TRANSPORT NODE MARKETS

A Study of Emerging Relationships Between Matatu stages and Informal Markets: The Case of Mombasa

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DECLARATION

This thesis is my original work and has not been submitted in any university or institution of higher learning for any award or degree

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DEDICATION

This thesis is dedicated to my family at large and most importantly my husband who has devoutly supported me in this journey.

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To the Almighty God; Creator, Eternal Architect, Friend and Provider.

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ABSTRACT

Transport infrastructure has been known to influence land use patterns which directly mould mobility behaviour. Globally, it is common to find commercial activities around and within different modes of transport; air, road, rail and sea. In Africa, bus terminals are focal points for attracting growth of markets. Bus stations serve as gateways between urban and rural areas and contribute to the wider economy as they take up an essential role in sustaining trade, commerce and exchange, providing people with a living. Bus stations commonly known as matatu stages in Kenya are among the most paramount sites of everyday economic and social activity. For the larger population in Kenya, motorized transport, railway travel, air travel and private transport is largely restricted, either in terms functionality, accessibility, and affordability. Transport node markets in Kenya exist mainly around Matatu stages. The purpose of this study was to determine the emerging relationship between transport nodes (matatu stages) and informal markets. This was done by assessing the existing condition and situation of three major transport nodes in the city of Mombasa.

The research reviewed literature on Public Transport Systems, the Nature of a Transport Interchange and Bus station design considerations. It also looked at Urban design qualities that contribute to the success of public transport systems. The study also briefly looked at the types of commercial activities globally across all modes of transport; from airport stations, waterfronts, railway stations and bus stops. Literature that dealt with underlying dynamics of informality, categories of informalities and characteristics of informal trade activities was also reviewed. Two case studies were selected based on the two phenomena in study; the transport node and the informal street traders. A review on facilitating street vendors in Indian cities gave urban design interventions on inclusive design for street traders while the cases studied on BRT stations in Dar es Salaam gave a brief overview of the influence of transport nodes to informal street markets. Based on the literature studied a conceptual framework was derived.

The research methodology is based on the conceptual framework of the “Grounded theory”. The study focused on Buxton Matatu stage, Ferry Matatu stage and Likoni Matatu stage on the island and mainland of Mombasa. Due to this methodological approach and exploratory nature of the research, qualitative methods were employed for data collection and analysis. Primary and secondary data were used in the study. Raw data was collected using field survey, interviews, observation, photography, sketching and note-taking. Google earth was used to analyse the spatial aspects of the area, the distribution of neighbouring land uses and streets morphology that directs people to the area of study.

The study found that the success of the transport node markets was influenced by the location of the matatu stage, the neighbouring land uses, presence of land marks, accessibility to different transport services and visibility to the streets among others. Some of the street trading activities were found to have a direct relationship to the matatu stage and act as fixtures to the urban transport system. The study also categorised the street traders in terms of their flexibility within and around the transport node. Based on the positive aspects picked from the literature reviewed and cases studied, a number of urban design guidelines were proposed towards a harmonious co-existence between transport node and related informal street markets in the city of Mombasa. The proposed guidelines can also be adopted by cities with similar characteristics to Mombasa.

DEFINITION OF TERMS

The following are the key terms used throughout the research; they are defined to give a comprehensive understanding of their meaning in the research

Boda-boda is a motorcycle used to ferry passengers and goods from one point to another and also used for short distances. In Lagos they are known as ***Okada***.

Informal trading is the exchange of goods and services which occur outside of state controlled or money-based transactions that are not recorded for taxation purposes.

Matatu is a privately owned mini-bus, bus or similar vehicle used as a public transport vehicle in Kenya. In Tanzania they are known as ***Daladalas***.

Matatu stage/terminal refers to an informal transit stop where matatus drop off and pick passengers on a routine basis. Most matatu stages in Kenya are located at convenient and easily accessible places in cities and there is numerous of them located along specific points of highways. Matatu stages are created overtime due to the consistent dropping off and picking of passengers at a specific place.

Street trader also known as "street vendor" or "hawker" means a person that conducts a business as an informal trader, and for the intention of this study includes any person who transacts business within the sphere of a transport node within an urban space.

Transit stop in this research refers to a designated area for vehicles such as an aircraft, train or bus on the way to its final destination or an intersection that serves as a connecting point from one terminal to the next.

Transport Node in this research refers to an interconnection of several components that serve travel, neighbourhood, cargo and traveller movement and planning of transport procedures. Transport nodes include transit stops (bus stops, seaports, airports, train stations), travellers or passengers, freight and goods that are transported from one terminal to the next

Transport Node Markets in this research refers to an informal market situated at the matatu stage characterised by vendors selling fresh food, vegetables, fish, fried snacks, small electronics, second-hand clothes, shoes and bags. The traders lay their goods on the ground or set up semi-permanent stalls within the vicinity of the matatu stage.

Tuk-tuk is a rickshaw form of transport used to ferry passengers over short distances. In Tanzania they are referred to as ***Bajaj***.

LIST OF ACRONYMS

ACK- Anglican Church of Kenya

BRT- Bus Rapid Transit

CBD- Central Business District

CCTV- Closed-Circuit Television

CUE- Centre for Urban Equity

FAO- Food and Agriculture Organisation

GDP- Gross Domestic Product

ILO- International Labour Office

ISUDP- Integrated Strategic Urban Development Plan

KBS- Kenya Bus Service

LRT- Light Rail Transit

NACTO- National Association of City Transportation Officials

NBS- Nyayo Bus Service

NYS- National Youth Service

PSV- Public Service Vehicles

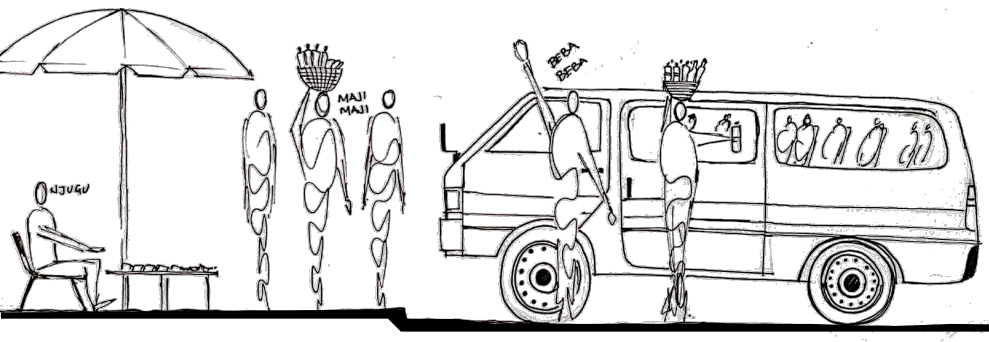
SACCO- Savings and Credit Cooperative Organisation

SMEs- Small and medium-sized enterprises

TOD- Transit Oriented Development

UNCTAD- United Nations Conference on Trade and Development

WHO- World Health Organisation



CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

Transport infrastructure planning has been recognized as needing constant interaction between land use and transportation in a consistent fashion thus creating the need for land use transportation models (Southwork 2018). Transport infrastructure influences land use patterns which consecutively directly shape mobility behaviour. When it comes to the economy, a wide range of benefits is derived from transport infrastructure, from creation of jobs during construction and maintenance to the ability of the transport infrastructure to generate commercial activity and employment (McKinsey, 2016).

According to Rodrigue (2017), land use shapes transport as much as transport shapes land use. Different land uses, like areas of production and consumption, location of resources, labour and markets, generate the transportation of people and goods. The structure of these flows from the origin to the destination can be related to the spatial organization; therefore, transport networks can be said to design spaces at different scales.

Transportation as a factor of spatial organization is also connected with the location of economic activities, including manufacturing, retail, and services (Rodrigue 2020). Transit stations like airports, rail stops are places where potential customers are a "captive audience", once they arrive, they stay until departure time. They have become a significant location for internationally oriented activities that tend to agglomerate within the area. They derive their business almost entirely from the terminal's passenger activities. These include duty-free shops, retail outlets, hotels, restaurants among others. Rail transit market places offers ideal opportunities for buy-and-go sales such as newspapers, magazines, coffee, food, cosmetics and selected services. Since transit systems concentrate people at particular locations, the terminals generally become economically viable for business trying to capitalise on this larger visibility.

In Africa, bus terminals are focal points for attracting the growth of markets. The spontaneous integration of the terminals and markets in Kenya is important to the economic development of its cities. Markets are centres of trade, commerce, exchange, entertainment and cultural and social interaction. Paul Bohannan and George Dalton (1968) emphasize in the introduction to *Markets in Africa*, that bus stations in Africa have many functions beyond the economic. They are gateways between urban and rural areas; they are sites of popular mobilization and political contestation; they serve as focal points for the circulation of value, knowledge, meaning, and ideology; and they

provide a platform for large numbers of people to hear news, meet friends, and find shelter. In short, like marketplaces, bus stations are packed with economic, social, political, and cultural significance.

By composing the transport of people and goods, bus stations in Africa take on an essential economic role: they support and sustain trade, commerce, and exchange, and thus the broader economies they are embedded in, and they provide a number of people with a source of revenue. The economic importance of bus stations is perhaps matched only by African marketplaces. They are often intimately related, at least in terms of geographical proximity, and with which they share many complementary services and functions (Grieco et al 1996). Besides their close ties through wholesaling, the complementarity of markets and bus stations reproduces larger structures of gendered occupational divides, with stations being associated with male and markets with females and stations with male. (Thiel and Stasik 2016).

Transport node markets in Kenya mainly exist around bus terminals commonly known as Matatu stations. This is because the matatu stations attract the critical mass required for economic activities to thrive. The complimentary bus terminal makes deliveries of products efficient and business transactions possible. These types of developments exist in both rural and urban areas. They can be permanent, temporary or seasonal depending on the nature of the terminal and the nature of the markets themselves.

1.1.1 BUS STATIONS AND STREET MARKETS IN PARTS OF AFRICA

Figure 1: *Addis mercato in Ethiopia.*
Source: Google images accessed Nov. 2021

Figure 2*: Kejetia street market in Ghana.*
Source: Google images accessed October 2021

Figure 3*: Street market in Kumasi, Ghana.*
Source: Google images accessed October 2021

Figure 4*: Central bus station, Nairobi.*
Source: Google images accessed Oct 2021

Figure 5: *Street markets along Mama Ngina drive, Mombasa.*
Source: Author 2020

Figure 6*: Machakos Country Bus station.*
Source: Google images accessed Oct 2021.

Addis Ababa Mercato (Fig 1)

The Addis Ababa Mercato is the largest open-air market in Ethiopia. The Mercato is located in the smallest and most overcrowded sub-city of Addis Ababa, Addis Ketema (Mazhindu, 2012). The sub-city is viewed as the economic hub of the country as it provides access to transportation services to the rest of the city and the country. At Mercato's main bus terminal, around nine hundred and fifty buses serve commuters to all parts of Ethiopia on a daily basis. The Mercato employs an estimated thirteen thousand people in seven thousand and one hundred business units. The open-air market has over one hundred and twenty stores and one massive shopping complex that houses seventy-five stores. The primary goods sold in the market include local agricultural produce; most notably coffee, cheap synthetic textile and electronic imports from countries in the Middle East and the Far East.

Each day, around 200,000 people are working in Mercato and close to 300,000 people commuting to work and shop in the Merkato (Seid Abdu., 2016/17). The following structural defects have been identified in the Mercato:

a) Congested circulation as a result of the outlet displays extensions; inconvenient vertical circulation systems for porters;
b) Unplanned additions of outlets in the building lobby area;
c) Absence of comfortable communal spaces for activities like: prayers; and
d) The misuse of the building lobby area has resulted in undefined circulation space.

Kejetia Street Market in Ghana (Fig. 2 and Fig. 3)

The Kejetia Market (*also known as* Kumasi Central Market) is an open-air market in the city of Kumasi. It has over 10,000 stores and stalls. Essentially, one can find anything one would wish to purchase from a marketplace in the Kumasi Central Market (Adarkwa, 2011).

The market is highly accessible from all points of the city thanks to the 'Kejetia' Lorry Park, the largest lorry park in Ghana. Huge daily human and vehicular traffic around the market made management and law enforcement very difficult. The government of Ghana attempted to deal with the numerous problems facing the market by creating a new central market with around forty thousand shops.

Through a government initiative, Kejetia market is being redeveloped to tackle civil disorders, fire outbreaks and flooding. The project intends to make Kumasi a modern city with rapid economic growth and improved living conditions for the inhabitants (Asare and Dapatem 2015).

The design is also aimed at ensuring that Kejetia is a sustainable marketplace, safe from fire outbreaks, energy efficient and culture oriented to allow traders and users of the market to feel at home. The design proposal features a modern bus station, parking spaces for private vehicles, a fire station, a police station, a hospital, childcare facilities, shared facilities with modern security, modern sewerage, and sanitation facilities for users of the market.

Central Bus Station, Nairobi (Fig.4)

The Central bus station commonly known as Bus Station (BS), is situated on Temple Road between Mfangano and Uyoma Street in the central business district. The Central Bus Station serves commuters along Mombasa Road and Langata Road including Imara Daima, South C/South B, Langata estate, the Nairobi National Park, and Karen. The mentioned access streets are lined with street vendors from Temple Road from the south, Mfangano street from the east and Tom Mboya Street from the north. The vehicle traffic at Bus Station includes 14-seater matatus, 33-seater mini-buses, and 51-seater buses whose departure interval depends on the availability of commuters.

As the bus station is at the heart of the central business district, the buildings surrounding it are of a permanent nature. However, along the entry points of the Bus Station from the west, east and the south are street traders who have laid their commodities on the street which include, fruits, clothes, jewellery and small electronic items. Inside the Bus Station, are hawkers vending their goods from one vehicle to another. Although permanent concrete structures surround the Bus Station, vendors have built semi-permanent extensions using wood and iron sheets which encroach into the bus station area. The main item of trade in these extensions is second hand clothes.

Like the Mercato, it is characterized by congestion and near “human squishings” (between two vehicles) due to the vehicles’ continual and fast flow and lack of designated crossing points. The

street vendors along the entry points have, on several occasions, had their goods run over by speeding buses. Further, commuters are left to hop over the vendors' merchandise in order to access the bus station which leads to overcrowding at the entry points especially along the Ronald Ngala Street entry point.

Street Markets along Mama Ngina Drive (Fig.5)

The main roads on the island of Mombasa include; Jomo Kenyatta Avenue, Nyerere Road, Digo Road, Nkurumah Road, Moi Avenue, Mama Ngina Drive, Barack Obama Road, Nairobi Highway and Nyali Road. Mama Ngina Drive is characterized by the main matatu stage serving the island on one end in the heart of the city and the recently renovated Mama Ngina Waterfront Park located along the seafront and the Likoni Ferry to the south. The stretch between the main matatu stage and the Mama Ngina Waterfront Park is characterized by street vendors on both sides of the road. The vendors comprise of food vendors, fishmongers due to the Drive's proximity to the ocean, clothes vendors, small electronics vendors and fruits and vegetable vendors. Mombasa is known for its vibrancy in the evenings. Food vendors are at the heart and soul of the vitality by providing visitors and residents alike with coastal delicacies including *kachiri* (cassava crisps), *mhogo* (roasted cassava), *mahamri* (fried bread), *vitumbua* (coconut rice pancakes), *mshikakis* (beef skewers) and fried fish among many others.

Like the Mercato, Kejetia and Central Bus Station markets, the street markets along Mama Ngina Drive are characterized by congestion and conflict between the street vendors and the bus owners due to competing interests for space and customers. The food vendors do not take adequate sanitary measures when handling their food.

Machakos Country Bus Station (Fig.7)

The Machakos Country Bus stage in Nairobi is located on Landhies Road, opposite Muthurwa Market in downtown Nairobi. The bus station is considered Nairobi's oldest bus station. The terminal is currently a hub for upcountry-bound matatus among other vehicles. Over the years, it has earned a negative reputation for its chaos, criminal cases and poor maintenance.

A Summary of Similarities and Differences

The transport node markets described above have a number of similarities and differences. The similarities include congestion and overcrowding at the market/bus station, lack of sanitation and sewerage facilities, lack of fire safety measures, unplanned additions of outlets and semi-permanent structures and lack of modern security facilities such as CCTV.

The differences, on the other hand, include markets that are considered formal while others informal. For example, the Mercato and Kejetia markets are recognised as public markets. Others have unplanned vehicular and human movement which leads to disorder and chaos, while others like Kejetia have provided a modern bus station and parking spaces for private vehicles.

1.2 PROBLEM STATEMENT

Bus stations are amongst the most prominent sites of everyday social and economic activity in Africa. The African bus station is a hub of travel, transport and mobility; commerce, centre of trade, and the informal service industry; and a focal point for circulation of value, knowledge, meaning and ideology. Social, cultural, economic and political issues fold together in Africa's bus stations in exceptionally dense ways. Comparable to African marketplaces, they are locations of prolific and rich encounters.

The concept of bus stations as places that facilitate mobility is rather self-evident. What may not be obvious is their similarly integral quality of being part of a more complex infrastructure of roads, roadsides and other hubs of exchange, most prominently what is termed as informal marketplaces.

The strain in Kenya between the desired modernization of the city and the ongoing "un-modern" activity of street markets in urban areas and bus stations is found in many African cities, often pitting the local authorities and formal businesses against street traders. Activities of the informal sector provide sustenance for many citizens and contribute to the urban vitality of our African cities. This is evident in the major Matatu stage markets in the city of Mombasa as seen in the **Figure 7**.

Figure 7*: Street market at Likoni stage market along Nyerere avenue. Source: Author 2021*

There have been numerous attempts to modernize bus stations and relocate street vendors in Kenya in the recent past. For example, the Nairobi Metropolitan Services Improvement Project is an investment project financed by the International Development Association. The aim of component 3 of the project was to provide mega-scale metropolitan infrastructure in areas of transport, solid

waste, and sewerage services. In terms of transport, this component supports, inter alia; preparation of land-use plans for areas within the vicinity of commuter rail stations and construction or improvement of public infrastructure surrounding the commuter rail stations and other transport nodes.

According to previous studies and international experience, many relocation attempts were unsuccessful because the proposed location was highly undesirable due to the lack of enough foot traffic and its marginal location required to make sufficient sales for the vendors. A notable example is the failed attempt to relocate the street market of Soko Mjinga located along the Nairobi-Nakuru Highway to the newly constructed Soko Mpya located 1.7km away and which contains permanent stall sheds. Although Soko Mpya is still situated along the Nairobi-Nakuru Highway, the retail vendors have been adamant to move to Soko Mpya for close to ten years now citing the proximity and access of Soko Mjinga to commuters along the Nairobi-Nakuru Highway. Soko Mpya has now been converted to a wholesale market attracting large agricultural produce traders with Tuesday and Friday as its official market days.

Further, the conversion of Muthurwa Hawkers Market from a trading market into a bus terminus and trading market has made the market congested and disorderly. At its inception, Muthurwa market was to be a hawker's market and it was meant to accommodate hawkers relocated from the Nairobi Central Business District. The bus terminus is an added informality that has posed urban land use problems and threatened the operations and sustainability of the market.

Market surveys posit that most commuters will likely shop for their groceries and daily use food stuff such as bread and milk in stores near their respective Matatu stages. In Kenya's case, retail stores and numerous informal markets comprising of hawkers are strategically located near a bus terminal. Such supermarkets include; Naivas Supermarket (The Mall, Westlands), Quickmart Supermarket (Westlands roundabout), Tuskys Imara (in receivership, Tea Room) and Quickmart Supermarket (Bus station), Mathai supermarket (Nyamakima bus stage) and Naivas Supermarket Ronald Ngala Street.

Matatu stage markets have become a permanent cityscape feature. This form of integrated commercial land use and ease of access to public transit has fostered economic growth and improved people's livelihoods. However, the unplanned and spontaneous existence of the public transport stages(matatu) and street markets in the city of Mombasa creates major traffic

congestion, conflicts over pedestrian space, poor integration of land uses and inadequate infrastructure to support the functions that undermine public spaces. This study therefore aims to establish the spatial characteristics that contribute to the efficiency of the existing transport node markets and recommend best practice design guidelines that can be incorporated in future bus stations with street markets.

***Figure 8**:Street vendors at Lights stage, Mombasa.*
Source: Author 2020

***Figure 9**:Streets markets along Likoni stage, Mombasa.*
Source: Author 2020

1.3 RESEARCH OBJECTIVES

The study aims at identifying the relationship, if any, between street markets and matatu stages. The specific objectives of the study are as follows:

1) To assess existing conditions and situations of existing street markets in relation to matatu stages in the city of Mombasa.

2) To determine the nature of relationship (if any) between the transport node and the informal markets in Mombasa

3) To formulate Urban Design Guidelines for the Transport node markets in the city of Mombasa.

1.4 RESEARCH QUESTIONS

1) What are the existing conditions and situations of existing street markets in relation to matatu stages in the city of Mombasa?
2) What is the nature of relationship (if any) between the transport node and the informal market in Mombasa?
3) What are the appropriate planning and design guidelines for the Matatu Stage markets in the city of Mombasa?

1.5 SCOPE OF THE STUDY

The scope of the study is limited to the major transport nodes in the Coastal town of Mombasa. The town has major transport terminals to various parts of the Coastal region. These terminals attract a huge vehicular and human traffic leading to the demand for different amenities.

The study addresses the efficiency and effectiveness of transport node markets and assess overall design and planning strategies that will be adapted to proposed new developments or refurbishments of existing developments.

The study specifically focused on the following transport nodes with market places:

i. Buxton stage
ii. Ferry stage
iii. Likoni mainland stage

Figure 10: *Map highlighting the areas of study,*
Source: Google earth image edited by author.

1.6 RESEARCH JUSTIFICATION

Matatu stages generally influence the development of many informal small enterprises and trading activities within their proximity. The employed and underemployed population depend on such set ups and activities for their living and economic growth. This study is in line with the Integrated Strategic Urban Development Plan of Mombasa 2035 (ISUDP), which proposes the following; allocation of space and organizing existing and proposed informal markets; planning and developing weekly markets; developing of new areas for informal trade that are integrated with commercial, housing, institutional and industrial areas and institutionalizing design of stalls, push-carts and mobile vans. As illustrated in fig. 11 and 12 below, the proposed commercial areas by the ISUDP are within the areas of study and the Mombasa County also seeks to develop matatu terminals as highlighted on the map as 1, 2 and 3 (Buxton, Ferry stage, and Likoni mainland respectively)

The ISUD Plan for Mombasa proposes all unauthorized encroachments, projections on road and government land to be removed to facilitate easy movement of traffic. This research seeks to recommend design guidelines that will assist in the design of these informal economic encroachments that play a key role in the economy of Mombasa while boosting the public transport and informal markets as well.

According to World Bank surveys (2010), formal SMEs contribute up to forty five percent of employment and up to thirty three percent of GDP in developing economies; these numbers are significantly higher when considering the estimated contributions of SMEs operating in the informal sector.

Figure 11: *Illustrating the proposed commercial zones highlighted in red in the mainland North and South and the island along major routes of movement. Source: ISUDP 2035.*

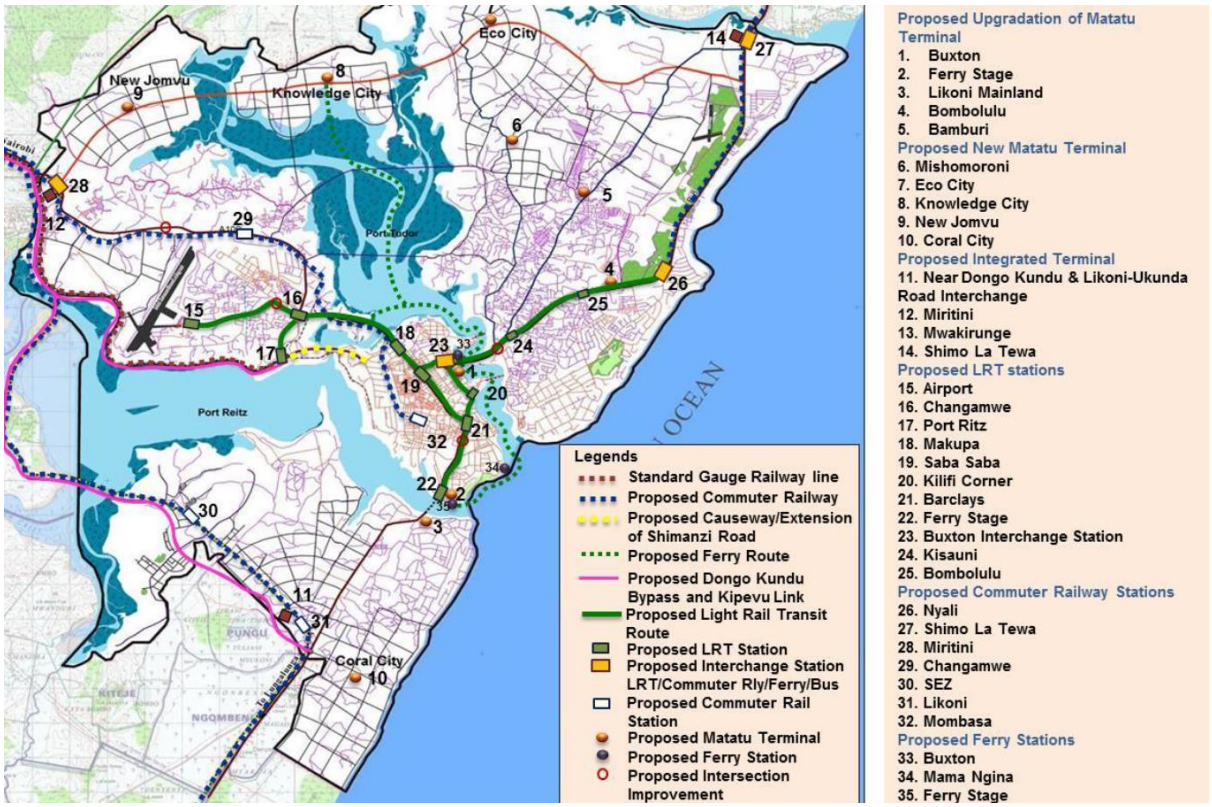


Figure 12: *Transport proposals for Mombasa highlighting the areas of study. Source ISUDP 2035.*

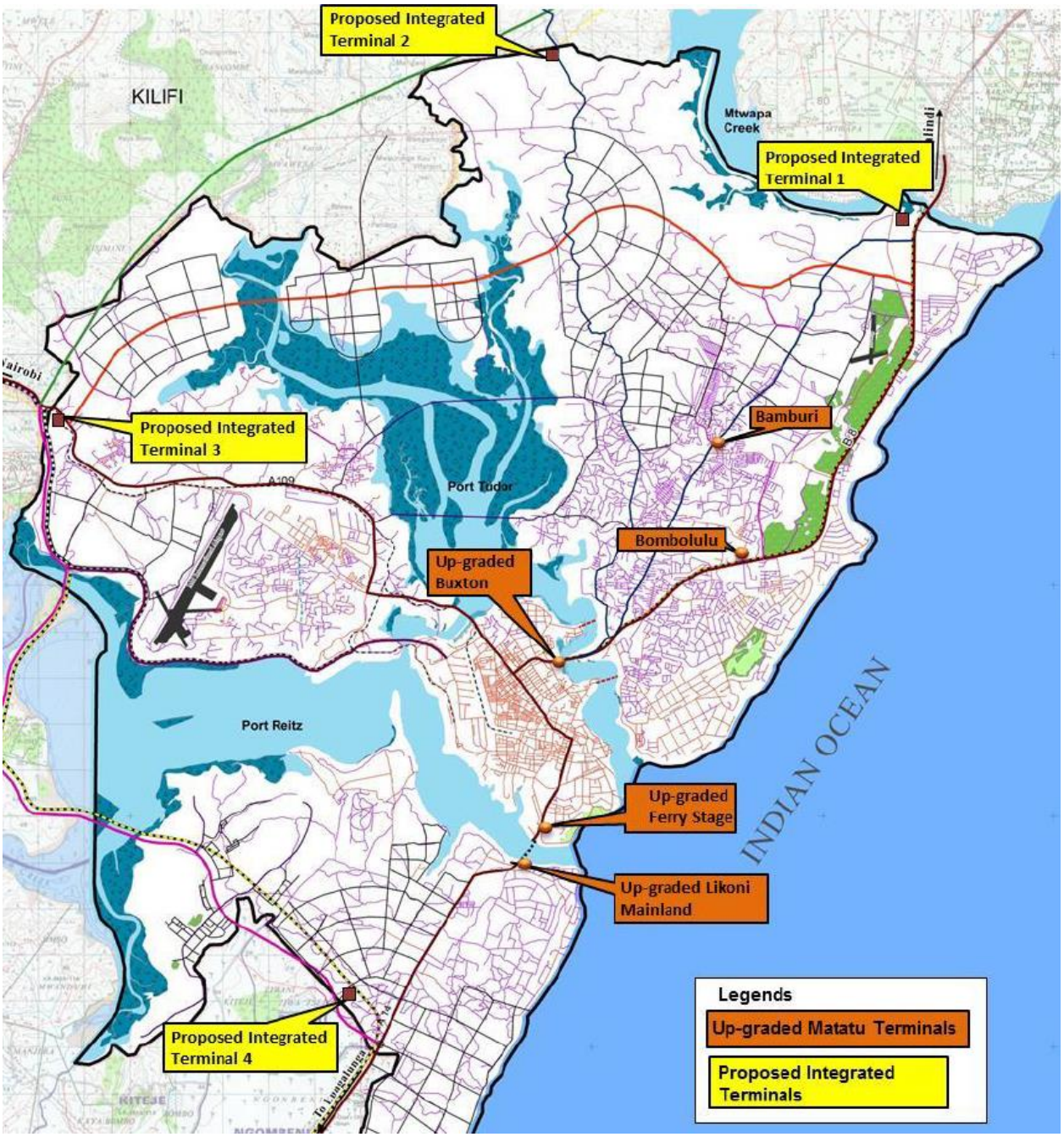


***Figure 13**: Proposed Matatu terminals in Mombasa. Source: ISUDP Mombasa 2035.*

The transportation proposed plan (Figure 13 above) indicates the following proposals on the sites of study

i. An LRT station, a Ferry stage and up-gradation of Matatu terminal at the Likoni stage.
ii. An upgradation of the Matatu terminal and Proposed Interchange station (LRT/ Commuter Rly/ Ferry/ Bus) at Buxton stage.

According to the ISUD Plan for Mombasa 2035, the matatu terminals will be upgraded to include waiting areas for passengers, small corner shops, small refreshment shops, sufficient toilet facilities and accessible ticket counters. Buxton, Ferry and Likoni mainland are among the few matatu stages targeted to be developed to accommodate the above facilities. However, no design proposal has been prepared for the proposed developments nor has a relationship between traders and transport been established as illustrated by the afore mentioned proposals and maps.

1.7 LIMITATIONS

Most of the studies related to African bus stations seem to have occurred as secondary research products on other subjects, often on marketplaces. Notwithstanding their multiple purposes and significances, bus stations in Africa have seldom been studied as subjects of research in their own right. Matatu stages have not received enough attention as places of significance in and of themselves. Consequently, there is insufficient material on research carried out on Transport Node Markets.

Due to the time limitation the study only analyzed qualitative aspects of the identified areas of study.

1.8 ORGANIZATION OF THE STUDY

Chapter One: Introduction

The first chapter discusses the background of the concept of study, the research problem, objectives of the study, justification for the study, the importance of the research, the limitations involved and the scope of the study.

Chapter Two: Literature Review

This chapter provides a critical review of the types of public transport systems, urban design qualities of transit stations, global transport stop markets and informalities to build upon the understanding of the complex cyphers; transport nodes and street markets. It also contains a review of cases and empirical studies, mainly conducted in Africa, related to the area of study.

Chapter Three: Research Methodology

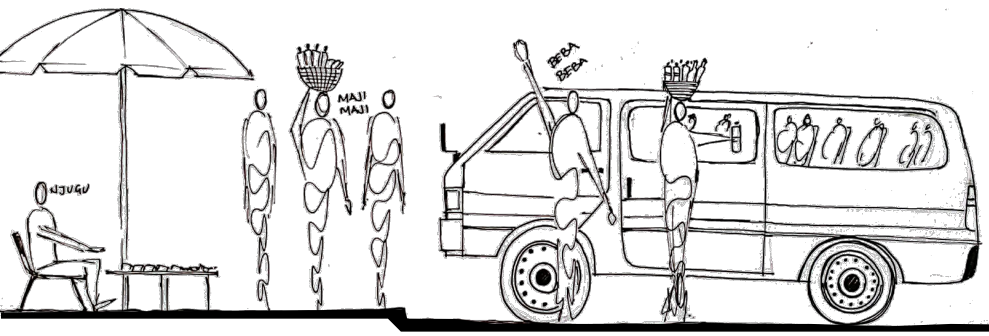
This research is based on the "Grounded theory" conceptual framework. One of the aims of the study was to illustrate an overview of situations, locations, livelihood contexts and activities related to Transport Node Markets in the city of Mombasa. Due to this methodological approach and the study's exploratory nature, qualitative methods were mainly employed. This involved the use of mappings, participatory interviews and group discussions, analyses of photos and observations for data collection. Limitations of the study were also identified.

Chapter Four: Situational Analysis of the Transport Node Markets of Mombasa.

This section discusses the data analysed and findings obtained from assessing the existing conditions of the three cases selected. It reviewed the Matatu transport system, street traders, the public transport infrastructure system in Mombasa and analysed the co-existence and relationships of matatu stages and informal street markets at the three selected cases; Buxton, Ferry and Likoni matatu stages. It also discusses the challenges faced by the street traders and matatu operators, the factors that influenced the emergence of informal markets at transport nodes in Mombasa and the nature of relationship between the two. A comparative analysis between the BRT stations discussed in Chapter Two and the Cases analysed in this chapter is also presented.

Chapter Five: Recommendations and Conclusion

This chapter summarizes the findings and outlines recommendations and proposals that are meant to assist urban design professionals plan and design transport nodes that are inclusive of street traders, to promote a harmonious co-existence of the complex cyphers in the city of Mombasa and that can also be adopted by cities with similar characteristics to Mombasa.



CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Extensive research on urban and architectural research has been conducted in different urban spaces like streets, parks and neighbourhoods. However, a few have focused on urban spaces around transit stops stations. These spaces are gradually becoming dominant in civic life as time progresses. The space in and around transit stops is valuable space and needs to be picked out and studied. Due to the influx of people brought by transit stations, the pattern of people's behaviours and the variation in the physical built environment in these spaces from other urban spaces, planners/urban designers should pay more attention to these spaces.

Transport stops are commonly considered as operative components of the transport system whose design is based on technical factors and standardization. Public transport stops play an essential role in the urban realm as they generate and enhance public spaces.

Public transport stops are widely spread throughout the city and are usually neglected by urban designers. The study explores how the potential role of public transport stops as shaping features of the urban environment is dealt within the urban realm.

2.2 PUBLIC TRANSPORT

Public transport can be defined as a shared passenger-transport service that is accessible by the general public. Unlike taxis, carpooling and hired buses, public transport involves strangers sharing a given mode of transport without private arrangement. However, transport within urban areas is not limited to public transport, but rather also consists of other private modes, with the use of the personal car being the most common in many urban areas. That being said, numerous studies have proved that public transport is a more efficient mode of urban transport relative to the use of the personal car.

Public transport services are offered using various modes of transport. Modes of public transport refer to the various ways in which passengers are transported from one point to another and consist of air, road, rail and water transport. Of these, road and rail transport, which are both land-based modes, form the main focus of studies on Transit Oriented Development (TOD). For each mode,

there are a number of transportation alternatives which form the means of transport. Road-based public transport consists of shared buses (matatus), shuttles, and coaches.

On the other hand, rail-based public transport consists of commuter trains, rapid transit (metro/subway trains), monorail, high-speed trains, regional trains, trams and light rail (articulated trams). Rail-based means of public transport can also be categorised as being either heavy rail or light rail. Heavy rail means consist of commuter trains, rapid transit (metro/subway trains), monorail, high-speed trains and regional trains which are all rail vehicles that operate on dedicated rights-of-way that are separated from other modes of transport. Heavy rail means are powered using either diesel or electric locomotives. On the other hand, trams and light rail are referred to as light rail means because the rail vehicles operate at street level alongside automobiles using electric motive power sourced from overhead lines, along with other modifications that make them quieter and cleaner than heavy rail trains.

2.2.1 TYPES OF PUBLIC TRANSPORTATION SYSTEMS

There are four types of public transportation systems classified by their level of segregation: (1) tram or bus stops on ground level that are partially segregated busways or railways (Stojanovski 2013); (2) subway stations; (3) completely segregated train and bus stations on the ground or elevated; and (4) transit stops on streets. Each type of transit stop uniquely connects to the streets, transit stops on the streets merge with the urban area without any barriers whereas segregated transit stops require a complex network of corridors, stairs and escalators to access the loading platform. Partially segregated transit stops are a component of street spaces but not directly connected to the street, crossing the street may not always be possible or safe. The afore mentioned transit stops produce specific development patterns within the vicinity and gives a distinctive context of permeable and impermeable barriers along the street due to urban design components such as fences, greenery, balustrades and so on.

