (Odada & Otieno 1990). By 1906, the original KUR depot and camp had grown to an urban Centre of 11,000 people with definite land-use zones, but no spatial planning. The growth of the city was controlled only by economic forces, with no co-ordination of development other than by the layout of a gridiron street pattern in the CBD. The economic forces also prompted the city to seek solutions to cater for industrial expansion and the growing numbers of African wage-earners working in the industries.

Between 1906 and 1928 several plagues had broken out in Nairobi and these had occasioned the formation of several commissions to investigate the sanitary conditions of the city. Though the commission's found the existing site of the city unsuitable for further development of Nairobi as the capital city of east Africa, they however advised on well-defined and separate quarters for the Europeans, Asians and Africans. The recommendations of the commissions were carried forward in the development of the first comprehensive plan of the city (Nairobi Master Plan for a Colonial City) which was commissioned in 1948 but was never adopted fully. It laid down guidelines for Nairobi's future development and earmarked land for major uses as well as making important proposals for extensions to the road network, public open spaces, spectacular civic centers as well as industrial expansion. Using the concept of functionalism, the plan was to create a modern national city to cater the industrialization and urbanization needs that were emerging. The main spatial structure of the Master Plan was to divide residential areas into neighborhoods units using the garden city concept. The main objective behind

this structure was segregation for purposes of surveillance and dominance. The planning used the Railway Line as a major axis for this segregation with the Europeans residing to the north and west of the railway because these areas were located at higher altitude with richer, volcanic red soils. The Africans and Asians were mostly confined to the plains east and south of the railway line where non-porous black cotton soils prevailed. (Achola, 2002).

2.3.2: History as an African Workers Settlement

It is important to understand the initial housing design for Landi Mawe and how it evolved over time and in the process triggering the transformation that call for its to During the construction of the KUR railway line there were relatively few Africans working in the actual construction of the railway and there was little mention of their accommodation then (Etherton,1982). However by 1918, the KUR was already employing African workers and the colonial government thus started building dormitory suburbs for the Africans. The first was Kariokor built for the First World War veterans while the KUR African workers were accommodated in institutional housing estates such as Muthurwa, Makongeni and Landi Mawe. All these estates are located in close proximity to the Railway centre and are what constituted the African Railway Quarters. The Quarters needed to be near the Railway workshops and Landi Mawe which is our study area is the one that is closest in terms of walking distance. The neighborhoods were however located in the areas set aside for industrial expansion which have poorly drained flat site with black cotton soils. Rapid industrialization and urbanization prompted by massive rural urban migration contributed greatly in changing the morphology of there neighborhoods. The need for accommodation for the growing numbers of African

workers in the industries and the need for industries to be located closer and closer to the CBD triggered radical transformations to the residential estates located close to the industries such as Landi Mawe. The densities of the estates began to change from low to high and this had adverse effects on the physical infrastructure and services as designed for as well as the residential fabric. This understanding of the initial target residents for whom the Landi Mawe estate was designed, helps in appreciating the significant role that the Railway Footbridge has played over the years in the transformation of the neighborhood to its current state.

Figure 2.2: Railway Footbridge



Source: Author, 2017

2.3.3: The Railway Footbridge

The historical development cannot be complete without mentioning the all-important railway footbridge. The pedestrian footbridge was constructed in 1945 to make it even more convenient for the African workers to move from the workshop and stations to their quarters. It becomes a part of Workshop road (Formerly Whitehouse Road) that spans from the junction with Haile Sellasie Avenue in the CBD across the Railway tracks to the other Junction with Commercial Street in Industrial Area. As its name suggests, the Workshop Road was designed as a service road to serve the Railway Workshops on both sides of the tracks. For control and monitoring purposes it was manned at the Industrial Area side with a gate and security office and pedestrians were restricted from going through.

The 40M long footbridge designed by the then KUR chief Engineer AK Atkinson was therefore private property that was only meant to be used by Kenya Railways staff and employees. The footbridge incorporates concrete stairs and hardwood floorboards, and steel balustrades. Though the bridge is in dire need of major repairs works, it still stands todate despite having to ferry approximately 10,000 pedestrians daily. The Railway Footbridge is a landmark feature in this neighbourhood acting as a dynamic and powerful non-motorised street spine connecting the Central Business District [CBD] to the greater Industrial area. The pedestrian population that uses this footbridge has grown tremendously over the years transforming the Landi Mawe estate into an urban commercial corridor

Figure. 2.3: Footbridge Staircase from the CBD Approach



Source: (Field Survey 2017)

Figure 2.4: Footbridge Staircase from the Industrial Area Approach



Source: (Field Survey 2017)

Figure 2.1: Footbridge as Viewed from the Railway Station Platform



Source: (Field Survey 2017)

2.4: Landi Mawe Low Density Housing Neighborhood

The KUR employed many African workers even after its completion and to accommodate them the colonial government built for them residential neighborhoods in Muthurwa, Makongeni and Landi Mawe. All these estates are located in close proximity to the Railway Centre and are what constituted the African Railway Quarters. The Quarters needed to be near the Railway workshops and Landi Mawe which is our study area was the closest in terms of walking distance.

2.4.1: Landi Mawe Neighborhood Characteristics

2.4.1.1: Housing Typologies

The Original plan of Landi Mawe Estate consisted of 275 dwellings and one commercial facility, the ‘Duka Kubwa’ which served the needs of the African male residents. The estate was well planned as a low density housing development with three housing typologies interspersed with open green lawns and adequate infrastructure services

including wide pedestrian footpaths to serve the low population. The three typologies designed for included row housing, detached and semi-detached housing.

Figure 2. 6: Detached Houses



Source: (Field Survey 2017)

Figure 2.2: Semi - Detached Houses



Source: (Field Survey 2017)

Figure 2. 3: Row Housing



Source: (Field Survey 2017)

The Kenya Railway Staff Retirement Benefits Scheme (KRSRBS) was given the responsibility of, managing the Landi Mawe Estate in 2006 by Kenya Railways Corporation. This move was necessitated by the deteriorating state of the houses and the inability of KENYA railways to collect rent from the tenants. The direct responsibility of managing the estate is carried out by an estate manager whose offices are located at the KRSRBS headquarters along Haile Sellasie Avenue. Administration at the estate level is conducted by community leaders who reside in the estate.

2.4.1.2: Population and Demographics

Land Mawe was planned to only accommodate 275 workers from the East African Railways. After independence, the families of the workers moved into the houses and this caused the population to escalate. The development of the Industrial area near the Landi Mawe estate and the proximity of the CBD attracted more workers and their families into the neighbourhood. The key attraction to the neighbourhood was the availability of cheap

affordable housing that was in close proximity to their work places thus greatly reduced their transportation expenses.

Table 2. 1: Population and demographics Characteristics as at the 2009 Population Census:

Area	Total Population	No.of Households	Area in Square KM	Density
Nairobi	3138369	985016	695.1	4515
Starehe Constituency	274607	87519	10.71	26540.24
Landi Mawe	26509	9814	5.55	4772.1

Source. (Kenya National Bureau of Statistics, 2009)

Over the years Nairobi has continued to attract high population due to the employment opportunities and the availabilities of services and amenities. This continuous population increase has resulted in the overstretching of the housing facilities in the city, with a huge housing being experienced. The Population of Landi Mawe area has been growing exponentially to that of Nairobi city with an estimated growth rate of 3.8% similar to the City of Nairobi. With the current trend of growth visa vis the housing deficiency the projected population growth would be as follows.

2.4.1.2: Transport Network and Infrastructure

The road network within the neighborhood had been adequately provided for with to ensure good pedestrian circulation for the workers. Thus the wide pedestrian footpaths were all weather friendly and ensured the workers would easily walk to and from work and to the commercial Centre characterized by the Duka Moja. The provision of

vehicular circulation of limited to the commercial centers and the peripheral roads to the workshops as the workers were not expected to own automobiles. Over time however the pedestrian footpaths have remained un-maintained and as such are in poor and deplorable conditions. This has been worsened by the increased population as well as the increased use by vehicles, motorcycles, wheel carts and tuk tuks. There has also been severe encroachment of the footpaths and the peripheral tarmacked roads by small scale trades conduction informal businesses along the busy streets. The poor condition of the storm drains, sewer lines and street furniture dues to increased population and vandalism had further let to the deplorable conditions of the transport network within the estate.

Figure 2.9: Poor Infrastructural Services within Landi Mawe



Source: (Field Surveys, 2017)

2.4.2: Formal and Informal Transformations in Landi Mawe

The formal-informal dichotomy, summarizes a variety of social relations, spatial forms and urban economies and sums up a wide spectrum of situations within any dualistic structure within an urban neighborhood. Hence, the term “formal” can refer to integrated spheres, specific forms, elements or procedures that, having been decoded, have become standard, the norm, rule or convention. In this regard, the formal-informal *continuum* is fundamental for understanding current urban development. At the moment in which elements of interaction between formal-informal are recognized, each dichotomous or dualist pattern falls apart in favour of mixed trajectories, a sort of “meshwork” that becomes a vast, structured terrain on which new spatialities and different forms of urban life can be sketched out. (Ingold 2011).

Informality is often associated with procedures and phenomena that take place outside formal processes or planned and regulated zones (Roy 2005). However informal development or transformations which are independent of urban design and legal rules are closely related to social and economic dynamics. A very wide range of situations may be included, like spontaneous processes of occupation of the territory, absence of property titles, self-building of houses, illegal inhabiting in contexts with rapid urbanization, temporary uses of space, forms of self-organization and development of urban areas at city edges, etc. These informal transformations are so economically, spatially and socially integrated with their urban contexts that most developing cities are unsustainable without them. This is despite the persistence to remove them since they are deemed not to fit within the perceived urban imagery and place identity. Most

approaches for addressing informality lean towards legalization, upgrading, and integration of informal settlements, emphasizing the need for strategic participatory intervention and well-targeted public assistance. Hence, formal and informal order may both be considered legitimate, simultaneous ways of “making the city” (Landry 2006).

From the background study of the Landi Mawe area and its neighborhood, the informal transformations outnumber the formal transformations on the basis of the argument presented above. The notable formal transformations include; the conversion of the railway workshops to formally organized spaces such as the Ladies Hostel and the mini-shopping arcade. The restriction on street hawking activities and non-authorized vehicles and motor bikes along the gated section of the workshop road. The informal transformation that have predominately changed the urban landscape of Landi Mawe and its neighbourhood include: The extensions and subdivisions of the residential units, the conversion of residential units into commercial spaces. The construction of temporary commercial structures along the internal roads and along workshop road. The subdivision of the existing industrial buildings into commercial spaces, the invasion of vehicular traffic within the internal pedestrian walkways. The illegal and legal diversion of services such as water, sewer and power to meet the needs of the emerging commercial spaces.

2.4.3: Emerging Neighborhood Transformations

Neighborhood design demands that certain parameters be put in place to ensure the posterity of the community. Besides merely providing basic facilities such as housing, attendant infrastructural services such as water, power, sewer systems, solid waste disposal and transport channels the commercial, institutional and cultural needs of a

community also need to be considered. The original design of Landi Mawe had factored all these parameters in the context of a small population of Railway Workers. However the transformation that have arisen over time propelled by the dynamic shift of the residential composition from living quarters for family dwellings and from single user to multi dweller has not only seen the rapid increase in population but the drastic change in the neighborhood social fabric and physical and structural outlook. The challenge in any neighborhood design is how to and where to provide for the all required facilities and still create a balance that enhances community living and social harmony more so in an urban context. Landi Mawe sits squarely in an urban setting and being a residential neighborhood needs to embrace the spirit of community living despite its unique location within close proximity of a busy commercial, transportation, institutional and industrial hub.

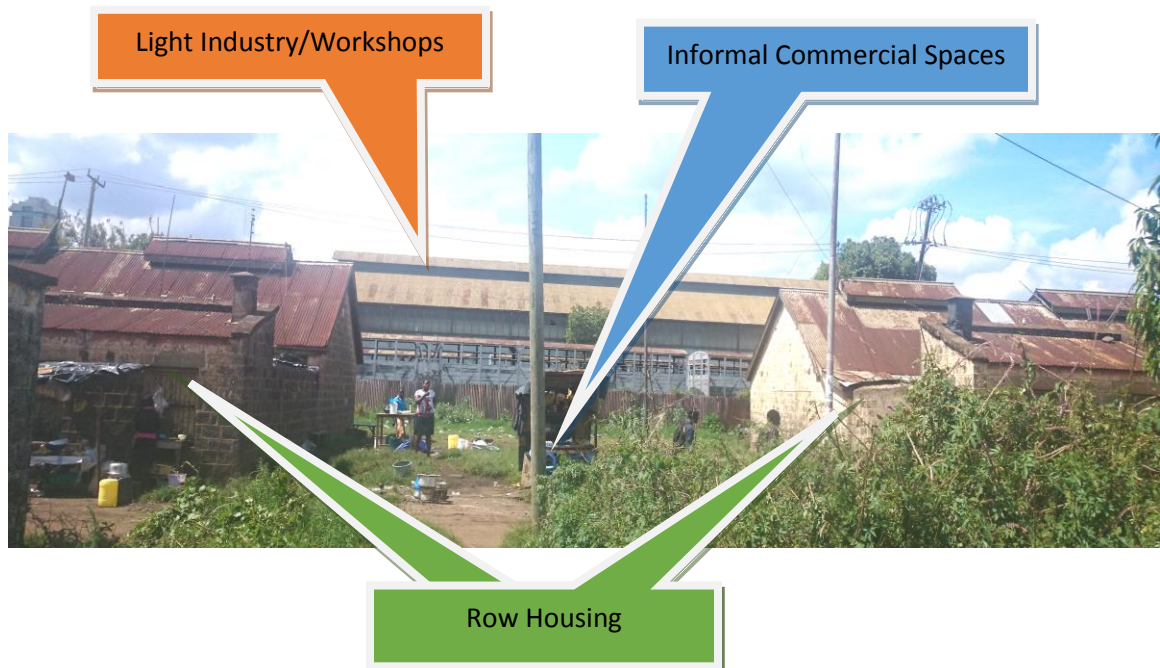
2.4.3.1: Mixed Used Neighborhoods

This had been the greatest, single most activity that has almost successfully taken root within the neighborhood and transformed the entire fabric of Landi Mawe as it was originally envisioned. The centralized Duka Moja was an ideal solution to a small local community problem that has over time been rendered inadequate in the context of the increased population and consequently the diverse commodity and service needs of the new population. The proximity of the CBD and the industrial area as well as the institutions of higher learning in close proximity to the estate has seen the rise of new commercial ventures that simply aim to balance the market equation of demand and supply. Thus beside the small retail shops and grocery kiosks that cater for basic household commodities, other commercial spots have risen to cater for other diverse

basic and leisure services and commodities such as hotels, bars, restaurants, barbers and salons, pharmacies, cybercafés, printing bureaus, clothes and shoes stalls, hardware and spare parts shops as well and garages, photo studios and movie/video and indoor recreational activities spaces.

Though the KRSRBS management saw the need to provide a formalized system of including the commercial activities in a designated area within the Duka Moja precinct, their efforts were quickly overtaken by the rapid rate of commercialization. With time informal business sprouted along the pedestrian streets, on the road reserves, on the front and back yards of individual houses and any other available open space was slowly been converted into a commercial space. The commercial spaces took many forms with the majority being defined by temporary structures/ kiosks that could serve the basic function of shelter, display and overnight storage. Others remained predominately as open air structures that served for display and would be easily dismantled or moved to a different location on need basis. It was also common to find extensions done to the individual houses to serve as selling points and the same spaces converted to storage or functional sleeping or cooking spaces after close of business. These residential changes accompanied by the proliferation of small-scale trade and petty commodity production prompted the growth of unserviced and unauthorized housing and informal commercial facilities. (Lee-Smith, 1989)

Figure 2.10: Mixed Space Use in Landi Mawe



Source: (Field Survey, 2017)

2.4.3.2: The Commercial Corridor

The opening up of the Railway Footbridge to more and more pedestrian traffic over the years has also contributed greatly to the emergence of a vibrant commercial corridor along workshop road. As its name suggests, the Workshop Road was designed as a service road to serve the Railway Workshops on both sides of the Tracks. For control and monitoring purposes it was manned at the Industrial Area side with a gate and security office and pedestrians were restricted from going through. Though the gates and security posts still exists, it has been opened up to pedestrians and has over the years become the lifeline of Landi Mawe. The massive number of pedestrians who use it to and from the CBD and Industrial Area have greatly contributed to the transformation of Landi Mawe. With the unrestricted access to pedestrian along Workshop road, hawking and on street retailing became the predominant commercial activity along the road for a very long

time. It was common to mistakenly liken Workshop Road to an open air market with all the different wares ranging from clothes, groceries, shoes, phones, jewelry, books and a myriad of other commodities that would line the sides of the roads enticing pedestrians to stop and shop. However increased rates of crime within the neighborhood and in the other temporarily constructed commercial spaces forced KRSRBS to prohibit the selling of commodities along the road.

Figure 2.11: The Landi Mawe Commercial Spine



Source: (Field Survey, 2017)

Integration of commercial activities in any estate is integral and it wasn't long before KRSRBS recognized that they had to eventually accommodate for it within the estate and

along the major pedestrian corridor as well. The first initiative towards formalization of commercial activities was thus first seen when Kenya Railways Authority (KRA) through KRSRBS started to lease out space along workshop road for permanent structures to be constructed that could be rented out as commercial shops and stalls. This started off on open spaces that were outside the gate towards the commercial and Bunyala Road roundabout. With time KRA was soon converting the old houses and warehouses into commercial establishment serving as hotels, shops, bureaus, salon etc. very recently conversion of workshops into a shopping mall and a ladies hostel along Workshop Road.