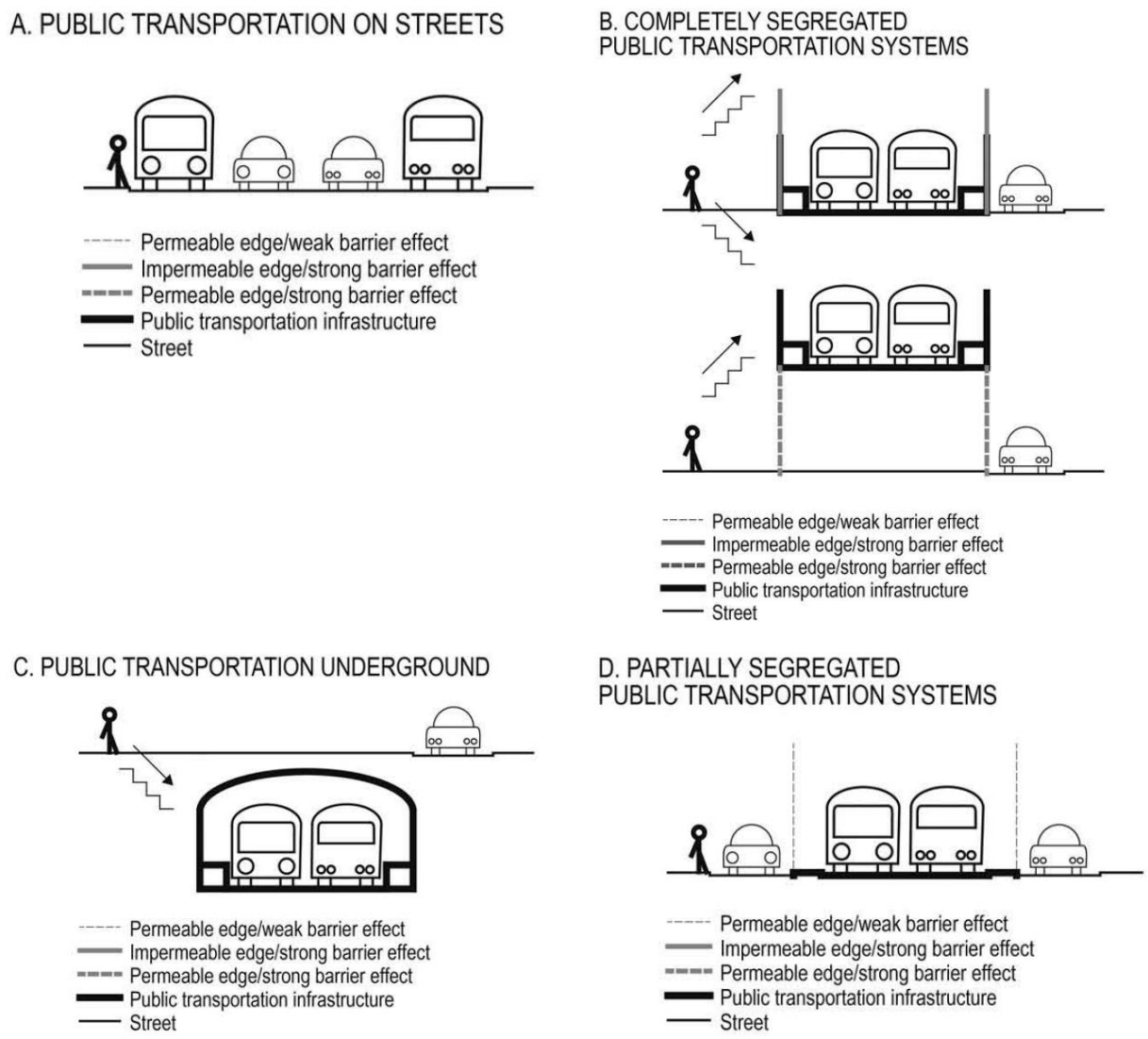


***Figure 14**:Types of public transportation systems (A, B, C and D) Source: Stojanovski T. (2020)*

2.2.2 THE NATURE OF A TRANSPORT INTERCHANGE

Transport interchanges are essential components of the urban fabric and structure and need to be used structurally to improve the city's performance. These interchanges are important places of gathering and the generation of pedestrian flows; they are places of waiting and places of movement.

The transport interchanges generate movement of people and traffic and have influential qualities that attract or repel other activities. As a general principle, interchanges should be highly accessible, be associated with public spaces and be considered good locations for public facilities,

contain supporting facilities such as ablution areas. They should also be safe, secure and comfortable places and be reinforced by high-density housing. In summary, these interchanges should be viewed as an essential form of movement infrastructure and ‘seeds’ for the emergence of intensive, lively, urban modes and as place-making elements.

For road-based public transport, the efficiency of the service can be further improved by providing a dedicated bus lane separated from other vehicular traffic, thus forming a transit street (NACTO, 2013). This minimises the wait time experienced by public transport vehicles either at intersections or when traffic congestions occur. Transit streets may either exist as dedicated kerbside bus lanes (located immediately at the kerb), dedicated median bus lanes (situated along the centre of the road), and contraflow bus lanes (temporary measures applied to bus routes to increase the efficiency of the bus service without providing a permanent or dedicated corridor). Where bus lanes are provided, other complementary measures like off-board fare payment and establishments of traffic signs. Adequate lighting and information on the route maps and schedules of the transit service should also be provided at these transit stops. People should also have safe and welcoming access to transit stops. The transit stops should be well integrated with the sidewalk and other amenities within the urban realm in general.

However, more has to be done to a movement framework beyond providing efficiency to create a pedestrian-friendly public space that enables interaction. Streets and roads planned for public transport must be designed to facilitate movement efficiently and safely. To identify these additional considerations, streets have to be broken down into their component parts. According to Transit Street Design Guide 2016, the street can be broken down into various urban street elements that comprise of sidewalks to travel lanes to transit stops. The planning and design of these elements plays a vital role in the efficiency of a transport network as illustrated below:

1. Lane width

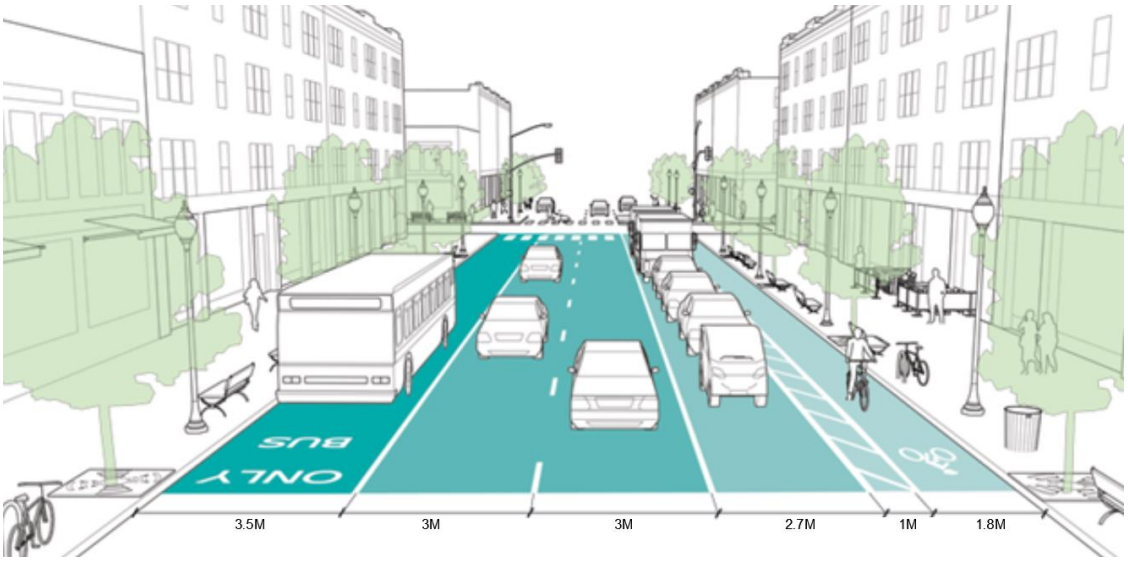


Figure 15*: Illustration of Lane widths. Source: Transit Street Design Guide (2016)*

The width designated to motorists' lanes for trucks, bikes, buses and parked cars is a critical aspect in the design of urban streets. The lane widths should efficiently and effectively serve all needs, including travel lanes, bike lanes, safety islands and pedestrian walkways.

2. Sidewalks

Sidewalks play a critical role in the urban life. They act as channels for pedestrian movement and accessibility, promote connectivity and enhance walking. They activate streets socially and economically hence serve as the front steps to the city. Accessible, safe and well-maintained sidewalks are an important investment for cities, and have been found to enhance general public health and increase social capital.

Sidewalks also play a crucial role since they facilitate pedestrian movement and access to different destinations within a station area and are where social and economic interactions occur (NACTO, 2013). Sidewalks can be further broken down into four zones, as explained below:

Figure 16: *Illustration of sidewalk zones. Source: Urban Street Design Guide (2013)*

The ***frontage zone*** refers to the section of the sidewalk formed by the building edge fronting the street and the space adjacent to it. This zone can act as an extension of the building by having active frontages. The building either has storefront windows or a sidewalk café that may draw the attention of the pedestrians walking along the street.

The ***pedestrian through zone*** is the main lane running parallel to the road on which pedestrians walk. In reference to the other zones, it lies between the frontage zone and the street furniture zone. The minimum space provided for this zone in residential contexts should be between 1.5m and 2.1m while in commercial areas it should range between 2.4m and 3.6m to encourage interaction along the sidewalk without constraining pedestrian circulation for those on the move (NACTO, 2013).

Street lighting should not only be provided for the vehicles using the street. Instead, outdoor lighting scaled to the pedestrians should also be provided to encourage night-time activities. The street furniture/kerb zone lies between the kerb and the pedestrian lane where street furniture such as benches, street lighting, and utility poles are located. This zone may also have soft landscaping features such as planters, plant containers or street trees to provide shade to pedestrians, create vistas, or even extend the design life of the paving materials. However, the selection and spacing of these plant materials should consider whether they have invasive roots that may affect the

sidewalk's structure, foliage sizes and heights, property lines, and their integration with streetlights and other street furniture. Dense vegetation that would conceal possible assailants should also be avoided to create a sense of safety along the street.

The ***buffer zone*** refers to the space between the curb and the actual roadway and may consist of a parking lane, storm-water management features or bike racks, or may be a curb extension.

3. Bus Bulb

Figure 17: *Bus stop planning and design. NACTO (2013) Urban Street Design Guide.*

Bus bulbs are platforms that are in line with the parking lane. As illustrated above, bus bulbs drop and pick up passengers without leaving the travel lane. This reduces time lost when merging in and out of traffic in the process increasing the efficiency and reliability of buses.

Transit shelters are a critical component of the bus bulb. This is because they not only provide shade against harsh weather conditions to the passengers but also make transit more attractive. Transit shelters may also be combined with off-board fare collection for faster payment options.

At major bus stops, bus bulbs should have shelters, benches, area maps, vegetation or street art. The adjacent sidewalk space around the bus bulb should meet the intended demand and ridership levels.

4. Dedicated Median Bus Lanes

***Figure 18**: Dedicated median Bus Lanes. Source: NACTO (2013) Urban Street Design Guide.*

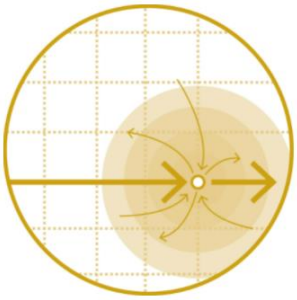
Dedicated bus transit lanes require median boarding islands at each stop's roadway. These stops must be accessible through controlled crossings. Dedicated median bus lanes eradicate conflicts with potential drop-offs, deliveries, or illegal parking along the road.

2.2.3 BUS STATION DESIGN CONSIDERATIONS

Below are some basic principles that prioritize, support and enable transit stations and stops to be essential tools for mobility, access and placemaking. must be taken into consideration while designing bus infrastructure. It is important to provide a clear inter-connected network of bus movement corridors with a structured timetable that is legible and easy to understand. The infrastructure of bus should provide a desirable bus lane of 3.5 metres (minimum 3.2metres),

desirable turning radius of 14 metres (minimum 12.5metres) and a minimum height of 3.7 metres. The principles that should be taken into consideration while designing bus infrastructure include:

1. **Stops are Gateways**



How the transit space interacts with neighbouring buildings and the sidewalks is very critical. The transit stops should focus on improving local rider and pedestrian perceptions by providing clear information, shelter, seating areas and nearby commercial activity. Distinctive stations can also advertise frequent service.

2. **Facilitation of Movement**

The location and the type of transit stop affects reliability and travel time. The design of the stop should support efficient transit and safe crossings by accounting for operations along crossroads, route transfers and local destinations.

3. **Boarding islands and bus bulbs**

Boarding islands and bus bulbs allow buses to stop along their transit lane. The integration of in-lane and bus bulbs eliminates delay and provides passengers an opportunity for level boarding. It also minimizes pedestrian crossings and provides more walking space on the sidewalk.

4. Universal Design

Transit stops must be designed for people of all ages, form and abilities. Elements such as ramps and level boarding make transit easily and smoothly accessible to all passengers, regardless of their physical or sensory ability. Human-centred Transit Infrastructural designs elevates the transit experience and makes it equitable design.

5. Safe Design

Proximity to twenty-four-hour activity, human scale lighting, open and transparent shelters and structures provide riders with a safe and secure place to board and alight. Safety and security influences riders on where and when to take transit. Prioritizing pedestrian access to transit stops through direct and convenient routes and low-delay pedestrian crossing is vital to achieving a safe system.

6. Integrate Vehicle and Platform Design

Platforms should be flexible to accommodate the range of transit vehicles already in use to ease boarding. In order to achieve accessible and fast boarding, transit vehicles, platforms and street surfaces must work together as a system.

Source of images: Tranist Street Design Guide (2016)

2.3 PUBLIC TRANSPORT AND URBAN DESIGN

More cities give priority to investment in public transport modes in order to curb traffic congestion menace. Proposals encourage the use of bus rapid transit systems (BRT) or buses and metro trains

instead of personal vehicles. Public transport modes have proven to be more efficient in transporting people around than personal vehicles. There are various Urban Design factors that play an essential role on a traveler's best travel mode.

2.3.1 Density

Density is the main reason why thirty percent of daily trips are carried out by public transport. Transit plays a major role in establishing articulated densities. Suzuki, et al (2013) argues that transit points attract a critical mass of activities that create points or links into and through the city. Cost effectiveness can be increased by locating transit-served corridors within high densities neighbourhoods. This ensures the critical mass of trip origins and destinations to fill up trains and buses. Suzuki 2013 proposes that the public transit becomes cost effective only when urban densities are high and a large number of retail activities and jobs are concentrated in the urban core.

2.3.2 Accessibility

Bentley et al (1985) proposes that the number of access routes through an environment is vital to making responsive places. The number of alternative routes to a place determines the degree of accessibility of a place. The emphasis on accessibility is on the design of roads and streets within an urban setting to enhance connectivity. Transit greatly determines the level of accessibility in an area.

The design of bus stations needs to consider the mode in which its accessed. Bus stations are majorly accessed by walking therefore bus stations should be positioned in an area that considers the immediate vicinity. Visibility of the station is critical to make passengers feel safe while using the public space.

2.3.3 Walkability

Walkability is determined by several factors; the distance to the station, the street character and the width of the street. A World Bank-funded study found that people who lived more than 900 metres away from the BRT station use it by foot; but in other areas many people whose houses are

just more than 100 metres away from the BRT stations do not use the transport mode. This was influenced by the nature of the street, mostly used streets were not wide and were covered by trees and fronted by shops. Ewing et al. 2005 state that walking depends on the design of commercial activity along the streets and in the buildings. Commercial activities tend to be located within hearing ranges and viewsheds of pedestrian and transit passengers.

2.3.4 Visual Proximity and Commercialization of Buildings

Visual proximity is critical for the commercialization of buildings adjacent to transit stops. Transit attracts the critical mass required to make business successful. Business is attracted by more traffic and more commuters within the vicinity of a transit stop. Public transport carries many passengers which lead to crowding of people who walk to and from transit stops and are potential buyers. Shopfronts and entrances to public buildings along sidewalks create an active frontage of public spaces in visual proximity to transit stops. Visual observation can be emphasized by sound. The hearing range is almost 30 m Gehl (1987). It is possible to detect the market vendors' voices, within this hearing range, and in this case, matatu touts and operators. It is possible to see and recognize individuals in streets and squares wider than 30 m, however, one cannot decipher their speech. The sounds are taken as a background buzz that arguably creates a discontinuity in the public space pattern.

2.4 THE 3 VALUE FRAMEWORK OF TRANSIT STATIONS

The 3 Value Framework generalizes international approaches based on the node, place and market potential model by identifying the three values that can characterize a transit station:

2.4.1 Node Value

This discusses the significance of a transit station in the public transit network based on its connection with other transport modes, volume of passenger traffic, intramodality and network centrality. Central, accessible and complex hubs have a higher nodal value because they appear to serve more passengers.

Hierarchy of nodes is created by a difference in the number of lines, transport modes and centrality within a network. Connecting hubs are grouped at the core of the network and offer transfers between various transport modes and lines. Core stations connect two or three lines while a single line station emanate from the core of the network.

2.4.2 Place Value

This relates to the desirability and quality of the area neighbouring the station. Factors such as availability of essential services; diversity of land use; walkable accessibility of everyday amenities; pedestrian accessibility and the size of urban blocks within the sphere of the station increase the place value of a transit station. High quality is achieved by high density of street nodes and small sized blocks.

2.4.3 Market Potential Value

Market potential value is assessed by studying the major variables that can have an effect on demand for land. these variables include the current and future number of jobs accessible by transit within thirty minutes; current and future residential densities; available developable land, major drivers of supply; potential changes in zoning and market vibrancy.

The 3Value framework is a methodological approach used in identifying economic potential in areas around transit stations and optimise them through the relationship between the node, place and market potential values. It creates a typology to cluster stations based on the aforementioned values. The framework equips policy makers to understand the relationship between the economic vision for the city, its mass transit network, its land use and its stations' urban qualities and market vibrancy.

2.5 TRANSPORT STOP MARKETS

Retail activities within stations is tailored to the type of traveller and the amount of time the travellers spend in transit. The station's objective is not to retain passengers but to optimise the time of an already-captive client spends on site and convert that into a revenue. This chapter discusses the various commercial activities related to the various modes of transport.

2.5.1 RETAIL AT AIRPORT STATIONS

Airports have grown into complex hubs and multi-faceted mega structures, offering spaces for larger terminals accommodating a budding number of functions unrelated to aviation. Airport retailing has evolved with time due to the evolving culture. As one spends more time travelling greater distances, it has forced airports to operate as a business in the form of malls with increasing product varieties.

Airport shopping and business are considered valuable income sources for every airport operation. It has become a popular trend for air travellers. The primary source of commercial revenues in airports are duty-free shops and food and beverages activities. Airports have transformed to miniature cities that house hotels, retail and dining. Similar to other cities, the value of adjacent land is ripe for development. This created the growth of the "aerotropolis".

For many passengers, especially those on holiday view shopping as a planned activity of their trip (Timothy & Butler 1995). Road, rail and air are used by tourists getting to their destination but air transport has a major impact on tourism (Khan et al 2017). Around three-quarters of tourists use air travel on international trips to get to their destinations (Air Transport Action Group 2017; Tang et al 2017)

Retail spaces in airports share many similarities with traditional retail environments in terms of commodities being sold but the unique environment and experience that passengers go through differs to the non-airport spaces. The passengers are affected by the airport shopping environment and local shopping cultures (Chung et al 2013). The influence of the airport setting combined with the trip being taken is a purchasing factor for many passengers at the airport (Baron & Wass 1996).

The first airport to experiment with a themed development of retail was Portland International Airport in 1988. The market was called the "Oregon market". It had a central shopping and dining

area whose goal was to market the unique cultures and experiences of the Pacific Northwest, with shops and restaurants that captured the local and regional flavour. The retail shops were oriented around "a main street" to complete the street-like pedestrian experience. This program was successful, and in 1994, the retail area expanded to include nine food outlets and three additional retail shops.

Prior research on airport retailing, in general, is limited and most previous studies on travellers' shopping behaviour at airports have been mainly descriptive (Omar & Kent, 2001; Hsu & Chao, 2005; Bohl, 2014; Crawford & Melewar, 2003; Baron & Wass, 1996), and centred on identifying various shopping types (Geuens et al., 2004; Freathy & O'Connell, 2012) and their underlying motivations. Three predominant groups of travellers are found in airports: the shopping traveller, the browsing traveller and the fast-track traveller (Omar & Kent, 2001).

Airports can evoke a sense of timelessness and placelessness which may be experienced by travellers in transit, particularly those making an international journey. Shopping demographics are significant for retailers when targeting their products and services at different customer bases. However, at an airport, factors such as dwell time, time pressure, mode of travel, and class impact passenger behaviour in ways that are not the case in a non-airport retail environment.

Figure 19: *Dubai Airport duty free, Source: Google images 2022*

Figure 20*:Another section of the Dubai Airport duty free shop. Source google images.2022*

2.5.2 WATERFRONT MARKETS

Waterfronts prosper when they can be accessed by more than one mode of travel, that is by water and road. This enhances the character of a waterfront. The waterfront in Hong Kong, Sydney, Stockholm, Helinksi and Venice is accessed through boats as frequently as it is accessed by land. waterfront promenades that are essential for commercial deliveries, retail or marine uses should be well designed to reduce their impact on pedestrian safety and entertainment.

A seaport is an area and a terminal where ships are loaded or offloaded with cargo and also includes an area where ships are obliged to wait for their turn no matter the distance from the port. Seaports usually have an interface with other forms of transport and in the process provides connecting services (Branch A.E 1986).

Back when international trade, economics and transport were separate systems, production and marketing were treated as two separate elements and transport was divided into different stages. The function of ports in such a situation was to carry out their traditional functions of loading and offloading to and from ships, independent and indifferent to the activities in production, trade and transport. This situation has rapidly changed over time. Seaports have now become catalysts that initiate a wide range of commercial activities in surrounding areas and adjacent surroundings to stimulate their economy and trade (UNCTAD 2015).

The new role of ports is traced and analysed from foreign trade and transport chain. The chain begins from production of raw materials, intermediate or semi-finished products to the receiver of the final product in a foreign country. It is a complex transport chain because the goods are transformed from raw materials into finished products. The location of any given product is critical. Four principles are generally applied to this factor. The location should be where and whenever the cheapest acceptable production factors can be found; where and whenever the minimum time is required; where and whenever minimum transport is required; and where and whenever concentration of products is achieved. Ports are seen to play a significant role as “nodal points” on the transport chain.

2.5.2.1 CASES OF SEASIDE MARKETS

Kiama Seaside markets, New South Wales, Australia

***Figure 21**:Kiama Seaside markets. Source: Google images 2022*

Kiama is a coastal resort town in Australia popular for the Kiama Blowhole, a fissure in the volcanic rocks that produce "blows" of water seasonally. The area is a famous destination for trips for people from Greater Wollongong and southern Sydney. The town is packed with coffee lounges and fast-food shops. It contains a small boat harbour, a large area for hosting picnics and a promenade along the shore.

The Kiama Seaside Market is organised by the Kiama & District Business Chamber every third Sunday and on occasional public holidays. During the Sunday market days, locals and travellers enjoy eclectic market stalls displaying an array of arts, crafts, clothing, jewellery, collectables, farm produce, homewares including soft furnishings, art, handmade furniture, fashion clothing and a growing produce presence, as well as fresh food from our stalls and food vans and much more spread over one hundred stalls whilst enjoying the beautiful background scenery of Kiama harbour. The Kiama Seaside Markets are considered a great shopping experience for the whole family, right in the heart of Kiama.

2.5.2.2 Mercado do Peixe (Maputo Fish Market) in Mozambique

***Figure 22**: Women selling fish in Maputo Fish market Source: Google images 2022*

Maputo is the capital of Mozambique, and it also serves as the country's Indian Ocean port. The Maputo Fish Market contains local vendors who sell seafood pulled straight from the Indian Ocean. The restaurants surrounding the fish market also allow visitors who buy fish at the market to have it cooked for them at an extra cost. The fish market is a popular destination for both locals and tourists. Locals mainly visit the market on Sundays as they come to enjoy the beachfront and restaurants with their families.

According to the Food and Agriculture Organisation (FAO), the fisheries sector plays a significant role in Mozambique's economy by contributing to thirteen percent of the export income. Generally, the country's foreign trade in seafood is characterised by imports of low-value fish and exports of high-value products.

2.5.3 RAIL STOP MARKETS

Railway stations have created an established connection between retail and potential customers in train stations, with a view of convenience creating the name ‘convenience store’. Commuters make local, small-scale purchases which can be impulsive while long-distance travellers who have a higher purchasing power favour seated restaurant, personal goods and leisure activities as well as travel-related purchases.

Railways stations are also visited by external clients like supermarkets or shopping centres to purchase common consumer goods. This clientele is highly complementary in terms of needs; the differentiating factor from others is mainly related to the waiting period.

Retailers face many challenges in meeting demand from time-limited consumers. new approaches are required to retain links between the retailer and consumer and to increase mobile consumers. Changing the store concept in terms of style, out-fits, clarity of products, robust furniture, tailor-made furniture and showcase displays are some of the approaches made to attracts consumers. Faster payment methods are an additional approach so as not to slow down commuters.

2.5.3.1 Mae Klong Railway Market / Hoop Rom Market in Thailand

Figure 23: *Mae Klong Railway Market. Source: Google images 2022*

Mae Klong Railway Station contains a 100-metre-long market that has existed since 1905. The market majorly sells fruits, fresh and dried food, seafood, vegetables, meat and other goods. Its usually open from 6.00a.m. to 6.00 p.m. The stalls in the market are attached to the Mae Klong-Ban Laem railway line risking the life of both buyers and sellers, giving rise to the name 'life-risking' market. parasols or canvas are put up to protect the traders and the goods from the sun. when the train signals its arrivals, the vendors rush to close their canvas and parasols and clear all the goods along the railway line in an attempt to clear the way for the train. Once the train passess the goods and parasols are re-opened. This happens eight times per day. The market is also known as 'Hoop Rom Market' (umbrella/parasol closing market).

2.5.3.2 The Elgin Railway Market, Cape Town

Figure 24: *The Elgin Railway Market, Cape town. Source: Google images 2022*

The Elgin Railway Market is located alongside the Elgin Railway line and is housed in an old apple warehouse containing an art deco local food market, live music and craft vendors. The railway market is the gateway to the beautiful Elgin Valley.

Locals and travellers access the Elgin Railway Market by taking a 160 km round trip by train departing from Cape Town. The market displays a wide array of food vendors with products ranging from vegan salads, Neapolitan pizzas, fragrant curries, Mediterranean cuisine, Mexican nachos, fresh juices, sweet treats, ice cream, cakes and handmade chocolate. The bar serves local wines, locally made-gin, cider and beer and cider.

A variety of retail goods can be found on the mezzanine and ground floors including genuine leather products, watches, oils, Himalayan salts and lamps, kids' toys and clothes, ladies' apparel and skincare products. The Elgin Railway Market is open on select days of the week; on Mondays and Fridays, guests can enjoy the steam coffee shop; on Wednesdays and Fridays, limited food vendors sell their goods, the bar also sells beer and wine, the full market is open on Saturdays and Sunday.

2.5.3.3 Grand Central Terminal Market

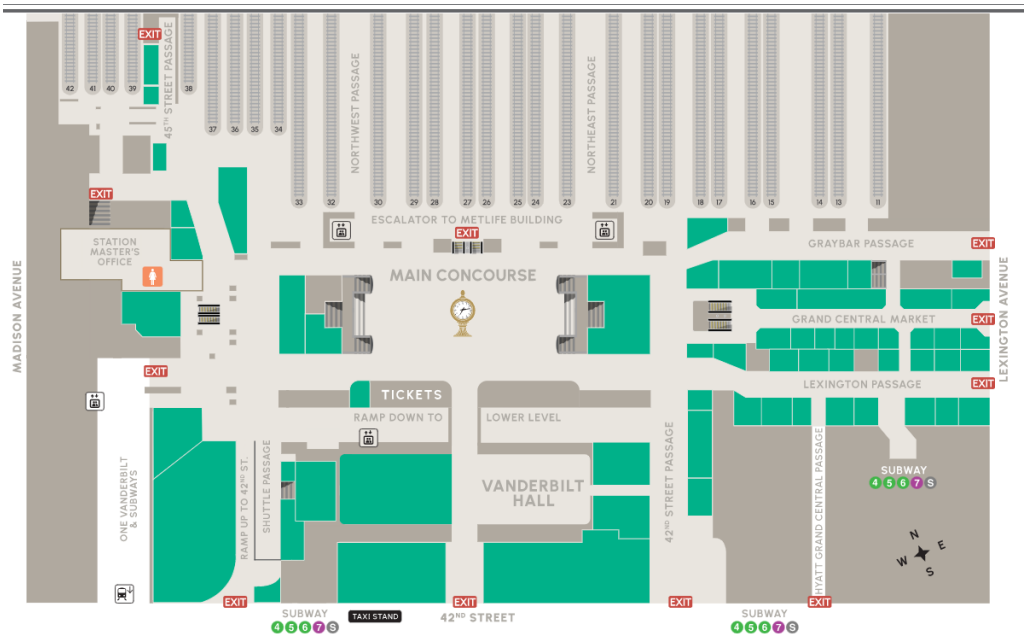


Figure 25: *Map of Grand Central Station. Source: Google images 2022*

Figure 26: *View of Grand Central Market. Source: Google images 2022*

Grand Central is a world-famous landmark and transportation hub in Midtown Manhattan opened to the public on 2nd February 1913. The area was originally a section of 43rd Street before it became the terminal's first service dock. A bank was later built in 1975 before it was converted into a market place in 1998. Grand Central Terminal has over 750,000 visitors everyday excluding train and subway passengers while over 250,000 people commute through Metro-North trains, the subway and New York City buses. Grand Central is second to Times Square. It is considered one

of the most visited places in New York City. Over the years, the grand central terminal has undergone significant re-engineering.

The market offers a European-style gourmet shopping experience. It is comprised of a variety of food shops, 40-plus retail stores including food vendors, fast-food outlets, two food halls, a grocery shop, delis, bakeries, restaurant and bars such as the Grand Central Oyster Bar & Restaurant which is considered the oldest business in the terminal and an annexe of the New York Transit Museum. Grand Central Terminal's station is considered as a National Historic Landmark due to the station's distinctive architectural character and interior design.

2.5.4 BUS STOP MARKETS

Bus stations in Africa are considered amongst the most important sites of everyday social and economic activity. For example, Kaneshie in Ghana is a commercial hub in central Accra with more than 4,500 stalls and shops. A wide range of goods are sold at Kaneshie including, construction materials, electronics, groceries vehicle spare parts, housing and beauty supplies and food and beverage. The multi-storey market is a significant landmark within the area, and it attracts shoppers from all over the city. Kaneshie accounts for almost half of commercial activity in the city.

2.5.4.1 Kaneshie Market in Accra, Ghana

Figure 27: *Kaneshie market in Accra, Ghana. Source: Google images 2022*

Kaneshie area is a central transport hub that contains; a sizeable car park that serves long-distance buses, taxis and a tro-tro bus terminal for inter-city and intra-city travel; loading and off-loading points for tro-tros and loading and offloading of passengers and goods by buses. The transportation hub is adjacent to the Kaneshie Market.

The area has been cited as a major terminal in the Accra pilot BRT design. Street traders and public transport operators were identified among people who would be majorly affected by the construction of the BRT. A 2010 Mott McDonald study the impacts of the BRT identified 900 street traders and 180 commercial shops along this stretch.

The introduction of Kaneshie market transformed the land use from a residential zone to a major commercial area serving as an anchor for existing commercial activity as well as attracting new commerce to the region. The residential buildings were converted into commercial space. New building structures were erected to accommodate imports of spare vehicle parts from Western and Asian countries. Kaneshie market has not only attracted formal businesses but its also become a magnet for informal commercial activities where pedestrian walkways have been appropriated by street traders.

Congestion caused by distribution of goods on the outer lanes of the road and volumes of vehicles accessing the area has become a significant issue affecting transit in the area. Queuing of buses, extensive commercial transport services and passenger loading and offloading increases the strain to the available space. With the expansion of the market, it necessitated new roads and footpaths connecting to existing throughways.

2.6 INFORMALITY

Informality is considered a rather ambiguous term that has evolved from being understood as a 'sector' of the economy to currently being redefined as a 'new way of life' (Hart 1973, Alyassad 2004). In the last fifty years, the term informality has been important to researchers and thus gaining different definitions, perceptions, narrations and interpretations over time by the mutual influence of urban policies and international discourses.

The International Labour Office (ILO) Employment Mission to Kenya in 1972 report, stated that the informal sector is constituted by activities of street vendors, street hawkers, shoe-shine boys and other underemployed groups on the streets of cities and male and female self-employed persons. These informal activities are characterised by ease of entry, reliance on local resources, family-owned businesses, acquired skills, adapted technology, unregulated and outside fully competitive markets.

The following key concepts of informality contributed to the research's understanding as to how marginalized groups in urban centres reconfigure public spaces to appropriate spaces for themselves for survival purposes.

2.6.1 Bayat's "quiet encroachment"

This concept refers to the street vendors' daily activities and practices, their scope of action, space appropriation that allow them to generate revenue in a restricted environment. Bayat defines quiet encroachment as a silent, prolonged yet pervasive advancement street traders on public space for survival purposes. Some of the forms of encroachment are selling without permits, tax evasion and selling goods in areas where vending is forbidden.

2.6.2 Concept of Tactics and Strategy

According to Thando 2017, strategy is a product of control whereas tactics equips street traders to constantly reassess and correct their environment based on observation of the exiting situations. Mobility, spatial and temporal tactics are used by street traders to protect themselves from the state's restraining strategies that restrict their access to public space.

2.6.3 The Appropriation Concept

The transformation of space by street traders from its intended use to a product of creation or recreation is what is referred to as appropriation. Appropriation is also known as the process of adapting and re-adapting between public space and the occupant.

2.6.4 Concept of Culture and Lifestyle

Culture is combined pattern of learned behaviours of a group of people. Street trading can also be referred to as business culture. Street vending culture has a clear-cut membership and recognized way of conducting business. In this research, the study investigates the coexistence of different cultural models and the influences that govern appropriation of space in both transport nodes and street traders.

2.6.5 Concept of Environmental Perception and Identity

Identity is marking off the character of personality of a person or a group. The "place-identity theory" views identity as the individual's perceptions and comprehensions regarding the environment. Factors such as values, memories, ideas, thoughts, interpretations and related feelings about a particular physical setting can influence the place identity theory.

2.6.6 The Concept of Supportiveness

Rapoport defines the concept of "supportiveness" by answering three questions: What is being supported? What is supporting it? and How is it being supported?

The first question refers to elements of culture, their expression and lifestyle. The second question concerns the particulars of systems of physical settings and the last question refers to various mechanisms such as meaning which refers to identity or status and economic of physical security.

2.7 THE EMERGENCE OF THE INFORMAL

According to Anyamba (2006), the emergence of informalities can be trailed from the beginning of colonialism, when dual systems of urban processes were made official; the “European” and the ‘Native”. The dualism gave birth to one of the paramount realities in developing cities today; the informal and formal divide.

Informality happened during the early years of colonization when the Europeans sought to establish their presence in Africa. The colonialists manipulated space and divided it among the European, the Indians and the Africans. This spatial segregation is what majorly contributed to the rise of informalities. In recent times, the phenomenon of informality is being reconsidered, to take advantage of some of its positive attributes.

2.7.1 Categories of Informalities

Anyamba (2006) states that informal practices are heterogenous in nature. According to his research, these informalities which he coins as “Diverse informalities” are practiced by all socio-economic groups of the Kenyan population. The informalities are classed informal because they are not fully formal, although they may have certain aspects of formality within their structure.
They may have a certain aspect of formality through obtaining temporary occupational licenses. For example, hawkers may operate with or without a license, and even if they are licensed, they are not taxed and therefore they are not fully formal. The plots on which they are built on have not been subdivided formally, and the buildings or structures have no formal approval. These varying degrees of the legal status of the businesses contribute to the diversity of the informalities. (Anyamba, 2006)

Anyamba (2006) classified the informalities as survivalist informalities, primary informalities, intermediary informalities and affluent informalities. Survivalist informalities are majorly mobile and are not fixed to a specific location. Very low-income groups usually adopt this type of informality. They have minimal impact on the built environment. However, they primarily operate along transport routes thereby disrupting normal functions. Their work is time-related where they set up shop in the morning and close at night. Some vendors in this category continuously use the space until they can claim some user rights. The vendors mostly operate on road reserves which

may have remained undeveloped over many years. Some may even construct structures at their operating locations.

Primary informalities are characterized by the subdivision of land and the construction of buildings informally. The low and some middle-income groups engage in primary informal activities. Survival informalities graduate to primary informalities when they make deliberate strategic spatial decisions and transform their display stand into more permanent structures made from timber or metal sheets.

Intermediate informalities are characterized by the informal construction of new settlements and the transformation of existing settlements. Middle income groups practice this type of informality. Most of the constructions are statutory illegal. These informalities have a major impact on the built environment as they often use approved standard building materials like stone, concrete blocks or tiles, ceramic tiles etc. Many of the landlords pay statutory payments including land rates and rents although the sums involved are sometimes quite low.

Affluent informalities are characterized by the construction of new settlements and the transformation of existing ones. This type of informality is dominated by high income group and are based in a residential development. It does not involve any commercial activities within the area but is instead the informal use of land and the built form without seeking the council's approval.

The primary and intermediate categories have the most impact on the urban fabric and infrastructure, which is the focus of this research.

2.8 CHARACTERISTICS OF INFORMAL TRADE ACTIVITIES

The literature reviewed in this section focuses on defining the characteristics of informal trading, the types of informal traders and the socio-spatial contribution of informal trading in urban centres.

Informal traders are categorised into two groups; street traders who operate from fixed locations on pedestrian paths with either permanent or temporary structures that can be assembled or

dissembled easily. The second type is of street traders are the itinerant vendors who continuously change locations to sell their goods.

The informal enterprises, are considered by many to be communal or social groups, that are formed by chance based on similar circumstances that are beyond an individual's control such as their social status, ethnicity, age etc. The repeated interaction with others in their every life routine contributes to mutual communication and a shared set of expectations that encourages a census.

Most researchers argue that the utmost challenge met by street traders is the right to trading space. Most traders target sites that have high pedestrian traffic (Mitullah 2005). The pedestrians on footpaths and pavements largely create the markets for street traders. They are mostly found along main roads and pathways, close to shopping centres or at junctions where they are visible to pedestrians and motorists. Customer relations and markets are also built when a trader operates at one spot for a long period of time (Mitullah 2005).

Different structures for display are used by street traders. These include, tables, crates, handcarts, wheelbarrows and on the ground cover over a mat. Others carry their goods on their heads or shoulders. There are others who hang their goods on walls, trees, fences or construct temporary structures for displaying their goods. The Food and Agriculture Organisation (1995) recommends that governments should intervene to reduce the risk of food-borne diseases. As listed by the FAO/WHO, the source of problems along the streets includes the lack of basic infrastructure and services such as water supply. Researchers recognize street trading activities as generators of cluttered streets of developing cities. According to Rajagopal 2001, it's the character of the "chaotic environment" that draws customers to experience a different shopping scenery at street level.

The services provided by street traders range from transport, food stuff, barber shops, hair dressing, electronics, utensils, cosmetics etc. Previous research indicates that street traders have acquired the skill of selling products to target customers by selecting the type of commodities or services offered in response to consumer beliefs, culture and behaviour.

Research conducted by Brown & Rammidi 2014, in Botswana identified that the trader's temporary structures illustrate careful orchestration and enhance the urban space with the variety

of materials used and displayed products and in the process shape customer experiences. Parasols, sheds and umbrellas are mounted to shield the trader from the scorching sun.

2.9 TYPES OF STREET INFORMALITIES

Overtime street vending has contributed to vibrant and colourful streets. However, during the 21st century, the dynamic nature of growth of populations in cities and continuous development has created challenges for street vendors who face the ever-changing economic, political and social realm and heightened competition for urban space.

Urban street vending plays a vital role in the urban economy by creating employment, generating revenue and increasing the gross domestic product of the economy. Street vending provides affordable goods for a large number of residents in the city. However, street vending creates congestion within city centres and where urban space is limited.

Below are some of the common forms of vending display along streets.

Figure 28: *Balloon man*

Figure 29*: Display space on ground*

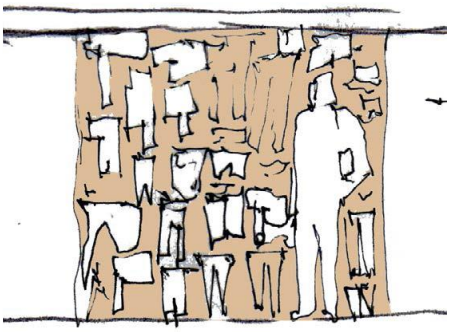


Figure 30*: Use of vertical wall to display clothes*

Figure 31*: Small platform to display goods*

Figure 32*: Cots and beds to display goods*

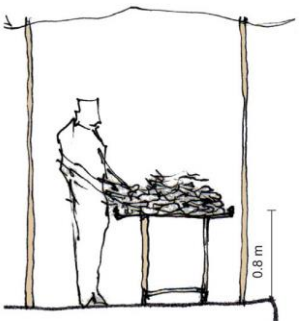


Figure 33*: Temporary structure with a platform*

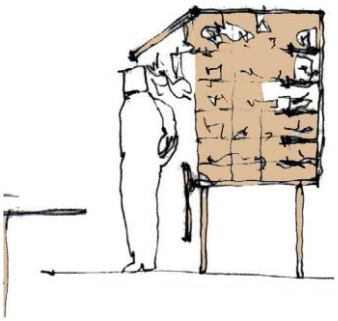


***Figure 34**: Designed moving cart*

***Figure 35**: Selling fruits on moving cart with temporary weather protection*

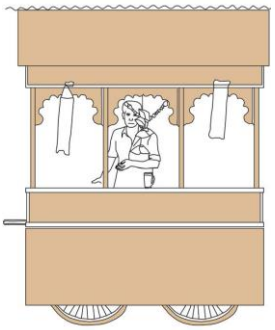


***Figure 36**: Designed food cart*

Study of street vending activities (18-26).
Source: STREET VENDORS IN INDIAN CITIES: strategy, toolbox and public space design: KANPUR AS AN EXAMPLE, 2011, http://issuu.com/felixx.

Informal trade has been estimated to provide between 20 and 75 percent of employment in many African countries. It is considered one of the main sources of employment. A range of benefits are associated with informal trading. These benefits include the creation of employment, ease of entry since very little capital is required, assured security as business is conducted in public spaces and easily accessible goods and services.

2.10 CASE STUDIES

Below is a discussion on two case studies highlighting the two concepts in this study; informal street activities and the public transport system.

2.10.1 Facilitating Street Vendors in Kanpur, India

The Centre for Urban Equity & Cardiff University (2014) studied the challenges of managing street vending in modern India, and how inclusive urban design can generate imaginative use of urban space, the case of Kanpur city.

Using contextual analysis, they explored the role of the market in its wider area, by focusing on:

(i) Surrounding land uses (including pedestrian traffic generators);
(ii) Access points for pedestrians, autorickshaws, motorcycles, cars and market commodities;
(iii) Neighbouring landmarks that draw people to the area;
(iv) Type of markets: city level, area level, roadside, bus stand etc.;
(v) Main goods sold: daily (For example, vegetables and perishables), consumer goods (For example, clothes, household goods and such); and
(vi) Understanding the linkages between suppliers and customers.

They concluded that chaos is created by lack of organization in the urban structure and lack of space.

Their recommendations included redefining the urban realm into vending zones and non-vending zones. In the non-vending zones, space is reorganized to prevent markets while the vending zones are structured to stimulate vending. The vending zones along the streets are organized into three typologies in line with the diverse types of markets: organized markets, flexible zones and spontaneous markets along the street. The guidelines proposed by The Centre for Urban Equity & Cardiff University include:

(i) Street Space Requirements

The sketches provided below show the minimum cross-sections of urban-streets requirements proposed for vending in instances where obstructions do not occur. Pavement widths of 2-2.5 metres which allow two people to pass. Seated vendors with a stall or stand require a further 2 meters to display their goods.

Broad Pavement

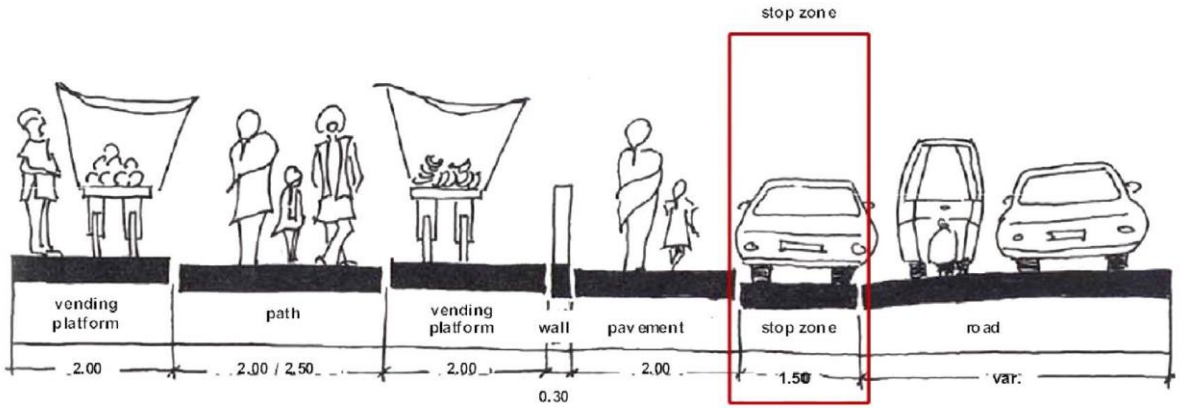


***Figure 37**: Toolbox for organized markets along a broad street.*
Source: Centre for Urban Equity & Cardiff University (2014)

Narrow pavement

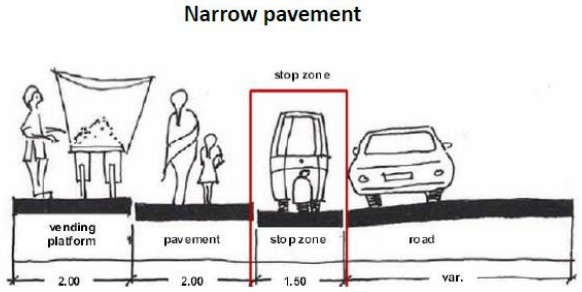


***Figure 38:** Toolbox for organized markets along a Narrow pavement.*
Source: Centre for Urban Equity & Cardiff University (2014)

Temporary Vending Areas

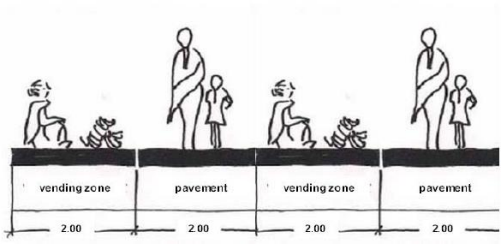


***Figure 39**: Road closed on market day.*

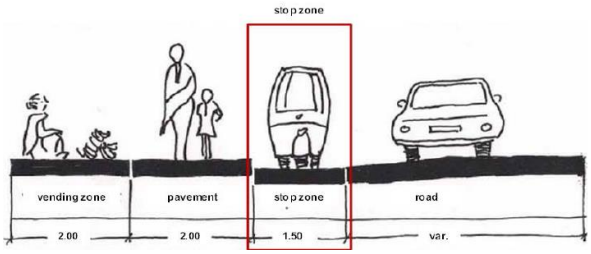


***Figure 40**: Road open on normal weekday*

Source: Centre for Urban Equity & Cardiff University (2014)

They further argued that street networks, character and context and size should be analyzed to identify and map areas appropriate to accommodate the commercial activity. The locations for commercial activities in a street were identified to include:

- Next to building edges as extensions of ground floor uses,
- In side-walk furniture zones, and
- In side-walk extensions or parking spaces. They posit that commercial activity should be allowed only on side-walks that are at least 4 meters wide and should not obstruct the clear path at any time.

(ii) Clearance Distances

With respect to street vendors located in the furniture zone of a sidewalk, they proposed that vendors and stalls should be placed at least:

- 0.5 metres from curb edges
- 2 metres from street furniture such as benches and fire hydrants.
- 1.5 metres from trees and planters.
- 2.5 metres from transit stops, boarding zones, and loading zones.
- 3 metres from pedestrian crossings
- 6 metres from building entrances.

(iii) Urban Design Innovations

They argued in favour of inclusive design; using existing space optimally through better space management or time-sharing (For example, for an evening or Sunday market).

(a) Pavements

The sketches hereinbelow show the proposed different ways in which a 4 meters pavement width can accommodate vending, with or without fixed structures.

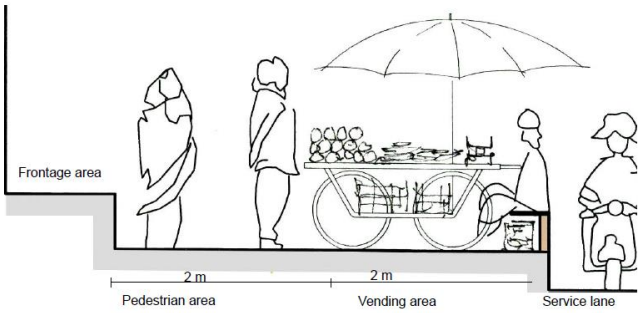


***Figure 41**:Moving cart with shade umbrella and seating area to sell vegetables or household goods*

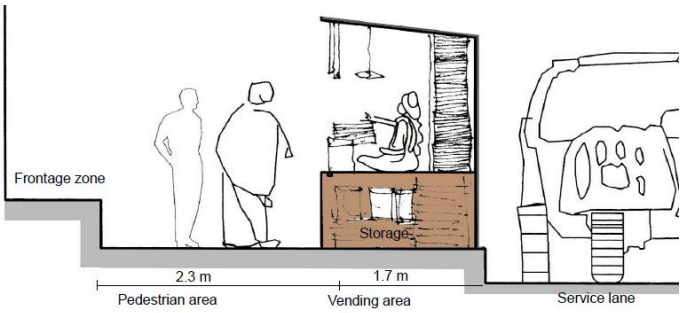


***Figure 42**: Lockable storage, display shelves and sun/rain shade*

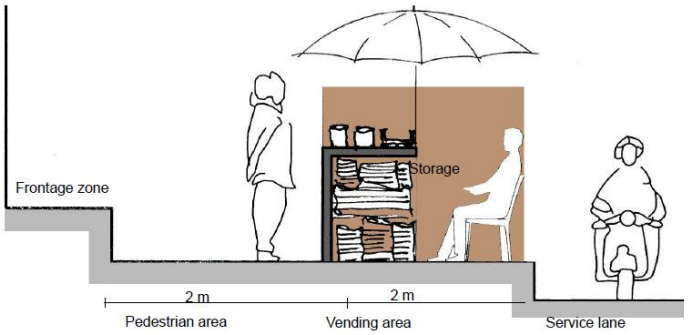


***Figure 43**: Cooked food display with seating area, shade and storage for utensils and ingredients*

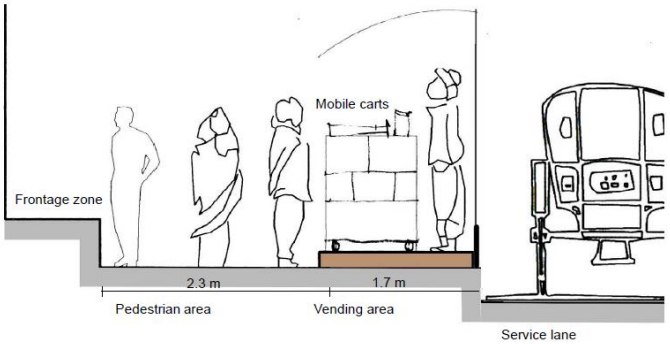


***Figure 44**:Small mobile cart platform*

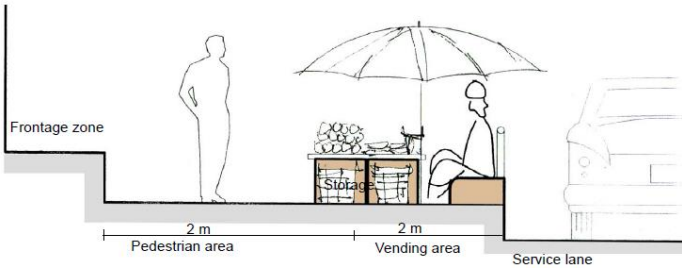


***Figure 45**:Moveable seat, display boxes and umbrella for example vegetable seller*

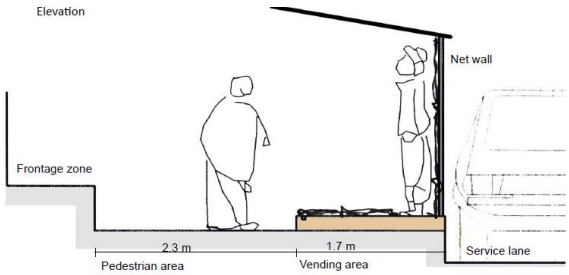


***Figure 46**:Wall and floor display with fixed shelter e.g., for T shirts*

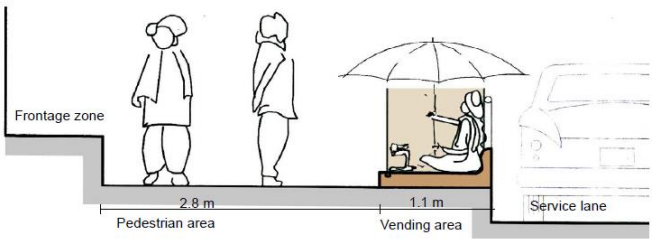


***Figure 47**:Moveable seat and umbrella e.g., shoe mender. Source: Centre for Urban Equity & Cardiff University (2014)*

(b) Road Space

The study also included sketches of a street market in Ahmedabad that were meant to show how disorganized trading in a service lane could be structured to allow efficient space sharing, to reduce the conflict between vendors, vehicles and pedestrians.

Analysis of a street market in Ahmedabad shows how vending spaces can be better arranged

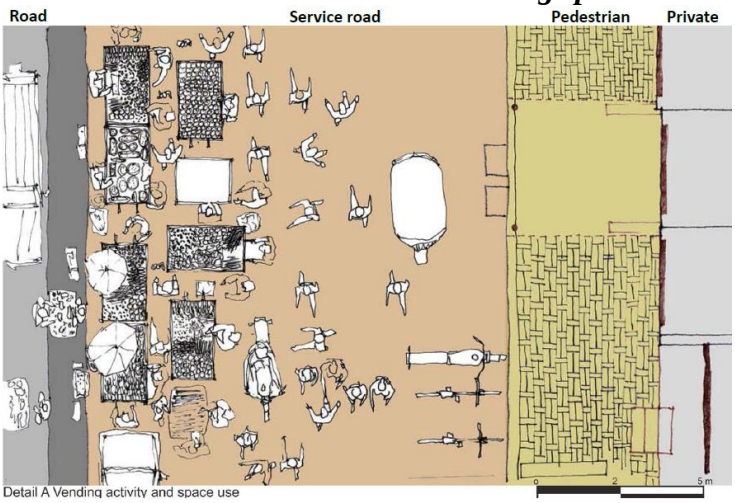


***Figure 48**: A detailed plan illustrating vending activity and space use*

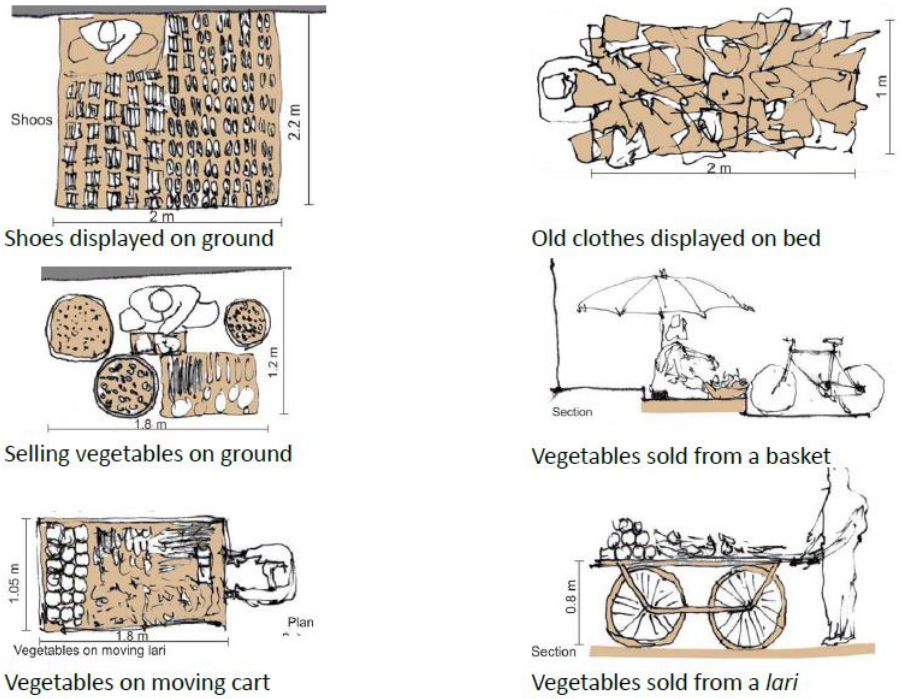
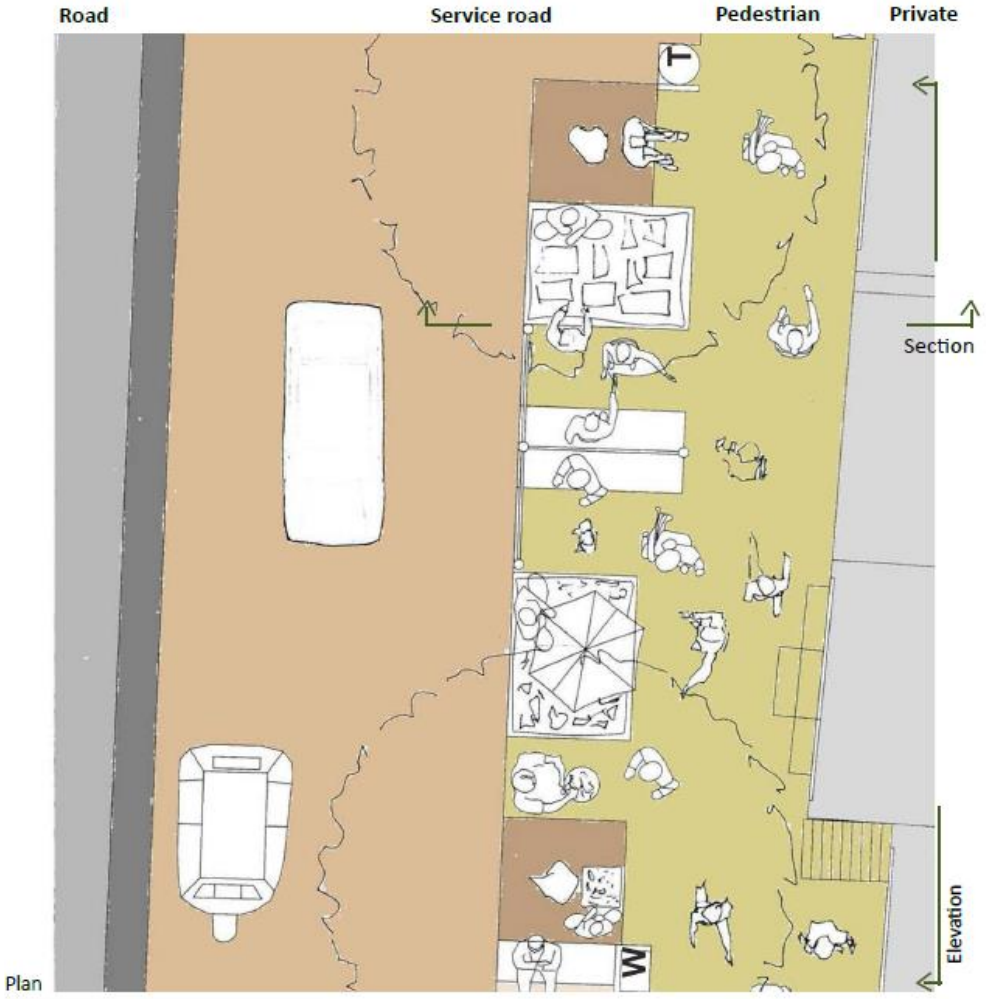


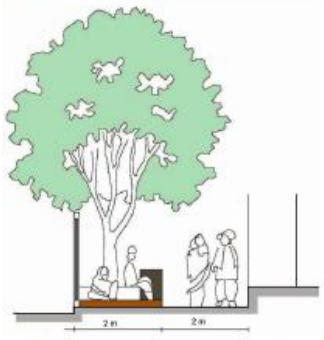
***Figure 49**: Types of vending activities on Ahmedabad Street. Source: Centre for Urban Equity & Cardiff University (2014)*

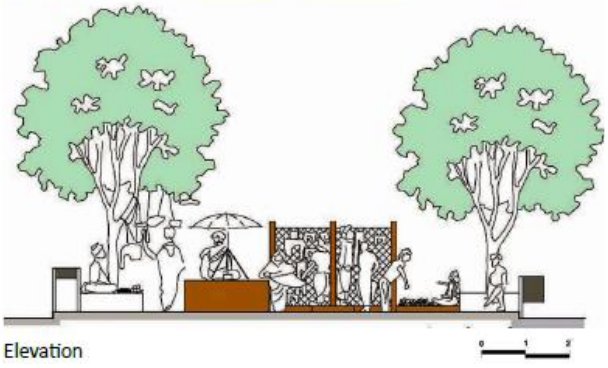
The study provided two proposals on how the roads and pavements can be designed to optimise the use of space and cater for street trading activities while at the same time preventing conflict between street traders, pedestrians and motorists.

Proposal 1

This scheme shows a narrowed service road and a 4m pavement. There is no scope for tree-planting on the road and the provision of a water tap, and trash bin.

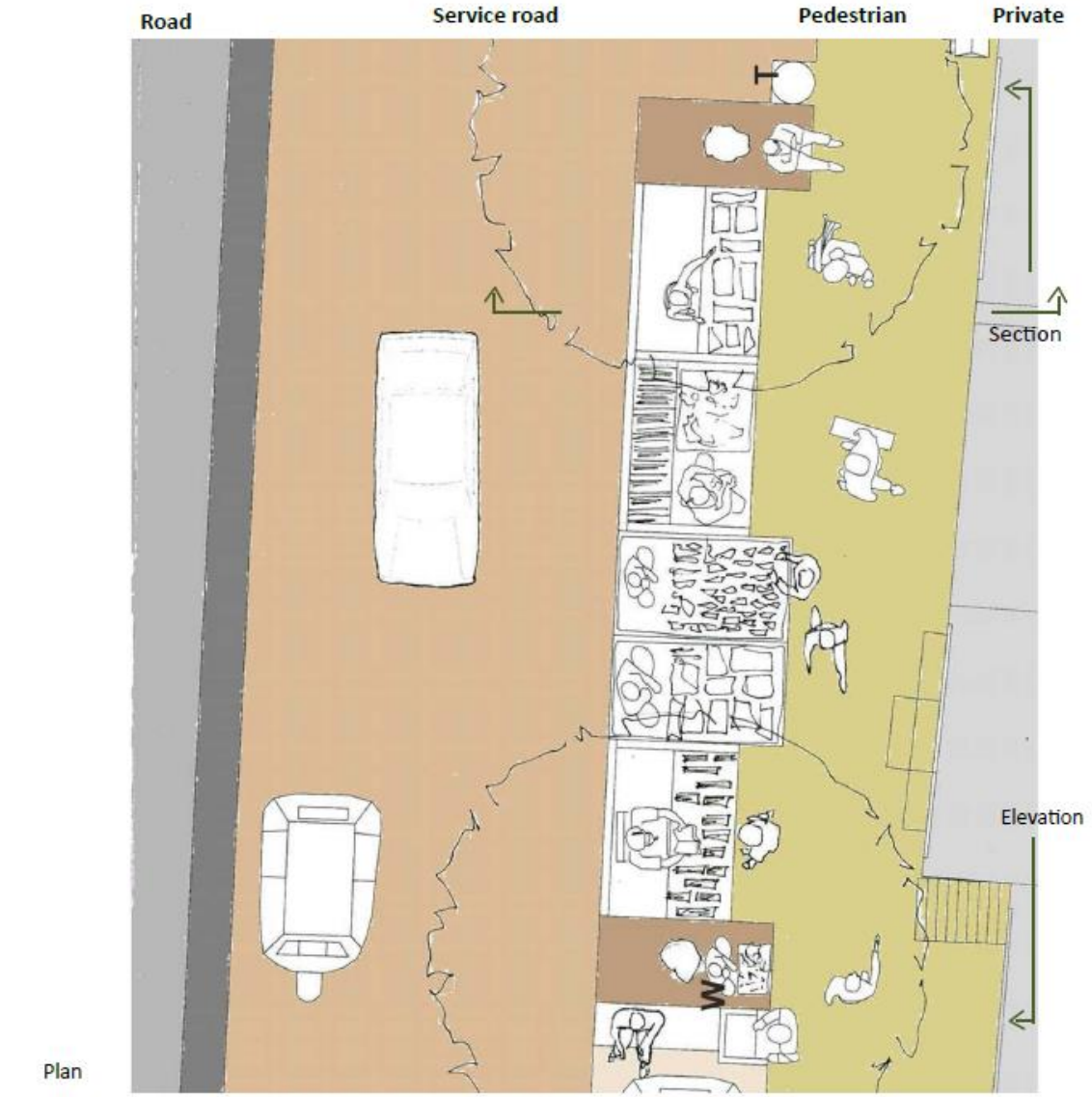


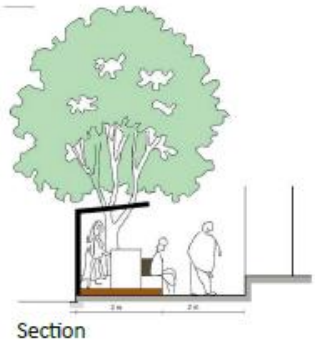


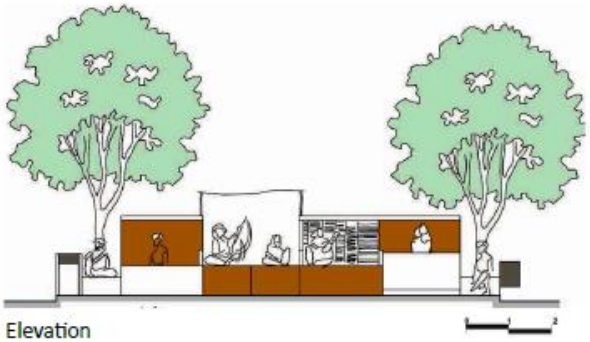


Proposal 02

This scheme also shows a narrowed service road and a 4m pavement, but is specifically designed to accommodate traders using a moving cart.







2.10.2 Kivukoni And Kimara BRT Stations in Dar Es Salaam

The Bus Rapid Transit system (BRT) has been introduced in many developing countries, including Tanzania, to positively reduce commuter travel times and urban congestion.

Figure 50*:Bus rapid transportation along the Morogoro road, Dar es salaam. Source: Google images accessed 2020.*

The design of the new BRT is illustrated by the dedicated bus lanes and in the layout of the bus stations. The construction of bus stations necessitated the need to extend pedestrian paths and pedestrian crossings. This clear structure has considerably reduced the risk of accidents at the BRT.

The Kivukoni and Kimara bus stops in Dares salaam, Tanzania were specifically selected according to their location, functionality and significance within the BRT network. They are terminals of the BRT trunk routes. Kivukoni is the central terminal that leads to the harbour and ferries. Kimara is an important traffic hub, the western bus stations along Morogoro road.

A survey was conducted on the immediate surroundings of the selected BRT stations to get feedback from the street vendors on their experiences and its influence on their business and lives as a whole. Below are maps of Kivukoni and Kimara BRT stations showing the location of shops and street vendors in 2020. (fig. 51 and 52 respectively)

Kivukoni BRT Station

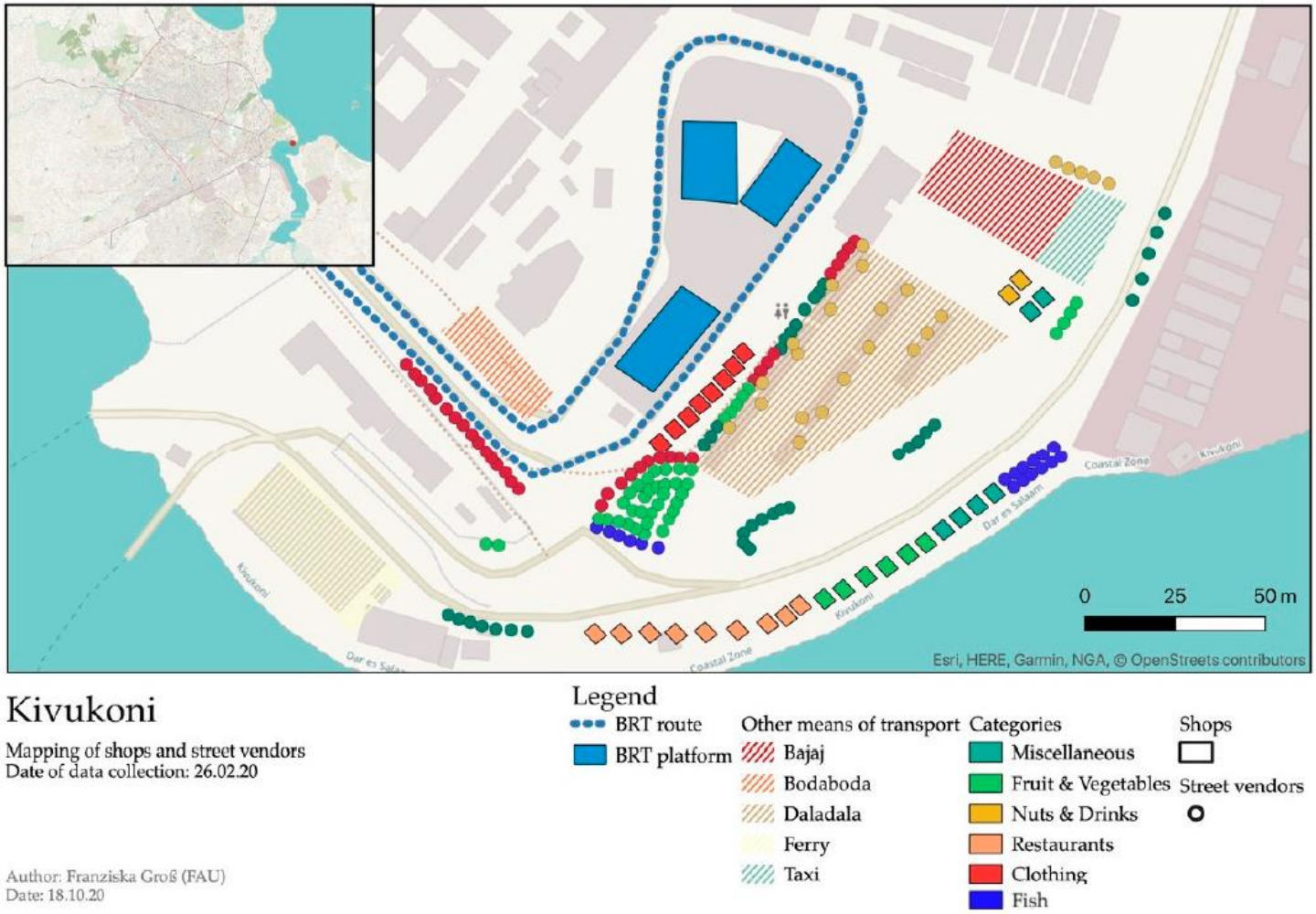


***Figure 51**:Map of the BRT Terminal at Kivukoni Dar es Salaam*

As shown in figure 51 above there are several fixed stalls in the immediate region of the entrance and exit points. At the Bajaj (what is commonly known as tuk-tuks in Kenya) points of departure, drinks, snacks and fruits are mainly sold. Clothes vendors are mainly found along the roads leading to the terminals. The sale of fish is also dominant in this terminal, owing to its proximity to the fish market and the harbour. Kivukoni is also swamped with street vendors. This is shown by the large availability of bajaj, daladalas and boda-bodas as illustrated in figure 51. Moreover, the presence of the BRT system was an additional pull factor for street vendors and this created the mushrooming of more stalls. Development of parking areas and other modes of transport has been prevented by the overcrowding of the terminal.

Kimara BRT Station

Kimara connects the city centre to the city's fringes by other transport means that act as feeders. It provides a larger transfer area for other transport services such as tuk-tuks, daladalas and boda-bodas. It also has a designated Park and Ride parking lot (see Figure 52). The BRT station is completely enclosed by a fence (see Figure 53), this influences the number of street vendors within the vicinity. There appears to be a few street vendors in its immediate surrounding. Fruits and vegetables are mainly sold at the large tuk-tuk stop. Permanent stands are located around the Daladala departure points. Street vendors are located at the western part of the terminal, the commodities sold are clothes and miscellaneous items such as sweets and snacks. Street stalls dominate more than fixed shops, a few fixed shops selling fruits and vegetables are situated towards a large market north of Kimara Terminal. The establishment of the BRT terminal has intensified Kimara's role as a suburban centre and has led to an increase of street vendors along Morogoro road.

Economic possibilities have emerged due to the BRT staging bus stops as local hubs. Street vendors have found more locations for their businesses due to an increased number of passengers. Nevertheless, street vendors remain dependent on unreliable political decisions.

Kimara BRT Station

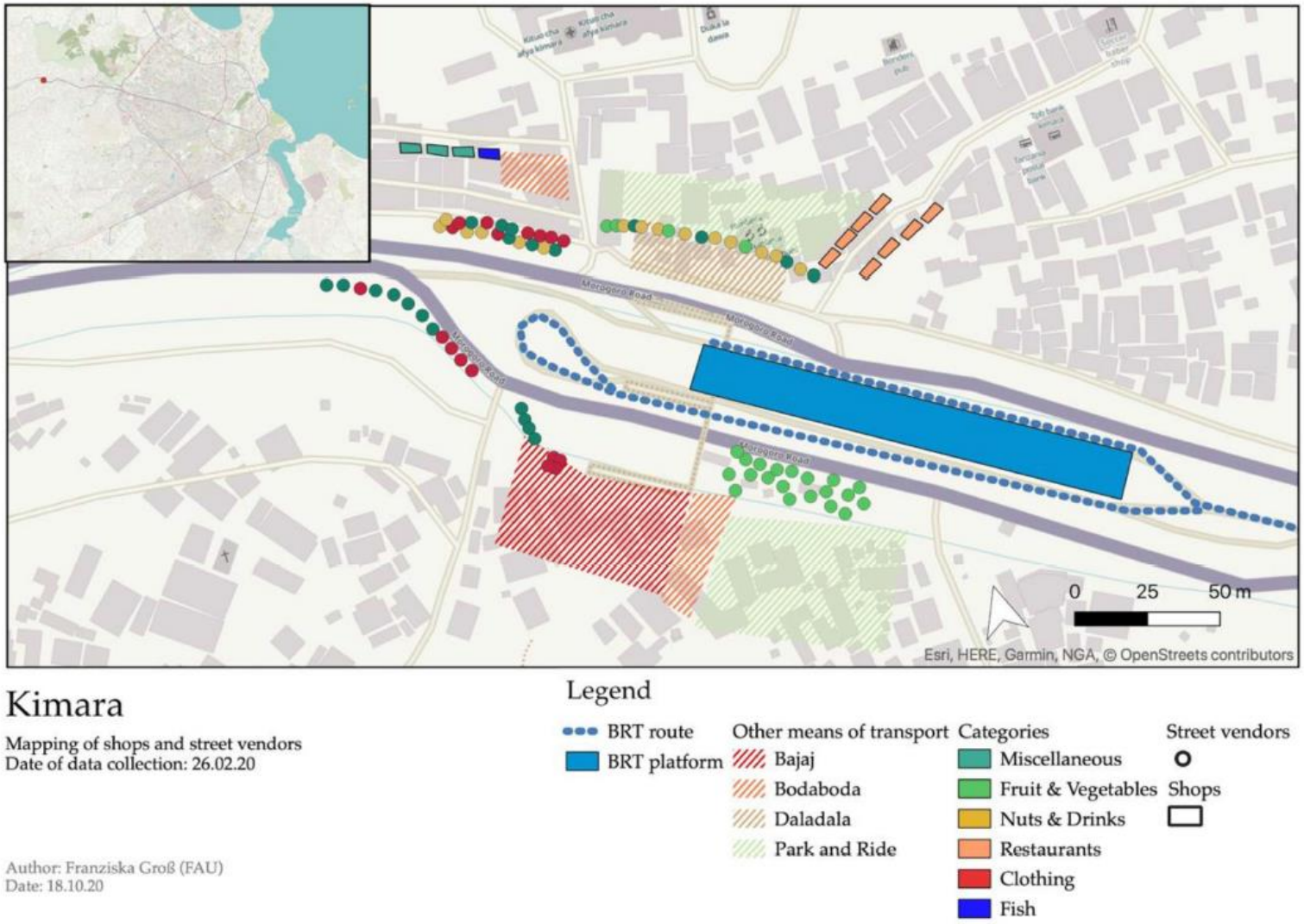


***Figure 52**: Map of the BRT Terminal at Kimara, Dar es Salaam.*

Figure 53*:Aerial view of Kimara BRT Station. Source: Google images 2020*

In summary, as much as the BRT system has helped create more jobs and generate more income opportunities for the street vendor and informal transport systems, the terminal could be utilised more efficiently by catering for shopping facilities and parking bays for other transport modes within the vicinity. The BRT sets out a good example of how the relationship of different stakeholders manifest within the transport sector and expand into the social and most importantly, the economic sphere as public transport connects citizens to their revenue-producing activities and basic services.