2.4.3.3: Residential Extensions

According to the Nairobi City Guide to Develop Ordinances and zones, Landi Mawe Estate is a low density, low income housing scheme for one family dwellings but ripe for high rise, high density residential redevelopment. This redevelopment has already began to take place albeit in an informal manners simply guided by the demand for more housing for an ever increasing population. The residents have for a long time been left to their own creative initiatives to address the issue of accommodating their growing families both nuclear and extended as well as address the ever increasing demand for rental spaces within the estate. This demand began with the many workers from the Industrial area who found Landi Mawe to be very convenient to commute to and from their places of works. They were soon followed by the students the institutions of higher learning in close proximity to the estate with the majority of those seeking for rental houses coming from the former Kenya Polytechnic and KIHBT.

The first attempt to accommodate the housing demand was seen when the tenants would subdivide and sub-let some of their rooms to accommodate other tenants. The backdrop of this was the harsh economic times that faced most of the tenants who had at that time had been laid off their jobs at KR and were trying to make ends meet. This was soon followed by a wave of former employees returning to their rural homes and renting out their entire houses to the new illegal tenants. Others became more creative and would build extensions annexed to the main housing unit using temporary building materials such as iron sheets, timber offcuts, bricks and eventually even with more permanent materials like quarry stones. Due to the grave of mismanagement of the estate by Kenya Railways at the time, this trend went unchecked until the formation of KRSRBS which was mandated to manage the estate. However a lot of damage had already been done to the neighborhood fabric of the estate. Despite efforts to control the phenomenon, KRSRBS soon realized that a new strategy of accommodating and re-structuring the neighborhood was more viable to long term prosperity of the estates. KRSRBS is thus re-strategizing on sustainable ways to manage the estate while acknowledging its unique position and strategic location within the greater Nairobi city and the potential that Landi Mawe holds for driving local urban development.

2.5: 24-hour Economy in Landi Mawe

Walking along the Railway footbridge affords the pedestrian a splendid view of the magnificent skyline of Nairobi CBD and the fast towering Upper hill region. This view can be enjoyed both during the day as well as early as 4.00 am and later at 11.00pm in the night when mostly workers and students are still crossing the flood-lit Railway Footbridge. Kenya's Vision 2030 blue print for development can already be seen to be

in motion even with such initiatives as street and footbridge lighting to enhance security and 24-hour pedestrian experiences. This thus simply points towards the myriad of potential possibilities that exist within the development blueprint to guide the development of a 24-hour economy within Landi Mawe

2.5.1: Urban Re-development

The development of the mixed-use development has always been catalysts for the growth of 24-hour economies because the multiplicities of activities that take place within a localized radius not only guarantee security but most importantly continuously generate demand. Despite the haphazard and informal transformation of Landi Mawe into a mixed used economic hub the transformation has strategically highlighted the neighbourhood's potential to accommodate a 24-hour economy.

This potential is framed within a backdrop of rapid commercialization due to the ever increasing student population of TUK, KIHBT and institutions of higher learning, the massive pedestrian traffic that uses the railway footbridge and the strong backward and forward linkages that Landi Mawe offers due to its proximity to both the CBD and the industrial area. Not forgetting the ever growing residential population within the estate as well as the availability of high value but underdeveloped space ripe for redevelopment into a mixed used neighbourhood that can be structured along the standards that can guarantee a sustainable 24-hour economy.

Figure 2.12: Conversion of Railway Workshops to Student Hostels



Source: (Field Survey, 2017)

2.5.2: The Nairobi Railway Station

The Railway station had until recently been an almost forgotten feature when the discussion on modes of transportation in Nairobi came up. The Nairobi Commuter Railway project as initiated by RVR in 2010 finally opened up the Railway Station and started it along the journey of reclaiming back its full glory, something that the Standard Gauge Railway will eventually achieve. The prominence of the Railway Station as the giver of the study area points towards the direction that Landi Mawe is eventually destined to enjoy and leap the full benefits of neighbouring the soon-to-be busiest 24-hour transportation hub in the city of Nairobi.

CHAPTER THREE: LITERATURE REVIEW

3.1: Overview

This chapter examines the existing literature in the limited pool of knowledge on the deductive nature of the 24-hour economy as well as exploring knowledge gaps on the same. For a deeper understanding the chapter contextualizes the concept of the 24-hour economy within the pool of knowledge on sustainable local economic development. The chapter culminates with a conceptual framework as a scholarly representation of the researcher's view of a sustainable 24 hour economy as a driver of local economic development within and urban setting. .

3.2: Local Economic Development

In "*Small is Beautiful: a Study of Economics as if People Mattered*", Schumacher (1973) established that the significance of counties within a state help in the effective handling of issues like mass migration, poverty, income inequalities and unemployment, just to mention a few (Schumacher, 1973). He condemned the focus of the central government's policies regarding its GDP which neglects other aspects concerning the quality of life among residents and the physical conditions where individuals live and interact (Schumacher, 1973). Local Economic Development (LED) strategies towards economic and social development have significantly increased in the 21st century mainly because of what has been observed as a failure of top-down expansion strategies especially in developing countries. In short, several national strategies towards development have failed to satisfy local needs as well as to handle local economic challenges, and have therefore failed to improve the quality of life among residents especially in relation to increasing globalization.

Thus, according to the World Bank,

“The purpose of local economic development (LED) is to build up the economic capacity of a local area to improve its economic future and the quality of life for all. It is a process by which public, business and nongovernmental sector partners work collectively to create better conditions for economic growth and employment generation (World Bank, 2010)”.

Correspondingly, Zaaijer and Sara (1993), explained LED as an essential process through which decentralized governments and/or community based groups manage existing resources and encourage private participation and investment to create employment and stimulate economic activity within that territory. Principally, the objective of LED is to create an economic structure that supports improvement of the residents’ quality of life. Blakely and Leigh (2010) further acknowledge that to seek pure growth is not enough, rather, emphasis should be on economic development and quality of life among residents. Accordingly, they observed that LED is attained when the standards of living in a society can be preserved and improved through human and physical development that is based on the principles of sustainability and equity (Blakely and Leigh, 2010). The key idea that emerges from the variety of definitions is that local economic development is a concept that extends beyond focusing on economic growth. Therefore, LED revolves around development expansion within regions that make the quality of life better for the residents. Further, it acknowledges that a necessary ingredient for local development entails the generation of income and provision of employment so that the region can afford anticipated, necessary and enhanced services, infrastructures and facilities and infrastructure. Understanding and working for a specific local area is an integral and

defining feature of local economic development. Conroy (1975) states that “urban and regional economies may grow at very rapid rates, in terms of output, employment and population without increases in the average level of income if migration brings in new labour force from lower wage jobs elsewhere” (Conroy, 1975). Based on this premise, highlights are brought forth on the idea that pure economic growth is not synonymous with improvements in the quality of the growth. Traditional economic growth theory does not consider the role institutions can play in economic development (Rodriguez-Pose, 2010). Modern economic geography takes into account the impact of new industries (technology, creativity and innovation based) and the effects of education on economic development, and therefore the role economic development can play in communities’ quality of life.

Local Economic Development (LED) overcomes market failures and the challenges in the global market structure; it stimulates the citizens towards a common sense of purpose and objectives. LED galvanizes residents to participate and invest in business and entrepreneurial activities in addition to guaranteeing environment that favour human development and sustainable employment. Thus, it continually works towards the fight against social inclusion and poverty, reassures security and leads to the integration of social and economic policies towards a “bottom-up” development approaches (Baird, 2010). In this regards, LED fights the customary model of economic development, which empowers a small portion of the population while at the same time depends on the questionable trickle-down effect to reach the poor: the neo-liberal theory which favors Multinational corporations and globalization. Local economic development is a subset of

what Kresl (2007) has labelled strategic-economic planning. Strategic-economic planning is a combination of two fields which have been fairly distinct in practice throughout history: strategic urban planning and strategic economic planning – “this is, economic planning but from the specific standpoint of the enhancement of the relative competitiveness of an urban region” (Kresl, 2007). The idea of strategic economic planning encompasses more than local economic development specifically – it is argued to be of benefit at a wider level (for instance, national over local). Key elements are efficient use of resources and quality public participation. It is argued that the framework that surrounds economies and the evolution of economic development initiates urbanization; as a consequence of this the cities role is changing. These changes can be planned for and taken advantage of via strategic-economic planning.

3.2.1: Theories of Sustainable Local Economic Development

The concept of local economic development is grounded in, or links closely with, a number of established economic and urban planning theoretical ideas. This section evaluates the relationship of local economic development to the following seven theoretical ideas agglomeration economies, specialization and diversification, neo-classical growth, endogenous growth, bottom up initiatives, the localities approach and globalization.

Agglomeration economies

It is argued that cities exist as a result of agglomeration economies. Agglomeration economies are based on the notion that dense areas are more productive, which is perhaps attributable to reduced transportation costs and easier flow of ideas (Glaeser and Gottlieb, 2009). Quality infrastructure provision is valuable in terms of place competitiveness, and

as a city grows, opportunities to utilize the tools of agglomeration and clusters increase (Kresl, 2008). The benefits of close physical proximity are also witnessed through easier communication. Cities provide a pool of labor for employers to utilize and the sharing of economic inputs. Social interactions occur frequently in cities, resulting in what is termed ‘knowledge spill-over’s’ as ideas are easily transmitted between people and organizations (Jofre-Monsey, 2008; Glaeser and Gottlieb, 2009). In addition, they posit that the concept ‘agglomeration economies’ suggest that cities comprise a concentration of economic activity. Some cities result as a cluster around raw materials, while others develop as clusters built around special industry or knowledge bases. The effect of one city’s activities on another city depends on the distance apart of the cities. It is difficult to measure economic success at the local level, approximating the value of economic agglomeration can be undertaken using unemployment and wage data (Shearmur and Polese, 2005).

Specialization and diversification

Economic diversification is often sought and encouraged. However, while diversified economies may have grown fast, diversification does not imply fast growth (Shearmur & Polese, 2005). Specialty can promote growth within a particular sector (Shearmur & Polese, 2005), while it has been identified that specialization has been associated with higher rates of unemployment (Rosenthal and Strange, 2003). There are benefits to each approach. Further, they argue that the local competition associated with specialization encourages innovation, while diversification encourages growth and business start-ups. Specialization can occur within diversified economies, for example, Seattle is “a large, diversified Metropolitan area that incorporates specialized industrial cluster” (Shearmur

& Polese, 2005). The question of whether specialization or diversification has the greatest large scale impact is unsolved because studies have diverse findings. The answer to this depends on the nature of the business activities in question (Jofre-Monsey, 2008).

The neo-classical / exogenous growth model

The neo-classical approach argues that the free market will reach natural equilibrium without interference (Blakely and Leigh, 2010). This is a growth model in which there are diminishing returns to each factor of production but constant returns to scale. Exogenous technological change generates most long- term economic growth (Todaro and Smith, 2009). This model is not in accordance with the principles of local economic development, for example, the creation of many low wage jobs would be considered positive; however in terms of local economic development, fewer higher quality jobs would be considered a better outcome (Blakely and Leigh, 2010).

Endogenous growth theory

Comparatively, endogenous growth theory is directly related to the local economic development concept. This theory assumes that increasing human capital and (simultaneously or consequently) technological capability will induce economic growth as production becomes more efficient.

The economic system of a locality will be self-sustainable as opposed to relying on external markets and inputs (Vazquez-Barquero, 2002).

Bottom-up development approaches

As the 'key role players' section above argued, community based groups and local people are a primary ingredient in the implementation and execution of local economic development strategies. These people and groups challenge the traditional approach of

decision-making that comes from the top (Squazzoni, 2009). This is especially important in poorer communities, as a stable community base is required for people to acquire the resources they need, such as financial support, however the sense of community is often lacking in the modern world. The local economic development process aims to overcome this lack of community and instead reap the benefits that are possible from the bottom-up approach.

The localities approach

This is the classical approach for explaining why people and businesses locate where they do. It is based on the notions of economies of scale and the benefits that ensue from agglomeration – when similar businesses and people locate within the same vicinity they can make use of similar inputs they require, increasing efficiency and reducing cost. Elements from this theory relate to this study and assist in explaining why and how cities develop in the manner they have, and do, in relation to the way local economic and urban development programs progress (McCann, 2009). A common idea in the literature is that of a changing economic geography. As technology becomes more important, it is argued that the value of place has become less important (Porter, 2000).

Globalization and ‘Glocalization’

It may seem strange that it is now argued that the concept of local economic development is closely related to the concept of globalization. This section has supported the argument that local areas must somehow compete for investment in this global era, be it for service provision, industry location or any number of other desirable elements of a city. Glocalization is the idea that urban areas must somehow provide for the local

communities needs while competing in a worldwide market and keep the economy performing successfully (Le Heron, 2009).

3.2.2: Urban Neighbourhood Development Concept

According to Abercrombie “Planning occurs when mankind makes a definite and conscious attempt to model or mould his environment”. Accordingly when two or three buildings are grouped together the question of their functionality in relation to each other has to be addressed. Abercrombie posits that the essence of planning is relationship, the accommodation of several elements to make a harmonious, complete and functioning system. And that is why when a bridge crosses a railway line, there is a relation to the railway station and yard, when an estate is enclosed the question of the boundary lines occurs and the manner in which it is to be divided up. When a road cuts through the estate the question of how the residents relate and react to the traffic generated arises.

3.2.3: Informal Economy

The capacity of the informal sector of the economy to absorb the increasing population into the labour force has posed challenges to the land use planning and management not only in Kenya but also in other African countries (Adenyika, 2006). This challenge is a result of the informal sector generating land usage problems such as inconsistency in land uses, building alterations, the nuisance of temporarily structures, alterations of land use functions, open space conversions and land degradation (Okeke, 2000). It is however important to recognize the important role that the informal sector play in the economic development of a country. The informal sector in Kenya contributes 25 per cent of the GDP (Economic Survey, 2012). This has to be appreciated in the context of a growing urban population where the majority are unemployed and more so fall in the category of

the youth. It therefore becomes necessary to evaluate the implications of the informal economy on land use in the urban setting and integrate the sector into the receptive capacity of land use planning and management.

3.3: 24-Hour Economy

3.3.1: Definition and Meaning

Iraki et al., (2009) defines a 24-hour economy as working for 24 hours per day. This means that people work round the clock both day and night as opposed to the conventional 8-hour working day. The author further explains that the 24 hour period could be in three 8-hour shifts or off hours during the weekends, holidays, early mornings and late evenings. Costa (2006) defines the 24-hour economy as a social organization unlimited by time restrictions. According to the author, the shift in time restrictions from daytime work to night work provides a clear picture of the definition of a 24-hour economy. Contrary to popular belief, a 24-hour economy does not imply that one works for 24 hours per day, or that businesses are necessarily always open day and night. The definitions however do imply that the normal 8 hour working day can be performed at any time during the 24 hour period within any given work situation.

This therefore means that within a 24-hour economy, the society does not have fixed borders between a person's working time and social time. This is because there has been a shift in the value of the working time from the conventional daytime to shift work (nights, off-hours and flexi-time).

Tapia (2004) likens a 24-hour society to a post-industrial and post-Fordist change in the workplace. His article on the 24-hour workday in IT organizations during the dot-com bubble asserts that the 24-hour economy has been caused by a shift in the workplace.

Owour (2009) defines shift work as the work activity that has been scheduled outside the conventional 8-hour working day. At the end of the shift, the employee hands over duty to another employee who takes over the next shift within the 24-hour duration. According to Iraki et al. (2009) flexi-time is an adaptable working scheme which allows employees to choose their working hours, within the organization's limits. Thus employees can choose to work during their off-hours which are hours outside the conventional 8-hour working day such as evenings, nights, early mornings, weekends and holidays.

Gupta and Seshasai (2004) in their research on a 24-hour knowledge factory posits that 24-hour societies were formed during the industrial revolution where employees worked 8-hour shifts to utilize limited equipment more effectively. With the advent of information technology, organizations embraced the establishment of multiple 24-hour call centres as a strategy to reap greater benefits from the 24-hour working system. Such benefits included reduction of telecommunication costs acquiring and retaining a geographically distributed workforce, increased turnaround time and creation of competitive advantage. The 24-hour organizations are therefore able to give employees freedom to handle their personal matters, take ownership of their time and take greater responsibility for their work which in turn lead to increased productivity. And 24-hour economy implementation report prepared by the National Economic and Social Council and the Ministry of Nairobi Metropolitan Development concurs when it posits that history indicates that the greatest economic growth is driven by an increase in productivity. Therefore a fully operative and sustainable 24-hour economy enables

society and businesses to increase productivity by making most use of the available space, manpower and technology and most importantly, time.

3.3.2: Scope of 24-Hour Economy

For a long time scholars have likened the 24-hour economy to a night time economy. For instance, Lightowlers, Morleo, Harkins, Hughes and Cook (2012) define a 24-hour economy as a night-time economy where diverse people perform economic activities at night such as going to the cinemas or theatres, going to restaurants, visiting cafes and nightclubs, and socializing in public halls and bars. They do however acknowledge that many urban centres have begun adopting night time economy because of its positive impact on job creation, scope of leisure and retail opportunities, investment and raised public profiles. The Scarborough Government (2013) in the Night Time Economy Strategy and Action Plan posits that a night time economy is vital for economic growth especially in the leisure and tourism industries.