2.11 EMPIRICAL REVIEW

Michael Stasik & Sidy Cissokho (2018) carried out a study on Bus stations in Africa; their manifold functions and significances. The research points out that nearly all studies that relate to African bus stations appear to have emerged as a subsidiary product of other subjects, often on market places. The main objective of the research is to highlight the significance of bus stations as a primarily urban phenomenon. The study looked at the types of bus stations in Ghana and the dimension of informality related to popular transport enterprises in West Africa. The study briefly highlights the different perspectives and theoretical vantage points from which the significance, multi-functionality and interconnectedness of Africa's bus stations can be considered. The researchers further highlight negative associations previous research has attributed to bus stations. The study also briefly highlights the social and cultural importance of stations. From the review of the study, it did not focus on the relationship between markets and the bus stations in Africa. Moreover, it focused its attention on Ghana.

Stasik M and Klager G (2018) carried out research on "The Temporalities and Temptations of (Not) Working in Ghanian Bus Stations; Station Waka-Waka". The study focuses on the practices and strategies of two kind of mobile entrepreneurs: the hawkers and the bus drivers. The study aims at showing how drivers and hawkers accommodated the transformations of "slow/fast business" by alternating between working inside the station and moving beyond it. The objective of the study is to show how the transport operators and vendors move beyond, and at times avoid the station as part of their attempts to cope with a competitive environment and to negotiate spatial temporal, and regulatory constraints. The study is a more descriptive study of the similarities between bus drivers and hawkers as mobile workers. It lacks illustrative spatial relationship between the informal market and the transport node.

Kruger F et al (2021) look at 'The Bus Rapid Transit (BRT) in Dar es Salaam: A Pilot Study on Critical Infrastructure, Sustainable Urban Development and Livelihoods'. The research reports on the impacts of the BRT on the livelihoods and city development in Dar es Salaam. The research tools to obtain information was conduction of interviews, street vendor surveys and mapping. The outcome of the results was divided into different fields of activity such as Traffic Management, City Administrations, Basic Provision of Services and Street Vendors. The main objective was to gain a better synopsis of terminal structures and to identify the spatial patterns in the bus stop

surroundings such as the location of permanent shops, temporary vendors and the range of products sold. This research aided the current study on how to map the transport system and location of street vendors. It also justified the need to carry out the research since it acts as a good example of modern transport stations that do not integrate the different services of transport and integrate the street vendors.

Centre for Urban Equity and Cardiff University (CUE) 2014 explores the challenges of managing street vending in modern India and explores how inclusive urban design can generate imaginative use of space. It illustrates how to adopt a 'rights-based approach' which argues for all urban dwellers, including street vendors.

Hussein M. (2014) conducted a study to provide an insight into the street trading concept and evaluated its impact on the Central Business District of Nairobi. The objectives of the study were to find out the various categories of street trading and describe the nature of street trading in Nairobi city. The data collection method used was administration of questionnaires directed to hawkers and non-participant observation. The research proposes the best ways of managing hawking in Nairobi CBD. While Hussein's study was conducted in the capital city of Kenya focusing on street trading in the CBD, this study was focused on the relationship between transport nodes and street trading in the coastal town of Kenya, Mombasa.

Macharia (2010) conducted research on "Building Inclusive Post-colonial Dynamics in a Context of Informalization: The Case of Commercial activities on Nairobi Eastleigh Neighbourhood'. The study examined the methods used by the Somali community for economic empowerment that have resulted to the social and spatial transformation of Eastleigh. It also examined the methods used by the non-Somali street vending community in their contentions to trading space. The research argues that Nairobi is in need of a new, urban and regional development framework which is integrated and bottom-linked. The author argues that this approach aims at meeting the needs of diverse informal economies within the transformed frameworks for Nairobi's post-colonial development.

Tuju B (2019) studied 'The Impact of informal trade on Spatial Development of Mumias South and Mtindwa Road'. This research was conducted in Nairobi. The study outlines the factors leading to the growth of informal businesses along the residential corridor of Buruburu estate. The study used a case study approach to document the existing informal businesses. The study proposes

integration of informal businesses into the urban land uses during the urban stakeholders' consultative forums. The study did not focus on the informal traders along transport nodes.

Racaud's (2017) study, the "Ambigous Resource: "Informal" Street Trading in Kisumu, Kenya", states that despite street trading being an economic and social self-evident fact, the relations between the authorities and street vendors involve conflicts. The local authorities use by-laws from the colonial era to prevent private traders from accessing public spaces. Conversely, the street traders refer to national laws (acts) and to the recent Constitution to support their claims to conduct business in the streets. These legal contradictions are tangled up with political contradictions. At the national level, the informal sector and small-scale enterprise are recognised and presented as sectors which should be supported, as indicated in the Kenya Vision 2030 national development plan. However, at the local scale, street traders work in a hostile environment, with regular forced evictions. The author goes further to look at the ambiguous institutional environment from the legitimacy of the rules governing the streets of Kisumu, to the issuance of the license business permit not offered to street traders and the contradictions between the national political and legislative frameworks and local policies. The study illustrates some of the challenges faced by informal traders from institutions that are charged with the responsibility of developing supporting infrastructure and regulations to support them.

The above review shows that the prevalence of informal activities occupying public space in developing countries has attracted research attention. However, very little has been written on the relationship of these informal activities to transport nodes.

2.12 CONCEPTUAL FRAMEWORK

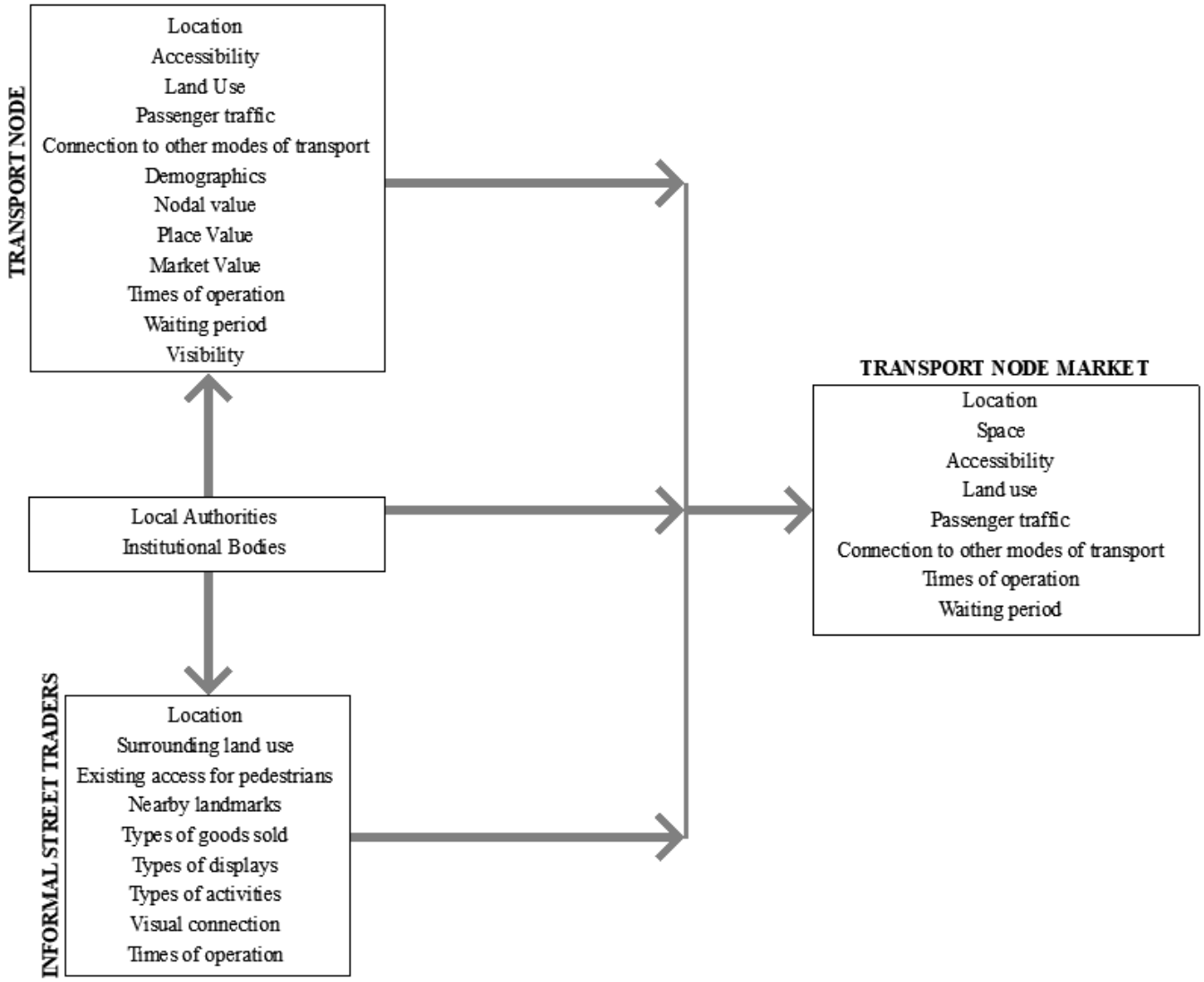


***Figure 54**: Proposed Conceptual Framework for Transport Node Markets. Source: Author 2022*

2.13 SUMMARY

Transport stops play a key role in shaping features of the urban environment. Transport stops are commonly considered as functional components of the transport system. Public transport is considered a more efficient mode of urban transport. It is offered using various modes of transport air, road, rail and water transport. Public transportation systems can be classified according to their level of segregation, connection to the street and the developed patterns in the neighbourhood influenced by the transport system.

Transport interchanges are very important elements of urban structure and need to be used structurally to improve the city's performance. The interchanges should be accessible, associated with public space and should make provision for trading. Roads and streets that are intended for public transportation must be planned and designed to facilitate movement efficiently. Transit points create a critical mass of activities that create points or links into and through the city. The success of a transport node is influenced by the station design considerations and also the factors of urban design such as accessibility, walkability, visual proximity among others. These factors play an essential role on a traveller's best travel mode.

A review on Transport Node Markets was carried out across all modes of transport. Airports have high-end retail facilities such as duty-free shopping, hotels, retail and dining. Commercial activities along waterfronts originated from sea ports. Ports act as catalysts that initiate a wide range of commercial endevours in surrounding areas. A lot of fish markets and restaurant can be found along the waterfronts as a form of tourist attraction. Rail stop markets have convenience stores, restaurants, travel-related stalls that compliment both short-distance and long-distance travel. Informal markets are located along the rail as previously discussed in Mae Kong Railway market. A good example of a modern rail stop market is Grand Central that compromises of a cluster of food shops, restaurants, a grocery market, bakeries and a Transit Museum. Bus Transit market are prominent sites of economic activities. Both formal and informal stalls, shops and vendors are located within the vicinity of bus stops.

The informal sector is constituted by those activities of petty traders, street hawkers, shoe-shine boys and other groups underemployed on the streets of cities. Key concepts define how the street vendors appropriate space, use strategies and tactics to encroach on space, the types of culture and lifestyle of the street vendors as well as their sense of identity and supportiveness as a community.

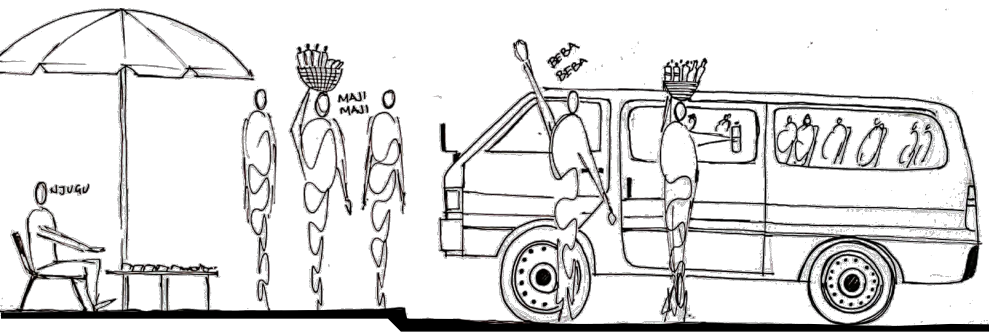
The various categories of informalities were further discussed in the chapter. The informalities are classified as survivalist, primary, intermediary and affluent informalities. The research focuses on survivalist and primary informalities.

The Case study: Facilitating Street Vendors in Contemporary Urban Realm illustrates how urban space should be redefined into vending and non-vending zones. Various vending space considerations should be taken into account, for instance, street network, context, size and character should be analysed and mapped in order to accommodate commercial activity.

The Kivukoni and Kimara BRT case study illustrates how the construction of the BRT influences city development and people's livelihoods. It maps out the types of street traders and transportation services within the vicinity of the BRT station. The case studied is a good example of how the improvement of the transport system needs to be inclusive of the street traders and transport services.

An empirical review of recent studies was conducted highlighting the areas of study different authors focused on and the gaps identified in some. This was purposeful to emphasize the need for this study.

Based on the literature reviewed on both phenomena; the transport node and informal markets, a conceptual framework was drawn to theoretically ground the topic.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter explains the approaches that were undertaken to accomplish the study. It details the data sources, the sampling procedure, data collection tools used for the study, data analysis and how the data collected and analysed shall be presented. This chapter also outlines the process used to meet the objectives listed in Chapter one of the study which are:

1) To assess existing conditions and situations of existing street markets in relation to matatu stages in the city of Mombasa.
2) To determine the nature of relationship (if any) between the transport node and the informal markets in Mombasa
3) To formulate Urban Design Guidelines for the Transport node markets in the city of Mombasa.

Research methodology refers to a technique used by the researcher to collect data, either through primary or secondary sources, to answer the research questions and the problem statement identified by the study. Hence the study took a descriptive approach to conceptualize and transcribe the findings gathered from the case studies. Therefore, this study has adopted qualitative research methods to collect data with regard to this research.

One of the approaches used in the qualitative part of this study is the grounded theory approach. Grounded theory methodology requires theoretical sensitivity to process findings into a theoretical basis in a conceptual and well-integrated way (Strauss et al. 1990). In this approach, the theory and concept shall be formulated from empirical data. This method is best to express the value of daily life that is described through spatial elements of architecture and producing an analysis in order to create a substantive theory.

3.2 SITE JUSTIFICATION

The study used purposive sampling method to select the cases to focus on the major transport nodes that connect Mombasa Island to the Northern mainland and Southern mainland. The analysis of the case studies selected acted as a sample in understanding the existing situation on Transport Node Markets in Mombasa; identify the existing problems and recommendations geared towards developing strategies based on the collected data.

3.3 DATA COLLECTION AND ANALYSIS

Data was collected from primary sources. The research tools and techniques employed included observation, interviews, note-taking, photography, and mapping.

3.3.1 Primary Data

The grounded theory approach was used to create a clear and systematic step based on the patterns of human behaviour in these transport nodes and trading areas. This was done through in-depth interviews, comprehensive observation and a structured analysis as explained below:

a) Interviews

Interviews involve face to face interactions or conversations between the researcher and the respondents. They were conducted during the field surveys and semi-structured interviews were used to capture primary data from the informants. The interview questions were formulated following the first reconnaissance site visit and were designed to enclose all concepts emerging from the research questions. The informants of this study were interviewed both in English and in Kiswahili for those who did not understand English. Information gathered from the informants was jotted down on a notebook.

Sampling Technique

The study combined both purposive sampling for key informants and simple random sampling for groups of respondents for the study as explained below:

Sampling of Key informants

Purposive sampling was used to identify key informants to compliment information gathered from street traders, stall vendors and matatu operators. A total of 5 key informant interviews were carried out.

The following people were purposely selected for the study interview:

1. Planner Nashon Njoroge at the County offices of Mombasa (1)
2. Head of Matatu Sacco operator at Buxton stage and Likoni Matatu Stage (2)

3. Market Chairman at Buxton, Likoni Matatu stage (2)

Due to the lack of permanent stalls at the Ferry Matatu stage, there did not exist an internal administration of a Market chairman or Head of the Matatu Sacco operator upon inquiry.

Sample Size

A stratified sampling method was used to select the various groups on site based on their characteristics; they include street vendors, stall operators and matatu operators. The stratified sampling method works well in heterogeneous environments like The Transport Node Markets where diverse activities and trade take place in one area. A random sampling was done for the various groups in the study, this included matatu operators, stall operators and street vendors. Ten interviewees were selected under each group, across all three case studies, giving 30 random interviews in total. This sampling method ensures that every individual in a given population has equal probability of being selected (Meng 2013)

Table 1: Sampling plan. Source: Author 2022

Case study	Sampling group	No. of Interviewees
Buxton Matatu Stage	Matatu operators	10
	Street traders	10
	Stall vendors	10
Ferry Matatu Stage	Matatu operators	10
	Street traders	10
	Stall vendors (there were no stalls)	0
Buxton Matatu Stage	Matatu operators	10
	Street traders	10
	Stall vendors	10
Total No. of interviews		80

A sample size of 80 respondent was drawn from the target population of street traders, stall vendors and matatu operators. Silverman (2020) notes that the smallest allowable sample size is 30 sample

units to minimise on the error of the entire populations. The sample size was considered a suitable representation of the population for the study area.

Narrative data was collected through these interviews. This method allows researchers to understand the many aspects of the cases studied that are not visible in sketches, maps or observation.

b) Observation

Observation is the process of collecting data directly by seeing, hearing, smelling and testing things as they occur in real life situation (Mugenda & Mugenda 2003). Unobtrusive observation was used for this study, noting the current state of the transport node markets and allowing the researcher to study and evaluate the behavioural patterns of the different actors within the urban space. The researcher purposely tried to be incognito so as not to influence their behavioural result. Moreover, this tool was utilized in different hours of the day and days of the week in order to document varying activities taking place on site. Mapping out the location of the various actors and existing features on the sites supported with pictorial evidence and descriptive interpretations was used to define the findings observed on site. The tool was used to assess the position of the transport system, the circulation routes for both pedestrians and the transport system, location of street vendors, types of trading displays, types of commodities sold, conditions of infrastructure and types of ancillary facilities available as well as general characteristics of the public space.

It was necessary to take into account the activity schedule of street traders, matatu operators and pedestrians in order to propose guidelines for each urban user in these spaces. The researcher observed the peak and off-peak hours of the transport system in relation to the types of goods sold and the number of traders within the space.

The observed data is then recorded using the data collection tools discussed below

i) Photographs

ii) Analytical sketches

iii) Analytical notes

i) Photographs

On site photographs were taken systematically of stall vendors, street vendors, street furniture, parking bays, passenger waiting area, use of street space, conditions of footpaths and surrounding elements. Photographs were taken using a mobile phone for future references.

ii) Analytical sketches

Part plans and part section of the cases in study were sketched out to further illustrate the existing situation and condition on site and determine a relationship between the two complex cyphers in study.

iii) Note Taking and Voice Recording

The researcher sought permission from the interviewees to record their responses via a tape recorder. The interviewees were not comfortable with the same. Consequently, only note taking was used as an aid to the interview sessions. The note taking process was essential because it functioned as the collection of reflective ideas obtained while listening to the conversation and as a reference during the data analysis.

c) Site Checklist Method

Structured site observation was organized and planned before the study began. Site observation for this research was conducted several times. The first site visits were conducted much earlier as a pilot visit for observing and recording generally the study sites and the surrounding environment. The second visit was conducted to record all the data in detail and conduct interviews. The fieldwork took two weeks within the month of December 2021.

3.3.2 Secondary Data

The proposed methodology in this research intended to build upon the understanding of existing literature in the related concepts of the proposed work. It is important to review previous studies' focus on public transport in urban areas, and street vendors in the proximity of transit stops.

Secondary data exposed the researcher to a broader perspective of existing knowledge regarding public transport and informality. The knowledge obtained helped guide the researcher in better understanding the concepts. Generally, secondary sources are said to be economically pronounced due to data availability; hence the researcher can access the information according to their pace. Therefore, the study used the following published materials:

1. Journal articles
2. Books (library and eBooks)
3. Previous dissertations from various institutions
4. Internet sources

3.4 DATA ANALYSIS AND PRESENTATION

The data was analyzed and interpreted with specific reference to the objectives. Different types of data displays, such as drawings, sketches, photographs, charts, and networks, were used to show the relationships between the information presented.

Descriptive Information

The qualitative data generated from interviews was categorised into themes and described in narrative form.

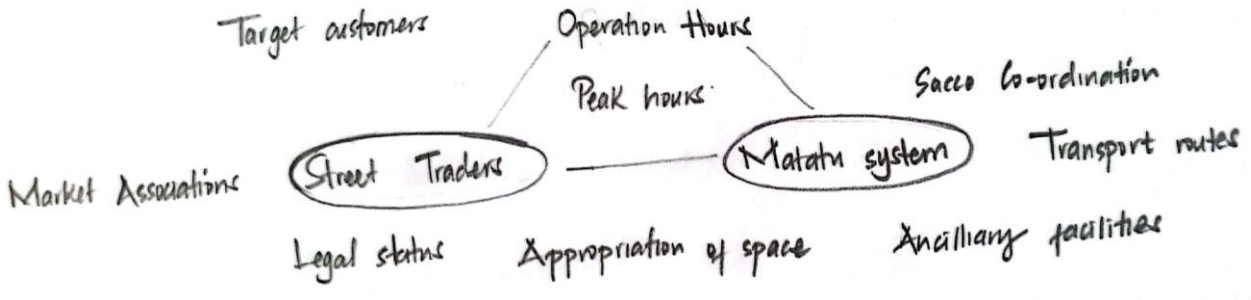


Figure 55:Main concepts used for data analysis based on interview responses. Source: Author 2022

Generated maps

Google earth images were used to assist in producing maps for the study areas. The maps generated were used to analyse the spatial aspects such as the spatial organization of the area, the distribution of the neighbouring land uses and the street morphology that directs people to the area, position of street traders, circulation route and position of the transport system. This helped identify the indicators to be observed for evidence to make valid inferences and conclusions. It also aided in understanding factors that influenced the emergence of street traders at the areas of study and determine the relationship between the position

Bar graphs

Bar graphs were used to illustrate the types of trading activities in relation to matatu operating hours. This was generated based on observation and information obtained from interviews. It aided in illustrating the relation between the peak and off hours of the transport system in relation to an approximate percentage of street traders and types oof goods sold against the hours of the day.

Charts

Charts were used to illustrate the relationship between the nature of traders and the proximity to the matatu stage at each case study.

Photographs and Sketches

Digital images and sketches of the urban space, users' behaviour and their components were used to illustrate existing conditions and issues.

3.5 LIMITATIONS OF THE STUDY

The study focused only on three transport node markets in the city of Mombasa. An assumption made by this study is that the sample area selected for detailed analysis will be representative of all the Transport Node Markets. This may not necessarily be the case given the different locations and the built environment of other transport nodes in Mombasa.

It is further assumed that the design proposals formulated for The Transport Node Markets developments can be implemented across Mombasa and in other urban centres encountering a more or less similar phenomenon. This may not be possible given the different nature, location and environments of the location of the other transport nodes, especially those in other urban centres.

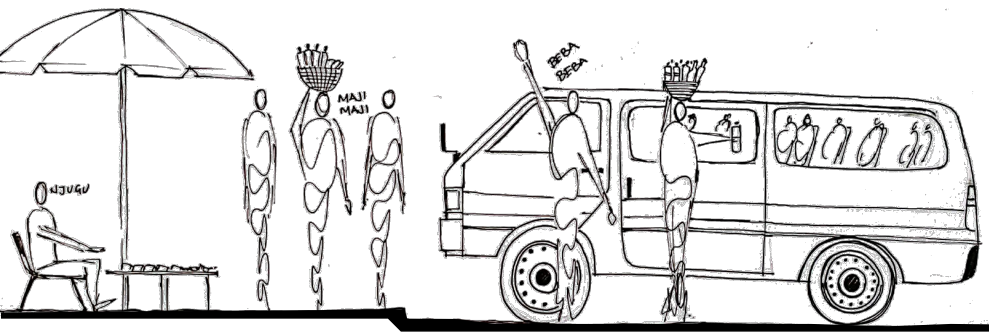
Another limitation of the study was in conducting interviews and focus group discussions with traders to understand their perceptions of the relationship between the street markets and transportation node. An assumption made by this study is that the sampled target population is representative in terms of the views presented in the way they perceive the space. This may not necessarily be the case as their responses may have been influenced by the location and nature of the transport node markets that may differ from of those in other parts of the country. The results of the study in terms of how to improve the relationship between street markets and public transport systems may thus not be generalized for other transport node markets that are outside Mombasa.

3.6 CHALLENGES FACED DURING FIELDWORK

Several challenges were faced while carrying out fieldwork.

One of them is being a Muslim lady carrying out data collection and having to conduct interviews and mingling with the opposite gender is something that is frowned upon in the Swahili culture. Nevertheless, I did what was required of me. I also had to be accompanied by my husband in most of my surveys for protection against theft and harassment.

I was also arrested by an officer from the County government of Mombasa, while conducting interviews, at Buxton matatu stage alleging that I might be planning terrorist activities and demanded for proof of my research. I provided proof of my admission as a student of Master of Architecture, at the University of Nairobi. My items were confiscated and I had to report to the Director of Inspectorate of Mombasa County. This action prevented me from continuing with my fieldwork till the next day as it had caused quite a commotion at Buxton matatu stage.



CHAPTER FOUR

SITUATIONAL ANALYSIS OF THE TRANSPORT NODE MARKETS IN MOMBASA

4.1 THE MATATU TRANSPORT SYSTEM

According to Kenda Mutongi (2017), the Matatu Industry is the only major business in Kenya that has continued to be locally owned and controlled. The Matatu transport system, which was African owned, contributed to rural-urban migration bringing Africans into the capital city centre during the post-colonial rule. The name 'matatu' is said to be derived from the Kikuyu/ Swahili word meaning "three" in reference to the three big ten cents used to pay for a ride to the city. Matatus have become so much a part of life in the capital city of Kenya, Nairobi, that it is argued that without matatus, Nairobi would come to a near standstill. Matatus are integral to the city's economy, culture, politics and street life. Through this, the matatu has played an essential role in transforming towns and cities as Kenyans depended largely on matatus for mobility. Given the pivotal role matatus have played in the growth of the economy, the government officially recognised the sector as an important sub-sector of the economy.

During the British rule, in 1934, to President Jomo Kenyatta's rule, the Kenya Bus Service (KBS) was the only primary official form of public transportation. The bus service was introduced to serve the white colonialists during the colonial era. The buses had their own designated bus stations in the CBD and in the city's outskirts. The KBS routes were limited to the main roads, and people who lived and worked any distance from the road had to walk several miles to reach the closest bus stop. The KBS buses were not enough to meet the growing demands of transportation needs. President Moi, the second president of the Republic of Kenya, later introduced the Nyayo Bus Service (NBS), forcing the KBS to operate at the city's periphery. The NBS had around three hundred buses donated through foreign aid. The NBS charged lower rates than matatus and KBS and received fuel subsidies from the government and free labour from the men and women serving in the National Youth Service (NYS). The government intended to give the matatu industry stiff competition and take control of the transportation industry. In time, the NBS collapsed due to the need to import spare parts and the need to hire foreign technicians to repair the buses hence becoming a liability to the government. Due to the competition created by the NBS, the public transportation system was put into disarray by matatu touts, who harassed, by throwing acid at, NBS drivers and passengers and by stoning the buses during matatu crack downs by the police.

Despite all the challenges the industry has gone through, matatus have continued to thrive as the major public transport system in Kenya. The success of matatus has been due to the flexibility of

the services they offer passengers, the routes they serve (no abstract or scheduled plan) and the high population density in the cities. Matatus represented the Kenyan version of the modern world, the music, the clothing, the language, the politics and upcoming current interests through the painting and branding of their vehicles.

For those who cannot afford motorised transport, the matatu informal transport system serves as the backbone of their transport system, providing essential mobility in the absence of government-run public transport.

4.2 STREET TRADERS

Street vendors and street hawkers were one of the four categories of informal workers recognised by the 1993 International Conference of Labour Statisticians in their attempts to address the informal workers' "place of work" (Becker, 2004: 13). The expressions "street vendor", " market vendor, " street trader, " vendor," and "hawker" are interchangeably and loosely used in the informal economy discourse across and within cultures. In some countries, the term "street vendor" encompasses vendors in organized marketplaces, mobile street hawkers, and home-based vendors. In others, marketplace vendors are a separate group and depending on the context, street vending may be considered legal or illegal (Cohen et al. 2000)

The common saying "where there is traffic, there is business" reflects a characteristic of Kenyan street traders. Street traders are mostly found along major thoroughfares and streets, areas around market places, bus stops, worksites and preferred downtown locations (Cohen et al. 2000). High pedestrian traffic creates a ready market for informal goods and services in many of these locations in the public spatial realm (Suharto, 2004).

The ways in which street traders select their locations are reliant on a mix of issues but predominantly on pedestrian flows which are in turn facilitated by urban attractions. It is evident from previous studies that street trading is clustered close to prime locations, such as busy intersections and entrances of shopping centres and stations.

This study shall look at the existence of street traders around the domains of matatu stages with the primary objective of understanding the relationship, if any, that exists between the transport system and the informal market. Just as the matatu industry brought about the seldom-heard story of African economic creativity, resilience and self-sufficiency, all of which played a role in the matatu success; from the seller of vehicles to garage men, to conductors, touts, upholstery men, graffiti artists, the bank managers offering loans, and matatu Saccos personnel, it also gave rise to the informal African market that can be seen in most matatu termini in Kenya.

4.3 PUBLIC TRANSPORT INFRASTRUCTURE IN MOMBASA

The major prevailing modes of public transport in Mombasa are matatu, mini-bus, tuk-tuk and boda-boda. The matatus and mini-buses follow certain approved routes managed by the county government and the Savings and Credit Cooperation Organization (SACCO) which they are registered under. The tuk-tuk and boda-boda operate on-hire and do not follow any route. To date, matatus carry the maximum number of public transport passengers in Mombasa.

According to the Integrated Strategic Urban Development Plan-2035 PLAN MOMBASA (ISUDP), the share of Public Service Vehicles (PSV) in Mombasa varies from 56% to 63% compared to private car mode which constitutes 37% to 44% of the traffic. The high number of tuk-tuks and boda-bodas on the roads has contributed to the higher percentage of PSV on Mombasa roads. Tuk-tuks and Boda-bodas, however, carry a smaller number of passengers relative to matatus. Public transport modes carry 76% of all passengers travelling in Mombasa. It is found that 66% of all public transport users in Mombasa use matatus.

On Mombasa Island, matatu and mini-bus terminals are located in Buxton, Docks and the Ferry stage. The existing number of matatu plying in Mombasa County is around 3000, and the facilities and area required for comfortable and efficient operation are insufficient.

According to ISUDP, the matatu or bus terminals require larger space, waiting facilities and small commercial establishments. The total area of all the matatu and bus terminals in Mombasa County is less than 4 hectares. In contrast, at least 8 Hectare area is required to provide basic facilities of a bus and matatu terminals and cater to the existing demand.

4.4 CATEGORIES OF STREET TRADERS

Street traders use different methods and structures for displaying their commodities. The methods include piling of commodities, for example, fruits, onions, tomatoes, and loose vegetables, and using measuring equipment such as tins, spoons, and baskets, among others. The structures used for displaying commodities include tables, racks, wheel burrows, handcarts, and bicycle seats. Others display their goods on the ground, over mats or gunny bags, while others simply carry their commodities on their hands and shoulders. There are also those that hang their goods, such as clothes on walls, trees, fences and an advanced group that construct temporary shades with stands for displaying their commodities (Mitullah, 2003).

Drawing from the data collected on the sites under study, four types of street traders were identified; mobile street traders, semi-mobile street traders, semi-fixed and fixed traders. Each of these has been explained below. Further, distinctions were identified in the type of structures adopted by the street traders. The first distinction is between the more permanent structures such as the county government stalls and kiosks and the more temporary claims on public space using mats on the floor, crates, tents or umbrellas. The second distinction is between the stationary claims on particular territory and ambulatory trading using pushcarts, baskets, or yokes. Other ambulatory types of trading included the use of motorcycles or bicycles.

4.4.1 Mobile Street Traders

This type of street trader occurs at the transit stop with a high capacity to move within the urban space. As shown in the figure below, these street traders carry relatively light commodities in buckets or baskets above their heads or shoulders. They mainly sell water, drinks and snacks to commuters, matatu operators and passers-by. They are highly adaptable to the rhythms of pedestrian flows as they can quickly move around and hence become more visible to potential customers. Hence, it is quite competitive in the temporal appropriation of the urban space and negotiating visibility to the public space; they can also penetrate areas that are not accessible by other types of traders. For example, they can easily move to establish direct contact with commuters in the matatus.

Figure 56*: Mobile Street traders at Buxton stage. Source: Author 2021*

4.4.2 Semi-Mobile Street Traders

This type of street trader carries out his/her trade along the edges of the urban space close to the transit stop and along the route of pedestrian movement. The traders place buckets, crates, light weight boards, make shift tables, mats or gunny bags on the ground to display their products. Goods are also displayed and moved around using a carrier (hand cart, wheel burrow, food carts). These types of accessories used for display allow for flexibility of movement around the urban space since they are quick and fast to dismantle and also functionally mobile through the use of hand carts.

Figure 57*: Semi-mobile street traders at Likoni stage 01 and Likoni stage 02, respectively. Source: Author 2021*

4.4.3 Semi-fixed Traders

This type of street trader is detached from the edges of the transit area, not quite capable of moving freely within the urban space and not necessarily fixed in his/her current location. This allows for both a degree of movement and a temporarily fixed location in a particular part of the urban space, which the trader found appropriate in relation to pedestrian flows.

The traders use elements found in the urban fabric to display their merchandise. Blank walls, fences and trees are mostly appropriated by this type of street trading. This limits the traders' capacity to move within the urban space. Similar to semi-mobile traders, the semi-fixed traders occupy pedestrian paths, road islands and unused parking spaces next to the afore-mentioned appropriated urban elements. As they display their merchandise using the vertical urban elements, they also take advantage of surrounding available ground space to display other goods on mats, gunny bags or crates and makeshift tables.

***Figure 58**: Semi fixed trading activities along the transit route in Likoni stage 01. Source: Author 2021*

4.4.4 The Fixed Trader

This type of trading refers to a condition where street trading takes place detached from the transit stop yet occupies a part of the transit area over a long period of time. This type of trading often forms a kiosk as it emerges within a quasi-formal box with relatively cheap makeshift materials that may or may not be authorized by the county officials. This type of trader cannot move within the urban space due to the fixity of his/her structure. It may also indicate a formalized form of street trading. This type of trading is the least adaptable to the change of situation in the transit area. Consequently, its location in relation to the rhythms of the commuters is critical to its survival and possible thrive.

***Figure 59**: Fixed structures along Likoni stage 02 transit route. Source: Author 2021*

Fixed street trading can also be in the form of permanent structures attached to the edges of the transit space in a fixed location. The type of street trading hinges on a pre-existing formal structure, as shown below. They may have access to facilities such as electricity and water. This type of street trading thrives according to the commodities sold because it is not necessarily linked directly to the commuters but also to other target markets like Matatus and the operators.

***Figure 60**: Fixed trading activities at Likoni and Buxton stage, respectively. Source: Author 2021*

The most dominant type of street trader is the semi-mobile trader who appropriates pedestrian paths, road islands, median strips and unused urban space to display their merchandise. This street trading is most common because it is most adaptable to the rhythms of the pedestrians' movements and allows for flexibility of displays. Majority of the fixed traders rent out storage space to the semi-mobile and mobile traders. Some appear to be in collaboration with them, where the fixed trader targets their everyday customer while the semi-mobile and mobile trader target the mobile customer.