According to the Kenyan *National Economic and Social Council*, (2010), the 24-hour economy is not a new idea. Some sectors of the economy, such as the security and health services, already operate 24 hours a day all year long. What is needed is for more sectors of the economy to adopt the strategy. Studies indicate that adoption of a 24-hour economy is not only vital for growth in the leisure and tourism industries but its benefits cut across all other sectors of the economy as well. Lightowlers, Morleo, Harkins, Hughes and Cook (2012) observe that a 24 hour economy includes leisure activities, retail activities, manufacturing and the services sector (such as banking). Rowe et al., (2008) posit that the success of a 24-hour economy is based on the dynamism and

intricacy of relationships between different economies of various cities. This success is traced from the 1990s when organizations changed their working hours and production to the after-dark period especially within the urban settings. This shift brought about different work and leisure rhythms, different uses of urban spaces, higher economic production of service industries, and fluid cultural and leisure pursuits. It can thus be argued that a 24-hour economy will encompass all aspects of the urban environment including the physical, social, cultural, political, architectural and economic development. Glorieux, Mestdag and Minnen (2008) also observed that flexibility of work schedules is one of the scopes of a 24-hour economy. This flexibility enables employers to increase their production outside the standard working hours. The employees work in different shifts such as evening work (7pm-10pm), night work (10pm-6am), Saturday and Sunday work. However The Retail Trading Hours Regulation from the Australian Retail Industry (2006) suggests that the scope of a 24-hour economy lies in the trading hours. The regulatory body states that a 24-hour economy requires an evaluation of restrictions on trading hours and geographical regulation of shopping districts. Given that the entire concept of the 24-hour economy is hinged on people being able to be productive within all the 24 hours of a day, restrictions on trading or working hours then hinders the full potential of the system. Removal of all restrictions relating to time should therefore go against the aspects of flexibility that makes 24-hour economies viable and sustainable. Flexibility is important because it increases the benefits for the consumer with regards to product variety and convenience, reduces discrimination between retailers, reduces the industry's distortion, lowers retail prices and increases employment in the industry. Nzioka (2014) supports this when she argues that a 24-hour economy has a number of

merits for employers, employees and consumers which include flexible working hours, cost effectiveness, reduction of energy costs, and higher employment.

3.3.3: Institutional and Legal Framework- Vision 2030

Glorieux, Mestdag and Minnen (2008) define the scope of a 24-hour society as one driven by macro-level or exogenous factors. These factors include changes in the global market, working in different time zones, integrating branch offices and flexibility brought about by the introduction of information and communication technologies. Other factors include competition in the industry. Presser (2005) posits that firms maintain 24 hour services and manufacture goods during the night as a strategy for competitive advantage. The author also asserts that consumer demand is another factor that causes companies to operate for 24 hours. He observes that consumers are increasingly demanding for after-hours services in restaurants and retail outlets.

Such a factor directly coming from the consumer can cause governments to inevitably support the 24-hour economy by encouraging flexible work hours and providing 24-hour licenses to companies. Still on the factor of increased consumer demand, Presser (1999) observes that the changing economy, shift in demographics and technological growth has increased employment opportunities for women and participation of the labour force through extended working hours. This therefore means more consumer demand due to the reduction of woman homemaking abilities, increased households incomes and postponement of marriages which lead to demand for more entertainment and recreational services after working hours. Technological changes have also seen the rise in consumer demand due to improved and speedy rate of communication especially in the

context of online shopping, banking, and even access to basic public services. These factors therefore mean that there should be prerequisite requirements and tools laid down before the implementation of any sustainable 24-hour economy. Iraki et al., (2009) suggest these prerequisites to be the identification of global and domestic market for the extra goods and services, development of an integrated national plan (combining rural and urban areas), provision of incentives to public-sector businesses, adoption of effective policy and legal frameworks, ensuring security, upgrading of the transportation networks, and improving access to social systems including water, energy, waste management, health structures, recreation activities and child care.

Flexi time as a human resource strategy can aim to improve the value of human resource. People generally are more productive and efficient when stresses associated with childcare, morning traffic tension and inter-role conflicts are reduced in the work environment. Karyabwite and Govender (2011) define flexitime as the establishment of flexible work times where employees customize their working hours. A common flexible work schedule is to allow employees to work from home. This is one schedule that can help organizations to retain their experienced and qualified workers who are most likely to leave the organisation due to poor work-life balance. It also encourages job-sharing, which increases the skill range of employees, and improves the health of the employee as well as reducing office space costs and increase the use of IT.

3.4: Urban Sustainability

The rapid population growth and sustained economic growth in Nairobi city has meant that zones adjacent to the CBD became alternatives for residential and commercial developments. Thus, Landi Mawe and other railway estates have since felt the pressure. These estates /zones were characterized by low density developments and fully serviced with water, sewer and electricity and all weather roads. However, they have witnessed radical land use transformations in the area from residential to commercial. The transformations have seriously strained the existing infrastructure services notably roads, sewers which are yet to be expanded and which in turn give rise to other urban challenges. Ultimately, it has been argued that successful local economic development has the potential to improve quality of life.

3.4.1: Neighbourhood Sustainability

Alongside the city's growth, the neighbourhood is equally dependent on the nature and level of commercial activities it supports and the level of physical infrastructure that has been put in place (Lynch, 1978) just as human culture is shaped by ecological conditions, human behaviour on the other had impacts on urban nature through city and neighbourhood design. Existing key theories of land use and urban spatial structure have been discussed below to shed insight into the neighbourhood concepts over time.

In many countries including Kenya, planning and land use regulations are designed in such a manner to separate residential and commercial activities. Hansen (1975), describes how the resident of low income neighbourhoods in Zambia in the early 1970s used to hide from authorities as home based enterprises were considered illegal. Despite the continuous effort to separate the residential and commercial activities, the enterprises

continued to thrive and spread throughout the city. Therefore, instead of eradicating or ignoring the growth of informal enterprises in residential neighbourhoods the policy makers can enhance their performance for the overall growth of the economy.

In Kenya several policies have been put in place to facilitate the efforts of small scale enterprises:

1. Sustainable housing: The UNHabitat (2012) indicates that sustainable housing offers a spectrum of opportunities, promotes economic development, environmental stewardship, quality of life and social equality esp. for the urban poor.
2. Economic sustainability in housing: UNHabitat (2012) notes that housing is more than just a place to sleep, but should also be connected with economic activities as these present an important livelihood strategy for most household in counties such as Kenya and other African countries that are still undergoing urbanization.
3. Sustainable neighbourhoods.

3.5: The Urban Development Corridor Concept.

In the 1970's conventional land use planning and the regulations to guide land use seemed more and more discredited as an attempt to regulate urban growth instead of encouraging it, yet cities are machines of wealth creation. Hall (1977) argued that the critical problem for cities today is that management interventions have managed to destroy much of the innovating entrepreneurship that was once the important economic feature of central metropolitan areas. As a reaction to Hall's sentiment, proactive urban planning has since envisaged urban development corridor concept. The concept involves transforming city thoroughfares into strategic business hubs that promote commercial and

neighbourhood activities through intensification of land uses defined by the main city street, bus stops, commercial and industrial activities on either sides of the corridor. This concept revitalizes contemporarily urban structures that seek to make better use of land resource. In a city like Nairobi where businesses are being driven out of the CBD by traffic congestion and related problems, the urban corridor concept has stood out as an alternative to freeing the city and promotion of local economic development. The concept also provides opportunity to identify potential commercial activities to help structure and strengthen the identity of different neighbourhoods around urban corridors and also to aid in the creation of new urban corridors. The corridors usually of mixed land use typology presents high density development along the highways promoting passenger and pedestrian transport and provided for growth and change (Lynch, 1977) the existing quality of the environment between the corridors can be protected to allow for open space that can be utilised for other community functions to elevate the experience of the occupants of the urban corridor. In this regards, urban neighbourhoods such as Landi Mawe shall continue to be importance components of the concept.

Neighbourhood differentiation, creation and revitalization in a city like Nairobi should be borne out of zoning practices that take into consideration all economic and social cultural factors affecting particular neighbourhoods. It entails a careful balance of all the forces that come into play. A functional neighbourhood's basic components entail learning institution, shopping centres, open spaces, recreational spaces, ambient parking and coordinated vehicular and pedestrian circulation systems among others. The ordering and

relationships of these components should determine the level of functionality and ultimate neighbourhood sustainability.

3.6: Mixed Land Use

According to Kellet (2003) the organization and meaning of space is derived from social translations and transformations and experience. This implies that, space is socially constructed through the activities that take place within it. Low income neighbourhoods are essential multi-functional, therefore, the informal economy is more prevalent in the high density neighbourhoods as compared to the low density neighbourhoods. The proliferation of the informal sector enterprises in the urban space especially close to residential neighbourhoods has been observed to pose a serious threat to land use zoning and planning (Tipple, 1993). This is more so because income generating enterprises within planned residential neighbourhoods are considered illegal according to the exclusionary zoning regulations that have guided urban planning for decades.

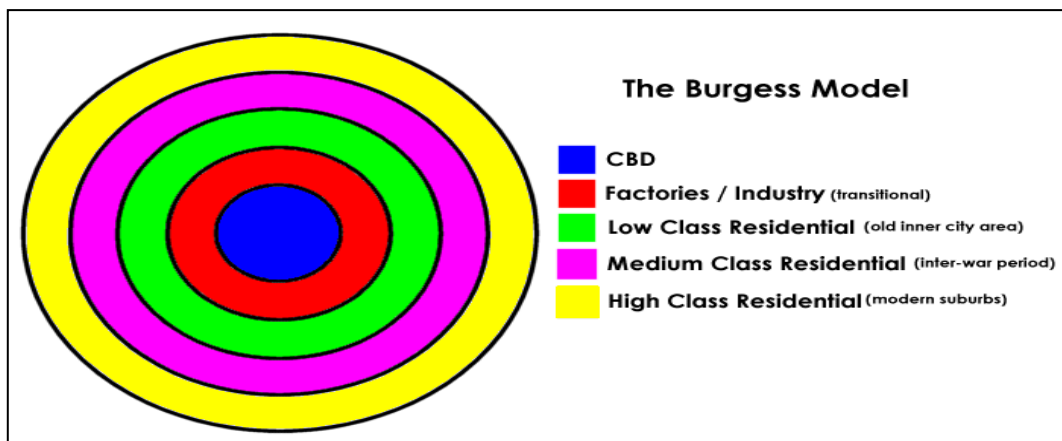
Kellet (2000), states that there is need to broaden the conceptual categories of residential areas to include income generating activities as valid and normal within the domestic environment. This therefore demands a new land use planning tools or approaches that will cater for the spatial distribution patterns and relationships between the informal economic sector and the residential land use. Hansen and Vaa, (2004) indicated that poorly equipped residential neighbourhoods may adversely affect the already disadvantaged, even if they try to get themselves out of their poverty trap by engaging in informal commercial activities and small scale trade. It is also important to note that the informal economy sector also provide supplementary services to the major land users in

the vicinity of the neighbourhood such as the CBD, industrial, and education as is the case in Landi Mawe. Amin (1993), however points out that the integration of the informal sector into urban planning needs to address a number of issues, these includes issues such as provision of appropriate and adequate worksites and workshops, environmental services and security of tenure of the vendors (Yankson, 2000).

3.6.1: Urban Land Use Models.

Mixed-use developments must be looked at through the lens of the three classic models of urban structure which include the Concentric Zone Model, the Sector Model and the Multiple Nuclei Model.

Figure 3.1: The Concentric Zone Model

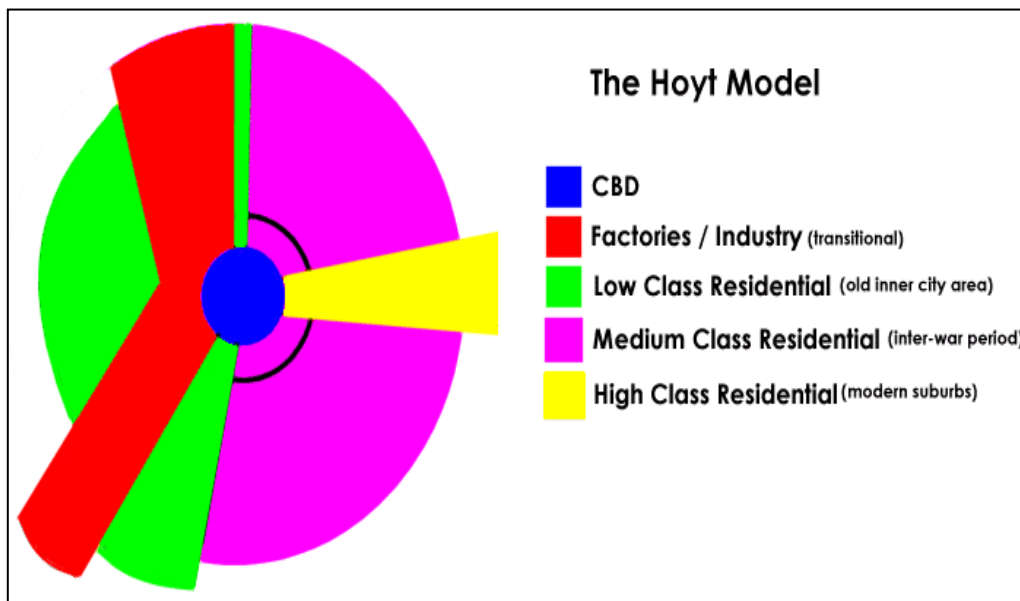


Source: (Smith, 1962)

The concentric zone model (Burgess Model) depicts use of urban land as a set of concentric rings with each ring devoted to a different land use. Zone I is the Central Business District (CBD) that is the most accessible zone where most of the tertiary employment is located. Zone II is the transition zone where many industrial activities locate (nearby labor, markets, transport terminals like ports & rail). Zone III is for

independent workers and also used by some industrial activities in inner cities and ethnic enclaves and mostly contains the poorest segment of the urban population. Zone IV is the reserve for better residences and is dominated by the working class. Zone V is referred to as the commuter zone and represents higher quality suburban housing linked with higher commuting costs.

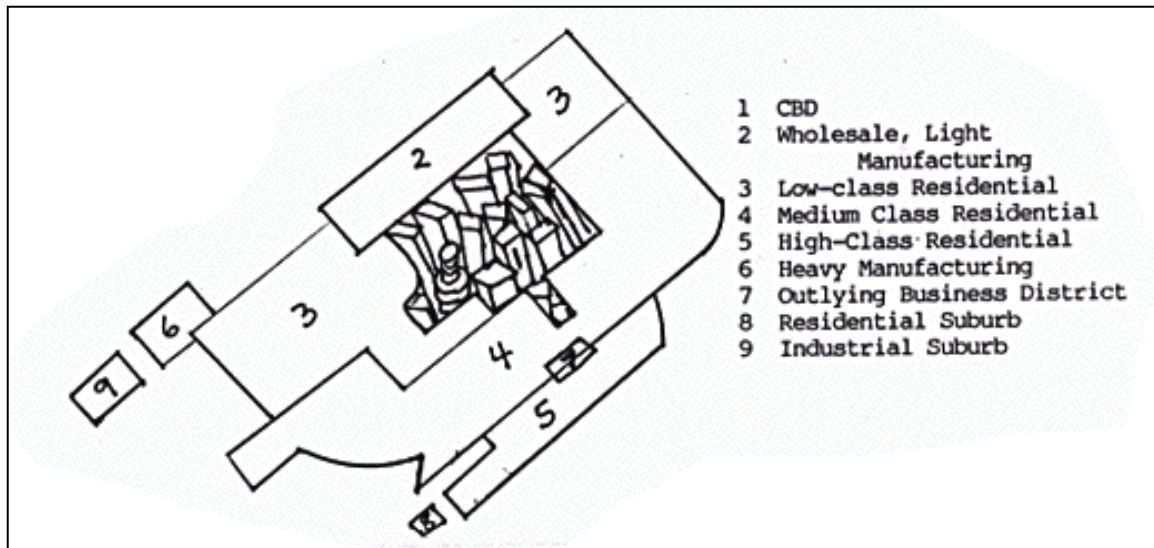
Figure 3.2: The Sector Model



Source: (Smith, 1962)

The study on the sector model was done in 1939 by Homer Hoyt in Chicago and is referred to as the Hoyt 'Sector' Model. In his model, Hoyt is taking into account differences in accessibility and in the land values along transportation routes. The land use in this model is not random but defined by functional sectoral wedges. Transportation "corridors" impact land uses and the rail lines, major roads, public transport create "sectors".

Figure 3.3: The Multiple Nuclei Model



Source: (Smith, 1962)

The multiple nuclei model on the other hand looks at a city as being multi-nucleated with a downtown center & satellite centers on the periphery. It recognized the presence of many competing decentralized centers and reflects the great influence of the automobile.