4.5 CASE STUDY 01: BUXTON MATATU STAGE

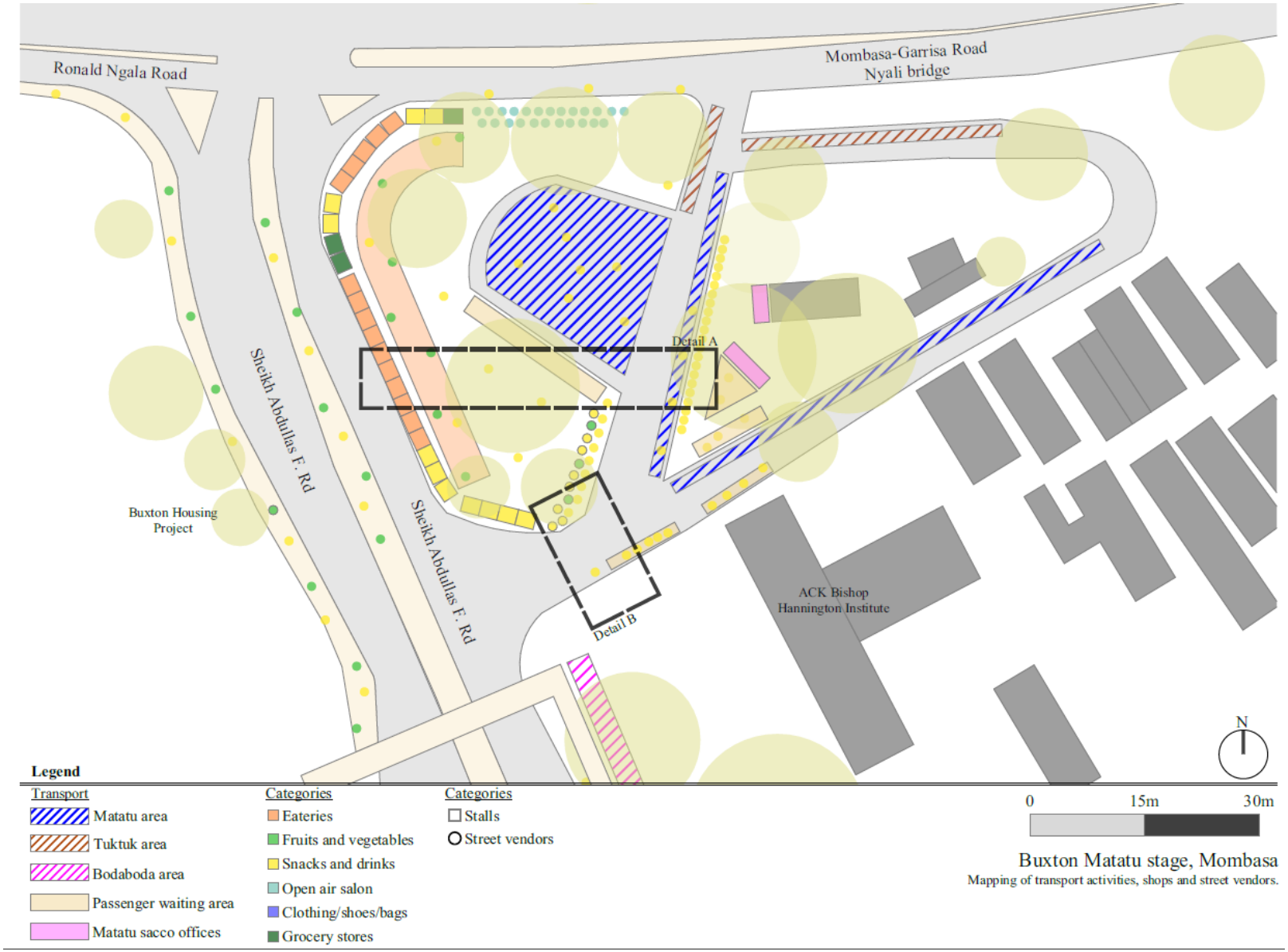


***Figure 61**:Mapping of transport activities, street vendors and shops at Buxton stage. Source: Author 2022*

4.5.1 CONTEXTUAL ANALYSIS

4.5.1.1 Location

The Buxton Matatu Terminus is located in the Northern part of the island. The terminus is at the junction of the Mombasa-Malindi highway and Sheikh Abdullas F Nassir Road. The ACK. Bishop Hannington Institute of Theology Buxton abuts its Southern edge. The stage was originally a garden in 2002. The Mombasa-Malindi (115.6 kilometres) and Mombasa-Kilifi (55.6 kilometres) transport services were previously offered at Bondeni, near Masjid Noor in Mombasa, before the authorities moved it to its current location due to the traffic it was creating. The relocation to Buxton created a lot of mobile street vendors, which probed the county to build structures in 2007 for them and tap into the revenue stream from them. The fixed stalls are located at the Northwestern and Western sides of the station, opening inwards towards the matatu station and giving its back to Sheikh Abdullas F Nassir Road. The area has access to public toilets that have existed since the relocation. The site has a Mabati mosque built in 2017 and is daily used by Muslim matatu operators, commuters and traders.

4.5.1.2 Land Use Pattern

The neighbouring region is a mixed-used area with the ACK Bishop Hannington Institute abutting the site on the southern side, while MM Shah and MV Shah Academy, although separated by the Mombasa-Malindi highway abutting the site on the Northern, the rest of the area is residential with upcoming Buxton apartments to the West of the site and on the Northern side. The area appears not to have strong connectivity to any neighbouring land uses.

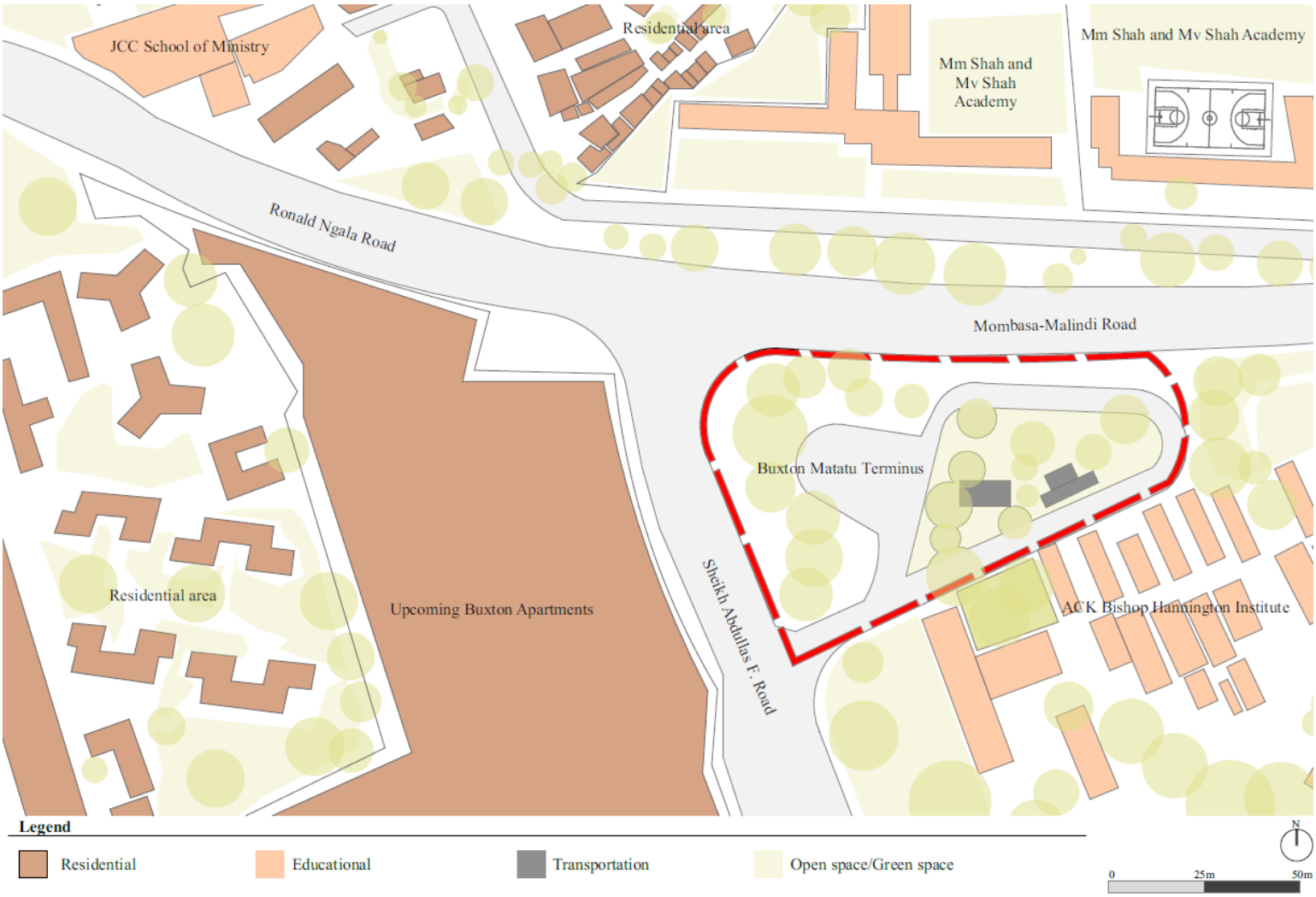


***Figure 62**: Neighbouring land use at Buxton Matatu stage. Source: Author 2022*

4.5.2 THE MARKET SYSTEM

4.5.2.1 Street Vendors' Position

The transportation pattern in this terminal influences the location of the trading activities. Due to the immense pedestrian flow moving on the roads, several formal trading activities are located on the Western side. They are considered formal due to the rent paid to the county government on a monthly basis. The activities are primarily eateries to serve long-distance travellers and matatu operators. The entry part of the terminal is flanked by semi-fixed hawkers mostly selling snacks and drinks for the commuters and passers-by along Sheikh Abdullas F Nassir Road. The mobile traders hang around the Matatu boarding stations to target the commuters boarding the buses. By

establishing their positions, no conflict is created between the transport land use and the informal commercial use. Due to the vastness of the site, the traders have adequate space to set up their businesses.

The critical characteristics of the trading identified by the survey are as follows: most of the trading activities along the stalls are eateries with very few operated as kiosks selling general groceries, one is used as a barber shop and three are used for storage purposes for the semi-fixed and mobile traders at a fee. Both the semi-fixed and mobile traders sell fruits, snacks and drinks.

The semi-fixed vendors have marked their territory by utilizing the same spot over time. There is a mutual understanding between the traders and the trader's association at Buxton on the same. The mobile vendors depend on the number of commuters flowing within the terminal, mostly hovering at the entrance and the matatu boarding points. During off-peak times, the mobile traders move to the roads abutting the site, targeting pedestrians and people stuck in traffic.

***Figure 63**: Mobile traders hovering around the matatu boarding area at Buxton stage. Source: Author 2021*

***Figure 64**: Aerial image showing the semi-fixed traders at the mouth of Buxton stage. Source: Author 2021*

4.5.2.2 Condition of Footpaths

Due to the availability of space at the most active part of the site, traders appear to have consciously cleared space for passengers, although, at times, it is inconveniently blocked by a hand cart, as shown in the figure below. Along the southern edge, the footpath has been compromised by a number of activities happening along the footpath; hawking, loading and off-loading of goods, setting up of temporary structures and passengers waiting to board. This forces pedestrians to use the roads, exposing them to the risk of accidents, among other things, by motorists.

Figure 65*: Hand cart occupying the pedestrian path. Source: Author 2021*

Figure 66: *Passengers waiting area and loading zone has occupied pathway. Source: Author 2021*

4.5.2.3 Sense of Enclosure

Buxton matatu stage is fully enclosed with only the entry and exit point creating a permeable access point both visually and physically. The edge of the matatu stage along Sheikh Abdullas F road and Mombasa-Malindi Road has been defined by hedges and stalls. This restricts visual connection from the outside.

4.5.3 THE TRANSPORT SYSTEM

4.5.3.1 Matatu Parking Area

Due to the availability of space, the matatu operators have organized their transport routes to create equity in onboarding passengers and way-finding for common passengers, as shown below. The different regions have designated parking spaces, as illustrated below, using the legend in **figure 66**. Kilifi Matatu Parking area has acquired the largest space within the terminus because of the size of the buses used. (62 pax).

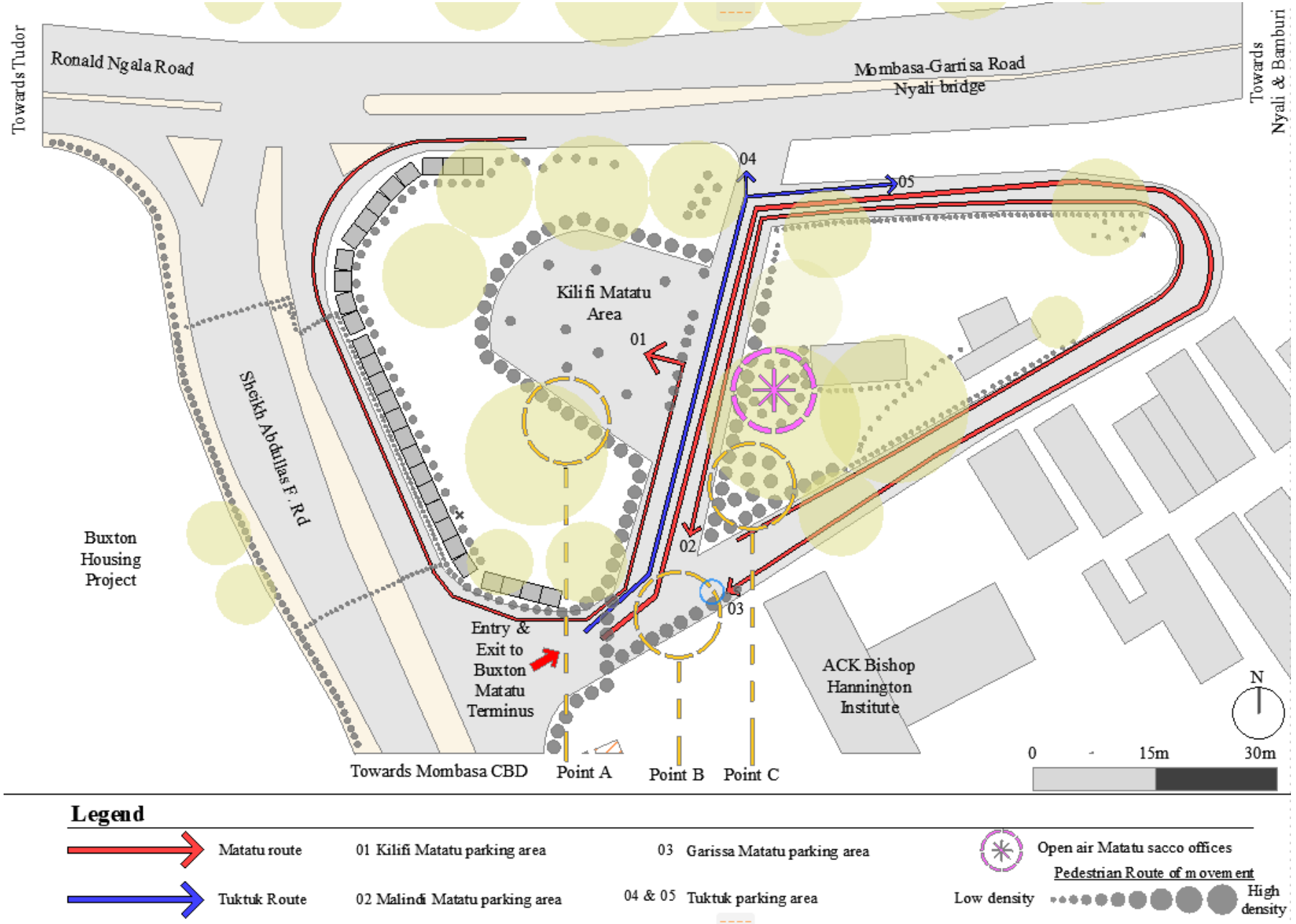


***Figure 67**: Map illustrating the vehicular circulation routes at Buxton Matatu Stage. Source: Author 2022*

***Figure 68**: Point A, Passenger waiting area.*

***Figure 69:** Passenger waiting area. Point B (refer to map above)*

***Figure 70:** Point C, Passenger waiting area*

4.5.3.2 Vehicular Movement Pattern

Buxton matatu terminus utilizes one point for both entry and exit. The matatus have self-organized the circulation to best suit their routes and parking spaces, as observed in **figure 67**. The buses have their own parking spaces and designated routes of movement within the terminus. The tuk-tuks also have their parking stations labelled 04 and 05 on the map above. The tuk-tuks offer town services to the commuters arriving from other areas.

The Matatu Sacco operators have organized the station according to how best it works for them; mini-buses and buses park at station 01, and mini-vans park at stations 02 and 03 (refer to map above). The matatus are arranged according to Saccos while waiting for passengers to board. This gives each Sacco an opportunity to operate every day (see figure below).

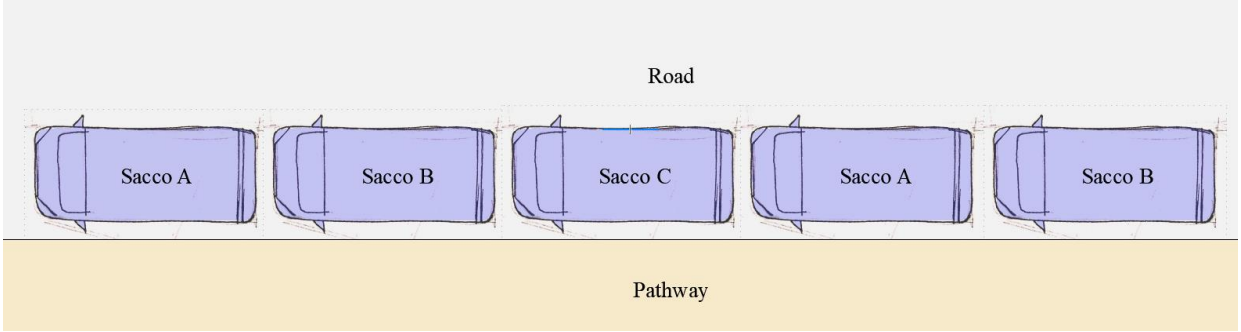


Figure 71*: Matatus parked according to Saccos at the boarding point. Source: Author 2022.*

The order of buses joining the queue and their position in this queue.

4.5.3.2 Passenger Waiting Zones

The Matatu operators took it upon themselves to create a passenger waiting zone, as shown above in **Figure 68**. The rest of the passengers wait along the pedestrian path close to the buses they wish to board. Some of the passengers utilize the concrete benches that were originally there when Buxton was a public garden, others sit on tyres or objects around the area that is appropriate for seating.

4.5.3.4 Loading and Off-loading Zone

There is no designated loading and off-loading zone within the matatu terminus. As shown in the figure below, the matatus that take passengers to Kilifi use the open-air parking spot while those going to Malindi and Garsen use the pedestrian path to load and off-load goods and luggage.

***Figure 72**: Goods loaded into a matatu at Kilifi parking station 01. Source: Author 2021*

***Figure 73**: Woman loading goods into a matatu at parking station 03. Source: Author 2021*

4.5.3.5 Fess Paid for Location

The fixed traders pay a rent of Kenya Shillings Six thousand per month per stall. The mobile street traders pay Kenya Shillings Thirty daily. The use of the public toilets is at a charge of Kshs.20 per use. The traders manage garbage disposal themselves by each paying Kshs. 30 daily to a designated trash collector. They also pay daily for security services according to the nature of business; traders pay Kshs.50, matatu operators with vans pay Kshs 100, and those with buses pay Kshs. 150

Detail A

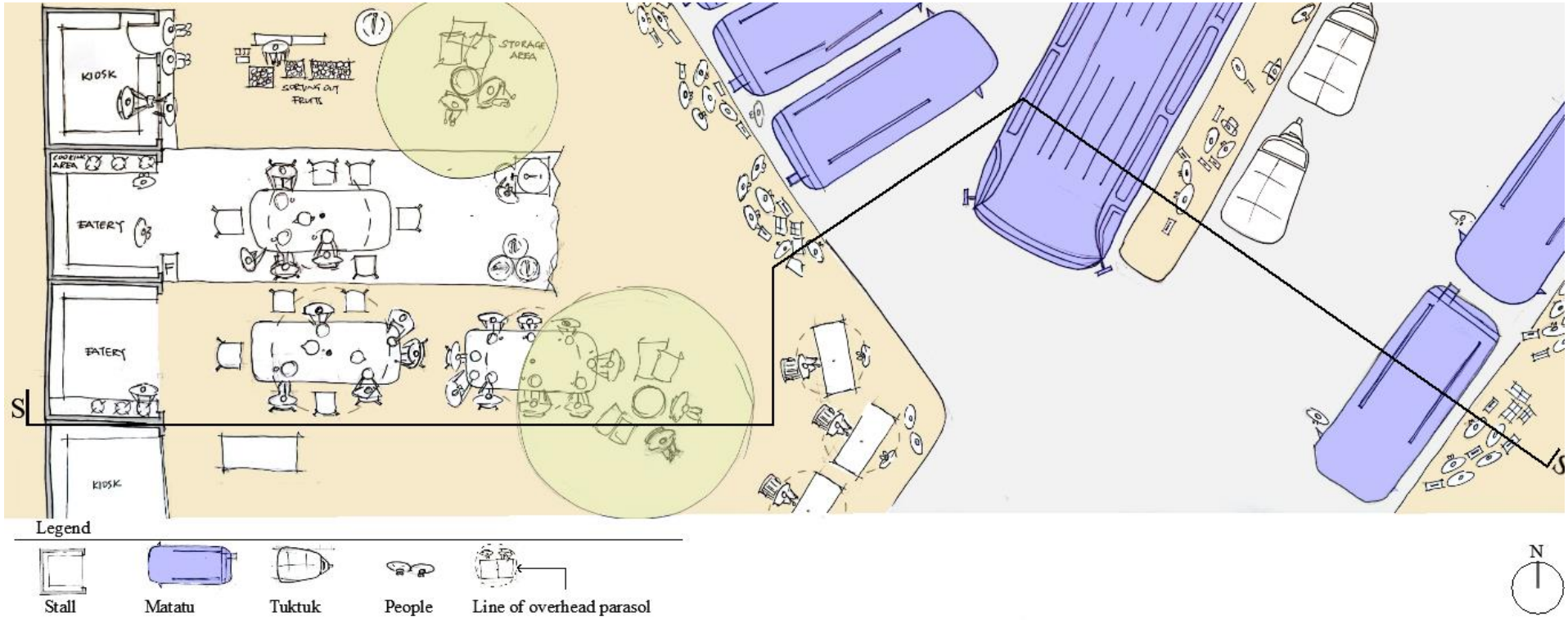


***Figure 74**: Part plan of **Figure 61**, Detail A, illustrating vendors and matatu areas. Source: Author 2022*

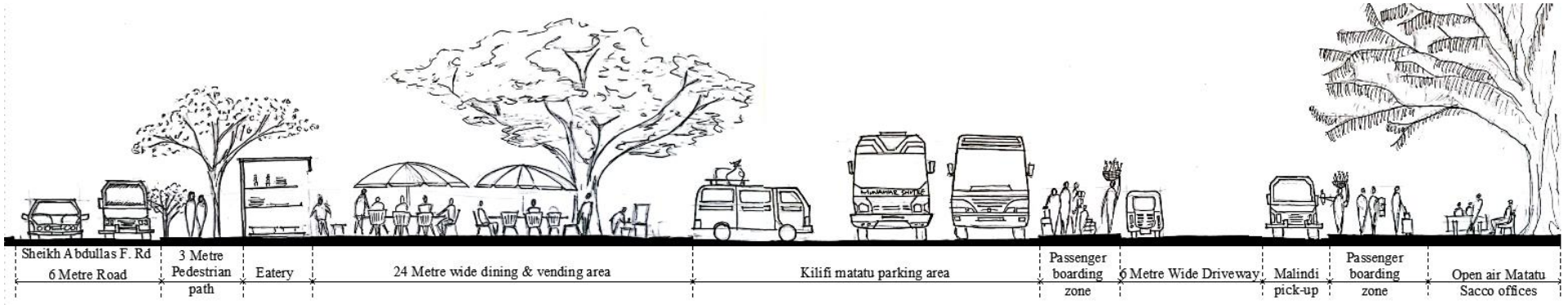


***Figure 75**: Section across Detail A above. Source: Author 2022*

***Figure 76**: Woman cooking outside the stalls. Source: Author 2021*

***Figure 77**: Dining space adjacent to matatu boarding point. Source: Author 2021*

Detail A

The county government stalls open into the matatu terminus. The interior of the stalls is majorly used for cooking and food preparation. Cooking and dining spill over to the open space. It is evident that the design of the stalls does not allow for proper ventilation and lighting. The activities spill over into the open space, as shown above. The stalls define the Western edge of Buxton terminal with a 24-metre-wide area used for dining. The area is well covered with trees providing shade for the traders and other users. Despite the shade created by the vegetation on site, the traders still have parasols to protect themselves and their customers from the sun.

The proprietors have installed handwashing points.

From the sketches above, it is clear that the eateries have a visual connection to the boarding point and matatu parking stations.

The Matatu Boarding points lack structures to accommodate passengers waiting and loading and offloading goods. The mobile street traders at the passenger waiting zones are in direct contact with the commuters and the matatu operators.

Detail B

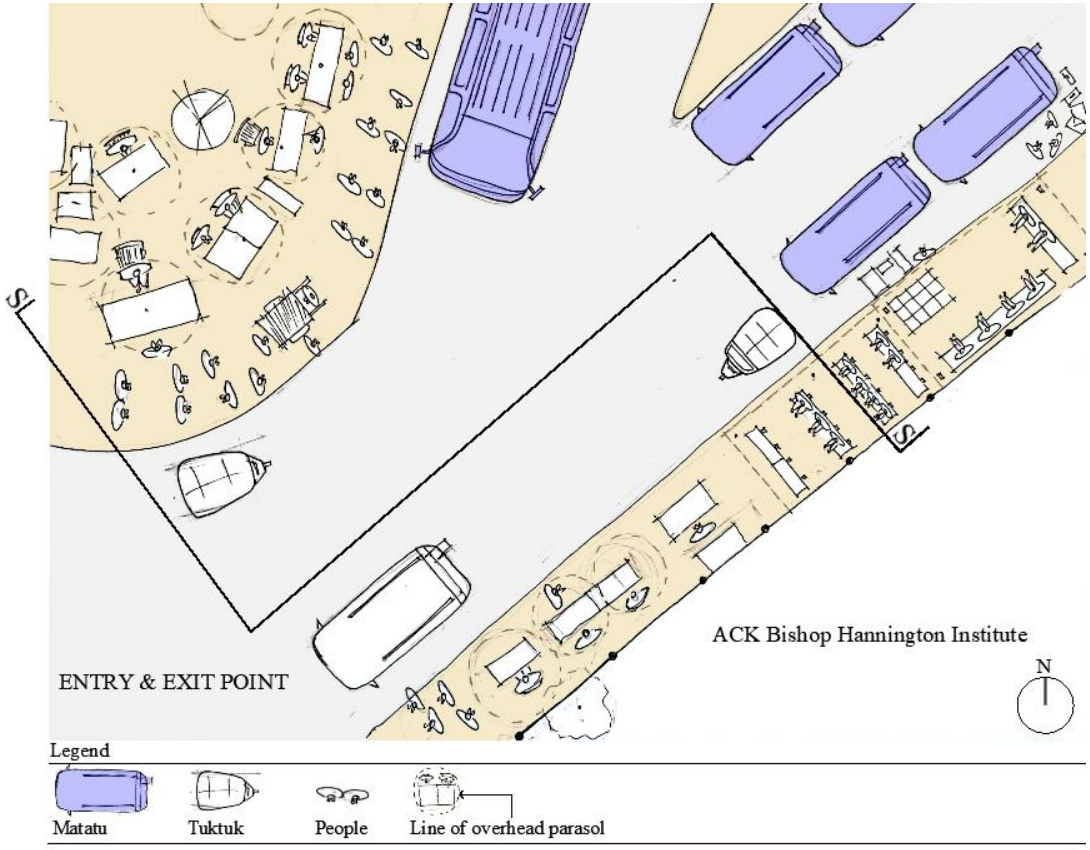


***Figure 78**: Part plan of **Figure 61**, Detail B, illustrating vendors and matatu areas. Source: Author 2022*

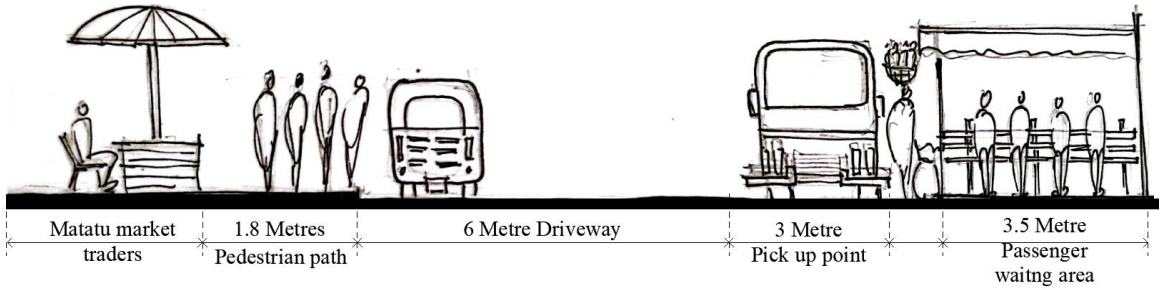


***Figure 79**: Section across Detail B. Source: Author 2022*

The plan and section illustrate the spatial layout of the semi-fixed traders at Buxton. The traders strategically locate themselves at the entry and exit point of the terminal since it is the major route of movement of commuters. The traders deliberately leave 1.8 metres for the commuters to access the transport system and leave space for their customers to view the commodities being sold. All the semi-fixed traders sell fruits, snacks or drinks.

Despite the terminal having adequate space, the details above indicate the most active points of the terminus are located along the western side leaving the rest of the space under-utilized. This is due to proximity to the route of movement and clear visual connection to the transport services in the terminus.

4.5.4 RELATIONSHIP BETWEEN THE NATURE OF TRADERS AND THE PROXIMITY TO THE MATATU STAGE AT BUXTON

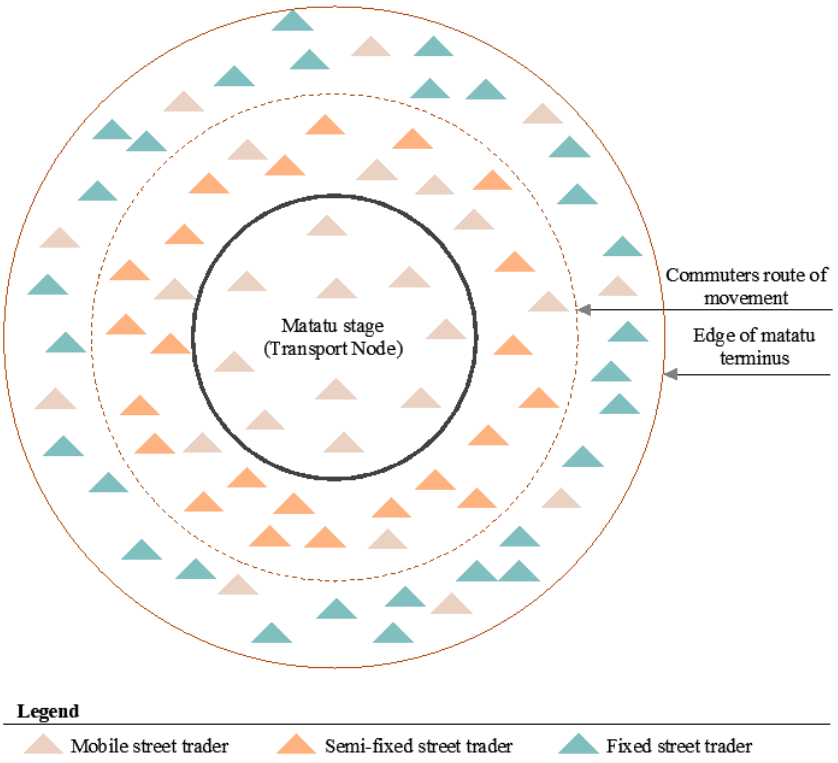


***Figure 80**: Illustration of the types of traders in relation to the distance to the Matatu stage at Buxton. Source: Author 2022*

There are three categories of traders identified at Buxton matatu stage; mobile street trader, semi-fixed trader and fixed trader. The mobile street traders are located at the transit stop and are in direct contact with the commuters. The semi-fixed traders are detached from the edges of the transit stop; they are located at the entry point of the terminus along the commuters' route of movement. The fixed traders are located at the edge of the terminus and are not in contact with the commuters. Their customers have to make a deliberate effort to come into contact with the fixed traders. The fixed traders at Buxton have a visual connection with the matatu touts, matatu operators and commuters; this contributes to the success of their business.

4.5.5 TYPES OF TRADING ACTIVITIES IN RELATION TO MATATU OPERATING HOURS

The following bar graph has been generated based on observations and information obtained from carrying out interviews with matatu operators about their work hours. The graph below shows the type of trading activities in relation to the operating hours of the matatu.

The peak times of matatus is mostly early in the morning and in the evening when people are moving between Mombasa and Malindi or Kilifi for work. Most matatus during the day wait for the evening passengers, therefore, providing business to eateries during lunch time. During the day, very few matatus operate. It takes about an hour for an 18-seater matatu to be filled as opposed to morning and evening hours, where the matatu takes about fifteen to twenty minutes to be packed.

The tuk-tuks are constantly there to offer town services. They park at a particular location waiting for passengers to alight from their destinations. Tuk-tuks that drop off passengers at the terminus are not allowed to park in the stage.

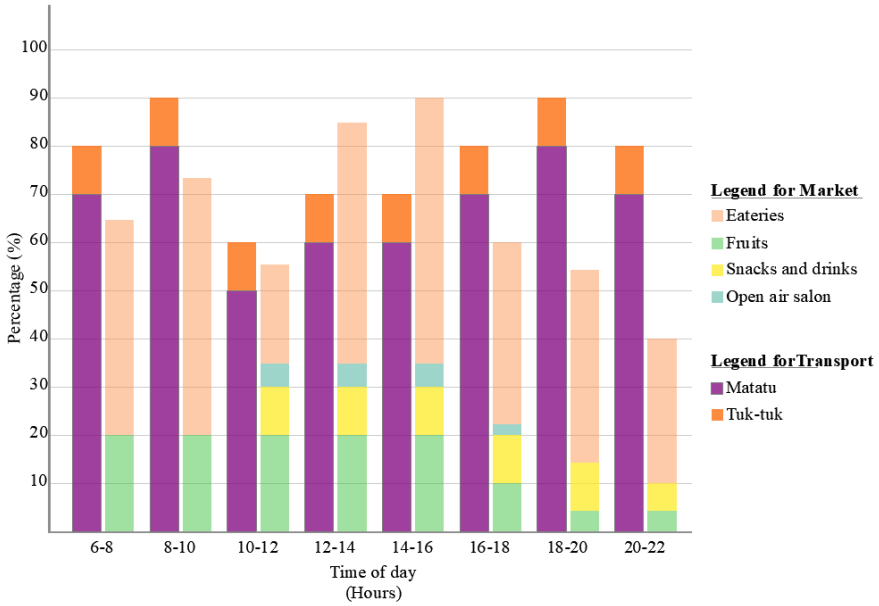


***Figure 81**: Graph showing types of commercial activity in relation to matatu operating hours. Source: Author 2022*

Time (Hours)	**Vendor Activities**
6-8	Eateries preparing breakfast for the early commuters Fruits sold both at the terminus and at the road (grapes, plums)
8-10	Eateries are still operating. Kiosks begin to open at around 9a.m. Semi-mobile traders set up their displays Snack and drinks mobile vendors slowly creep in
10-12	Barber shop and Open-air salon begin business for the day
12-14	Eateries prepare to serve lunch to matatu operators, commuters and a few workers within the neighbourhood
14-16	Eateries continue to serve lunch to the matatu operators as well as a few commuters waiting for the matatus to be full
16-18	Mobile traders are located both at Sheikh Abdullas road targeting commuters stuck in traffic
18-20	Semi-mobile traders' close business at around 7p.m
20-22	Eateries and grocery stalls close at around 9p.m
22-24	No activity

4.6 CASE STUDY 02: FERRY MATATU STAGE

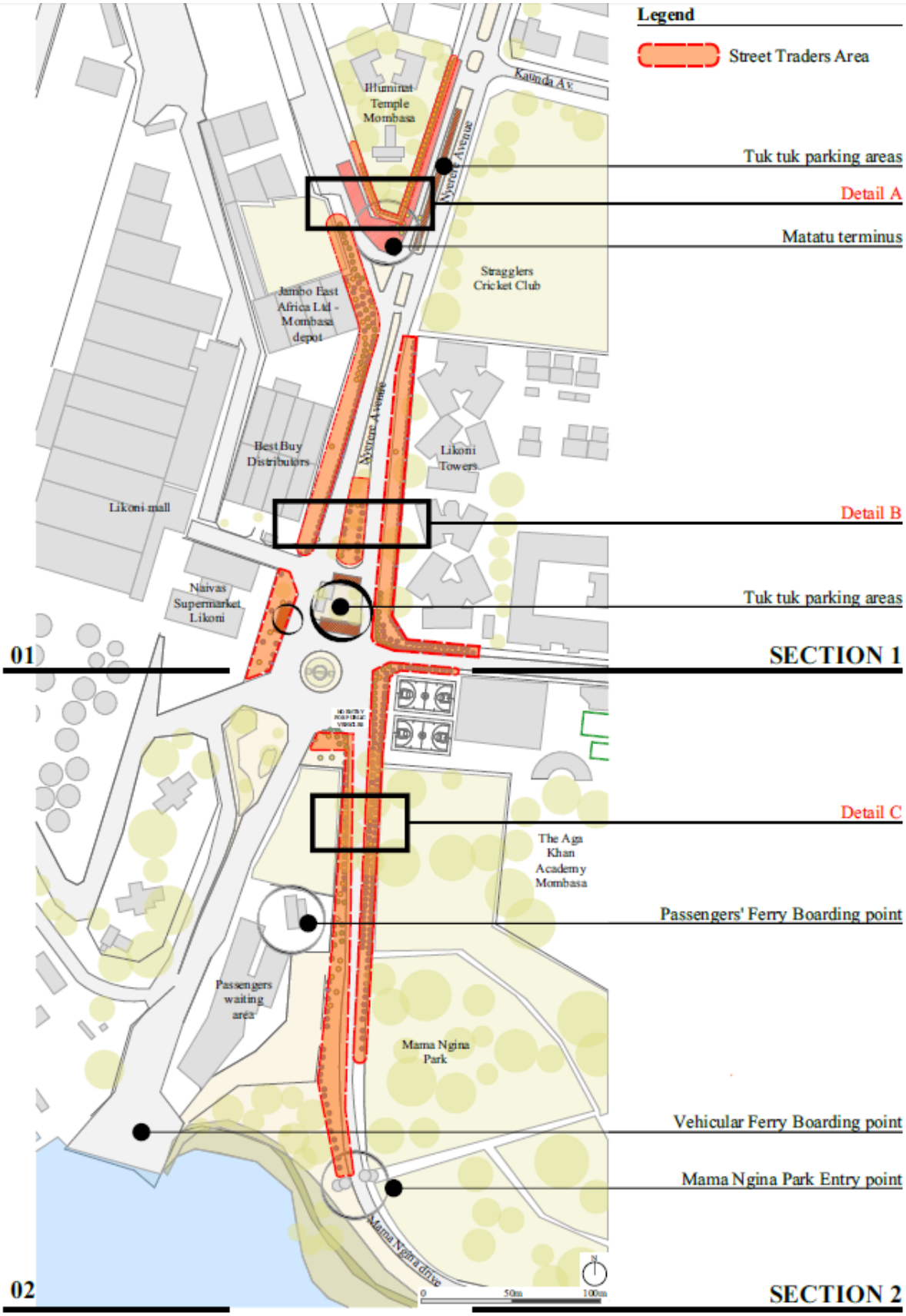


***Figure 82**: Mapping of transport activities and street traders at Likoni stage 01. Source: Author 2022*

4.6.1. CONTEXTUAL ANALYSIS

4.6.1.1 Location

The Matatu stage is located in the southern part of the main island. The junction between Nyerere avenue and Mbaraki road has been transformed into a matatu stage. The matatus have occupied the area along the periphery of Illuminat Temple Mombasa. The matatus transport travellers are mostly from the Likoni mainland to parts of Mombasa Island and the Northern mainland; Bamburi, Kisauni and Mtwapa. The area of study begins from the junction of Nyerere Avenue and Mbaraki road to the Ferry boarding point. This is because the ferry has contributed to the existing nature of the area and will be discussed later in this chapter.

4.6.1.2 Land Use Pattern

The terminus is predominantly in a mixed-use area. As shown in the map below, the area is close to an industrial zone, majorly on the Western part of the study area and residential areas on the eastern side of the site, as well as institutional areas on the South Eastern side. The Ferry boarding point is at the southern part of the site. Beyond the Ferry boarding point, the Mama Ngina drive leads to Mama Ngina Park.

Major landmarks are located along Nyerere Avenue. These landmarks, that include the Likoni mall, the Ferry boarding area, Mama Ngina Park and The Aga Khan Academy Mombasa, contribute to the traffic generated around the area. Another contributing factor to the traffic in the area is the high-rise residential apartment, Likoni Towers.

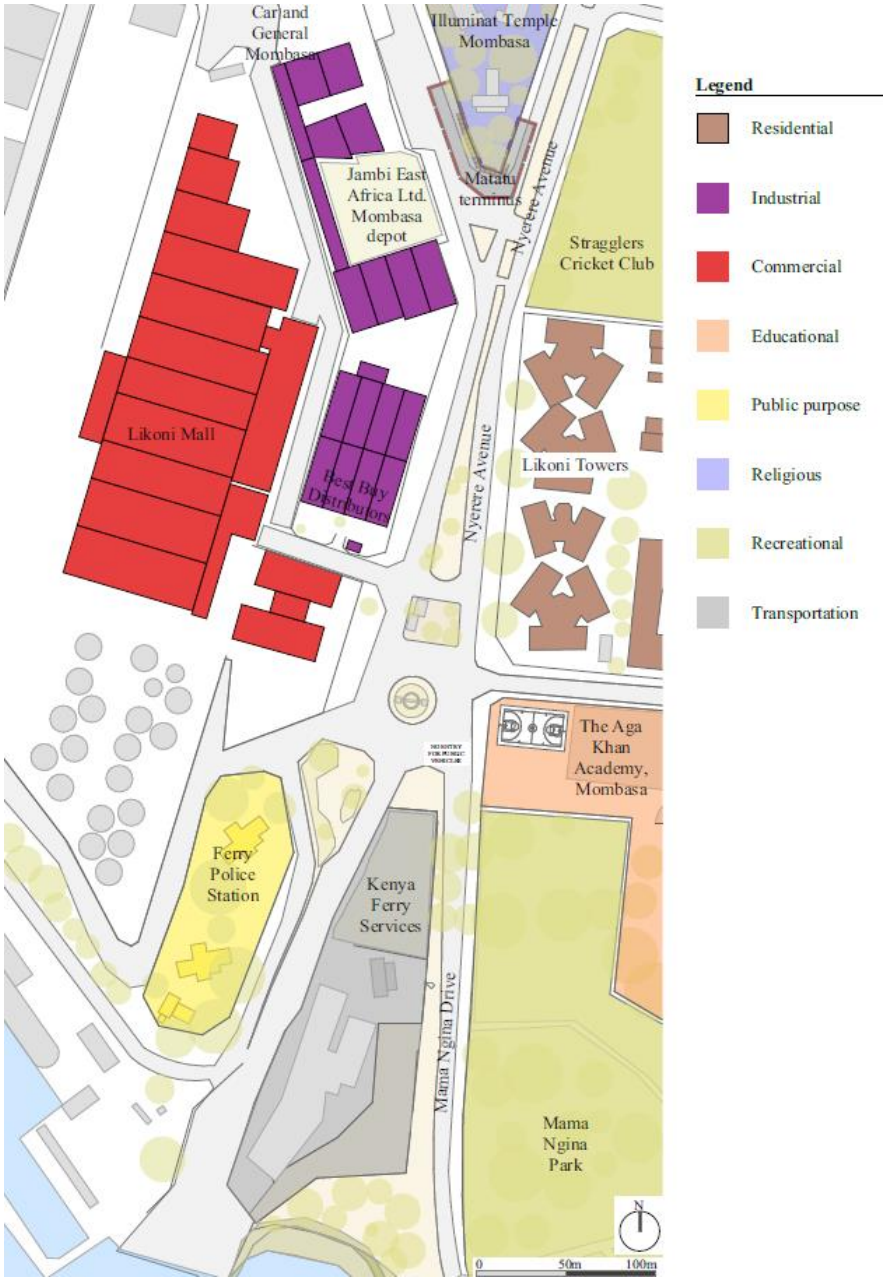


***Figure 83**: Land use pattern of Ferry Matatu stage. Source: Author 2022*

4.6.2. THE MARKET SYSTEM

4.6.2.1 Street Vendors' location

The street traders are located along the whole stretch of Nyerere Avenue, from the matatu terminus to the passengers' ferry boarding station, as indicated in **figure 82**. The street traders occupy an area of approximately 450metres in length. They have segmented themselves according to the types of goods sold. In reference to the map below, it is evident that informal eateries are at the edges of the matatu operation area. Across from it are the vegetables and fruits traders. As one moves towards the ferry, the types of commodities being sold change to clothing, shoes and bags. The fruit and vegetable vendors occupy the corner spaces at the junction. This is deliberate to target not only the commuters but also the motorists and passers-by.

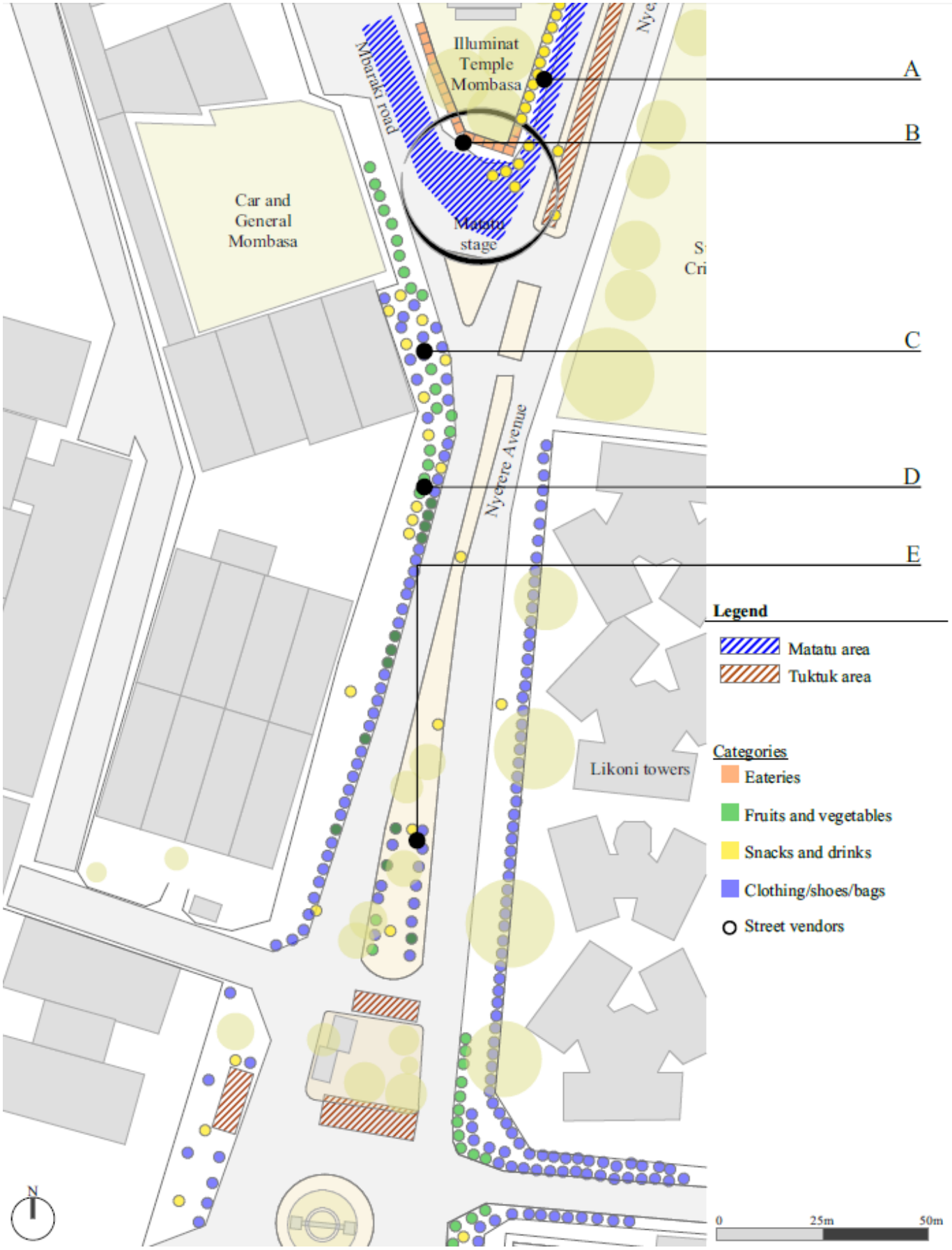


***Figure 84**: Part plan of **Figure 82**, Section 1. Mapping out the street traders and matatu stage. Source: Author 2022*

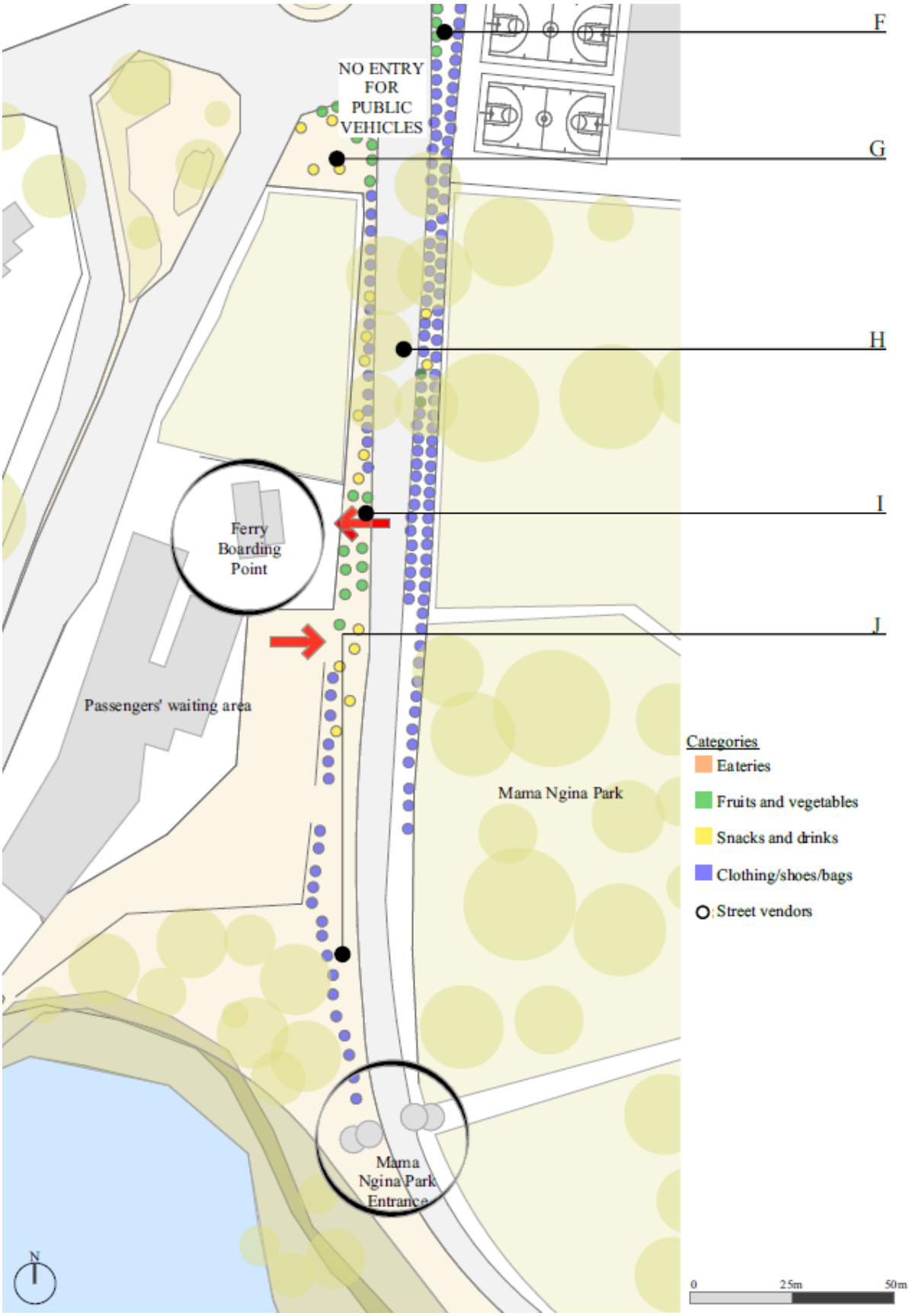


Figure 85: *Part plan of* ***Figure 82****, Section 2. Mapping out street traders. Source: Author 2022*

Below are images showing the street vending activities that take place around the sphere of Likoni Matatu terminus 01 in reference to the above plans

Figure 86**: Snacks and drinks sold under parasols adjacent to the boarding points.* ***(A)

Figure 87**:Eateries at the periphery of the matatu terminus* ***(B)

Figure 88**: Vegetables and fruits displayed on mats under parasols* ***(C)

***Figure 89**: Vegetable vendors lay their goods on mats while tuk-tuks park alongside waiting for passengers.*

Figure 90**: Panoramic view of the street traders along Nyerere road.* ***(E)

Figure 91**: Fruit vendors lined up close to the road to target motorists.* ***(F)

Figure 92**: Street traders at the island just before Kenya Ferry Services.* ***(G)

Figure 93**: View of Mama Ngina drive just before the Passengers' ferry boarding point. **(H)

Figure 94**: Street traders at the entry point of Kenya Ferry services. **(I)

Figure95**:Street traders targeting tourists close to the entrance of Mama Ngina Park**(J)

4.6.2.2 Condition of Footpaths

A large number of street vendors have occupied the footpaths taking over a lot of space, leaving a relatively small strip for pedestrians to view their goods. Consequently, those interested in viewing the commodities being sold use the small path left in between traders, while those whose goal is to get to their destination use the main road or the median strip along Nyerere Avenue.

***Figure 96**: Pedestrians using the path left by the street vendors. Source: author 2021*

***Figure 97**: Pedestrians using the main road as their pathway along Mama Ngina drive*

4.6.2.3 Fess Paid for Location

The mobile street traders pay the County government of Mombasa Kshs.30 daily irrespective of the size of the space accommodated. Use of the public toilets is at a charge of Kshs.10. The traders manage garbage disposal themselves each by paying Kshs. 30 daily to a designated trash collector. There are no permanent stalls within this site since the land occupied is not intended for commercial purposes.

4.6.3. THE TRANSPORT SYSTEM

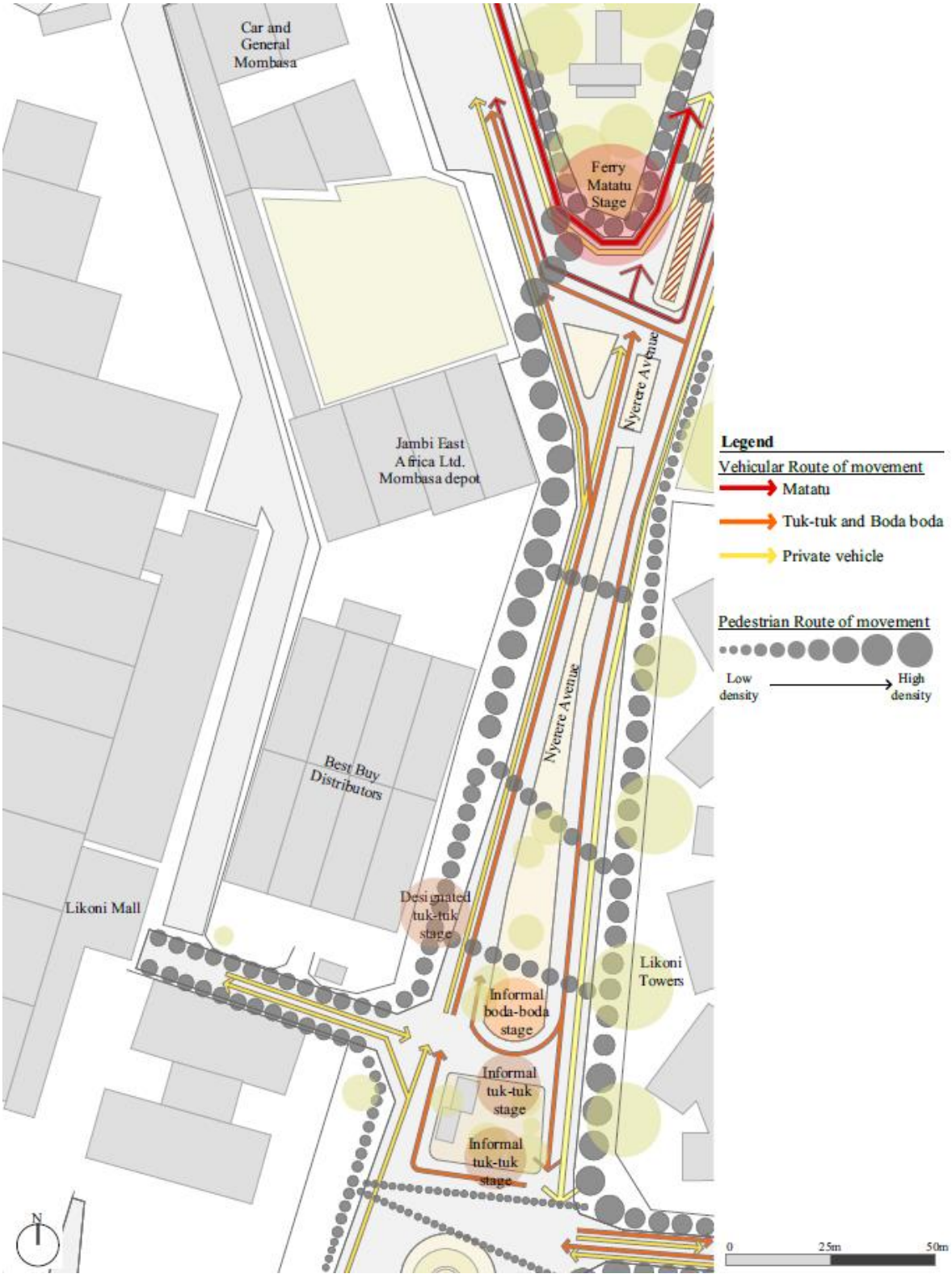


***Figure 98**: Section 1(refer to **figure 82**), illustrates the transport network and pedestrian circulation pattern around the Ferry Matatu stage. Source: Author 2022*

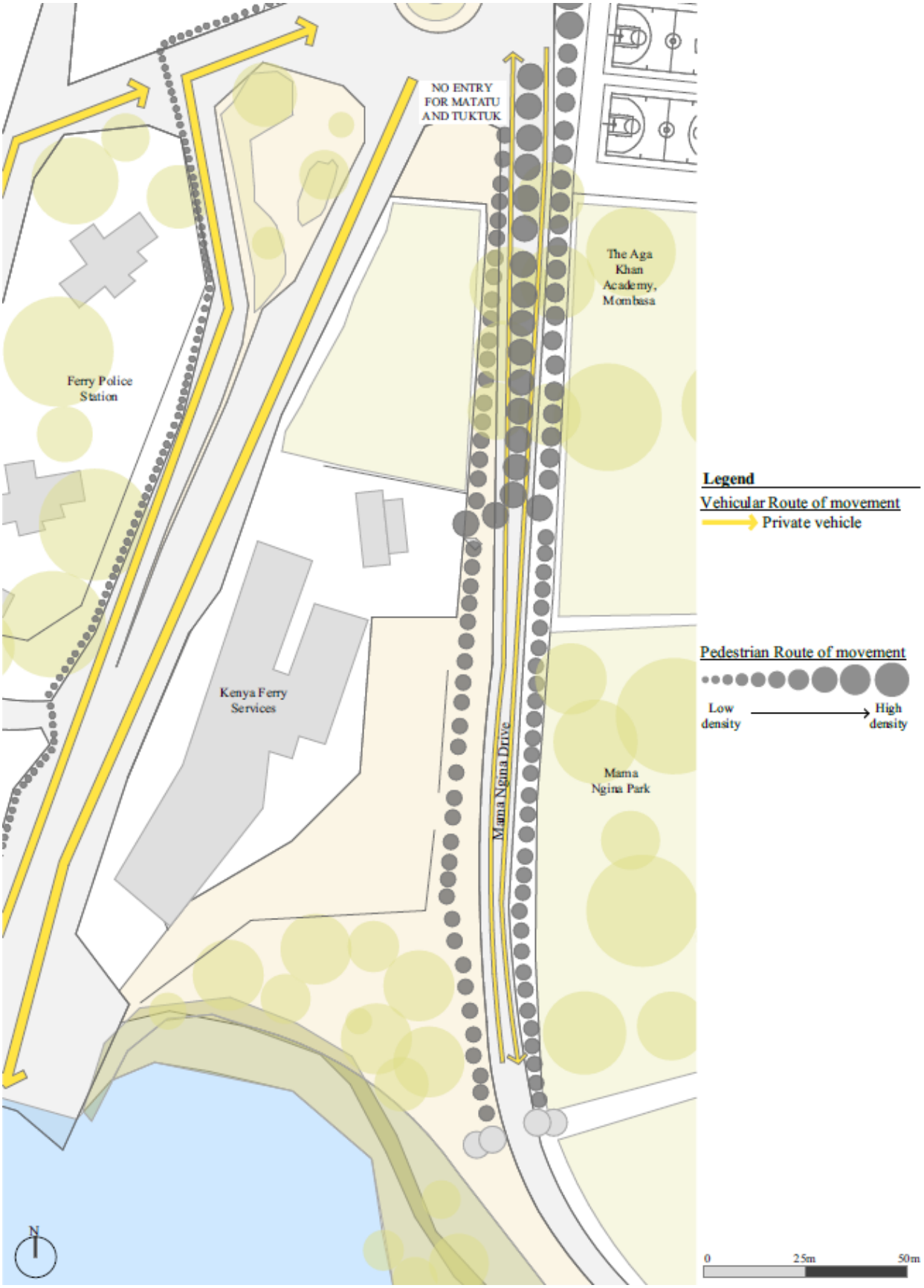


***Figure 99**: Section 2 (refer to **figure 82**), illustrates the transport network and pedestrian circulation pattern around the Ferry Matatu stage. Source: Author 2022*

4.6.3.1 Vehicular Movement Pattern

The matatu circulation route highlighted in red operates on roads coming from the North coast to the CBD, Mbaraki road, and exits through Nyerere Avenue. As illustrated in the maps above (**Figure 98 and 99**), the matatu routes have been restricted to go beyond a certain point along Nyerere Avenue. Just before the junction of Nyerere Avenue and Mama Ngina Drive, a sign has been put up to restrict entry of public vehicles along Mama Ngina drive. Tuk-tuks and boda-bodas stop just before the roundabout that leads one to board the ferry.

***Figure 100**: Image showing the Ferry Matatu stage at Nyerere Avenue and Mbaraki road junction. Source: Author 2021*

***Figure 101**: Signboard along Nyerere Avenue restricting public vehicles entry to Mama Ngina Drive. Source: Author 2021*

4.6.3.2 Matatu Parking Station

The matatus have used the road reserve at the junction of Nyerere Avenue and Mbaraki road. This is the space allocated to them by the county. The matatus used to use the allocated parking space at the Kenya Ferry Service, where they would drop and pick up passengers alighting from the Ferry and going to the ferry. This changed later last year, the year 2021, when the County government wanted to decongest the area due to the traffic the matatus were generating and the conflict between traders, commuters and vehicles.

***Figure 102**: Matatu parking station at the Kenya Ferry Service station. Source: Author 2019*

***Figure 103**: Road being used by motorists, commuters and traders. Source: Author 2019*

4.6.3.3 Tuk-tuk Parking Station

A designated tuk-tuk parking stage exists that is under-utilized by this type of transport. The tuk-tuk drivers prefer waiting for passengers just before the entrance to Likoni mall. This is a strategic point as it is a convergence point of passengers coming from the Ferry, the Aga Khan Academy Mombasa, Likoni mall and Mama Ngina Park. The tuk-tuks also hover around the matatu stage as they hope to compete with the matatus to transport passengers to their destinations.

***Figure 104**: Designated tuk-tuk stage. Source: Author 2022*

4.6.3.4 Passenger Waiting Area

The Matatu terminus lacks a passenger waiting area. Passengers are observed standing on the raised paved area and along Nyerere Avenue as they wait to board the matatus. The nature of the terminus does not call for a waiting area since it operates as an intra-city transport service. It is mainly a connecting point from the Ferry to the Northern mainland; Bamburi, Kisauni, Shimanzi and Mtwapa. The average period for a matatu to be packed is between fifteen to twenty minutes. However, on the southern side exists a passengers' waiting area that is not utilized due to its distance to the matatu stage. During peak times, the matatus create more traffic along the road due to their notorious practice of stopping in the middle of the road to pick up and occasionally drop passengers.

***Figure 105**: Bus shed along Nyerere avenue, near Naivas Likoni. Source: Author 2021*

In reference to **Figure 82**, three details below (Detail A, B and C) map out the traders' activities, commuters and the matatu transport pattern.

DETAIL A

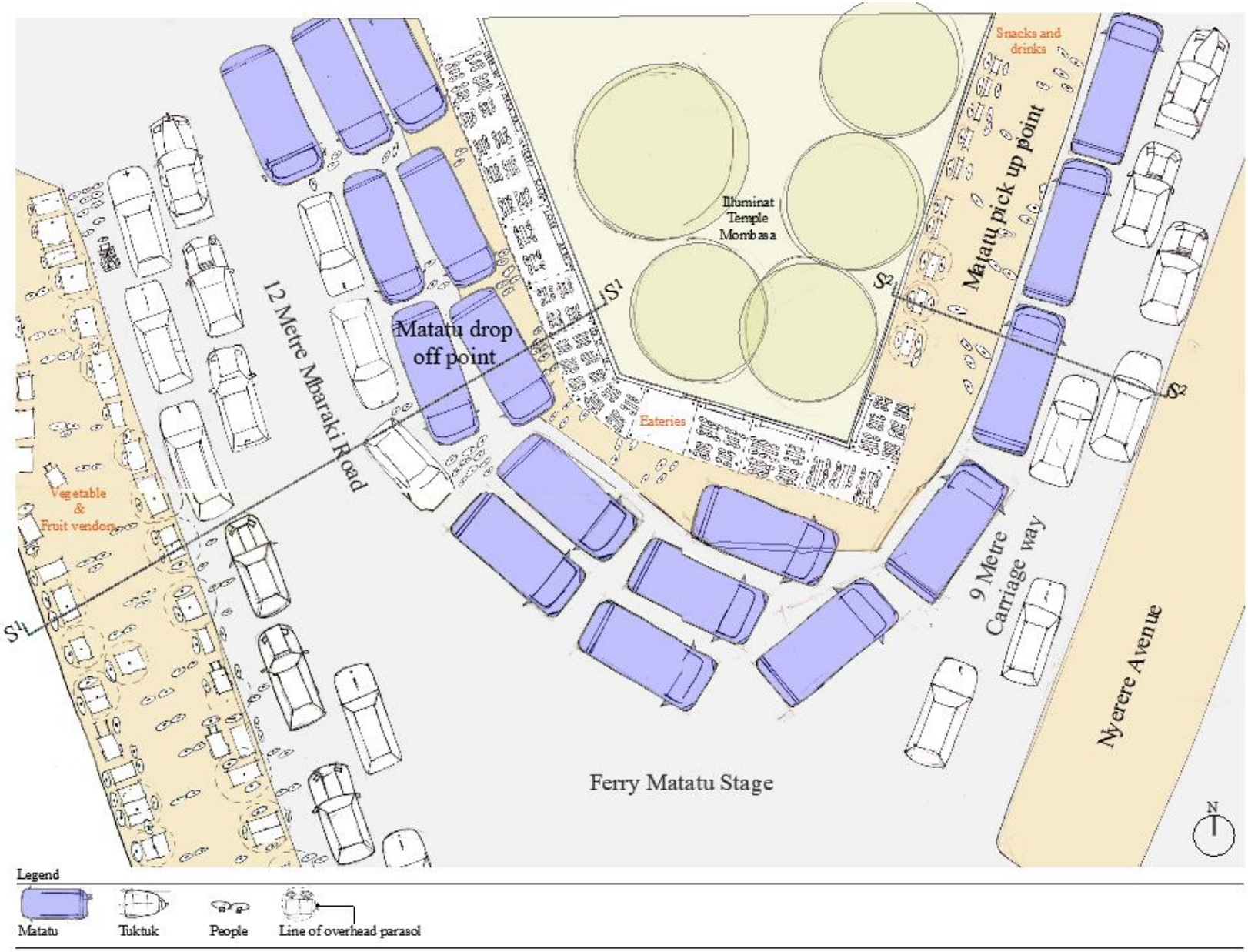


***Figure 106**: Part plan of **Figure 82**, Detail A, mapping out street traders, commuters and the transport system at the Ferry Matatu stage. Source: Author 2022*

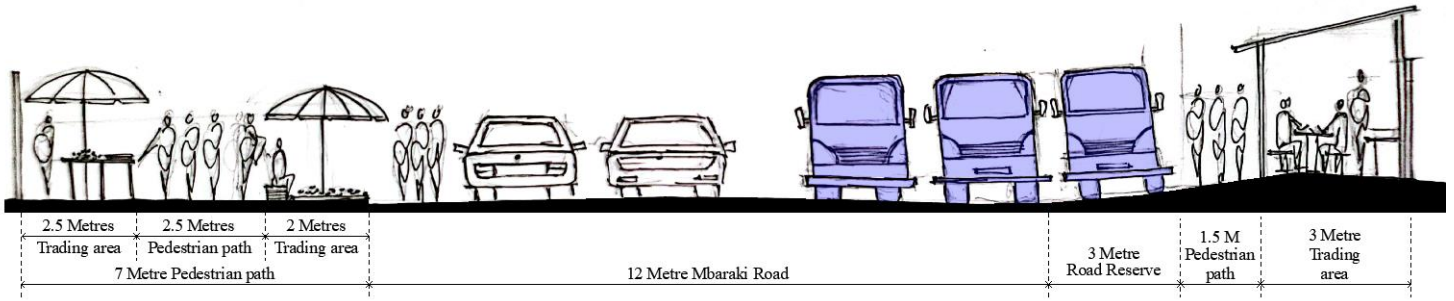


***Figure 107**: Section 1, section across Mbaraki road. Source Author 2022*

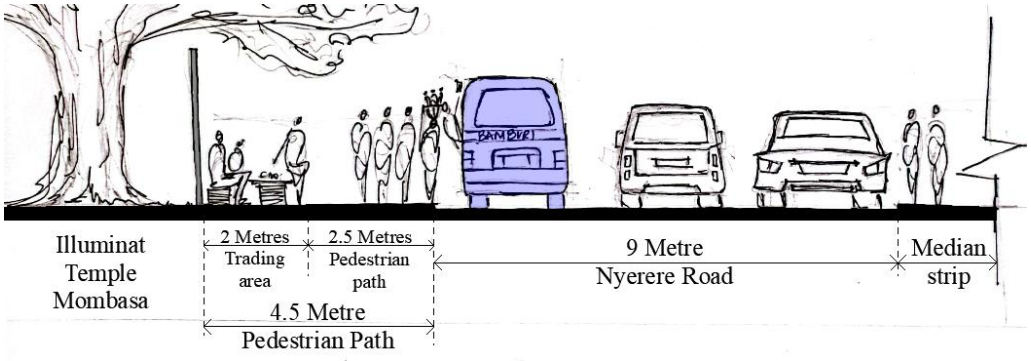


***Figure 108**: Section 2, across Nyerere avenue. Source: Author 2022*

The matatus at the Ferry stage do not have a designated station to drop off and pick up passengers. As shown in plan above, the matatus operate at the junction of Nyerere Avenue and Mbaraki road. Along the edges of the matatus operating area, there are informal eateries under open kiosks that serve the matatu operators, commuters and workers from the neighbourhood. Across the matatu stage, there are traders who mainly sell vegetables and fruits.

This is a deliberate action targeted to those who are heading to their homes. The commodities next to the road are mostly placed on mats or gunny bags on the ground. While traders along the perimeter walls of the neighbouring plots, display their goods on tables and crates.

Section 2 illustrates semi-mobile traders who display snacks and drinks opposite the matatu pick up area targeting those travelling to the Northern mainland (Mtwapa, Bamburi)

DETAIL B

***Figure 109**: Part Plan of **Figure 82**, Detail B, mapping out street traders, commuters and the transport system. Source: Author 2022*

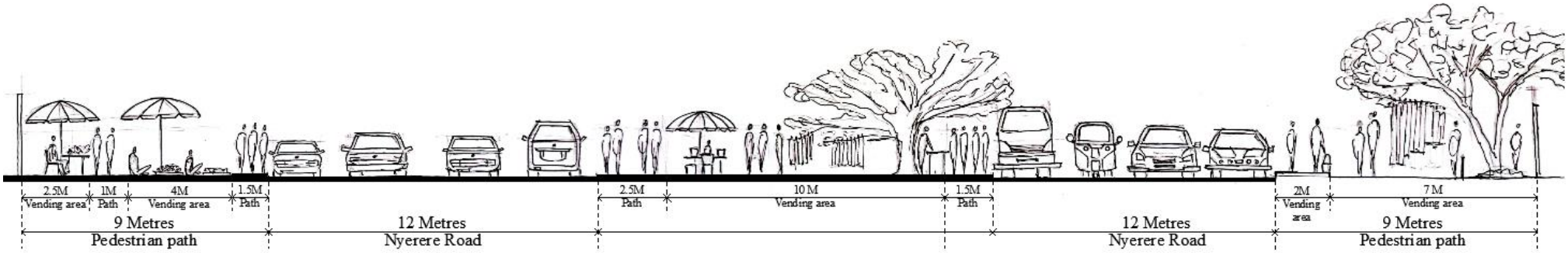


***Figure 110**: Section across Nyerere avenue, detail B. source: Author 2022*

The plan above illustrates a high density of semi-fixed traders selling fruit and vegetables on the ground, crates and tables on the left side. The number of traders is influenced by the proximity to the matatu stage and the common route passengers use to connect to the ferry.

Traders rarely use the median strip as a display point. The few traders that are there usually have large stands of clothes for display or utilize the trees as a display element by hanging their clothes on branches, or by tying strings in between trees to hang their clothes or mats on. The traders are advantaged during peak hours when the motorists are stuck in traffic, leaving very little room for pedestrians on the road. The pedestrians are then forced to use the median strip as a pathway facilitating the establishment of a visual contact of the goods being displayed by the traders along the median strip.

The traders along Likoni towers are mostly semi-fixed who display clothes, shoes and bags. A few semi-mobile traders with hand carts would be located next to the road selling fruits.