3.7: Challenges of Implementing 24 Hour Economy

Interestingly, it has been established globally that a 24-hour economy in cities create a wide range of challenges and policy issues. Nonetheless, the biggest challenge is in finding ways of selling the concept and enabling its benefits while mitigating and limiting its problems. The dominant challenges and policy issues experienced in the city are identified to include; inclusiveness, mobility, change of attitude and behavior, county by-laws, labor laws and ethical concerns; funding of supportive infrastructure; and formulating how to decentralize roles among all stakeholders (Owuor, 2009). A second concern relates to security. For any city to effectively develop 24-hour economy, there is a need to have a secure environment. Relying on the current security levels in the city,

insecurity will put off interested investors and shoppers in the city. Accordingly, measures like increasing the presence of police and other security agencies and continuous patrols by law enforcers will have a great impact by reducing the fear created through perceptions of crime at night among city residents and potential investors. Further, through the use of technology such installation of CCTV cameras and other modern surveillance strategies, lighting of the city will ensure that crime is reduced and enhance timely response to distress calls and consequently, attract a wider cross-section of stakeholders into the city at night (Owuor, 2009). Furthermore, the role of central and Nairobi county governments in providing a conducive investment environment that will support a 24-hour economy cannot be ignored. For instance, it is important to enhance mobility within the city besides security (Nzioka, 2014). In addition, supporting infrastructure such as adequate lighting for traders including hawkers as well efficient and reliable public transport system will support the concept. Moreover, a spatial interaction between producers and consumers, goods and services during the night is heavily reliant on the availability of efficient transport systems. Even though currently most routes are served by public transport (matatu) round the clock, they mostly charge higher than normal fare prices during the night (Owuor, 2009). Similarly, taxis, which are a reliable transport means during the night, are very expensive for common citizens to afford. Nonetheless, strategies on providing reliable and efficient public transport should also include security both to commuters and operators). Equally, establishing convenient and pedestrian walks will ensure that shoppers are able to access different stores and services within the city (Ngayu, 2011).

Regarding inclusiveness, Ngayu (2011), observes that the 24-hour Nairobi economy's value should be for the benefit of the majority including the poor, and as well as vulnerable groups in the society like the disabled. Whereas, the current environment favors these groups during the day it is not the case during the night. For instance, women feel insecure during the night, those living in poor neighborhoods may lack the services of public transport during the night while the disabled equally suffer for the same reason (Nzioka, 2014). Presently, the 24-hour city economy favours the youth since most night activities focus on entertainment and consumption of alcohol. Thus, encouraging other businesses that are characteristically open during the day should be enhanced. It is the role of the government and policy makers to ensure that every citizen is given an equal chance to participate in the development of 24-hour Nairobi economy. Noting that during the night most services are provided by hawkers, who use street and pavement, their security, as well as providing enough and accessible spaces should be addressed. Further, since most 24-hour supermarkets and shopping outlets are located in middle-high income areas which are considered safe, they limit the number of people that can access them. The majority are left out due to their social-economic status whereas they are the major drivers of the same economy during the day.

Accordingly, Nzioka (2014), notes that it is important to change current behavior and attitude among citizens/ city dwellers. Acknowledging that the concept of a 24-hour city economy is still fresh among many business persons and local investors, its acceptance may be sluggish. Thus, residents are embracing this concept with caution, and it is the role of the government to guarantee its safety and benefits. Culturally, citizens have

believed that businesses are conducted during the day and hence the city is almost empty during these hours and hence, changing this belief is paramount to the success of the concept (Bocquier, Otieno, Khasakhala & Owuor (2009). Through civic education and implementation of pilot projects to act as demonstrations of how a 24-hours economy is beneficial to their livelihoods will help change the negative perceptions and attitudes regarding the concept. In addition, cultural and gender barriers linked to night life must also be addressed through civic education and sensitization campaigns. For instance, whereas women would be the major night and customers given that they are preferred to men in occupations such as supermarket attendants, waitresses, barbers and salonists among other jobs, their place in society(mothers and wives) limits their participation in a 24- hour city economy (Nzioka, 2014).

Political influences through City/county by-laws, labor laws as well as ethical concerns are other factors that challenge the 24-hour city economy. Existing city by-laws and labor laws are ridged and have continued to suppress initiatives targeting the 24-hour Nairobi economy participation. For example, the county councils of Nairobi policies are seen to be against the participation hawkers and street/pavement venders. Similarly, in the formal sector, current labour laws have strict work hours and are very restrictive on night or weekends participation. To challenge this, there is need to frame by-laws and labour laws that favours a realization of the 24-hour city economy. More so, investment in supportive infrastructure is necessary. It is the government's role to provide amenities and public good including; street lights, good roads, efficient and reliable public transport system, electricity and security, among others for the successful implementation of a 24-city

economy (Nzioka, 2014). Wholesomely, it is established that the economic success of cities is a function of urban structures efficiency, and its attractiveness to investors and customers. As such, security and investment on supportive infrastructure are the lead challenges being faced in the implementation strategy of the Nairobi City 24-hours economy. However, changing the attitude of city residents as well as that of the governing bodies (county and central governments) has also been established as contributing factors (Nzioka, 2014). It is therefore, up to the government to put in place enabling infrastructure and policies that will attract the participation of residents which will subsequently expand the development of evening and late-night economies and ultimately in the realization of a full 24-hours economy.

3.8: Conceptual Framework

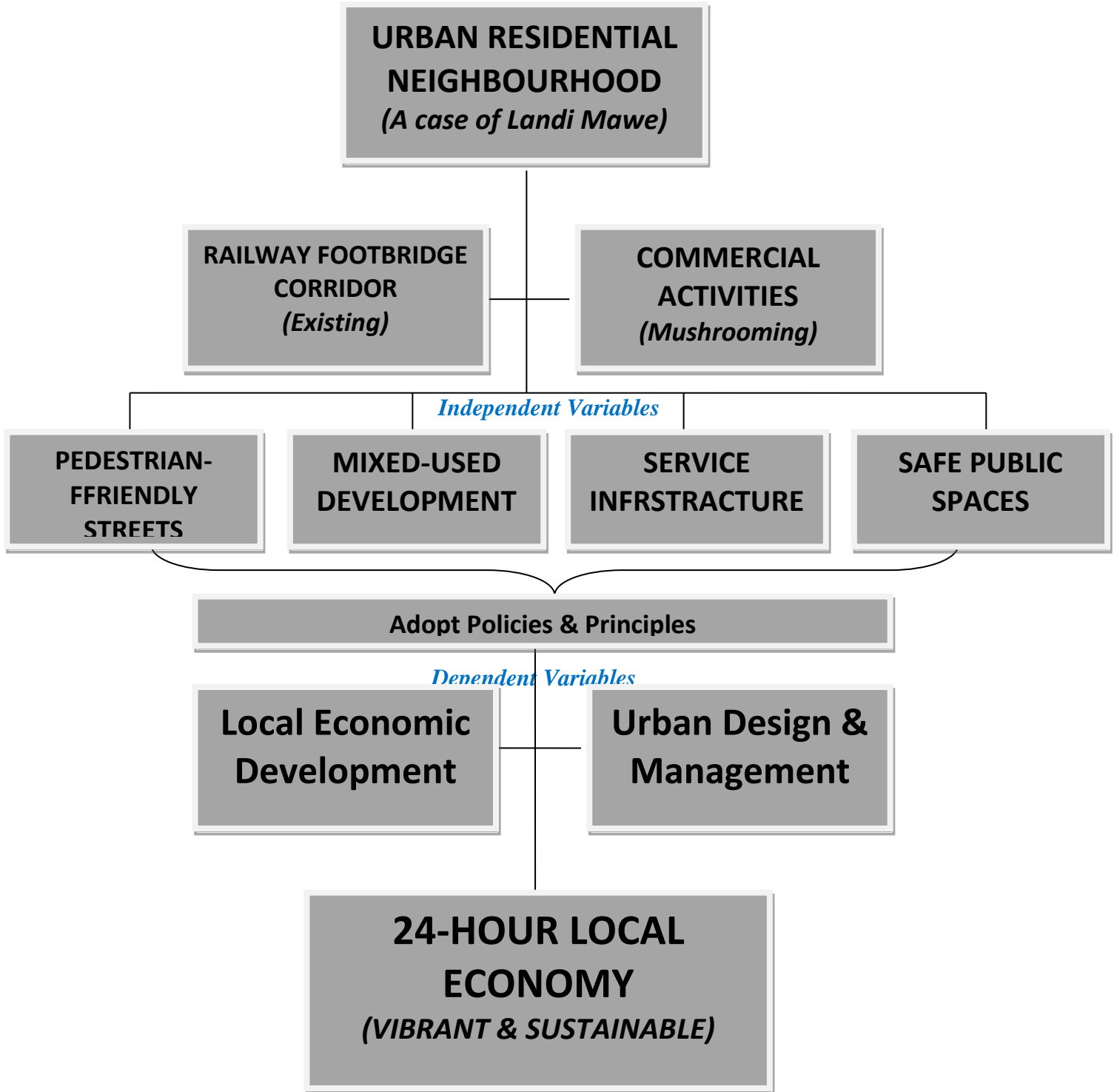
The conceptual framework looks at an urban residential neighbourhood such as Landi Mawe that is undergoing unstructured transformations as it tries to adapt to urban dynamics. The neighbourhood is looked at within the context of what is triggering the transformations. The key major triggers of transformation in Landi Mawe are; the existing Railway Footbridge that has created a pedestrian transit corridor right through the residential neighbour. The mushrooming commercial activities that have come up to compliment the 'Duka Kubwa' concept that on longer serves the needs of the growing Landi Mawe population and the ever increasing pedestrian traffic. This key triggers are manifest within the spatial scope of the study area which is defined by the Railway Footbridge corridor which also accounts for the largest area where majority of the commercial activities are located.

The dependent variables in this case are the policies for effective Local Economic Developments and Urban Management. These are guided by solid principles that should ensure that the Urban Neighbourhood is successfully transformed to become a vibrant and sustainable 24-hour local economy. Urban design principles also play a role in the effective delivery of local economic development and should be integrated within the urban management framework right from the beginning.

The independent variables are the four key tools widely used in developing and managing local economies with a urban setting with specific emphasis on 24-hour economies. The first is the creation of a pedestrian friendly street along the corridor that guided by the principles of universal design will accommodate even the physically challenged. The street should allow for convenient non-motorized mode of transport such as cycling. The second variable is the concept of mixed-use development where there is properly planned integration of commercial spaces esp. for retail within the residential typologies to ensure cohesion and optimal use of services. The third is the creation of safe public spaces that should enhance the levels of cohesion and maintain the cultural integrity of the urban neighbourhood. Public spaces can become powerful nodes in a neighbourhood and can be the unifying factor as well as significant landmarks. The fourth independent variable is the introduction and maintenance of appropriate service infrastructure to cater for the needs of the newly transformed urban neighbourhood. In this case, issues of security become a major concern due to the multiplicity of functions and the influx of new inhabitants, businesses owners, shoppers and pedestrians in transit through the neighbourhood. The upgrading and maintenance of the existing services such

as the footbridge, waste & storm water drainage etc to match the population increase and other infrastructural services related to the proper function of the other 3 variables.

Figure 3.4: Conceptual Framework



Source: (Author, 2017)

CHAPTER FOUR: RESEARCH METHODS AND MATERIALS

4.1: Introduction

This Chapter discusses methods and materials used for the research design. It discusses the data collection techniques and sampling procedures used to collect both primary and secondary data. Structured interviews, questionnaires, observations and key informants were the key data collection tools that the researcher used. The chapter also describes the data analysis methods used and the different data presentation methods that were adopted.

4.2: Research Design

According to Kumar (2008), a research design provides a framework for describing the relationship between research variables and the techniques for performing the research. Common designs include surveys, experimentation and case studies. The research methodology employed a deductive approach within an observational and descriptive research design. Since it was of an exploratory nature, the researcher conducted reconnaissance field surveys to observe and understand the nature of Nairobi's Landi Mawe neighbourhood both during the day and at night to determine how viable it is to accommodate a 24-hour economy. The field surveys of the case study area were aimed at identifying the key indicators, benefits and potential strategies for the implementation of a 24-hour economy.

The approach was supported by quantitative survey design which was necessary for the study to collect data from a population that is constituted of several varied stakeholders. Random purposive sampling was done from each group of stakeholders. This was an

approach that was also used by the National Economic and Social Council successfully. Key informants were also identified as key sources of data and were identified from the different stakeholder groups key among them being Landi Mawe estate residents as well as traders operating within Landi Mawe who were not residents in the estate.

The key source of Secondary data was The Expert Working Group Paper of the National Economic and Social Council(NESC) of 2009 titled; A 24-Hour Economy: The Next Frontier in Kenya's Economic Development. Other documented literature was also reviewed extensively to inform the research.

4.3: Population and Sampling Design

4.3.1: Population

Every survey research aims to collect data from a population that has been targeted for its unique characteristics that relate to the topic under study. This data is then analysed and the findings generalized to draw inferences about the population. Bartlett, Kotrlik and Higgins (2001) emphasize that it is important that a quantitative study collects data that is representative of a population. This study collected data from a population working and living in Landi Mawe, Nairobi CBD and the industry area together with those that use the Railway footbridge spine.

4.3.2: Target Population

The United Nations Human Settlements Program (UN-HABITAT) statistics in Cruz, Sommer and Tempra (2006) and constituency density data in Kenya Open Data Survey (2014) based on the 2009 Kenya census showed that Nairobi has a population of 3 million people. However, this population was quite large because the census covered 684 square kilometres of Nairobi's divisions: Starehe, Lang'ata, Dagoretti, Kasarani,

Westlands, Kamukunji and Makadara. However this population was quite large for the study given the logistical and time constraints of the entire project. This study was only concerned with Landi Mawe which has a population density of **4,772** per square kilometre (*Population and demographics figures as at the 2009 population census*). Taking an area of 5.55 square kilometres, the study covered a population of **26,509**. Thus, the population within **5.55** square kilometres of Landi Mawe was **26,509** for this research.

Table 4. 1 Population and Demographics Characteristics

Area	Total Population	No. Of Households	Area in Square KM	Density
Landi Mawe	26,509	9,814	5.55	4,772.1

Source: (Kenya National Bureau of Statistics, 2009)

Employment trends from the Institute of Economic Affairs (IEA) revealed that there were 9.9 million people employed in Kenya in 2009. Out of these, 1.93 million (19.5%) were in formal employment and 7.97 million (80.5%) are in informal employment (Omolo, 2010). It was difficult to establish the percentage of those in public sector due to conflicting reports. A Mars Group (2009) report shows that the Kenyan Government believes it has employed 484,830 staff while an Economic Survey points to 638,000 employees in the public sector. Due to the large variance between the two headcounts, the study did not profile its target population based on the type of employment.

4.3.3: Sampling Frame

A sampling frame is the list for selecting a sample from a population (Bartlett, Kotrlik & Higgins, 2001). It is the source material or device from which a sample is drawn and forms the list of all those within a population who can be sampled, and may include individuals, households or institutions. The entire sampling frame comprised of people who were residents of Landi Mawe, formally or informally working within the CBD and the Industrial area.

4.3.4: Sampling Design

Landi Mawe estate has over the years turned into an urban corridor since the construction of the Railway Footbridge. The population thus consists of the residents, the commercial traders, the student population and urban workers in transit to and from industrial area to the CBD and vice versa. The spatial sample frame for the study was defined by the pedestrian spine running from the Bunyala/ Commercial Street roundabout across the Railway Footbridge to the intersection of Workshop Road with Haile Sellasie Avenue.

In order to have a detailed understanding of the economic potential that lies within the Landi Mawe neighbourhood, data was gathered from all segments of the population. The random purposive sampling technique was adopted for the spatial sample frame. Thus random samples of 200 questionnaires were administered to residents, business owners, students and the general pedestrian population. The sampling of the pedestrian population was strategically chosen and administered to those walking or cycling along the railway footbridge which entailed positioning the research team at the two ends of the footbridge and at the top of the bridge.

The sample population included the key stakeholder sectors in the urban economy who used or were affected by the presence of the Railway footbridge. The stakeholders included:

4. Residents and business owners and operators in Landi Mawe neighbourhood.
5. Students, Staff from TUK, KIHBT or other institutions of higher learning
6. Workers and Residents of Industrial area and the CBD
7. The Kenya Railway and the KRSRBS
8. County Government: Nairobi County Government, the Nairobi City Council (NCC), the Nairobi Central Business District Association (NCBDA)

The sampling from the different segments of the population denotes that heterogeneous sampling was at play and this was deliberate with the aim of capturing a wide range of perspectives relating to the 24-hour economy. These perspectives helped the researcher make statistical inferences that guided the quantitative research design.

4.3.5: Sample Size.

A sample size is a statistical sample is the number of observations that constitute it. (Bartlett, Kotrlik & Higgins, 2001). The appropriate sample size for the population was 456.

$$n = \frac{\left(\frac{P[1-P]}{Z^2 + \frac{P[1-P]}{N}} \right)}{R}$$

This number was arrived at using Krejcie and Morgan's (1970) formula: where n is the sample size being sought, N is the population of **26,509**, P is estimated variance in

population, A is precision (0.05), Z is the confidence level (1.96 for 95 percent confidence) and R is the estimated response rate given as a decimal (0.75).

The population that was initially designed for within Landi Mawe was 275. With the current population having grown over the years to reach 26,509 the variance in this case was humongous and the sample size thus calculated using this formula was not representative nor appropriate. The research therefore opted to target 1% of the Landi Mawe population which accounted for 265 respondents.

4.4: Methods of Data Collection

Primary data was collected through participative observation and field photography, key informants, semi-structured interviews and questionnaire administration. Primary data collection focused on profiling the area for viability as a 24-hour economic hub, focused on pedestrian traffic along the Railway footbridge spine and identified the commercial activities that thrived most in Landi Mawe both during the day and at night.

A questionnaire refers to a list of structured questions that the researcher sends or administers to the respondent to fill. The method was equally exhaustive since the researcher developed the questionnaire personally thereby including every question deemed necessary. The questionnaire for data collection was structured and would pose closed-ended questions combining Yes/No responses and a 5-point Likert scale. The first part of the questionnaire collected general demographic, pedestrian and consumer information of the respondent. The remaining three parts posed questions derived from the three research questions for the study ie 24- hour economy and sustainable viable strategies for implementation.

Published and unpublished and peer-reviewed documentation including books, journals, thesis papers, surveys, internet e-books and articles among others formed the bulk of secondary data sources. This data collecting method aimed to get data on 24-hour economies as well as pedestrianization of urban streets. It aimed to identify the strategies that would aid in sustainably transforming a neighbourhood into a thriving 24-hour economy. The secondary sources therefore provided background information on the study. They developed an effective background upon which the researcher based her arguments and some of the assumptions.

4.5: Research Procedures

It is important that questionnaires be pre-tested to measure their validity and reliability. Validity refers to a data instrument's ability to measure what it is supposed to measure (Orodho & Kombo, 2002). The researcher measured the validity of the questionnaire by pretesting it on 10 people selected at random. The 10 respondents gave feedback on discrepancies on the format, types, level of understanding and clarity of the questions posed. The researcher used the feedback to improve the design of the questionnaire. Similarly, the questionnaire was tested for reliability to ensure that it did not measure the same variable more than once. The Cronbach Alpha test was used to confirm the internal consistency of the questionnaire (reliability) (Mugenda & Mugenda, 2003). A score of 0.83 was arrived at. A score above 0.8 is critical because it indicated that the instrument is reliable. After the questionnaire was pretested and rectified, it was presented to the sample population through electronic mail and in person. A letter of introduction was attached to the questionnaire explaining the purpose of the study.

The researcher then sought approval to conduct the study from relevant authorities before administering the questionnaires. Research assistants administered the refined questionnaires and helped in data entry.

4.6: Data Analysis Methods

Data analysis was supported by statistical tools. After the field work, the questionnaires were checked to ensure that they were properly administered. Analysis was by both quantitative and qualitative techniques. Quantitative techniques entailed the data being entered into the Statistical Package for Social Sciences (SPSS) for statistical analysis. Descriptive statistics transformed the raw data into figures and tables for interpretation (Mugenda and Mugenda 2003). Inferential statistics helped the researcher establish the dependency of the relationships between the research variables and included the use of personal knowledge and judgment to interpret open ended responses from questionnaires. Quantitative and qualitative evaluation of the secondary data involves the systematic identification, location and analysis of document containing information related to the research problem. The analyzed data was then presented into tables and charts to give a clear picture of the research findings.

4.7: Summary

This research methodology aimed at collecting data in the most ethical and acceptable manner. It also strived to use the most appropriate data collection instruments in the most efficient and reliable way in order to have a reliable and strong basis for discussion, conclusion and recommendation.

CHAPTER FIVE: RESULTS AND DISCUSSIONS

5.1: Introduction

This chapter provides the findings on the research project. The collected data was analysed using descriptive and inferential statistics. The statistical techniques used in the study included means, percentages, frequencies, cumulative frequencies, and the coefficient of variation, Pearson's correlation and regression tests. The study was guided by four research questions: What are the economic activities being undertaken within Landi Mawe neighbourhood and their space requirements? How the growth of commercial and academic activities within Landi Mawe has contributed to the economic corridor development? What is the impact of the existing pedestrian infrastructure in the neighbourhood on the local economic development? What are the recommendations for the development of a sustainable 24-hour economy in Landi Mawe? Under each research question, the responses from the questionnaire had to be analysed.

The findings are divided into six key sections. The first section shows the demographic of the respondents. The second section reveals the respondents' views towards commercial and academic activities within a residential neighbourhood, while the third section shows the respondents views on the pedestrianization and usefulness of the Railway Footbridge spine. The Fourth section offers respondents proposals towards creation of a 24-hour economy. The fifth section reveals the urban management strategies that can be implemented to achieve a sustainable 24-hour economy in Landi Mawe while the final section will provide a summary of the entire chapter.

5.2: Respondents Demographics

5.1: Response Rate

Area	No.	Percentage
Participated	201	76%
Did not Participate	64	24%

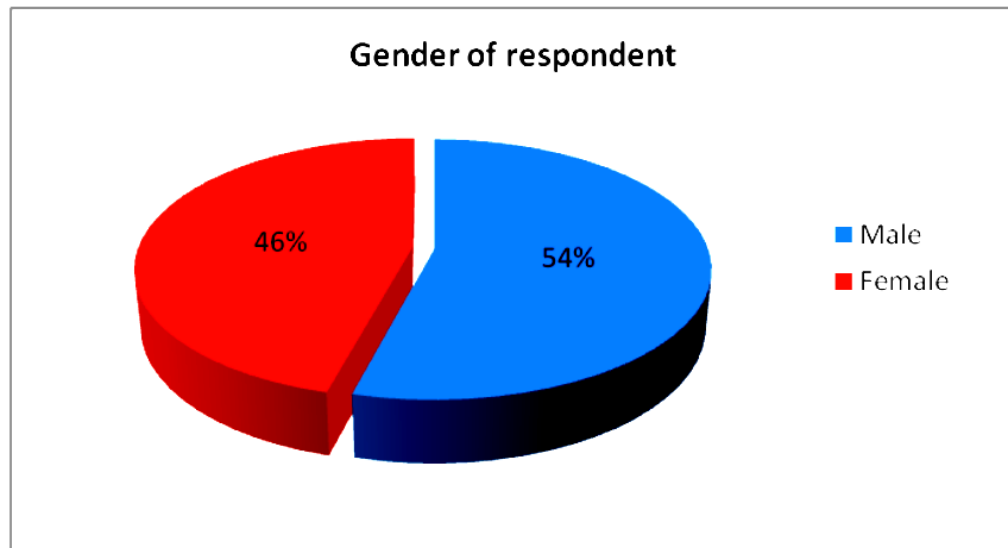
Source: (Author, 2017)

The response rate is an indicator of the number of respondents who took part in the study. This is often indicated as a percentage. The sample size for this study was 265 respondents including residents, students, pedestrians, business owners and consumers. The rate for this study is shown in Table 5.1. The total sample for the population was 265 respondents. From the findings, the response rate was 201 for those who participated and 64 for those who did not participate. Those who took part in the study and returned fully completed questionnaires were 201 representing 76 percent of the sample size. Twenty-four percent of the respondents did not return their questionnaires and therefore did not participate in the study.

5.2.2: Gender of Respondents

Respondents were asked to state their gender. Figure 4.1 shows the distribution of gender among respondents. The findings show that 54% of the respondents were male while 46% of the respondents were female. The findings imply that there were slightly more males than females in the sample population. This finding is important as it indicates nearly equal representation of the views of both gender since the issues are cross-cutting.

Figure 5. 1 Gender Response Rate

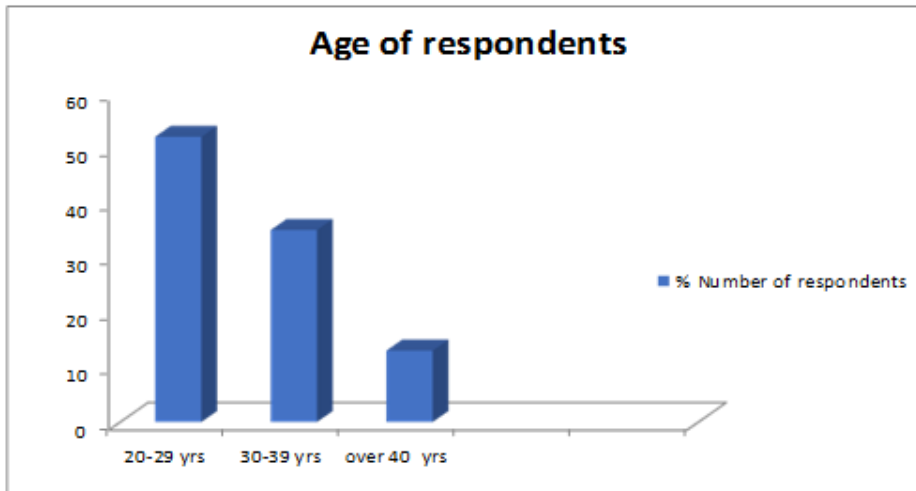


Source: (Author, 2017)

5.2.3: Age of Respondents

Respondents were asked to specify their age group. The responses are shown in Figure 5.2. The findings show that 52% of respondents were aged between 20 years and 29 years while thirty five percent of the respondents were aged between 30 years and 39 years whereas 13% of respondents were over 40 years of age. The findings imply that most of the respondents in Landi Mawe were aged between 20 years and 29 years, followed by the 30-39 year age group and the above age groups. The least populous population was aged over 40 years. The average age in Lani Mawe is 24.5 years. This verify the research assumption that Landi Mawe's rapid population growth is greatly attributed to the ever growing student population

Figure 5. 2: Age of Respondents

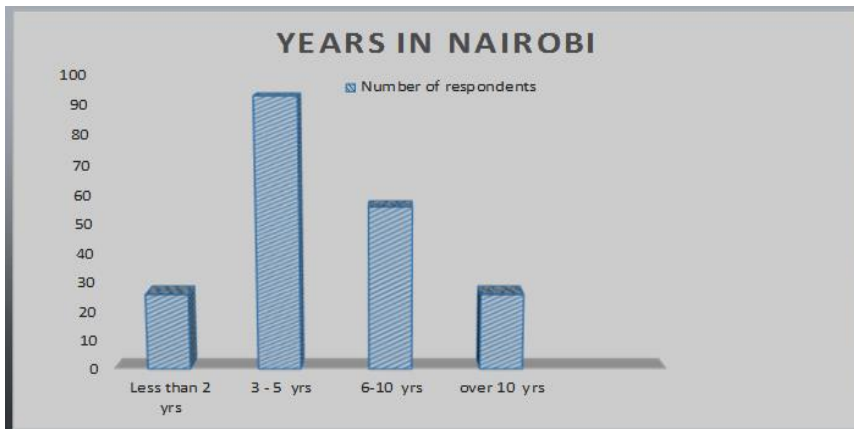


Source: (Author, 2017)

5.2.4: Years in Nairobi

Respondents were asked to select the number of years that they have been in Nairobi. The responses are shown in Figure 5.3. The findings show that 13% of respondents have less than 2 years in Nairobi while 46% percent of the respondents have 3-5 years in Nairobi. 28% of respondents have stayed for 6 to 10 years while 13% of the respondents have stayed for more than 10 years in Nairobi. The findings imply that most of the respondents have either lived, studied or worked in Landi Mawe for 3-5 years. This indicates that most of the residents were familiar with the unique and recent transformations happening in Landi Mawe along the Railway Footbridge corridor and its impact in their lifestyles. This was important as it means that the respondents were more objective in giving viable strategies based on their experience and interactions within the context of Landi Mawe neighbourhood.

Figure 5. 3: Years in Nairobi

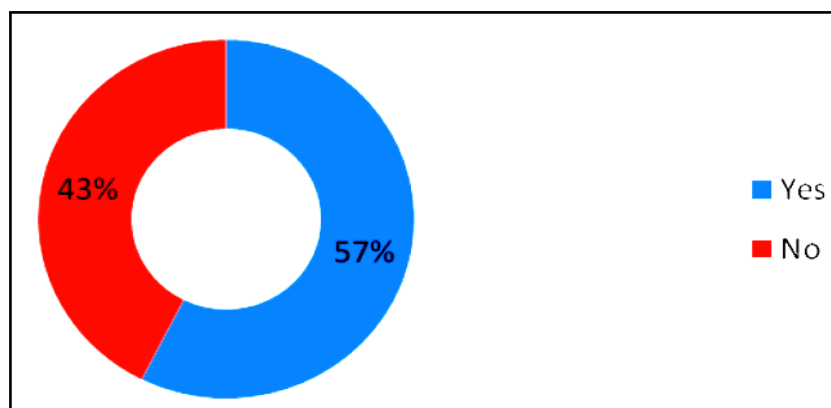


Source: (Author, 2017)

5.2.5: Shopping in Landi Mawe

Respondents were asked whether they shopped at Landi Mawe. The responses are shown in Figure 5.4. The findings show that 57% of respondents shopped in Landi Mawe while 43% of the respondents did not. The findings imply that majority of the respondents engaged in commercial activities in Landi Mawe. Shopping in this case was meant to indicate the presence of a ready market both for business owners and consumers. This fully supports the profiling of commercial activities and confirms that Landi Mawe is now longer a purely residential neighbourhood anymore.

Figure 5. 4: Shopping in Landi Mawe



Source: (Author, 2016)

5.2.6: Pedestrian Frequency through the Railway Footbridge

Respondents were asked to indicate the number of times they used the Railway Footbridge. The responses are shown in Table 5.2. The findings show that 7% of the respondents rarely used the footbridge, while 79% used the bridge daily with the rest 14% using it occasionally. In response to use of the footbridge before 6.00am and after 8.00pm the response was 14% percent of the respondents used it daily on those hours. Only 31% used it occasionally while 48% used it rarely and 7% of the respondents have never used the footbridge at night. The findings imply that most of the respondents used the footbridge during the day with majority not exceeding past 8.00 pm at night or very early in the morning

Table 5. 2: Pedestrian Frequency Response

Pedestrian frequency along footbridge	Frequency	Valid percent	Cumulative percent
Occasionally	28	14%	14%
Daily	159	79%	93%
Rarely	14	7%	100%
	201	100%	

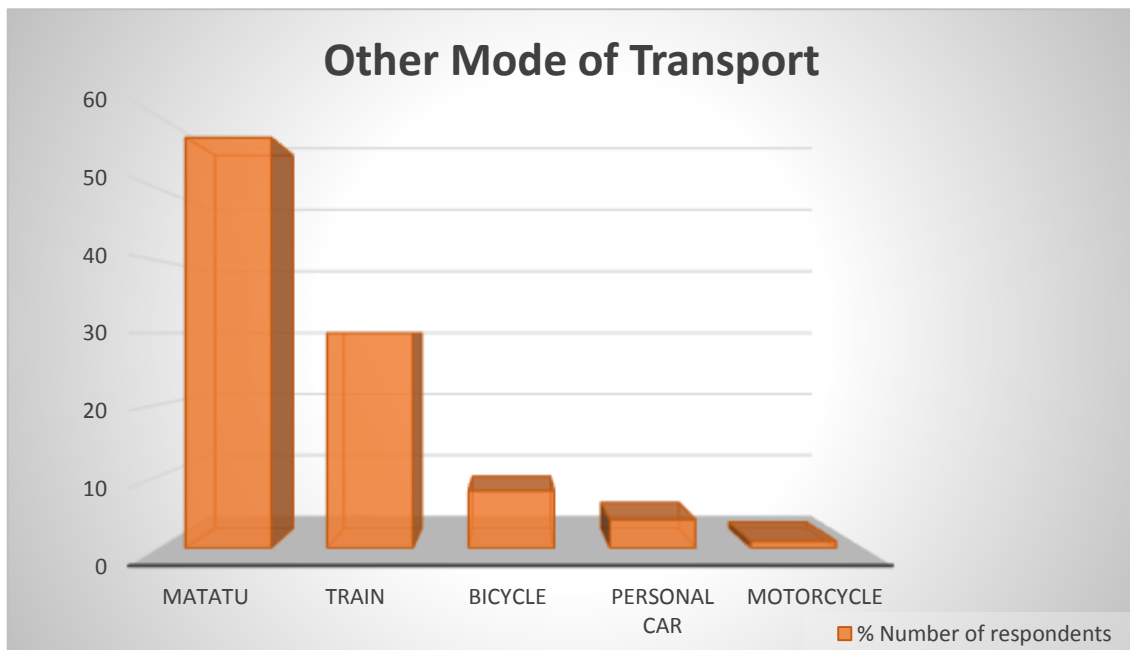
Source: (Author, 2017)

5.2.7: Mode of Transport

Respondents were asked to indicate if they used any other mode of transport besides the Railway Footbridge and the type of transportation used. The response as as per figure 5.5. The majority respondents at 62% indicate that they use other means of transport either to get to work or go home.

The most-used mode of transport is the matatu at 58% while those who used the train are at thirty percent and those who used the bicycle at 8 percent. The 4 percent used their personal car while two percent used the motorcycle. It was important to note that there are no bus or rail terminus within Landi Mawe itself and thus the Railway Footbridge becomes a critical transit corridor leading people to and from the terminuses.

Figure 5. 5: Other Modes of Transport



Source: (Author, 2017)

5.2.8. Choice of Commercial Products and Services

Respondents were asked to indicate the types of goods and services they sought for most within Landi Mawe. The responses in this question were diverse as most respondents choose more than one answer to the question. The responses are shown in Table 5.5. The findings have been ranked to show the order of most commonly sought after products and services. The findings show that garage services and hardware tools were the least sought after while groceries, retail shops, apparel and mobile agency services were high on

demand. Services such as restaurants, cyber café, electronic repair, salon & barber shops and car wash followed closely to the top. Though majority of the respondents indicated they were on transit the findings show that they mostly sought out for services and products on the go as opposed to residential oriented goods.