DETAIL C

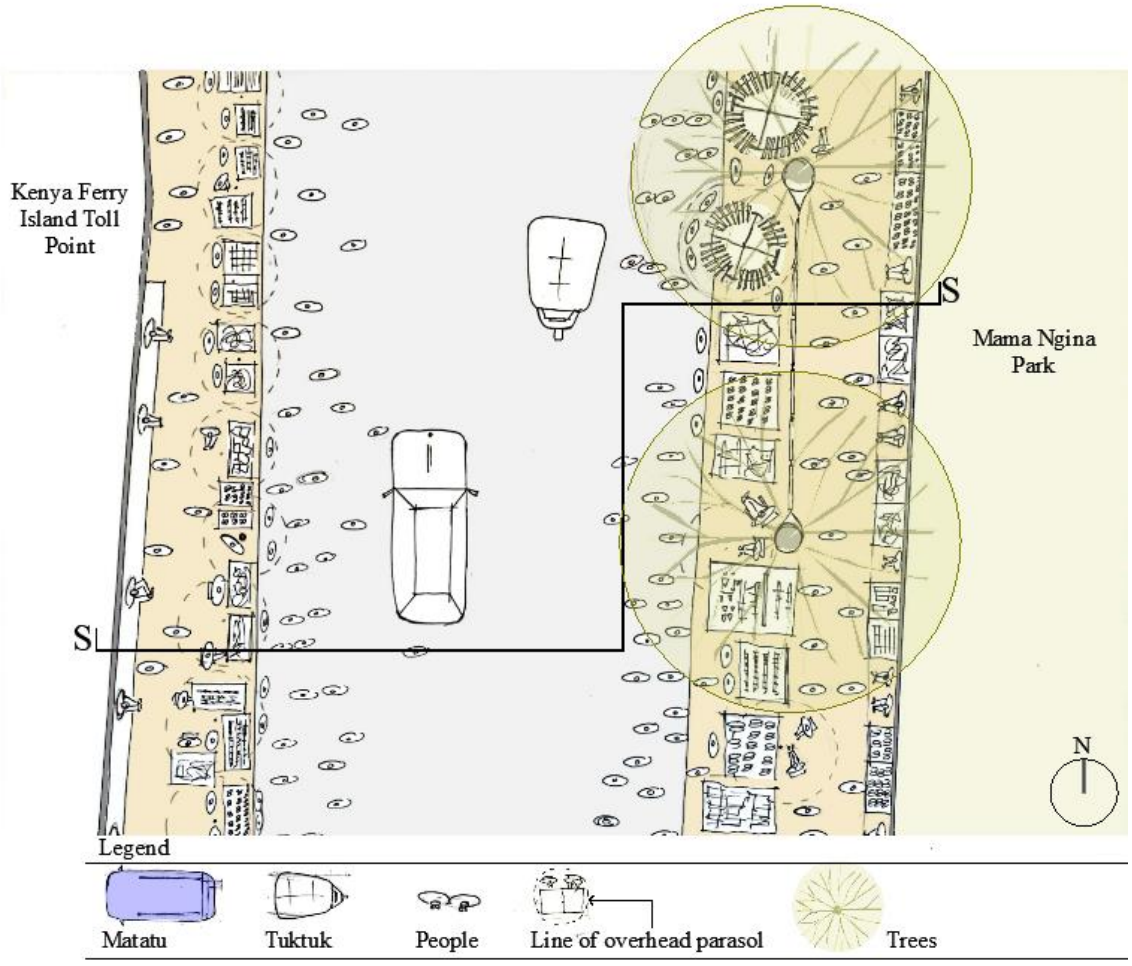


***Figure 111**: Part plan of **figure 82**, Detail C, mapping out street traders, commuters and the transport system. Source: Author 2022*

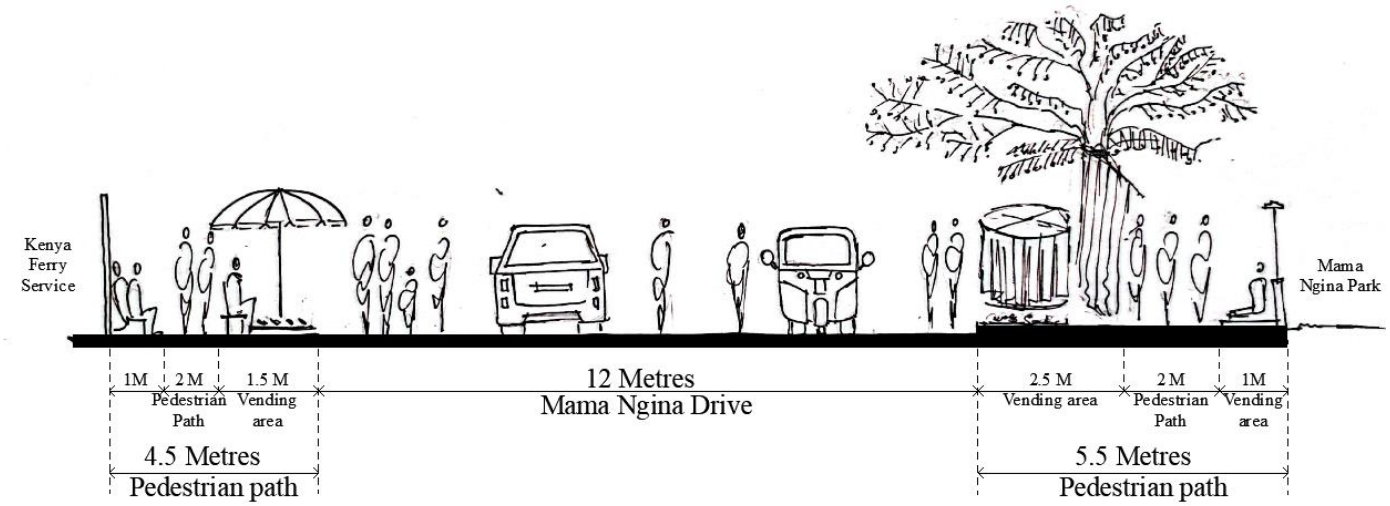


***Figure 112**: Section across Mama Ngina Drive, Detail C. Source: Author 2022*

The traders along Mama Ngina drive mainly sell clothes, shoes, bags, mats, cosmetics and related accessories. The fruits and snacks vendors are located at the junction of Mama Ngina drive, Nyerere avenue and the Passengers ferry boarding point entrance. A few mobile traders would be found following the mass of people into the ferry. The traders abutting the edge of Mama Ngina park are mostly semi-fixed traders who take up approximately 2.5metres by 2 metres of space displaying their commodities. Due to the size of the pathway, there are two rows of commercial activities.

The traders abutting the edge of the Kenya Ferry Island toll mainly sell accessories, cosmetics and electronics. A few sell snacks and drinks. The Count government of Mombasa have restricted matatus to drive along Mama Ngina Drive. This has greatly reduced the conflict between motorists and commuters.

4.6.4. THE RELATIONSHIP BETWEEN THE NATURE OF TRADERS AND THE PROXIMITY TO THE STAGE AT FERRY MATATU STAGE

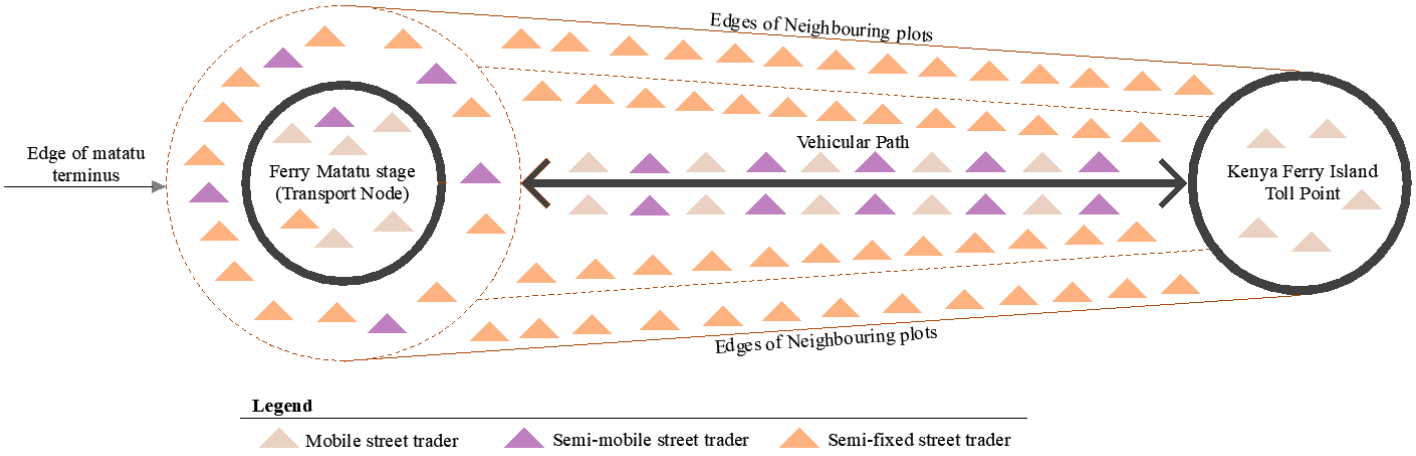


***Figure 113**: Illustration of the types of traders in relation to the distance to the Matatu stage at the Ferry stage. Source: Author 2022*

There are three types of traders identified at the Matatu stage; mobile trader, semi-mobile trader and semi-fixed trader. The mobile street traders are located at the matatu stage and along the edges of the road targeting both commuters and motorists, respectively. The semi-mobile traders who carry their goods in hand carts are located along the edges of the pedestrian path targeting both pedestrians and motorists. The difference between the mobile and semi-mobile trader is that the mobile trader can maneuver within the road targeting the inner traffic lanes. The semi-fixed traders are located along the edges of the neighbouring plots. The informal market is linear due to the linear spatial relationship between the matatu stage and the Kenya Ferry Island Tolling point.

4.6.5. TYPES OF TRADING ACTIVITIES IN RELATION TO MATATU OPERATING HOURS

The ferry is an important determinant in the operating hours of both matatus and traders, due to the new schedule of the Ferry. Since the introduction of the new operation schedules, where vehicular and human traffic will be ferried across the channel separately on a fixed timetable, the traders and matatu operators have reduced their business during the closed period for passengers between 7 a.m. and 11 a.m. The motorist's peak hours are 6:00 am to 9.30am and 4:00 pm to 9pm. The off-peak hours are 4:00 am to 6:00 am and 9.30 am to 4:00p.m. Between 6.30 am and 8:00 am and 4 pm to 7 pm the ferry closes so that people use the bridge through Ganjoni. During the morning closure, very few commercial activities operate along Nyerere Avenue. The evening closure of the ferry does not affect the commercial activities as much. This is because there are still motorists waiting to cross the ferry, people walking to their homes within the neighbourhood, people walking towards Mama Ngina Waterfront for recreational purposes as well as a few commuters with a ferry pass going to board the ferry. All businesses close at 10p.m.

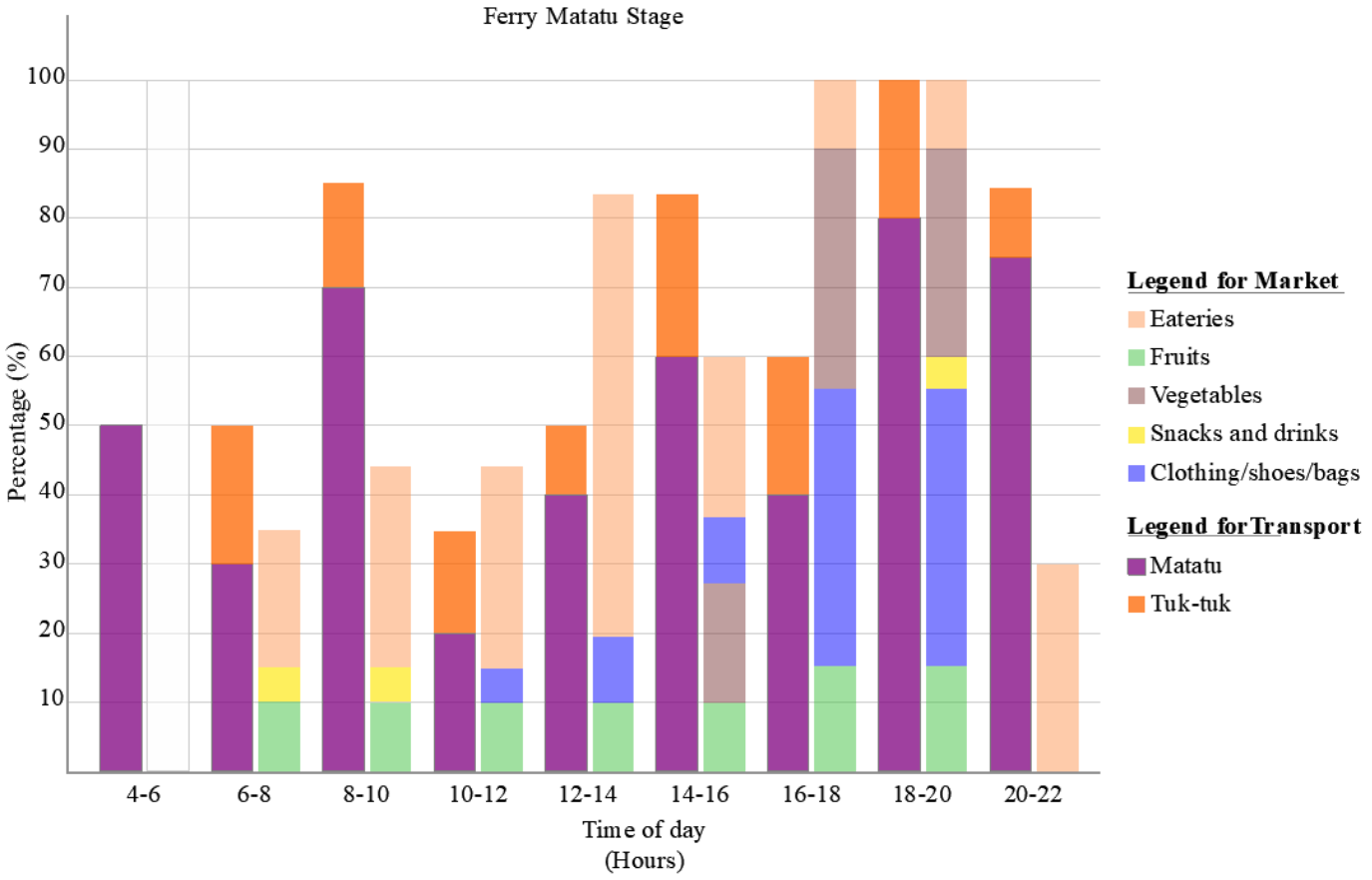


***Figure 114**: Graph showing types of commercial activity in relation to matatu operating hours. Source: Author 2022*

Time	Vendor Activities
4-6	Commercial activity is at a minimum. Matatus transport passengers from the ferry to Mtwapa, Bamburi, Shimanzi and vice versa.
6-8	Eateries are preparing breakfast for the early commuters and matatu operators. Very few fruit vendors are present on the road.
8-10	Eateries are still operating. A few traders selling clothes display their items along the road.
10-11	Between 11a.m to 3pm, there is very little activity going on within the sphere of the matatu stage.
12-14	Eateries prepare to serve lunch to matatu operators, commuters and a few workers within the neighbourhood
14-16	Eateries continue to serve lunch to the matatu operators. A few traders slowly set up their businesses.
16-18	Due to the peak hours, matatus operate at a maximum capacity since workers from the North coast travel to the South coast using the Ferry.
18-20	Semi-mobile traders' close business at around 8 p.m.
20-22	Eateries and grocery stalls close at around 9p.m.

4.7 CASE STUDY 03: LIKONI MAINLAND MATATU STAGE

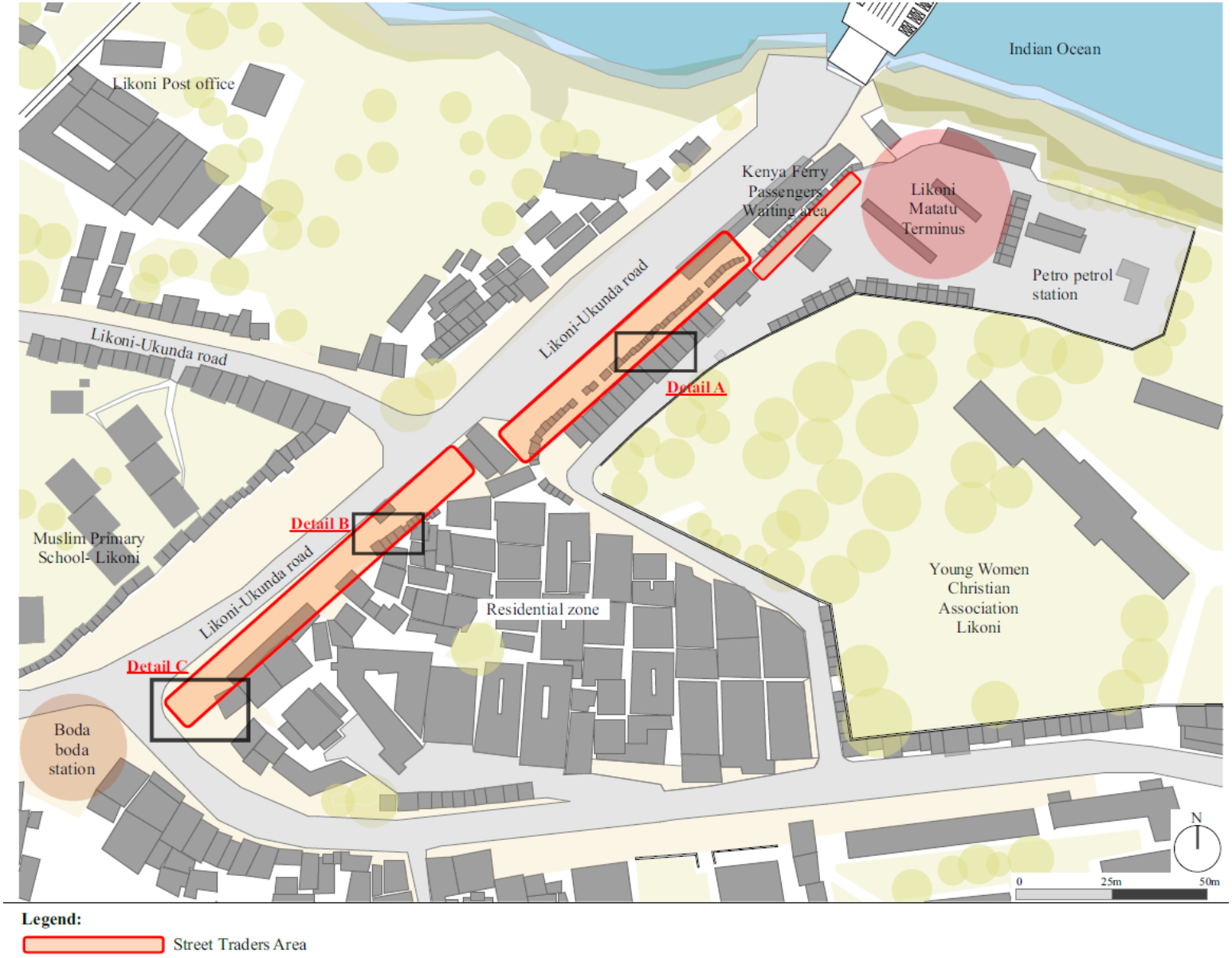


***Figure 115**:Map illustrating location of Street traders parallel to Likoni-Ukunda Road and position of transport stations within the sphere of Likoni matatu stage. Source: Author 2022*

4.7.1. CONTEXTUAL ANALYSIS

4.7.1.1 Location

The matatu stage is located in South Coast of Kenya on the Northern part of Likoni mainland. It borders the exit road and fronts the Indian ocean. The terminus is off Likoni-Ukunda Road and can only be accessed from a service road. The matatus transports travellers from the main island to parts of Likoni such as Mtongwe (3.5km), Shika adabu (6.8km) as well as long-distance travelling to towns in Kwale county such as Ukunda (21.6km), Shimba hills (46.9km), Kikoneni (77.5km), Shimoni (77.3km), Lunga adobe (95.3km), Vanga (113km) and Kwale (30.8km). The area of study stretches from the Ferry boarding point to the junction created by the Likoni-Ukunda Road.

4.7.1.2 Land Use Pattern

The area is predominantly a residential area with small-scale commercial enterprises along Likoni-Ukunda Road and the secondary road as illustrated in **figure 116** below.

***Figure 116**: Land use pattern of neighbouring area of Likoni Matatu stage. Source: Author 2022*

4.7.2. THE MARKET SYSTEM

4.7.2.1 Street Traders Location

The street traders are located along the stretch of Likoni-Ukunda Road, extending beyond the area of study. The street traders occupy approximately 350 metres in length within the area of study. They are spatially organized in a clustered form, where majority of the traders sell common commodities in an area. It is evident that majority of the County government stalls around the sphere of the Matatu terminus are eateries, while a few sell groceries and cold drinks as a compliment to the eateries. Two stalls house the Matatu Sacco offices, where the chairman of the Matatu association manages the operations from.

Moving towards Likoni town, makeshift kiosks selling a variety of items ranging from raw fish, sun-dried fish, cooked fish, clothes, shoes, bags, utensils, vegetables and fruits start becoming visible. The women selling Swahili snacks are categorised under semi-mobile street traders. They are located at the junction of Likoni-Ukunda Road and the secondary road that leads to Shelly beach. This is a deliberate attempt to target the commuters and the residents of that area. More of the semi-mobile street traders sell accessories, mostly padlocks, as well as utensils and vegetables.

The eateries form part of the edge of the matatu stage. As one moves towards the mainland, traders displaying their commodities in open kiosk selling sun-dried fish, vegetables and clothes are visible. Semi-mobile traders and mobile traders take up the Northern section of the study area. The goods they sell ranges from padlocks, electronic, utensils, clothes and fried Swahili snacks.

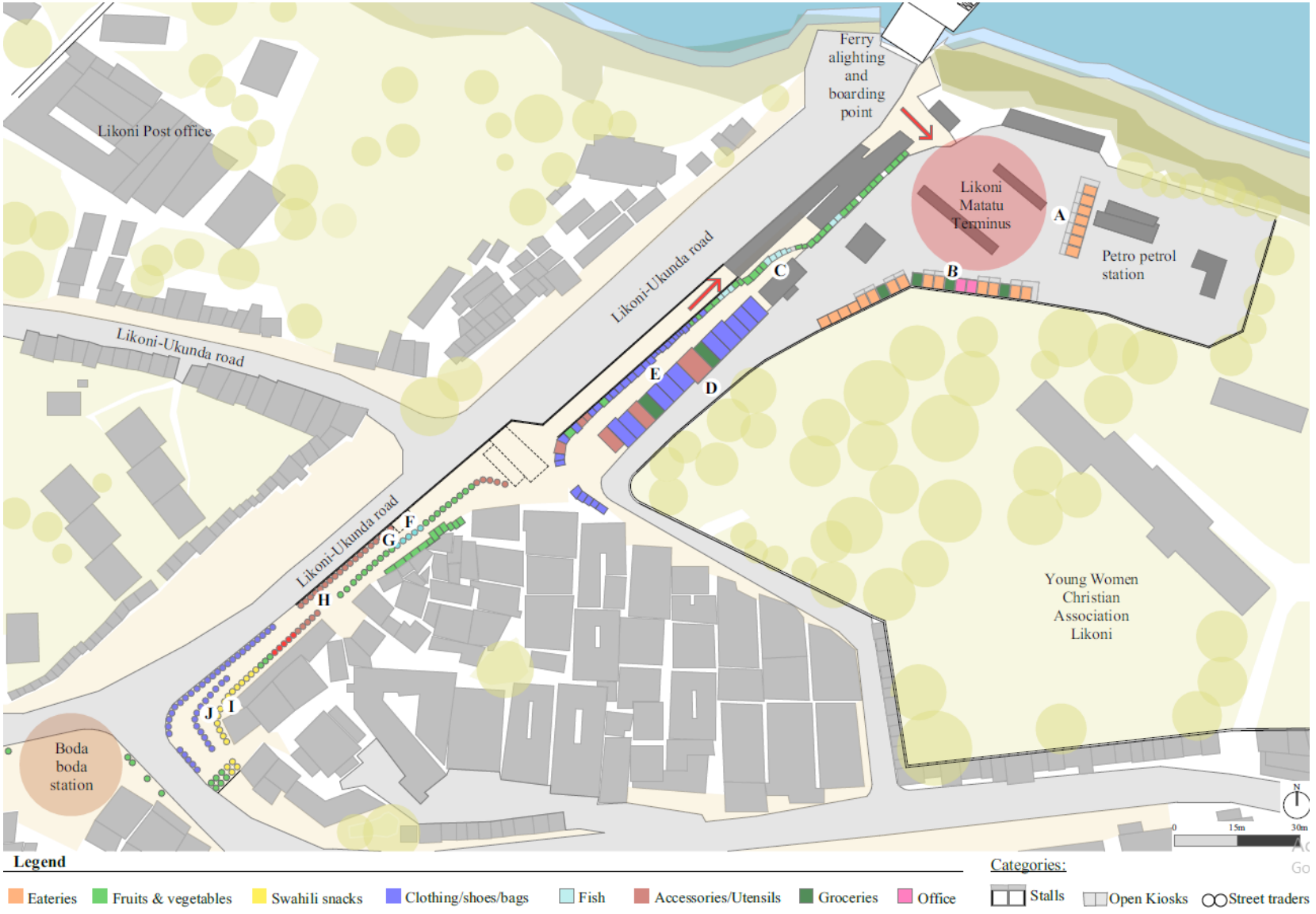


***Figure 117**: Mapping out street traders around the sphere of Likoni Matatu stage. Source: Author 2022*

The images below illustrate the street trading activities at Likoni Matatu Stage. Refer to plan above.

Figure 118**: County government stalls operating as eateries.* ***(A)

Figure 119**: County government stalls operating as kiosks, eateries and offices* ***(B)

Figure 120**: Sun-dried fish sold along the pedestrian path* ***I

Figure 121**: Clothing stalls facing the service road* ***(D)

Figure 122**: Open kiosks selling clothing, shoes and bags along the pedestrian route **I

Figure 123**: Fresh fish being sold along the pathway **(F)

Figure 124**: Semi-mobile vendor selling accessories just before the pass to the ferry **(G)

Figure 125:** Semi-mobile traders along the path towards the ferry boarding point. **(H)

Figure 126**: Women selling Swahili snacks **(I)

Figure 127**: Display of merchandise on the pedestrian path **(J)

4.7.2.2 Condition of the Footpaths

The whole area is paved with cabro; the vehicular path at the matatu terminus and the pedestrian path. This creates a visual sense of homogeneity in the space, although the two are separated by difference in levels.

4.7.2.3 Fees Paid for Location

The County government tenants pay a rent of Kenya shillings five thousand per month. The other traders pay Kenya shillings thirty daily irrespective of the type or size of structure and type of display. The use of the public toilets is at a charge of Kshs.10 per use. The traders manage garbage disposal themselves by each paying Kshs. 30 daily to a designated trash collector.

4.7.3. THE TRANSPORT SYSTEM

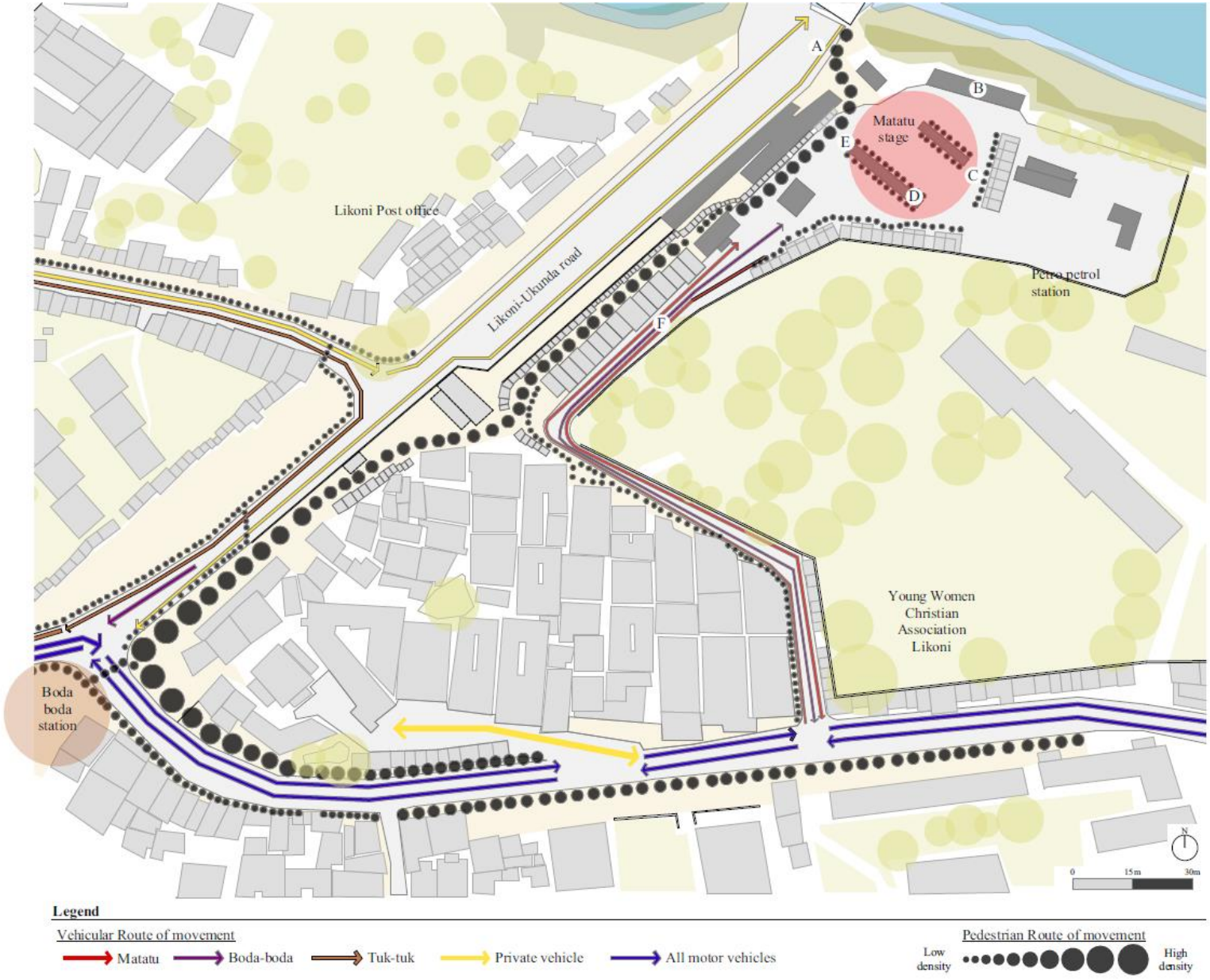


***Figure 128**: Mapping out matatu and commuters' movement pattern. Source: Author 2022*

The images below illustrate the activities associated with Likoni matatu terminus. Refer to plan above.

Figure 129**: Passengers alighting from the ferry going towards the matatu terminus **(A)

Figure 130**: Open structure designated for playing games **(B)

Figure 131**: Matatu parking area **(C)

Figure 132**: Passenger waiting area **(D)

Figure 133**: Boda-boda waiting point **(E)

Figure 134**: Matatu stage access road **(F)

4.7.3.1 Vehicular Movement Pattern

According to ISUDP-Mombasa 2035, over 300,000 commuters and six thousand vehicles travel between Likoni mainland and Mombasa Island, causing significant congestions during peak travel hours. As shown in the illustration above, both matatus and boda-bodas access the terminus from the secondary road off Likoni-Ukunda Road. A 6metre wide road connects the terminus to the secondary road. The matatus use the same route for entry and exit into the terminus. The size of the road is only adequate for two 18-seater or 11-seater mini-buses to pass simultaneously. The width of the road is insufficient for two 33-seater buses to pass simultaneously.

The matatus at the stages are in constant competition with the matatus that operate along the road like the Likoni mainland terminal. The matatus along the road tap into the "mobile passenger market" that is not confined to the bus stations. The only advantage that the Likoni terminal has is the controlled route of movement from the ferry to Likoni towns.

4.7.3.2 Matatu Parking station

There is adequate parking space at the stage while matatus are in operation. Each route has its designated parking space. During non-operating hours the matatus utilize the whole stage and part of the Petro petrol station and neighbouring fueling stations along Likoni-Ukunda Road. According to the chairman of the matatu association at Likoni, there are over 200 vehicles that operate in that area and use the stage as an operating station.

4.7.3.3 Passenger Waiting Zone

The only facility for passengers is the wooden benches placed under the curved galvanized iron sheets, as shown in the figure below. The roof of the structure is too high to protect the users from the scorching sun and rain.

***Figure 135**: Passenger waiting area at Likoni matatu stage. Source: Author 2022*

DETAIL A

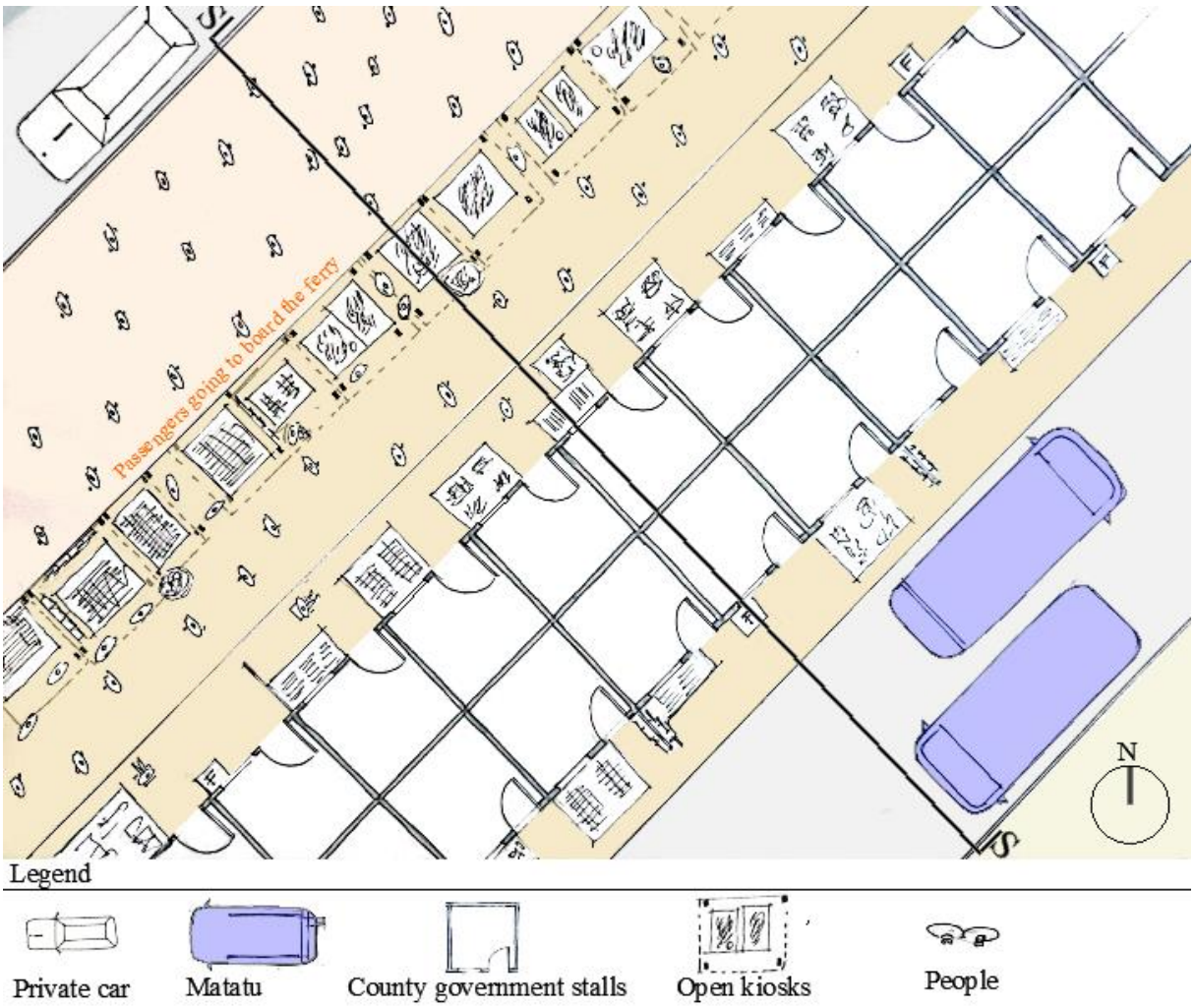


***Figure 136**: Part plan of **Figure 115**, Detail A, mapping out street traders, commuters' pattern. Source: Author 2022*

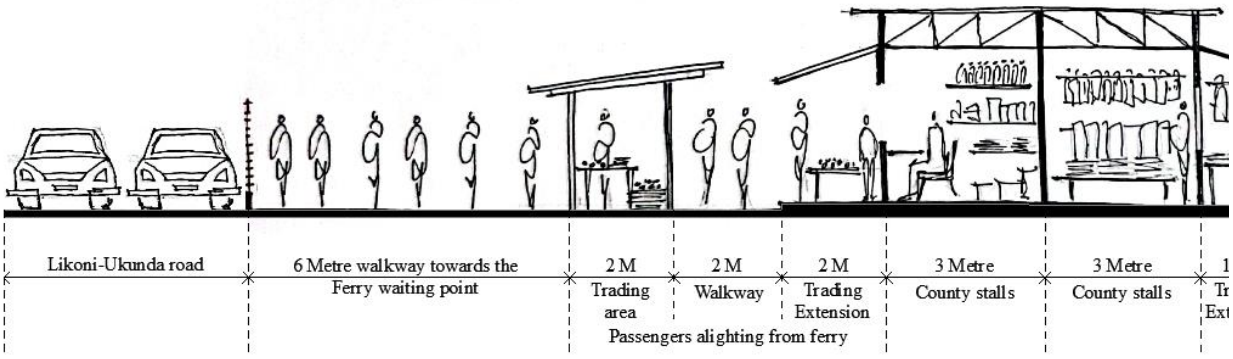


Figure 137: Section illustrating the types trading structures along the pedestrian path close to the matatu stage. Source: Author 2022

The drawings above illustrate space use along the route adjacent to the matatu stage. The path dedicated to passengers alighting from the ferry is occupied by open kiosks selling dried fish, vegetables and clothes. The county government stall creates the edge along both routes of movement; the pedestrian path and vehicular path. The proprietors of the stalls have made extensions along the walkway by adding galvanized iron roof to the existing stalls. The stalls sell clothes, shoes, bags and groceries. As shown in the plan above, the area highlighted in pink is designated for passengers boarding the ferry. The pedestrian route of movement of passengers alighting from the ferry and those boarding the ferry was earlier separated by a chain link fence. Today the open kiosks act as the boundary between the two.

The 6metre driveway is designated for matatus and boda-bodas.

The 6metre walkway is restricted to street traders. The pedestrian and commercial activities are restricted from spilling over to the vehicular path due to the balustrades installed along the Likoni-Ukunda Road.