Table 5. 3: Preferred Consumer Goods and Services

SN.	Goods & Services	N	Mean	Std Dev	CV	Ranking
1	Restaurants (food & dining) □					4
2	Hostel stay					11
3	Stationery					9
4	Groceries					3
5	Apparel (Clothes / Shoes)					5
6	Cyber café					8
7	Hospital					12
8	Retail shops					2
9	Salon and barber					9
10	Car wash					10
11	Electronic and phone repair					7
12	Garage and spare parts					13
13	Mobile/Agency Banking					6
14	Numerical machines/ Pumps					14
15	Transit					1

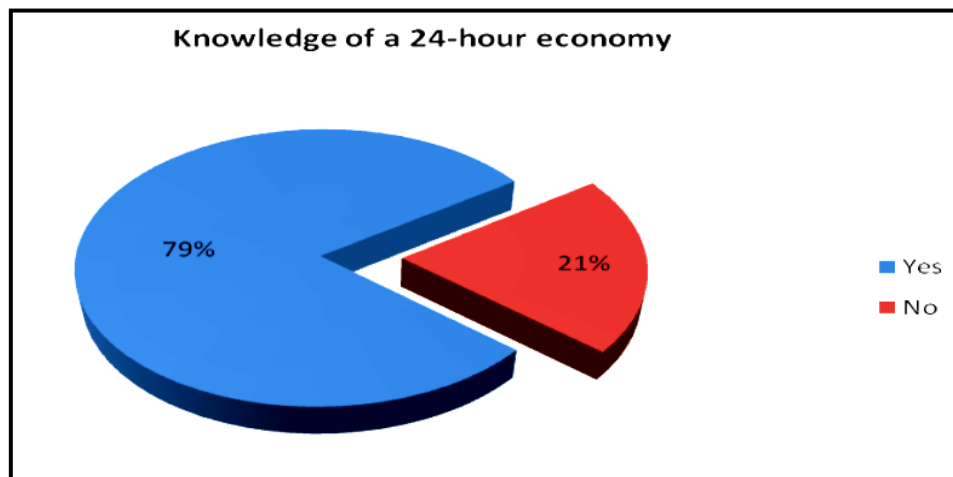
Source: (Author, 2017)

5.3: The 24-Hour Economy

5.3.1: Knowledge of a 24-hour Economy

Figure 5.6 shows the responses after respondents were asked whether they knew the meaning of a 24-hour economy. A total of 79% of the respondents had knowledge of what a 24-hour economy was. Only 21% percent of the respondents did not know what a 24-hour economy was. The findings imply that most of the respondents were aware of the concept of a 24-hour economy.

Figure 5. 6: Knowledge of a 24-hour Economy



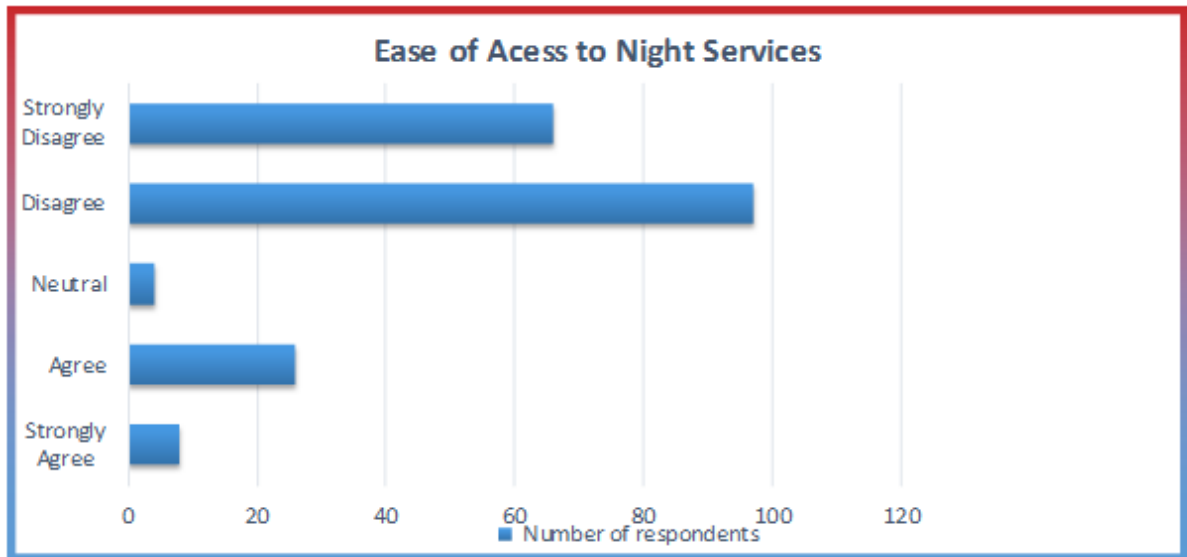
Source: (Author, 2017)

5.3.2: Ease of Access to Night Services

Respondents were asked whether they agreed that it was easier for them to access services at night rather than during the day. The responses are shown in Figure 5.7. The results show that 4% of the respondents strongly agreed that it was easier for them to access services at night instead of the day while 13% of the respondents generally agreed on the same. Two percent of the respondents were neutral. On the other hand, 48% of the respondents said that they disagreed that it was easier to access night services while 33% of the respondents said that they strongly disagreed that it was easier to access services at

night rather than during the day. The findings imply that majority of the respondents did not find it easier to access services at night than during the day. This may point to one negative experience of night shopping.

Figure 5. 7 Easy of Access to Night Services



Source: (Author, 2017)

5.3.3: Support Creation of 24-hour Economy

Respondents were asked they supported the creation of a 24-hour economy. The responses are shown in Table 5.3 .From the findings, 59% of the respondents said that they strongly agreed that they supported the creation of a 24-hour economy. Thirty-eight percent of the respondents said that they agreed with the creation of a 24-hour economy. Three percent of the respondents said they were not sure. Majority of the respondents (97%) supported the creation of a 24-hour economy. This implied that there is public support for the creation of a 24-hour economy.

Table 5. 4: Support for a 24-hour Economy

Support 24- Hour Economy	Frequency	Valid percent	Cumulative percent
Strongly Agree	118	59%	59%
Agree	76	38%	97%
Neutral	6	3%	100%
	200	100%	

Source: (Author, 2017)

5.3.4: 24-Hour Economy and Job Opportunities

Respondents were asked whether a 24-hour economy increased job opportunities for the youth. Table 5.4 shows that 45% of the respondents strongly agreed that night economy increases job opportunities for the youth. Forty-one percent of the respondents generally agreed on the same while 3% of the respondents said that they were neutral. Eleven percent of the respondents disagreed that night economy increases job opportunities for the youth. Majority of the respondents were in agreement that a 24-hour economy would improve job opportunities for Kenya's youth. The implication here is that a 24-hour economy experience is job creation for the unemployed youth.

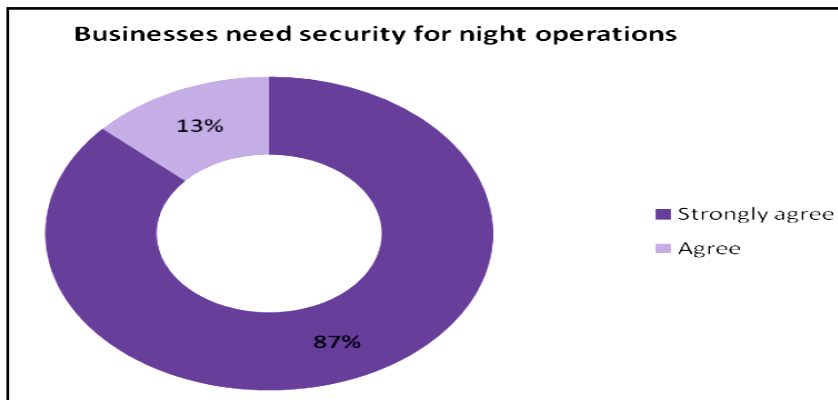
Table 5. 5: Job Opportunities in a 24-hour Economy

24- Hour Economy increases job opportunities	Frequency	Valid percent	Cumulative percent
Strongly Agree	91	45%	45%
Agree	82	41%	86%
Neutral	6	3%	89%
Disagree	22	11%	100%
	201	100%	

Source: (Author, 2017)

5.3.5: 24-Hour Economy and Security

Figure 5. 8: 24-hour Economy and Security



Source: (Author, 2017)

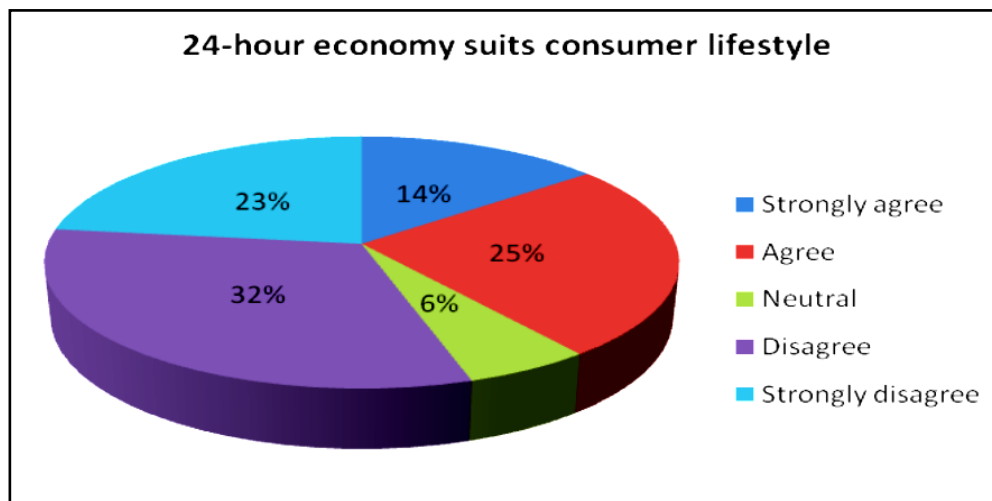
Respondents were asked whether security was an important factor influencing the decision to operate at night. Their responses are shown in Figure 5.8. The findings reveal that 87 percent of respondents strongly agreed on the importance of security for night operations. Thirteen percent generally agreed on the same. All of the responses were in

agreement that security was very important factor influencing night economy. This implies that security is an important tool for night operations within a 24-hour economy.

5.3.6: Suitability of 24-Hour Economy to Consumer Lifestyle

Respondents were asked whether a 24-hour economy was suitable for their consumer lifestyle. This is shown in Figure 5.9. Fourteen percent of the respondents said that they strongly agreed that a 24-hour economy suited their consumer lifestyle and 25% of respondents agreed that a 24-hour economy suited their lifestyle. Six percent of the respondents were neutral. Thirty-two percent of the respondents disagreed while 23% of the respondents strongly disagreed that a 24-hour economy suited their consumer lifestyles. Majority of the respondents did not agree that a 24-hour economy suited their lifestyle. The findings imply that night shopping does not suit consumer lifestyle.

Figure 5. 9: 24-hour Economy and Consumer Lifestyle



Source: (Author, 2017)

5.3.7: 24-Hour Economy and Transport System

Respondents were asked whether a 24-hour economy would improve the pedestrian transport and experience. Table 5.5 shows the responses. It reveals that 35% of the respondents strongly agreed that a 24-hour economy would improve the pedestrian

transport system while 54% of the respondents said that they generally agreed on the same. Only 11% of the respondents said they were neutral. Overall, majority of the respondents agreed that a 24-hour economy would improve the pedestrian transport system and experience within Landi Mawe esp. at night. . The findings imply that adoption of a 24-hour economy in Landi Mawe would have a positive impact on the pedestrian transport system and experience.

Table 5. 6: Pedestrian Experience in a 24-hour Economy

24- Hour Economy improves pedestrian transport.	Frequency	Valid percent	Cumulative percent
Strongly Agree	70	35%	35%
Agree	109	54%	89%
Neutral	22	11%	100%
	201	100%	

Source: (Author, 2017)

5.4: 24-Hour Implementation Strategies

This section sought to find out the strategies that the respondents thought would be most suitable for adoption in the implementation of a 24-hour economy for Landi Mawe neighbourhood. Table 5.6 shows the ranking for the strategies. The expansion of the Railway footbridge to enhance pedestrian traffic was ranked highest followed closely by the introduction of CCTV , lighting and street furniture along the spine. The conversion of the estate into an SME business hub and a student zone with hostels and an a open park and public square followed closely to the top in that order. Renewal of the estate to a more modern residential neighbourhood was less preferred due to the suggestions that

the houses would charge very high huge rents due to their proximity to the CBD. The inclusion of a vehicular thoroughfare and the introduction of offices blocks tied at number 9, an indication that the two would ideally function better together though not preferred by the respondents. The least preferred strategy was the transformation of the Railway workshops into a bus transit hub with a vehicular road linking Commercial Street to Haile Selassie Avenue.

Table 5. 7: Ranking of Strategies for a 24-Hour Economy.

SN.	Strategies	Ranking
1	Expanding and re-designing the Railway footbridge and roads	1
2	Railway Footbridge spine into a vehicular by thoroughfare.	9
3	Modern residential neighborhood- High-rise Apartments	6
4	A formal commercial Centre (Shopping malls, bazaars, retail etc.)	8
5	SME Business Hub	3
6	Student Hostels/ Centre	4
7	Office Complexes	9
8	Street Lighting, CCTV and Street furniture.	2
9	Designing for Cyclists and Persons with Disability	7
10	Open Park and Public square	5
11	Public Resource Centre / Library	10
12	Mass transit Hub (Bus Park, Commuter trains, etc.)	11

Source: (Author, 2017)

5.5: Discussions of Findings

The findings generally showed that safe pedestrian friendly streets and neighbourhoods that offered a variety of businesses, recreational and residential activities had a significant relationship with the implementation of local economic development. A local economy that operated within a safe 24-hour framework was a great stimulus for increased job opportunities. Vehicular transport networks and formal institutional spaces had less significant relationship with the implementation of a 24-hour local economy. This was attributed mainly to the fact that these amenities are easily accessible in the CBD and the other neighbouring zones.

The findings were then discussed as guided by the research questions as follows:

5.5.1: Commercial Activities in Landi Mawe.

Profiling of Landi Mawe indicated that the majority of commercial activities taking place within Landi Mawe were SME and home-based business. These businesses include among others grocery kiosks, retails shops, fast food restaurants, clothes and shoes stalls, electronic and hardware's outlets, salons and barbershops and open car wash yards. The basic space requirements for most of these business have not been meet as they are normally located in converted spaces and makeshift and temporary roadside structures that have not been guided by any design input or building regulation. KRSRBS has recognized the transformation taking place around and within Landi Mawe estate and in on attempt to avert this trend has tried to convert the abandoned railway workshop into business premises with the hope that the houses will remain intact. This has however been overtaken by the high demand for residential housing quarters esp. for the student population which demands for smaller and more affordable rentable spaces. This has

therefore seen the conversion of houses shift from conversion to kiosks into conversion into single rental residential spaces. This trend then saw the conversion of the abandoned and disused railway workshops into student hostels. But this has been just but a drop in the oceans as the demand for more affordable commercial and residential housing still continues to grow. This is further enhanced by the opening up of Landi Mawe to increased pedestrian traffic given the close proximity of the CBD and industrial area via the railway footbridge. The recent introduction of railway commuter trains has also seen more people use the railway footbridge as the quickest means to the railways station due to the increased use of the commuter train system.

All these are catalysts for a neighbourhood that is rapidly transforming to lean more towards a 24-hour economy. The findings of the study show that 97% support the creation of a 24 hour economy since 57% already shop in Landi Mawe. Majority of the respondents at 87% agreed that security is vital for implementation of 24-hour economy and although only 36 % agreed it suited their current lifestyle, majority at 86% agreed that a 24-hour economy would greatly increase job opportunities.

5.5.2: Impact of Pedestrian Friendly Streets on Economic Development

The Railway Footbridge has become a magnet for pedestrian traffic in Landi Mawe over the years. Despite its current dilapidated state, it has continued to attract pedestrians and even cyclists who wish to transit to and from the CBD and industrial areas as well as the high student population who reside and recreate with Landi Mawe due to its low income status that offers affordable goods, services and rents.

The introduction of vehicular access and bus/ matatu stops along the railway footbridge spine was the least preferred strategy. Although the majority at 67% indicated they used other means of transport after the bridge, this is an indication that the majority enjoy the experience of walking with less conflict with hooting, speeding and polluting vehicles.

The findings of the study indicated that the majority at 79 % use the Railway Footbridge. The use of the footbridge before 6 am in the morning and 8 pm at night stood at 45% with the major challenge being the sense of insecurity across the bridge though the adjacent railway police station acts as a crime deterrent. The finding also indicated that the majority of the pedestrians would use a second mode of transport after the bridge with matatus being the most used at 58%. This is an indication that if adequate and affordable housing would be provided within Landi Mawe, majority would opt to reside there though currently there are fears that the rent would be too high due to the proximity to the CBD.

For pedestrian streets to be deemed sustainable they must be people friendly, safe, easily accommodate everyone esp. those with disabilities and offer non-constrained access and exits points. Another feature of friendly pedestrian streets is their ability to offer a variety of diverse activities to make the experience enjoyable and this can range from shopping, recreational, relaxation, vantage view point as well as attractive street furniture. The study findings indicated that the majority picked the expansion and rehabilitation of the railway footbridge and access roads as a priority for 24-hour economy implementation. This was a strong indicator that most enjoy the experience of using the pedestrian streets. 89% also agreed that 24-hour economy would improve the pedestrian experience along

the footbridge spine. However this can only be possible if the second most popular strategy of introducing streets lights, CCTV and street furniture was implemented to avert the concern of 81% who felt that access to services at night was limited.

5.5.3: Infrastructure Development for Economic Development

Ultimately, it has been argued that successful local economic development has the potential to improve quality of life. However the improvement in quality of life is directly proportionate to existing infrastructure services notably roads, sewers, clean water, affordable energy street lighting etc. When these infrastructural services are not adequately maintained and continuously upgraded, a myriad of other urban challenges arise to lower the quality of life. Furthermore, the role of the Central and Nairobi county governments in providing a conducive investment environment that will support a 24-hour economy cannot be ignored. For instance, besides providing security, it is important to enhance mobility within the city. (Nzioka, 2014). In addition, supporting infrastructure such as adequate lighting for traders including hawkers as well efficient and reliable public transport system will support the concept. Moreover, a spatial interaction between producers and consumers, goods and services during the night is heavily reliant on the availability of efficient transport systems. Equally, establishing convenient and pedestrian walks will ensure that shoppers are able to access different stores and services within the city (Ngayu, 2011).

5.5.4: 24- hour Local Economy Implementation Strategies

Nzioka, (2014) posits that the Kenyan government needs to create an enabling environment for 24-hour economies by ensuring adequate security, providing CCTV and lighting, and providing adequate incentives for businesses to invest in 24-hour operations.

These are strategies that can cut across any region in the country. However there are more area- specific strategies that each locale must put into consideration to achieve wholesome and sustainable local economic growth driven by a 24- hour business environment. The study aimed to identify those strategies that are specific to the 24- hour economy needs of Landi Mawe area. The study findings indicated that the majority felt that the most ideal enabling environment would be created by enhancing the pedestrian streets, proving street lighting, CCTV and street furniture as well as a SME business hub with a modern high-rise renewed residential neighbourhood.

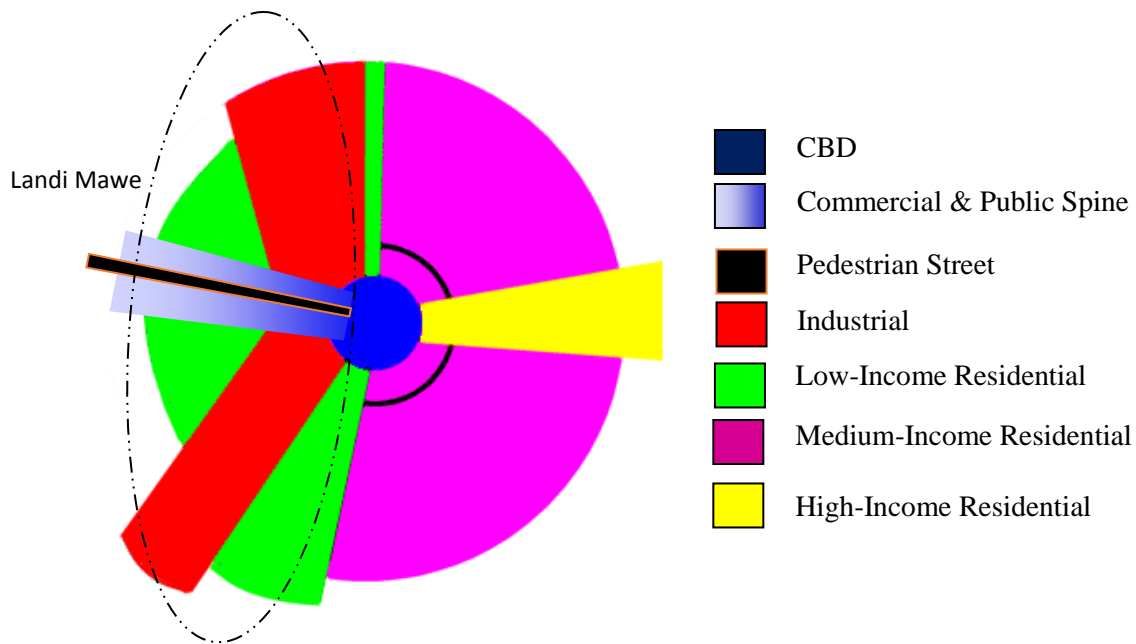
With the majority of the respondents within Landi Mawe falling with the youth bracket with 52% below the age of 30 years it is no wonder that 86% agree that a 24-hour ceremony would increase job opportunities. The major target group of either or both consumers and entrepreneurs would definitely be the youth with an emphasis on the student population. Therefore strategies that would attract the youth more to Landi Mawe have already cone forth from the findings of the study. Key among them ranked as number 3 was to convert Landi Mawe into a student hub with affordable hostels and business premises that allows them to live, study and work within a smaller radius. The need for more open public spaces and parks was ranked as number 5. This is a strong indicator that this is an ideal strategy to create vantage locations for recreational and networking activities as well as street exhibitions, concerts and ‘hanging out’ points that are some of the features that perfectly fit into the lifestyle of the youthful student.

The study findings indicate that the strategies of introduction of formal commercial centre with shopping malls, office blocks or even a resource centre was not very favourable for implementing a 24-hour economy. This strongly indicates that the population within Landi Mawe would not wish to see it transformed into a smaller version of the CBD but should still retain its strong pedestrian connection with the CBD. Landi Mawe is strategically located off the hustle and bustle of the CBD and this is a quality that should be maintained for it to remain attractive and retain its powerful identity. The findings also indicated the least preferred strategies would be to introduce a vehicular highway or a mass transit bus/matatu hub, a significant indicator that Landi Mawe can best thrive sustainably as a pedestrian friendly, safe and green and low-rise mixed- used development zone.

5.5.5: Spatial Analysis for Local Economic Development

The profiling of Landi Mawe clearly shows that the transformations within the neighbourhood are introducing new land use patterns that are spontaneous in nature. For the local economy to grow and remain sustainable, these kind of spontaneous emergence of zones needs to be structured and guided by sound principles. The literature review of the different land use models guided the researcher to further analyse the finding as discussed above. The analysis led to the formulation a proposal for a land use model that is applicable to the sustainable local economic growth of Landi Mawe.

Figure 6.0: Landi Mawe Land Use Model Concept



Source: (Author, 2017)

The proposed land use model borrows from both the Hoty Model and the Multi-nuclei Model, as it recognizes Landi Mawe had the characteristics of a potentially competing decentralized center. But at its simplest, the land use proposal is guided by the need for Landi Mawe to maintain its already strong connection to the CBD even as it transforms into a low-density mixed use neighbourhood. This connection can best be maintained through a controlled commercial corridor whose axis is a pedestrian spine that is clearly defined by the Railway Footbridge.

5.6: Analysis of Local Economic Development Literature

The review of literature on local economic development within the context of Landi Mawe has led to an understanding that local economic development can be identified as activities which are based locally, mobilize local resource and skills, promote economic diversification, training and new forms of organizational development. While local

economic development attempts to satisfy the needs of the urban area, it also identifies and defines the need for the provision of new services, infrastructure and other public provisions. Ultimately, it has been argued that successful local economic development has the potential to improve quality of life. It is possible to look beyond solely the role and activities of agencies and organizations, to the framework within which local economic development is occurring. There are a variety of country, regional and city level variables which influence how, and with what success, local economic development is able to occur. A key aspect that emerged from this analysis of the literature is that innovation is key to success in improving the quality of life for communities. The variety of tools, approaches, techniques and strategies that have been evaluated above can be enhanced by the integration of unique (but well justified) policies applicable to Landi Mawe neighbourhood. In addition, this research seeks to explore how this concept can be applied to improve the quality of life for people in rapidly growing areas – in terms of both population and economic growth. This will be a valuable process as most literature on community development are erroneously based only on areas that are facing poverty, economic decline or other experiences that are detrimental to the peoples' quality of life.

5.6.1: Critical Factors Guiding Local Economic Development in Landi Mawe

The strategies for Local Economic Development within Landi Mawe neighbourhood should be guided by the following factors; National Economic context, fiscal and financial performance, demographic context, infrastructure development, local government, private sector and employment and labour productivity. However due to the strategic location and context within which Landi Mawe exists some of the factors are already in place and only reinforcement is needed for successful implementation. The

comprehensive background study of the areas plus the identified scope of the study enabled the researcher to identify, bundle, analyse and be guided by the following select factors and the sub-factors therein that formulated the recommendations for this study:

1. The National Economic Context and the Local Government: These two factors when bundled up guided the researcher towards policy formulation that will be anchored within the Vision 2030. Formulation of appropriate policies that will enable the strategies for sustainable local economic development to be implementable.
2. Employment and Labour Productivity highlighted for the researcher the great role of MSMEs in the growth of local economies. But given that the study area is a residential neighbourhood, the key sub-factor was that of mixed used development. And given the scope of the study area, the commercial corridor concept has been analysed as the axis along which the mixed-used development will be anchored on.
3. Infrastructure development. The major deterrent to any sustainable development has always been the status of infrastructure development. Thus despite the great strides being made in infrastructure development nationally, it still remains a huge challenge for the local economic development of Landi Mawe neighbourhood given its strategic locations and economic transformations. The sub-factors of pedestrian friendly streets, security, street lighting, CCTV, public spaces, street furniture, water and sanitation came to the forefront due to the nature of transformations and the envisioned strategies towards 24-hour economy

5.6.2: Nairobi Integrated Urban Development Master Plan (NIUPLAN)

The Nairobi Integrated Urban Development Master Plan (NIUPLAN) is a major milestone for Nairobi City County (NCC) and the country at large. The NIUPLAN marks an important phase for the development of the City and provides a comprehensive and integrated urban development framework that has been missing since the expiry of the 1973 Nairobi Metropolitan Growth Strategy in year 2000. The development vision for the Nairobi City County as laid out in the NIUPLAN is based on the gradually decelerating population scenario that assumes that the Kenyan population growth will gradually decelerate from 3.0% to 2.3% and by 2030 the population will be at 66 million. Therefore the Nairobi Metropolitan Development Scenario was adapted to guide the development vision due to the key factor that the expected net-in migration and the population growth rate is lower than the national due to the relatively lower birth rate in Nairobi. This scenario thus forecasts the 2030 population of the city will be contained to 5,212,500 according to the “Spatial Planning Concept for Nairobi Metropolitan Region” (2013). Part of the forecast population for the Nairobi Metropolitan Region falls into the Greater Nairobi outside the city and that is counted as the population of the environs within Greater Nairobi.

The economic pillar of Vision 2030 strives for sustained economic growth of ten percent over the next 25 years. Some of the ways it intends to achieve this include: A better more inclusive wholesale and retail trade and develop Nairobi City as an incubation Centre for SMEs technologies with the aim of creating an economically vibrant city with proper urban management policies and structure. This is critical to this study as the Landi Mawe

transformations have been triggered by retail trades operations that fall within SMEs category. Through a proper urban management structure at the county level, Landi Mawe would be transformed into a vibrant mixed used sub-centre by strengthening and building upon the existing policies especially those geared towards the growth and regulation of SMEs. It is also notable that a key foundation of the Nairobi Metropolitan is to deliver a unique image and identity of the city through effective place branding. Due to Landi Mawe's strategic location, its new image and identify ought to resonate with that of the CBD as this will also spur its growth towards a vibrant local economy.

5.6.2.1: Railway City.

The NIUPLAN establishes that the refurbished and new railways stations would be utilized by large number of people and as such they have high development potential to be developed as sub-centres. The structural plan aims to establish and strengthen sub-centres to promote balanced development and dispersion of social economic activities through the Nairobi City County. The development vision for Nairobi City County advocates for the greater CBD which will incorporate the Upperhill area, Lusaka Road and the Railway City. The formulation of land use policy for the greater CBD is based on among other issues the large land occupants within Nairobi County key among them being the Kenya Railways who own 112 hectares south of the CBD. This large public service land would be utilized partly for urban development, transport facilities and public activity by way or redevelopment or agglomeration. Landi Mawe falls within the envisioned Railway City and it is currently seen as obstacle land for urban planning due to the fact that the railway central station and yard blocks the direct link between the

CBD and the southern industrial and business area. Thus the development vision would aim to expand and renovate the CBD and look at the Kenya Railways land as an area ripe for development as a key urban core that would enhance the livable environment and accelerate spatial development of the greater CBD.

Currently the CBD does not utilize its full potential with the residential use being a merely four point 7 percent with medium/ low rise units in small lots. For the greater CBD to be a symbol of active social economic development, the master plan aims to promote higher densification and compatible mixed use developments inclusive of residential function. For this to happen, the greater CBD has to utilize its full potential and expand vertically while still promoting the characteristic feature of pedestrian walkways that link the CBD to the open spaces and the green corridors. Non-motorized transport would thus be a prerequisite to the development improvement and priority given to areas where demand is concentrated. With all these factors incorporated in the development of the Railway City then there would be increased connectivity from the CBD to industrial area and this would drastically spur the local economy of the area. However it is critical that stakeholder coordination is strengthened between the key stakeholders who include the Kenya Railways, Nairobi City County, the Central Government, the public and the development partners.

5.6.2.2: Bipolar Corridor Development

The NIUPLAN for NCC adopted the Sub-center System (Bipolar Corridor Development) prototype to guide the formulation of the structure plan for the greater Nairobi. The prototype envisages the development of minor settlements along transport corridors

between two nodes. In reference to this study the minor settlement is Landi Mawe and it lies between two major nodes ie the CBD and the Industrial Area. The prototype also improves the mobility by decentralizing the CBD, improving and maintaining the living conditions within the CBD and creating multi modal transport along the corridors. It also proposes a strong axial development with strong polar forms, something that this study proposes to be adopted as the axial commercial corridor that aims to not only increase mobility through the two key nodes but also anchor the sub-centre to the city centre core.

The recommendations for the strategies for Local Economic development of Landi Mawe have to be guided by the NIUPLAN since its formulation process ensured the plan was aligned to global commitments to sustainable development as well as best practices. Locally, the plan was referenced to Kenya’s Vision 2030, Nairobi Metro 2030 (2008), and The Spatial Planning Concept for Nairobi Metropolitan Region (2013). The Constitution of Kenya (2010), The Physical Planning Act, The County Government Act (2012), The Urban Areas and Cities Act (2011) and other applicable statutes also formed the legislative framework within which the NIUPLAN was anchored. The plan provides an integrated framework based on a comprehensive and holistic view of urban development with the development vision being “Nairobi 2030: An Iconic and Globally-Attractive City Aimed at Regional Integration and Sustainability

CHAPTER SIX: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1: Introduction

This chapter provides a summary of the findings, conclusions drawn from the research, and recommendations for further research. The summary of findings is structured around the four research questions. The study provided concluding statements on the findings and recommendations for practice and for further research.

6.2: Summary of Findings

The aim of the research was to evaluate sustainable strategies of a 24-hour economy in Landi Mawe neighbourhood in Nairobi. It was guided by the need to profile the Landi Mawe neighbourhood with the aim of understanding the rapid changes that have over the years been transforming the residential neighbourhood into a fast growing commercial corridor and student thoroughfare. Research design was used for the study. This helped the researcher to investigate the phenomenon of transforming residential neighbourhood into mixed used neighbourhoods that are pivoted along a strong axis of pedestrian friendly streets and footbridges. A total of 265 questionnaires were designed and distributed to respondents selected from a target population of 26,509 residing, operating and transiting through Landi Mawe to and from the CBD and the Industrial area and beyond.. Responses were collected after 3 days and follow-ups made two days later. Only 201 completed questionnaires were returned, representing 76 percent of the sample size. The researcher then coded the responses and entered the data into SPSS for data analysis. Descriptive and inferential statistics were used to support the quantitative analysis. A ranking of the results based on significance showed that the most significant variable was

safe and friendly pedestrian streets followed by mixed use developments and then elaborate physical infrastructure and services to support and sustain the first two. All this in the context that Landi Mawe still retains is residential function as the main anchor.

The first research question sought to examine economic activities along the Landi Mawe Railway Footbridge spine and their impact on the neighbourhood. Various activities and experiences were analysed and then ranked using the coefficient of variation (CV). The findings indicate the most significant activities in terms of goods and services were those available to the pedestrian as opposed to the residents. The most significant experience was that of transit along the Railway footbridge and spine and the challenge of sufficient space requirements and safety of the pedestrian both day and night. The least significant was the introduction of vehicular transport along the spine and the construction of commercial malls and institutional buildings complexes

The second research question sought to assess how the growth of commercial activities has contributed to the economic growth Landi Mawe. . Various impacts were analysed and then ranked. The findings indicated the most significant impact was the increased pedestrian traffic due to an increased sense of security while crossing the Railway yard. The commercial activities have also attracted the student population by offering opportunities for jobs and businesses as well as affordable housing within the converted residential houses. Ranked last was the lack of the commercial activities having any significant impact on the improvement of the roads, the pedestrian footbridge and the security through the corridor late in the night.

The third research question sought to assess the challenges facing pedestrian infrastructure and consequently local economic development in Landi Mawe. Various challenges were analyzed and then ranked using CV. The findings indicated that the most significant challenges the poor state of the Railway Footbridge and the Workshop Road on either side of the footbridge. This was followed by the informal haphazard nature of the transformations of the estates houses, the railway workshops and the informal kiosks along the workshop road. Ranked as another key challenge was the lack of attendant services such as street lighting, street furniture, restricted access for pedestrians, drainage systems, water supply and conflict of pedestrian and vehicular traffic.

The fourth research question sought to find out the strategies for a 24-hour economy that the target population deemed most appropriate for Landi Mawe. The findings indicated that the most significant strategy would be to expand and redesign the Railway footbridge and access roads to be more pedestrian friendly and safe with street lights, CCTV cameras and street furniture. This was followed by the need for more structured SME business hub that would allow the vibrant youth population to set up small businesses more easily. The findings also indicated that the majority also wanted Landi Mawe to become a student friendly centre with more affordable hostel and open public recreational space that would so green the neighbourhood.

The overall findings showed that there was a strong correlation between safe and friendly pedestrian streets and the sustainable implementation of 24-hour local economy. There was a correlation between mixed used neighbourhoods accommodating varied business

activities, students housing and recreational open spaces and the implementation of a 24-hour economy ($r=0.497$, $p < 0.05$). Regression tests using the coefficient of determination showed that pedestrianization ($R^2=0.247$) determined 25% of the success of a 24-hour economy's implementation. There was also a positive correlation between mixed used development and the implementation of 24-hour economy ($r= 0.465$, $p<0.05$). Regression tests using the coefficient of determination showed that mixed used development ($R^2=0.216$) determines 21% of the success of a 24-hour economy's implementation. Lastly, there was a positive correlation between infrastructure and appropriate space design and the adoption of 24-hour economy ($r=0.422$ and $p<0.05$). Regression tests using the coefficient of determination ($R^2=0.178$) showed that proper design and management of infrastructure and space requirements determines 18% of the implementation of a 24-hour economy.

6.3: Conclusions

The study was to determine the sustainable strategies for implementation of local economic development in Landi Mawe. The findings were guided by four research questions: What are the economic activities being undertaken within Landi Mawe neighborhood and their spatial requirements? How the growth of commercial and academic activities within Landi Mawe has contributed to the economic corridor development? What is the impact of the existing pedestrian infrastructure in the neighborhood on the local economic development? What are the recommendations for the development of a sustainable 24-hour economy in Landi Mawe? The findings showed positive correlations between mixed-use development of commercial and

residential nature and safe, green pedestrian friendly streets and infrastructure with the implementation of a 24-hour economy in Landi Mawe.

6.3.1: Mixed- Use Commercial & Residential Development

There was a correlation between mixed used neighbourhoods accommodating varied business activities and low-income housing typologies that would accommodate both the family unit and the student living quarters and the implementation of a 24-hour economy. Landi Mawe is ideally a residential neighbourhood that is transforming into a commercial corridor. To avert the dangers of over-commercialization of a pedestrian corridor that doesn't have adequate infrastructure to support the weight of commercial facilities, then a balance between residential and commercial must be attained.

6.3.2: Pedestrian Friendly Streets

The research results showed that there was a strong correlation between safe and friendly pedestrian streets with adequate and appropriate infrastructure and green open spaces and the sustainable implementation of 24-hour economy. Safety and security within a 24-hour economy is crucial and aspects of street lighting, CCTV camera and improved surveillance patrols from the security enforcement police unite become vital. Street furniture and universal design principles of street design are vital in making pedestrian streets because attractive places to linger longer both during the day and at night which is a good strategy for majority of businesses.

6.3.3: Physical Infrastructure & Services

According to the Nairobi City Guide to Develop Ordinances and zones, Landi Mawe Estate is a low density, low income housing scheme for one family dwellings but ripe for high rise, high density residential redevelopment. Residential neighbourhood design demands that certain parameters be put in place to ensure the posterity of the community

which include; housing attendant infrastructural services such as water, power, sewer systems, solid waste disposal and street networks as well as address the basic commercial, institutional and cultural needs of the community. The original design of Landi Mawe had factored all these parameters in the context of a small population of Railway Workers. However the transformation the rapid increase in population has seen the drastic change in the neighborhood social fabric and physical and structural infrastructure. Thus an upgrading and maintenance strategy need to be put in place to ensure the road network, the services and amenities are improved to a level that will enhance the local economic development of Landi Mawe Neighborhood. The management of Landi Mawe by the KRSRBS needs to be relooked at and an urban management framework ought to be developed in collaboration with the Nairobi County Government to better address and accelerate the local economic development of Landi Mawe.

6.4: Recommendations

Key recommendations are provided for each objective as well as suggestions for further scholarly research.

6.4.1: Recommendations for Mixed –Use Developments

The findings and literature reveal the need to revise the policies which govern the zoning of different zones in Nairobi to accommodate and guide the growing demands and inherent transformations currently taking place. Landi Mawe is zoned as a low-rise residential neighbourhood but the impacts of population growth amidst an ever growing labour market and student population in Nairobi demands that the area be allowed to function as a low-density mixed –used commercial zone. The KRSRBS and the Kenya

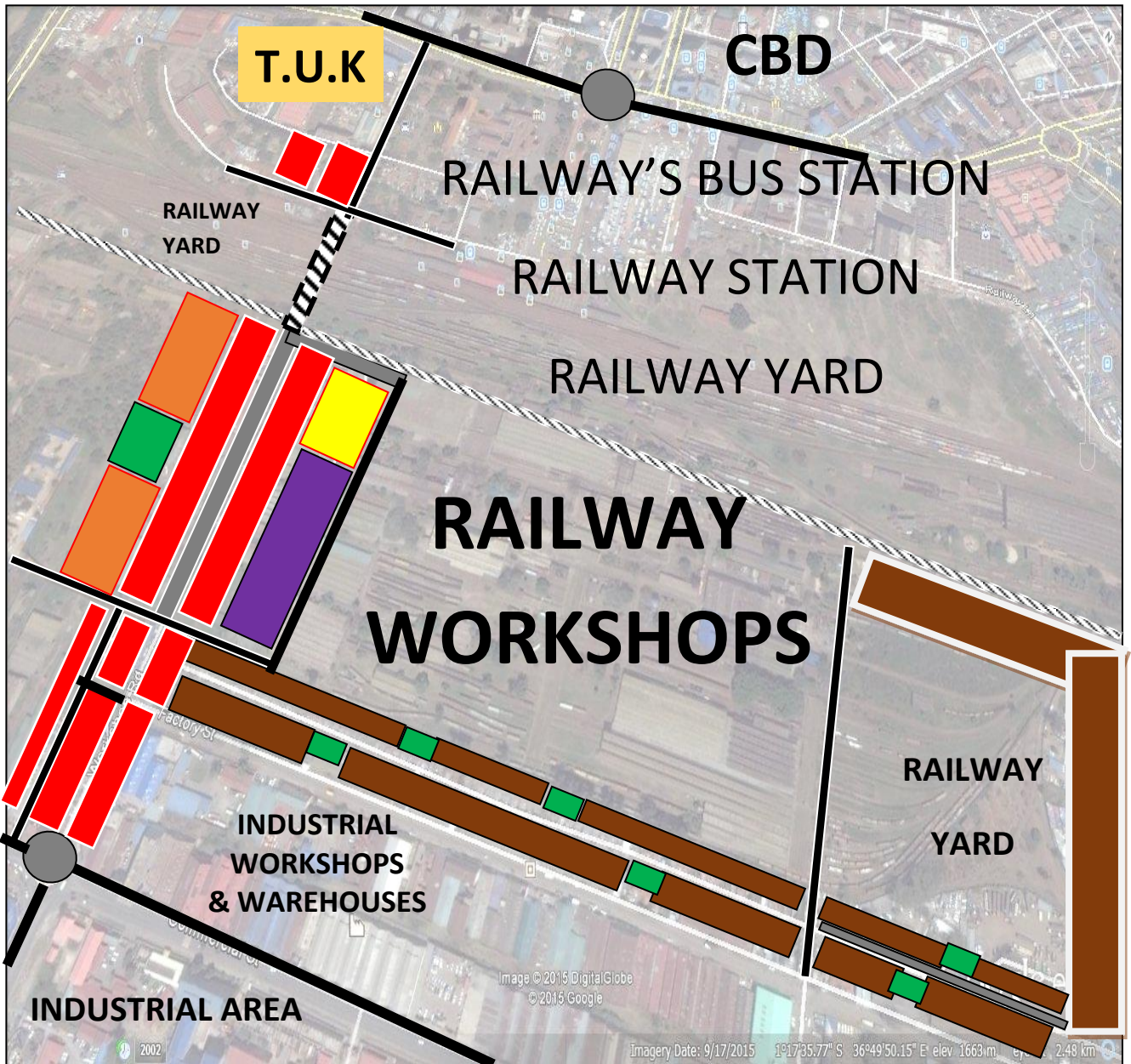
Railways should take a lead role in the urban renewal process of transforming Landi Mawe into a mixed-use development operating within the framework of a 24-hour economy. There are numerous benefits to leap from this development process both to the residents and users on transit through Landi Mawe, the entrepreneurs who will set up in the neighbourhood, the struggling KRSRBS and the Railway pensioners as well as the nation at large,

6.4.2: Recommendation for Pedestrian-Friendly Streets and Infrastructure Improvement.

The Kenyan government needs to adopt a transformative leadership style to motivate businesses and consumers to adopt a 24-hour local economy. It needs to provide support, to address mobility and infrastructure concerns facing businesses and consumers. In Landi Mawe the immediate leadership is offered by KRSRBS and the Kenya Railway who need to address the dire need of the thousands of pedestrians who pass through their ground every day. The issues of safety should start right with the expansion and rehabilitation of the almost collapsing Railway footbridge followed closely by enhanced security systems. The expansion, pedestrian friendly improvements and maintenance of the Workshop Road and the greening of the entire spine so as to not only enhance the sustainability of the 24-hour local economy but also enhance the pedestrian experience retain the identity of the Railway yards and grounds for posterity.

6.4.3: Recommended Land Use Model

Figure 6.1: Landi Mawe Land Use Model Proposal.



Source: (Author, 2017)



The Landi Mawe land use proposal is guided by the need for Landi Mawe to maintain its already strong connection to the CBD even as it transforms into a low-density mixed use neighbourhood. This connection can best be maintained through a controlled commercial corridor whose axis is a pedestrian spine that becomes part of the Railway Footbridge spine. The research underscores that the most significant experience in Landi Mawe is that of pedestrian Transit and the most significant commercial activities was the provision of goods and services to the pedestrian as opposed to the residents. The greatest challenge thus was the competing space & infrastructural requirements for safe pedestrian walking & cycling versus retail shopping both during the day and night. The research clearly highlight the need to reduce vehicular transport along the spine as this would have a negative impact on the desired safety of pedestrian transit and shopping.

Thus the Land Use model dedicates itself to the proposed development along the pedestrian corridor. The pedestrian corridor will thus be developed to enhance the pedestrian transit experience and the shopping experience as well. The development will introduce the appropriate physical infrastructure and services that will ensure the corridor is pedestrian friendly, safe, accessible to all, green and sustainable. The research findings indicate the need for Landi Mawe to become a student friendly centre with more affordable hostel and open public recreational spaces. The Land Use model advocates that the land use planning within the greater Landi Mawe neighbourhood retains the residential use. However to accommodate the increased population, the row house and semi-detached units to be converted into apartment blocks. Thus the appropriate infrastructure will be upgraded and maintained to ensure that its meet the demand of the

increased population. All the green spaces that are located within the neighbourhood will be maintained to retain the residential integrity of the neighbourhood.

6.4.4: Recommendation Towards an Enabling Environment for Policy Formulation.

Makachia (2011) posits that the inevitability of the cultural and utilitarian phenomena of transformations is a reflection of the social, economic and physical spatial objectives of the urban dwellers. Urban Dweller should therefore be understood as the key drivers of any interventions for urban renewal and upgrading of new neighbourhoods. Thus the continued ownership of the Landi Mawe housing estates by the KR as managed through the KRSRBS can be deemed as a key deterrent to quality transformations that has overtime contributed to the deteriorating state of the neighbourhood. The study recommends for the collaborative and joint efforts of KR and the Nairobi County Government. These joint efforts to be guided by the Vision 2030's goal of setting up 24-hour local economies as targets of economic development through which Nairobi can be positioned as a globally competitive business and tourism city whose residents enjoy high quality of life. This will also help in addressing issues relation to appropriate development codes and guidelines that accommodate transformations, legal and social frameworks that rely on covenants that facilitate the administration of common and boundary areas. Inclusion of professionals in planning, engineering and architectural bodies to undertake technical development proposals for implementation and ensuring quality through technical guidance and information. This collaborative efforts will thus effectively also create an enabling environment for through legislation and capital facilitation.

6.5: Recommendations for Further Studies

The aim of the study was to determine the viability of transforming Landi Mawe into a 24-hour economic hub and sustainable strategies for implementation of a the 24-hour economy in Landi Mawe. The study recommends that future scholars should evaluate the challenges of sustaining a 24-hour economy much more in detail. Further research on the challenges of policy development, leadership and organisational implementation on a 24-hour local economy is recommended. This study aimed to also act as a pilot study for implementation of 24-hour ceremonies nationally within the Vision 2030 framework. The study recommends that future scholars identify other locations or neighbourhoods that are viable for a 24-hour local economy and study their unique characteristics that would offer sustainable strategies specific for the particular locations and neighbourhoods.

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Appendix A: Cover Letter

Juliet Wairimu Kabere
University of Nairobi
Department of Architecture and Building Science
P.O.Box 30197-00100, Nairobi.

Date: 11th January, 2017.

Dear Respondent,

I am carrying out research on the Strategies for Local Economic Development: A Case Study of Landi Mawe Neighbourhood in Nairobi City. This study is a requirement for the partial fulfilment of the Master of Urban Management Degree Program at the University of Nairobi, School of the Build Environment.

This study seeks information from stakeholders who would benefit from the local economic development of Landi Mawe as a 24 hour economic hub such as the estate residents, pedestrians, business operators, shoppers, students, employee from surrounding institutions and industries and the general public. The officials from Kenya Railways will also be interviewed. You have been selected as a key respondent for this study.

This is an academic research and confidentiality is strictly emphasized, your name will not appear anywhere in the report. Kindly spare some time to complete the questionnaire attached.

Thank you in advance,

Yours sincerely,

Juliet W. Kabere

Appendix B: Questionnaire

SECTION I: GENERAL INFORMATION

1. What is your gender? Male Female

2. What is your age? 20-29 years 30-39 years Over 40 years

3. How do you relate to Landi Mawe

- Student
 Resident
 Business person in Landi Mawe
 Pedestrian employed in CBD industrial area

4. How long have you stayed in Nairobi?

- Less than 2 years
 3-5 years
 6-10 years
 Over 10 years

5. Education and Skills level

None	<input type="checkbox"/>
Primary School	<input type="checkbox"/>
Secondary School	<input type="checkbox"/>
Polytechnic/ technical Certificate	<input type="checkbox"/>
Diploma/ H.diploma college	<input type="checkbox"/>
University	<input type="checkbox"/>
Other	<input type="checkbox"/>

If Other, specify.....

6. On average, how often do you pass through Landi Mawe?

- First time
 Daily
 Occasionally
 Rarely

7. Do you use other means of transport after than the railway foot bridge to get home?

Yes No

8. If Yes, to no. 7 above, what means of transport do you use?

- Train
 Matatu
 Personal Car
 Bicycle
 Motor cycle

9. Do you shop at Landi Mawe ? Yes No

10. What type of services/goods do you seek/buy at Landi Mawe?

Restaurants (food & dining)	<input type="checkbox"/>
Hostel stay	<input type="checkbox"/>
Stationery	<input type="checkbox"/>
Groceries	<input type="checkbox"/>
Clothes / Shoes	<input type="checkbox"/>
Cyber cafe	<input type="checkbox"/>
Hospital	<input type="checkbox"/>
Retail shops	<input type="checkbox"/>
Salon and barber	<input type="checkbox"/>
Car wash	<input type="checkbox"/>
Electronic and phone repair	<input type="checkbox"/>
Garage and spare parts	<input type="checkbox"/>
Mobile/Agency Banking	<input type="checkbox"/>
Numerical machines/ Pumps	<input type="checkbox"/>
Railway Transit	<input type="checkbox"/>
Transit	<input type="checkbox"/>

11. Why do you shop in Landi Mawe?

- Cheap
 Convenient
 Availability
 Diversity

SECTION II: CONSUMERS OF 24-HOUR ECONOMY

A). TOOLS AND EXPERIENCES OF 24-HOUR ECONOMY

12. Do you know what a 24-hour economy is? Yes No

13. On average, how often have you been in Landi Mawe before 6am or after 8pm?

- Never
 Daily
 Occasionally
 Rarely

14. What type of services would you want to be available at night within Landi Mawe?

Restaurants (food & dining)	<input type="checkbox"/>	Salon and barber	<input type="checkbox"/>
Hostel stay	<input type="checkbox"/>	Car wash	<input type="checkbox"/>
Stationery	<input type="checkbox"/>	Electronic and phone repair	<input type="checkbox"/>
Groceries	<input type="checkbox"/>	Garage and spare parts	<input type="checkbox"/>
Clothes / Shoes	<input type="checkbox"/>	Mobile/Agency Banking	<input type="checkbox"/>
Cyber café	<input type="checkbox"/>	Numerical machines/ Pumps	<input type="checkbox"/>
Hospital	<input type="checkbox"/>	Railway Transit	<input type="checkbox"/>
Retail shops	<input type="checkbox"/>	Transit	<input type="checkbox"/>

15. I support the creation of a 24-hour economy

- Yes.
No.
Maybe.

SECTION III: STRATEGIES FOR 24- HOUR ECONOMY
A). TOOLS AND EXPERIENCES OF 24-HOUR ECONOMY

Please tick the answer corresponding to your opinion for each question.

Pedestrian Experience

Question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
16. It is convenient for me to use the Railway footbridge both day and night.					
17. It is easier for me to access services at Landi Mawe at night.					
18. It is safe to work and walk through Landi Mawe at night.					
19. Infrastructure services are adequate in Landi Mawe.					
20. A 24-hour economy would suit my lifestyle					

24-Hour Strategies.

Please tick the set of strategies corresponding to your opinion on what would greatly enhance the creation on a Sustainable 24-Hour Local economy for Landi Mawe;

Question	Tick ✓	Comments
21. Expanding and re-designing the Railway footbridge and roads to enhance pedestrian experience.		
22. Transforming The Railway Footbridge spine into a vehicular by thoroughfare connecting Commercial Street to Haile Selassie Avenue.		
23. Urban renewal of the Estate to accommodate:		
a) Modern residential neighborhood- Highrise		

Apartments		
b) A formal commercial Centre (Shopping malls, bazaars, retail etc)		
c) An informal business centre		
d) Student Hostels/ Centre		
e) Office Complexes		
24. Introduction of Street Lighting and Street furniture.		
25. Designing for Cyclists and Persons with Disability.		
26. Conversion of the abandoned Railway workshops into:		
a) Open Park and Public square		
b) Public Resource Centre / Library		
c) Mass transit Hub (Bus Park, Commutter trains, etc)		