DETAIL B

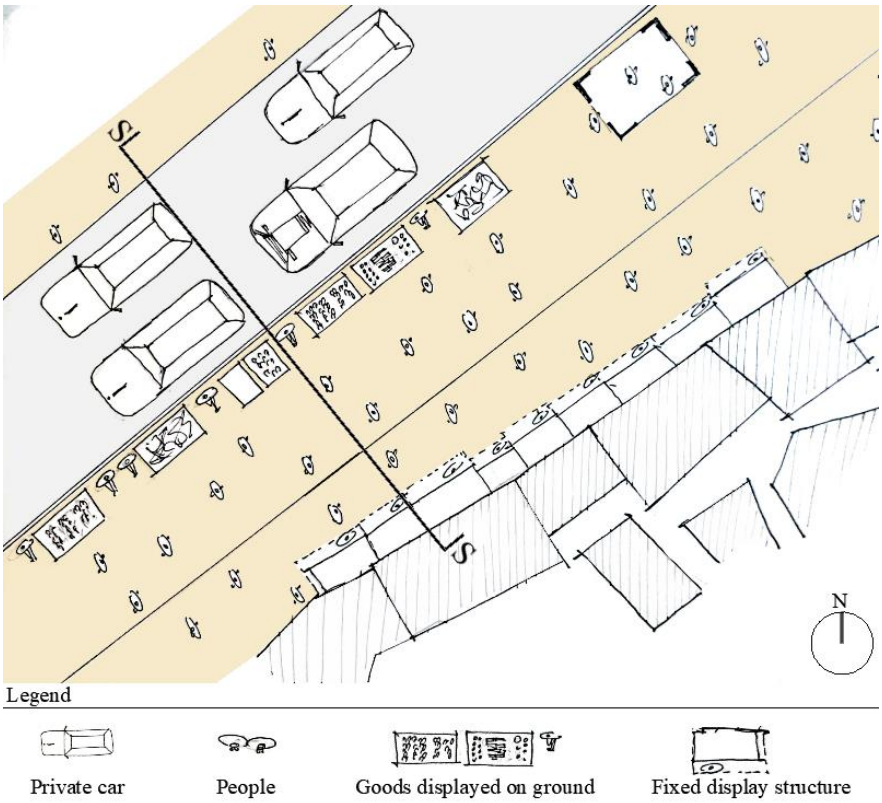


***Figure 138**: Part plan of **Figure 115**, Detail B, mapping out street traders and commuters' pattern. Source: Author 2022*

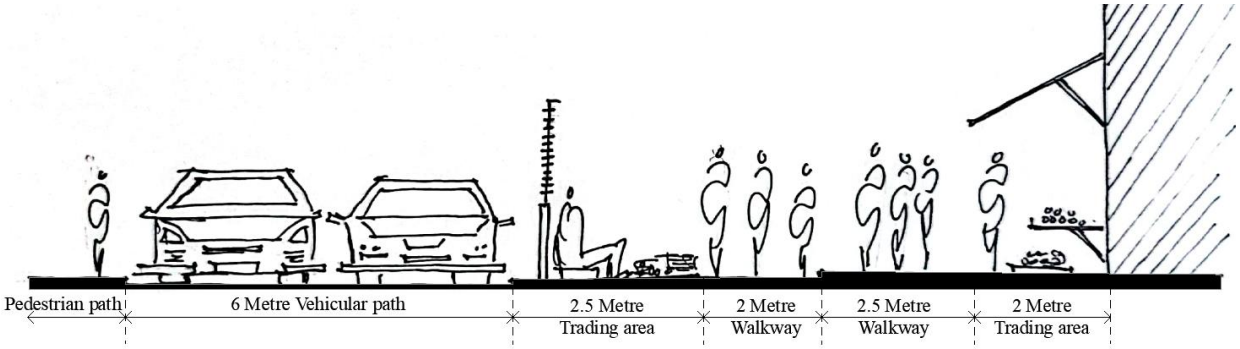


***Figure 139**: Section across Detail B. Source: Author 2022*

The sketches above illustrate the appropriation of the building edges by the traders. The traders construct timber pole structures to display their commodities and have galvanised iron roofs to protect them from the sun. Semi-mobile traders are located along the balustrade that separates pedestrians from motorists. They use the half wall as a back support. The semi-traders along the edge of the vehicular path display their items on the ground with no parasols as a protective measure from the sun. Their business begins in the afternoon.

DETAIL C

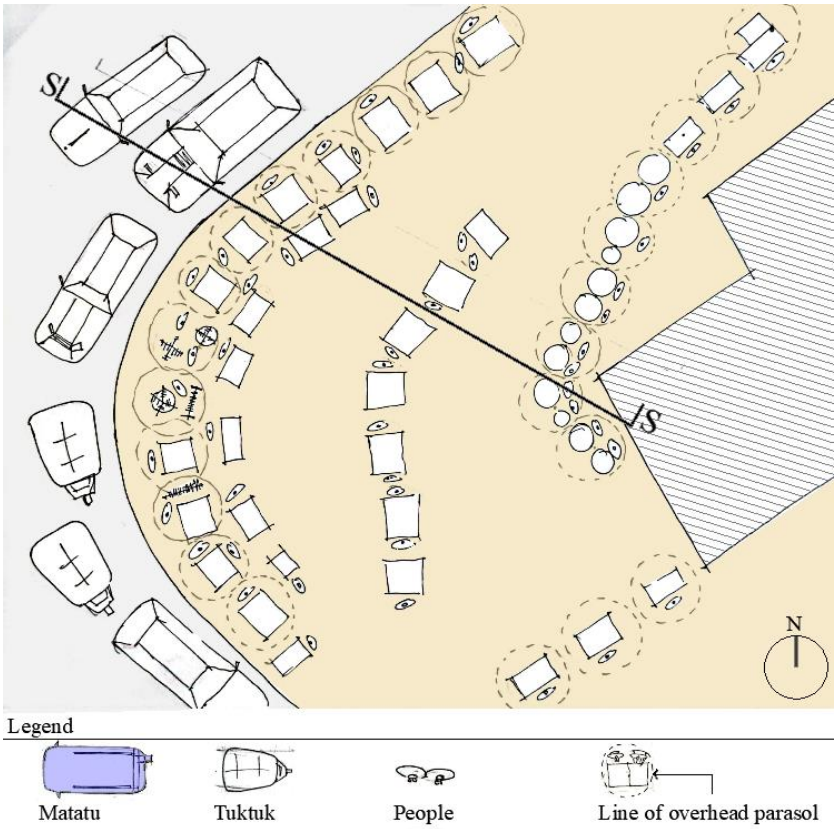


Figure 140*: Part plan of* ***Figure 115****, Detail C, mapping out street traders, and pedestrians' pattern. Source: Author 2022*

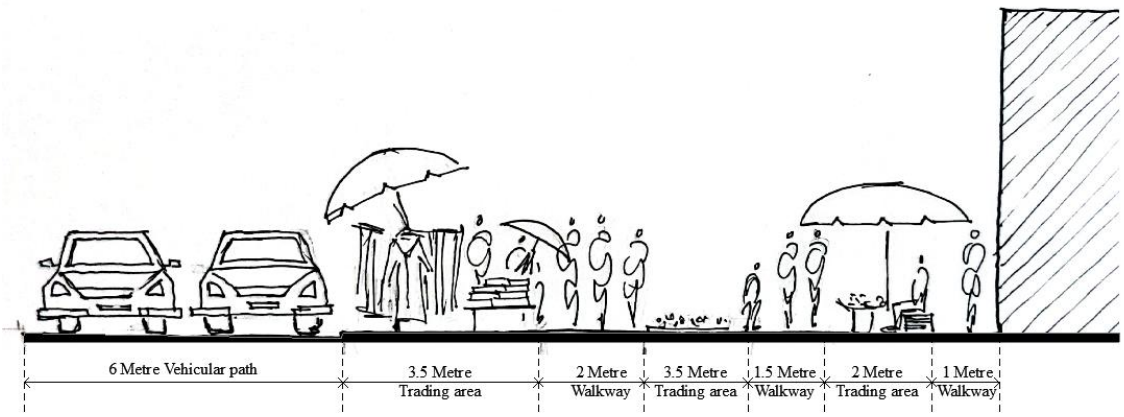


Figure 141*: Section across Detail C*

The width of the street dictates the number of commercial lanes laid out. As one moves up towards the mainland, the commercial lanes increase from two to three lanes due to the increase in width from 9m to 12m width. The traders are sensitive enough not to have any parasols or structures at the middle lane. The commodities sold range from clothes to appliances, to vegetables and fruits to swahili delicacies

4.7.4. THE RELATIONSHIP BETWEEN THE NATURE OF TRADERS AND THE PROXIMITY TO THE STAGE AT LIKONI MATATU STAGE

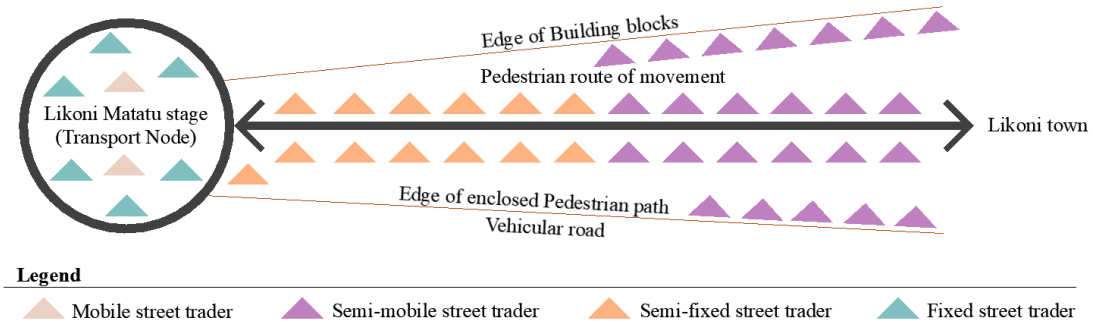


***Figure 142**: Illustration of the types of traders in relation to the distance to the Matatu stage at Likoni stage. Source: Author 2022*

There are four types of traders identified at the Matatu stage; mobile traders, semi mobile traders, semi fixed traders and fixed traders. The fixed traders are located at the matatu stage in the form of County government stalls. Very few mobile traders linger around the stage selling snacks and drinks. The semi-fixed traders are the first to come into contact with as one exits the matatu stage. They display their commodities under open structures made of timber poles and an iron sheet roof. The semi-mobile traders are located further up as one heads to the town. They display their goods on crates, mats, baskets and stands. The informal market is linear due to the enclosed nature of the pedestrian path.

4.7.5. TYPES OF TRADING ACTIVITIES IN RELATION TO MATATU OPERATING HOURS

The matatu peak hours are in the morning between 6 a.m. to 10 a.m. when the matatu operators transport people from Kwale towns to Likoni in order to cross the ferry or Ganjoni bridge, and in the evening where matatus wait for passengers crossing from the ferry to transport them to the southern part of Likoni mainland. Most of the commercial activities start operating in the afternoon due to the traffic generated by the ferry. The eateries, vendors of Swahili delicacies and traders selling durable goods begin operating in the morning from 8 a.m. Businesses start closing at around 8 p.m., and by 10 p.m. very few people are found on the street.

Just like the Ferry matatu stage, the ferry plays an important role in the number and type of commercial activities along the pedestrian path and at the terminus.

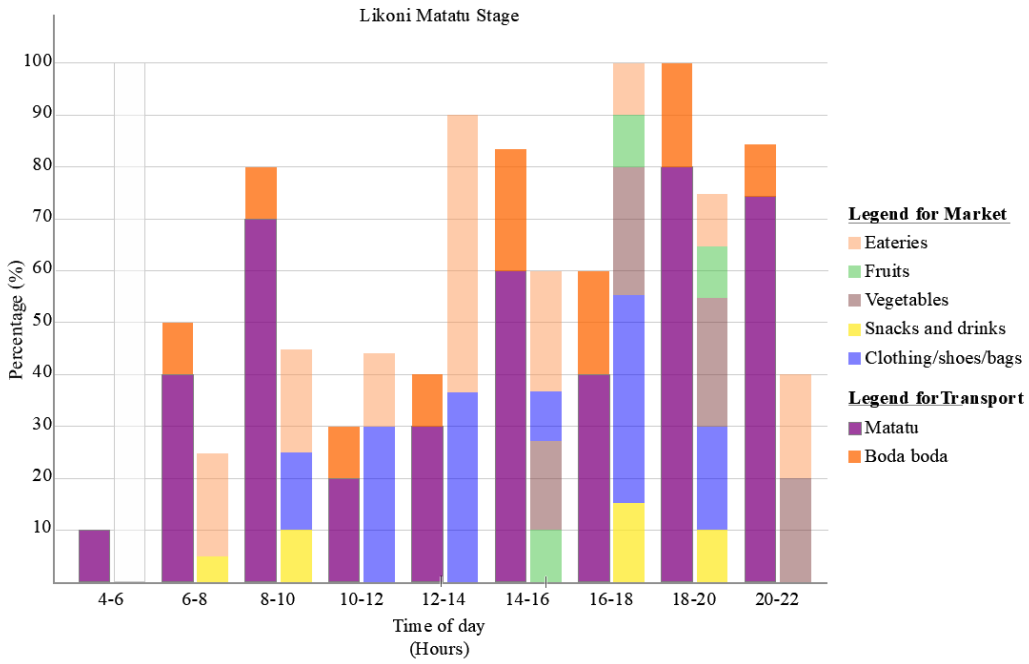


***Figure 143**: Graph showing types of commercial activities in relation to matatu operating hours. Source: Author 2022*

Time (HRS)	**Vendor Activities**
4-6	Commuters from Ukunda and Lunga lunga arrive at the stage to cross the ferry before it is closed. Around 3 to 4 matatus operate within these hours.
6-8	A few mobile vendors selling Swahili fast food are located along the pedestrian route. Since the ferry is closed to passengers, very few matatus operate, although some arrive dropping off passengers who wait for 8 a.m. to cross the channel using the ferry. A few eateries begin business to serve breakfast to the users of the area. Semi-fixed traders selling clothes, shoes and bags open up their business.
8-10	Eateries continue to operate. Grocery kiosks at the stage open up their businesses.
10-11	Between 11 a.m. to 3 p.m., there is very little activity going on within the sphere of the matatu stage.
12-14	Off peak time for matatus due to minimal movement Eateries prepare food for the matatu operators and nearby workers within the area.
14-16	At around 3 p.m., operation hours of matatus heading to Ukunda and Mtongwe reduce. Fish traders and vegetable traders begin to set up their business.
16-18	Due to the closure of the ferry to pedestrians between 4 p.m. to 7 p.m., the semi-mobile traders move further up the Likoni Ukunda road to target pedestrians coming from the Ganjoni bridge
18-20	From 7 p.m., the matatus operate at a maximum due to the opening of the ferry to pedestrians. The semi-fixed traders close up their business at around 8 p.m. A few of the traders selling cooked food have left.
20-22	Eateries and vegetable vendors close at around 9 p.m.

4.8 ANALYSIS OF THE 3 VALUE FRAMEWORK ACROSS THE TRANSPORT NODE MARKETS IN MOMBASA

4.8.1 Node Value

The matatu stage with the highest nodal value relative to the others is the Likoni matatu stage on the mainland. This is due to its ease of accessibility that generates high pedestrian traffic. The node value is further strengthened through the controlled route of movement from the Ferry. The matatu stage is also connected to a different mode of transport, the ferry. As much as the Likoni matatu stage is not centrally located, it acts as the connecting point to other parts of the South coast and Mombasa Island via the Ferry.

4.8.2 Place Value

The Likoni stage attains the highest level of place value. It is located in a mixed-use region with residential, commercial and institutional land uses within the area. The Ferry matatu stage is similar to the Likoni stage, however Likoni mainland have smaller urban blocks compared to the ones at the Southern part of the island. This makes accessibility to essential services easier.

4.8.3 The Market Potential Value

The market vibrancy and potential value increases due to the presence of small-scale enterprises in Likoni mainland and the future vision of ISUDP-Mombasa to develop transit-oriented developments in the name of Eco-city along a transport corridor.

4.9 CHALLENGES FACED BY THE STREET TRADERS AT THE TRANSPORT NODES MARKET

1. Appropriation of Trading Space

An “informal” ownership with no legal status but is considered authentic by traders exists within the markets. It becomes challenging to acquire space for trading in Likoni mainland terminus. This is because the demand for trading spaces is so high. More than one person can own five trading spaces. The chairman of the trader’s association has to allocate space to traders to avoid any conflict.

2. Unclear Institutional Framework

The study shows an unclear institutional framework that allows for conflicts and gives room to some actors who act as mediators between street traders and authorities to generate income. According to the Mombasa County government, anybody engaged in business by using the urban space has to pay a fee to the county. Fees paid by the street traders are received by different authorities. A large proportion is paid to the county officers, while a small percentage is paid to the chairpersons of the various street traders' associations. The pertinent issue is that most street traders assume that they are paying fees to gain permanent status at their sites.

3. Lack of Basic Services

The street traders operate in sites that lack services such as water, electricity and efficient waste management systems. This includes traders renting space from the County government of Mombasa. The rent-paying government tenants at Likoni matatu stage use solar power offered by Sun king. Sun king provides affordable solar energy that uses a “pay-as-you-go system”. The tenants at Buxton illegally tap into the electricity power lines.

The traders at the eateries have small water jerricans to store water for their use. The proprietors of the eateries at the Ferry matatu stage use dirty water collected in potholes along the road to rinse their utensils, as shown in the figure below posing a health risk not only to themselves but also their customers.

Figure 144*:Proprietors of the eateries washing their utensils along the road. Source: Author 2021*

4. Lack of Storage Facilities

The street traders lack storage facilities. They rely on wheel burrows, handcarts, bicycles, motorcycles and tuk-tuks to transport their goods to and from sites of operation. This is because the spaces the vendors occupy are not planned for trade and therefore do not have the appropriate infrastructure to accommodate the activity. During the trading period, traders leave their gunny bags along the path, as seen in the image below, creating an eyesore to the image of the area.

***Figure 145**: Gunny sacks left along the pedestrian path at Nyerere avenue, Ferry Matatu stage. Source: Author 2021*

***Figure 146**: Clutter of tables and gunny sacks at Buxton matatu stage. Source: Author 2021*

5. Poor Road Conditions

The roads are generally poorly maintained creating hazards to motorists, matatu operators, commuters, pedestrians and the traders.

6. Eviction by the City Authorities

Street traders face many constraints in their operations. A case in point is eviction by city authorities from their spaces where their goods are seized, forced to part with large amounts of money and in some case, physically assaulted. According to the street traders, the most worrisome issue is that one is never sure when the authorities will come and drive them away.

Attempts at evicting and relocating street traders have often failed due to the limited capacity of relocation areas in meeting the critical mass required for this informal industry to thrive. This posits the argument that "when customers fail to follow, the vendors have no choice but to return to the streets."

7. Inadequate Spaces/Size of Stalls Provided by the County Government

The size of the county government stalls is not adequate to accommodate dining areas contributing to the spillover of activities such as washing, cooking and dining in both Buxton and Likoni matatu stages. At Buxton, the dining areas spill over to the open space fronting the garden, while at the Likoni matatu stage, the traders extend the spaces by constructing open kiosks or through roof awnings, as shown below.

***Figure 147**: Extensions created by the proprietors of the stall. Source: Author 2021*

The available stalls in the matatu stage have been difficult for most traders to obtain. This is due to the cost of renting out these spaces, the cost of licenses and miscellaneous fees paid to the county authorities.

8. Conflicts

The capacity of street traders to use services in a self-organized and creative way relies on their presence in the urban space, their visibility in relation to pedestrian flows, and the extent to which the state tolerates their use and appropriation. Street traders are attracted to pedestrian flows alongside walks and their concentration can generate more flows. The street traders who do not have stalls resort to using the circulation areas, gathering on the streets and around the terminal, impeding free movement of pedestrians resulting in high congestion and several mobility issues causing a conflict between traders, pedestrians and motorists.

4.10 FACTORS THAT HAVE INFLUENCED THE EMERGENCE OF INFORMAL MARKETS AT TRANSPORT NODES IN MOMBASA

1. The Presence of Matatus/ Matatu Operating Hours

The critical mass generated by the transport node plays a vital role in the success of informal markets. This is due to the natural character of the mode of transport that operates throughout the day, from 5.30 a.m. to 10 p.m.

2. Accessibility

The levels of accessibility provided by transport nodes influence the setting of economic activities. It is evident in previous studies and the cases studied that transport nodes play a catalytic role in transforming space through land use. The co-location zone is an area where transportation has a form of influence on the location of economic activities. In a high-end area, an office park, hotels, restaurants and parking lots would be a common form of co-location for passenger terminals. In this case, the informal markets are a common form of co-location to the matatu stages.

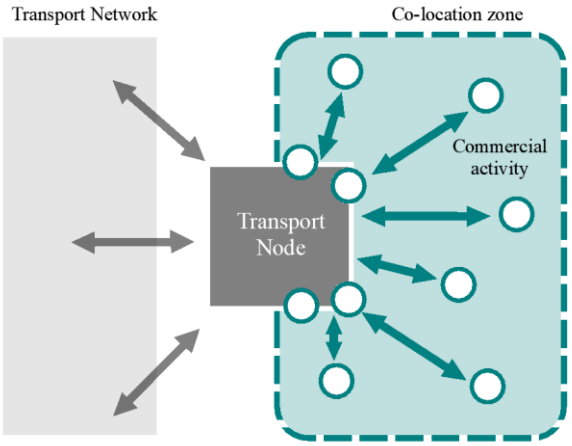


***Figure 148**: Transport and co-location area. Source: Author 2022 adapted from The Geography of Transport systems*

3. Availability of Space

From observation, Buxton matatu terminus has adequate space to accommodate as many street traders as there are now. The Ferry matatu terminus located at the junction of Nyerere Avenue and Mbaraki road is an informal bus stop assigned to the matatu operators by the County government of Mombasa. Due to the density of people, it generates, the presence of pedestrian paths and wide median strips, the informal traders appropriate these spaces. This forces the pedestrians off the

pathway and onto the road. The Likoni matatu terminus is equally similar to the Ferry matatu terminus.

4. Visual Connectivity to the Street

The space used by the street markets located within the vicinity of the matatu stages is an asset to both the traders and matatu operators to manage their livelihoods. Yet, it is subject to a range of contested claims. The street traders negotiate their visibility and use of space not only with each other but also with matatus. Visibility is very important to the traders; the vendors place themselves where they are visible to pedestrians and motorists.

Buxton has no visual connectivity due to its enclosure. Customers have to make deliberate effort to identify what is being sold. A factor that is most likely responsible for the display of a limited variety of goods. Likoni and Ferry matatu terminus are more longitudinal, encouraging visual connectivity, providing higher chances of trade activities due to ease of visual contact hence a relatively larger display of variety of goods.

5. Neighbouring Land Use

The land use dictates the kind of items the markets would sell. For example, the Ferry matatu terminus and Likoni matatu stages are in close proximity to residential neighbourhoods. This encourages the traders to sell items that households would require, such as vegetables, fruits, utensils, clothing, shoes and bags.

6. Sense of Enclosure

A less enclosed terminus influences the number of traders in a terminus. The more permeable the edges of a terminus are, the more the visual connection there is between the traders to the commuters and the passers-by to the traders.

The fixed traders at Buxton terminus have opened towards the terminus giving its back to Sheikh Abdullas F road. Therefore, most of the clients would be the users of the terminus and very few would be passers-by.

7. Controlled Route of Movement

Looking at the case of Likoni Matatu terminus, the movement of commuters from the ferry to other parts of Likoni mainland forces the commuters to move into the designated matatu terminus irrespective of whether one requires the transport service or not. The segregation of the vehicular circulation and pedestrian circulation reinforced by balustrades and fences contributes to the presence of commercial activities along the pedestrian route of movement.

8. The Presence of Ferry

Potential customers for the Ferry and Likoni matatu stage markets are many since the users of the ferry to and from the island include those who use motor transport and those that are simply walking to their destinations. The need to use the ferry to cross to the mainland or the island influences the size of the market and the types of goods being sold in the market. It would be expected that users of the ferry are diverse and would therefore have diverse needs. The Ferry contributes to an adjacent mobile market on both sides of Likoni because of the motorists who would usually spend time awaiting to board the ferry. This is in contrast to the Buxton matatu stage, where there are no stop overs. There is a relatively smooth flow of traffic managed by traffic sites at Buxton.

The Ferry also creates an enclosed market within itself for mobile vendors who sell snacks and drinks to commuters and motorist on the ferry. The Ferry's presence positively contributes to the transport services to other parts of the mainland and also to the thriving of the matatu stage markets.

9. The Spatial Form of Trading

The linear form of the trading space at the Ferry Matatu stage and Likoni Matatu stage is more successful than Buxton Matatu stage, in terms of the number of traders in the area and the variety of commodities being sold. As far as the Likoni matatu stage is concerned, the informal market is linear due to the enclosed nature of the pedestrian path while in the case of the Ferry matatu stage, the informal market is linear due to the linear spatial relationship between the matatu stage and the Kenya Ferry Island Tolling point.

4.11 RELATIONSHIP BETWEEN THE MATATU STAGES AND THE INFORMAL MARKET IN MOMBASA

1. The Nature of Goods Sold in Relation to the Transport Route

Buxton is the connecting point for commuters from Mombasa County to the various towns of Kilifi County. It operates as a long-distance terminus. Therefore, one finds that majority of the goods being sold are perishable. Perishable goods are what one would expect a commuter in transit to purchase. Eateries mainly target the matatu touts, operators and Sacco managers and a few of the commuters. The semi-fixed and semi-mobile traders sell snacks, drinks and fruits to the commuters and matatu operators. The remaining few traders in the county government stalls sell groceries, offer barber services and operate as stores. Therefore, they act as destination points.

The Ferry Matatu stage and Likoni Matatu stage markets sell both durable and perishable goods. The nature of the transport for the two stages are final destination points and connectivity points. Those on the island would use the ferry to cross over to their homes on the other side of Likoni, and those from South Coast have a final destination point on the mainland. The nature of the markets has similar characteristics in terms of the types of goods being sold because the transport terminus has the same characteristics.

2. Eateries are in Direct Contact with the Transport Node

A common factor across all stages is the demand for eateries. Irrespective of whether the matatu stages operate as long-distance or short routes stages, there are eateries to serve the matatu operators and workers nearby. Due to the availability of space and the matatu stages being destination points, both the Buxton and Likoni matatu stages use the county government stalls to accommodate this function. The Ferry matatu terminus being informal and a short-distance route stage, have open kiosks that are less comfortable than the others.

4.12 COMPARATIVE ANALYSIS WITH THE CASE STUDIES IN CHAPTER 02

Kivukoni and Kimara BRT Station

Kivukoni BRT Terminal is similar to the Ferry and Likoni Matatu stages in terms of location. Kivukoni is considered the final terminal in the Eastern part of Dar es Salaam. The Ferry Matatu stage would also be considered the final terminal within the main island before crossing to Likoni mainland. The existence of two modes of transport at Kivukoni, Ferry matatu stage and Likoni matatu stages, creates a pattern of street traders positioned along the routes of movement. According to analysis, the transport nodes act as magnets for street vendors. The presence of the harbour and fish market at Kivukoni was also a pull factor for the street traders, but the construction of the BRT at Kivukoni increased the number of vendors, stores and stalls within the area. In all cases studied, the vendors are observed to be along the pedestrian routes of movement and in the case of Kivukoni, they are more so located at the in-town service stations of the *Bajaj(tuk-tuk)*, *Dalalals (mini-bus)* and *Boda-bodas (motorcycle).*

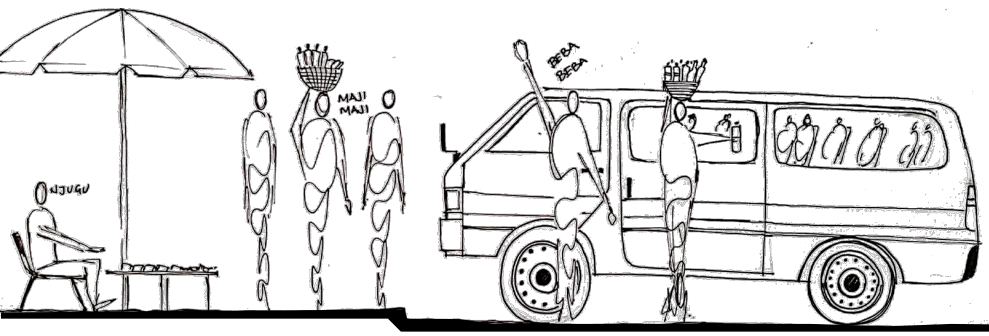
The range of commodities sold is similar across all terminals, both in Mombasa and in Dar es Salaam. The products range from fruits and vegetables, snacks and drinks, restaurants, clothing and fish. The fish market is available due to its proximity to the harbour. In order to keep track of the number of street traders, officially registered street vendors pay an annual fee in the streets which they operate from.

In the case of Mombasa and Dar es Salaam, the presence of two modes of transport; the matatu stage and the ferry and the BRT station and the Ferry, respectively, provides a thriving platform for traders due to the critical mass generated.

Kimara is a transport hub that connects the city centre to the suburbs. A fence encloses the BRT terminal at Kimara resulting in the presence of a few street vendors in its immediate vicinity. It is observed that the street vendors are located along alternative transport service stations (the *Bajaj*, *Dalalals* and *Boda-bodas)*. This illustrates that both physical and visual connection to the transport node influences the number of street vendors within the vicinity. The location of the station at a macro scale and its relationship to the neighbouring land use plays a vital role. Due to its enclosed

nature, Kimara station is segregated to the neighbouring land uses. The street vendors at Kimara station are fewer than in the other cases studied.

According to research, the economy of street vendors at intermediate bus stops has stagnated since the implementation of the BRT and the restrictions on street vending. The upgrading of the transportation system failed to accommodate the other transport services that encompass the transport system of Dar es salaam. Moreover, accommodation or integration of the street traders was not considered. The BRT stations at Dar es salaam are not inclusive to the other transport services; the *Bajaj*, *Dalalals* and *Boda-bodas*



CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The main objectives of the study were to; assess existing conditions and situations of existing street markets in relation to matatu stages in the city of Mombasa; to determine the nature of relationship (if any) between the transport node and the informal markets in Mombasa and to propose guidelines that would address the challenges related to Transport Node Markets. The research sought to recommend urban design and planning principles that promote a harmonious coexistence of informal street vendors and matatu stage operators within the same locality.

5.2 SUMMARY OF FINDINGS AND CONCLUSION

The study purposively chose to focus and analyse the major transport nodes that connect Mombasa Island to the Northern Mainland and Southern mainland, the Buxton Matatu Stage, the Ferry Matatu Stage and Likoni Matatu Stage, to achieve the objectives of the study.

Generally, the study identified four types of street traders; mobile street trader, semi-mobile street trader, semi-fixed street trader and fixed street traders. It further went to describe the existing conditions of the cases selected as briefly explained below:

5.2.1 Buxton Matatu Stage

Buxton Matatu Stage located on the Northern part of the island, serves as a long-distance bus terminal. Its minimal connectivity to its neighbouring land uses, influences the types and density of commercial activity within the matatu stage. The Western side of the matatu terminal is active, due to the location of the pickup and drop off points of the passengers. The terminus is fully enclosed with only the entry and exit point as the permeable point. The transport system is well organised with each route having its own designated parking space. The SACCOs manage the order in which the buses queue. The existing passenger waiting area is structurally and spatially inadequate to accommodate the population utilizing the space.

Three types of traders were identified in the stage; mobile traders, semi-fixed traders and fixed traders. The dominant commercial activity is eateries that serve both the commuters and matatu operators. The eateries are accommodated in fixed stalls leased out by the County government of Mombasa. Majority of the goods sold are perishable. Semi-fixed traders use crates and tables to display their goods while the mobile traders used baskets.

5.2.2 Ferry Matatu Stage

The matatu stage is located on the southern part of the island. The area designated for pick up and drop off of passengers is along a road reserve at the junction of Nyerere avenue and Mbaraki road. The neighbouring land use is mixed use. Despite the transport system not having a direct connection to the adjacent plots, the land uses and landmarks influence the success of both the transportation system and the informal markets located along Nyerere avenue.

The types of traders found in this area are mobile, semi-mobile and semi-fixed traders. The commodities of goods sold range from cooked food, vegetables, fruits, snacks and drinks to clothes, shoes, bags and electronics. Tables, crates, gunny bags, mats and steel racks are some of the displays used to place some of the goods. A few of the urban elements like fences, trees and walls were also used to display goods. The presence of the ferry as another mode of transport influences the location and linear form of street trading activities. The street traders invade the walkways and median strips to conduct their business forcing the pedestrians to walk on the carriageways. The County government of Mombasa made a deliberate effort to restrict matatus and tuk-tuks in accessing Mama Ngina Drive. This reduced the conflicts between pedestrians and motorists and traders and motorists.

5.2.3 Likoni Matatu Stage

The matatu stage located on the Southern mainland of Mombasa serves both long-distance travels and in-town services. The area is predominantly a residential area with small scale enterprises along the edges of the road. County government stalls are located at the matatu stage with most of them serving as eateries to both the commuters and matatu operators. The stall proprietors are categorised as fixed traders. All four types of traders are found within the sphere of Likoni matatu stage.

Fixed and semi-fixed traders are located close to the transport node and as one moves further into the town, semi mobile and mobile traders are located along the pedestrian path and edges of the road. The types of goods sold are both durable and perishable and they range from raw fish, cooked food, fruits, vegetables, clothes, bags, utensils, shoes, padlocks and electronics. Open kiosks, tables, crates, mats, gunny bags, baskets, buckets and steel/wooden racks were some of the items used to display the commodities. The matatu stage is accessible from a secondary road branching off Likoni-Ukunda Road. Each route has its designated pick up and drop off point and the Saccos

operate on a first come first serve basis. The pedestrian traffic generated by the ferry and the controlled route of movement influences the success of the matatu stage and the street traders. The passenger waiting area is functionally inadequate for the users.

From the above cases studied it is evident that street traders strategically position themselves at points of entry and exits and along pedestrian access to induce impulse buying and make it convenient to customers. As observed in the cases studied, land use plays a critical role in influencing the success of both the transport node and informal markets. The types of land use should be able to generate the density required.

As observed in case 03, the use of vertical barriers separating the pedestrian from motorists, controls routes of movement and in the process controls the location of street traders. This also reduces the number of mobile traders along the road, making it safer for both the motorists and the traders. A pattern observed is that it is common to find food vendors and eateries at the matatu stages. The eateries or open kiosks serving food are evidently a fixture of the matatu stage. They are either adjacent to the matatu parking area or in visual proximity. The variety of displays used by street traders adds to the vibrancy of the urban image. The relationship between visual elements and the urban space strengthens the trading space by complementing the composition of the surface of the street trader's space through the use of blank walls, trees, platforms, balustrades and width of walk ways.

For the transport nodes that are designated as points of destinations, they have adequate pick up and drop off points but lack critical spaces that would make it more functional such as loading and offloading areas for goods, waiting area, Sacco offices and drivers' lounge.

This study has demonstrated that matatu stops in most cities in Kenya is an important resource to livelihoods in cities and towns. Matatu street traders particularly offer a wide range of employment opportunities. The transport nodes and the streets offer a stable and constant agglomeration of both traders and buyers. The study has shown that street traders do not necessarily have to be within the transit stop but can also position themselves along the popular routes of movement and critical mass created by the transport.

In summary, a wide range of goods are offered in the immediate vicinity of the matatu stages and their surroundings offer attractive areas for street vendors. The degree of influence of the matatu

stage varies according to the location of the stage, the neighbouring land uses, landmarks, accessibility to other modes of transport, availability of space along the streets visual connectivity of the transport node to the streets and the route of movement of commuters among others.

5.3 RECOMMENDATIONS

Listed below are a number of basic design principles recommended for preparing proposals for transport infrastructure that integrates informal trading activities into upgraded or modern transport nodes. These include the overall planning and design approach, location of transport node, location of trading sites, the spatial relationship between the transport systems and the informal markets, street trading activities and overall circulation, space standards and types of structures.

5.3.1 Site Selection Criteria for Transport Node Market

Pedestrian access: This is considered the most important factor in the site selection criteria. The market and the transport system as economic activities is dependent on the volumes of foot traffic that passes through the spaces for their success. The transport node market should have access to pedestrian walkways.

Presence of existing street traders: The site should have street traders around it. This will be an appropriate way of integrating street trading in the urban fabric making the traders automatically benefiting from the intervention.

Zoning: The site should be in a mixed-use development area. This will create more market for the traders' merchandise and services since it will target the residential, retail and commercial users.

Design of an appropriate environment for transport node markets should start by recognizing that congested places are where the informal transport system and street traders want to operate. Therefore, the objective should be to accommodate street traders in these zones and regulate them to prevent congestion.

5.3.2 Spatial Organization of the Transport Node Market

Based on the findings, the linear form of organization is best suited for combining both types of phenomena. Borrowing from case 03: the Likoni mainland stage and informal markets, the researcher found it relatively successful in reducing conflict between pedestrians and motorists

and pedestrians and traders. This is because the entry point of matatus was off set and separated from the main vehicular path by change of levels and the placement of open kiosks clearly defined the pedestrian pathway.

The study recommends the adoption of the lessons learnt from the Transit Street Design Guide 2016 highlighted in the study. Various elements make up urban streets such as sidewalks, travel lanes and transit stop. The planning and design of these elements plays a vital role in the efficiency of the movement network and in creating pedestrian-friendly public space which enables interaction. There is a need for the existing transport nodes to conform to these proposed elements to comfortably accommodate the informal market.

Lane width with respect to lanes for motorists, parked cars and bikes is crucial for the street layout. Lane widths ought to be considered within a given street delineating space to serve all needs including motorists, sidewalks and safe islands. According to the illustration below, the suggested lane width should be 3.5 for the buses.

The recommended layout for the matatu stage **vehicular circulation** is that both long-distance buses and town service buses are to have the entry to the stage from the dedicated bus lane and exit through another point. This shall reduce congestion at a point and maximizes on land use.

Parking bays should allow for the various types of buses used within Mombasa; 14-seater, 33-seater mini buses, and 55-seater buses.

The sidewalks should be demarcated into two zones; the pedestrian zone and the trading zone. The pedestrian zones are to encourage interaction along the pedestrian path in a commercial area, the minimum space provided for this zone should range between 2.4metre and 3.6 metres. The trading zones are to allow vending along the street. The recommended pavement width is 2.0-2.5 metres. Commercial activities on one lane should be allowed only on sidewalks that are at least 4.0 metres wide and should not obstruct the clear path. Commercial activities on two lanes should only be allowed on sidewalks that are at least 6 metres wide.

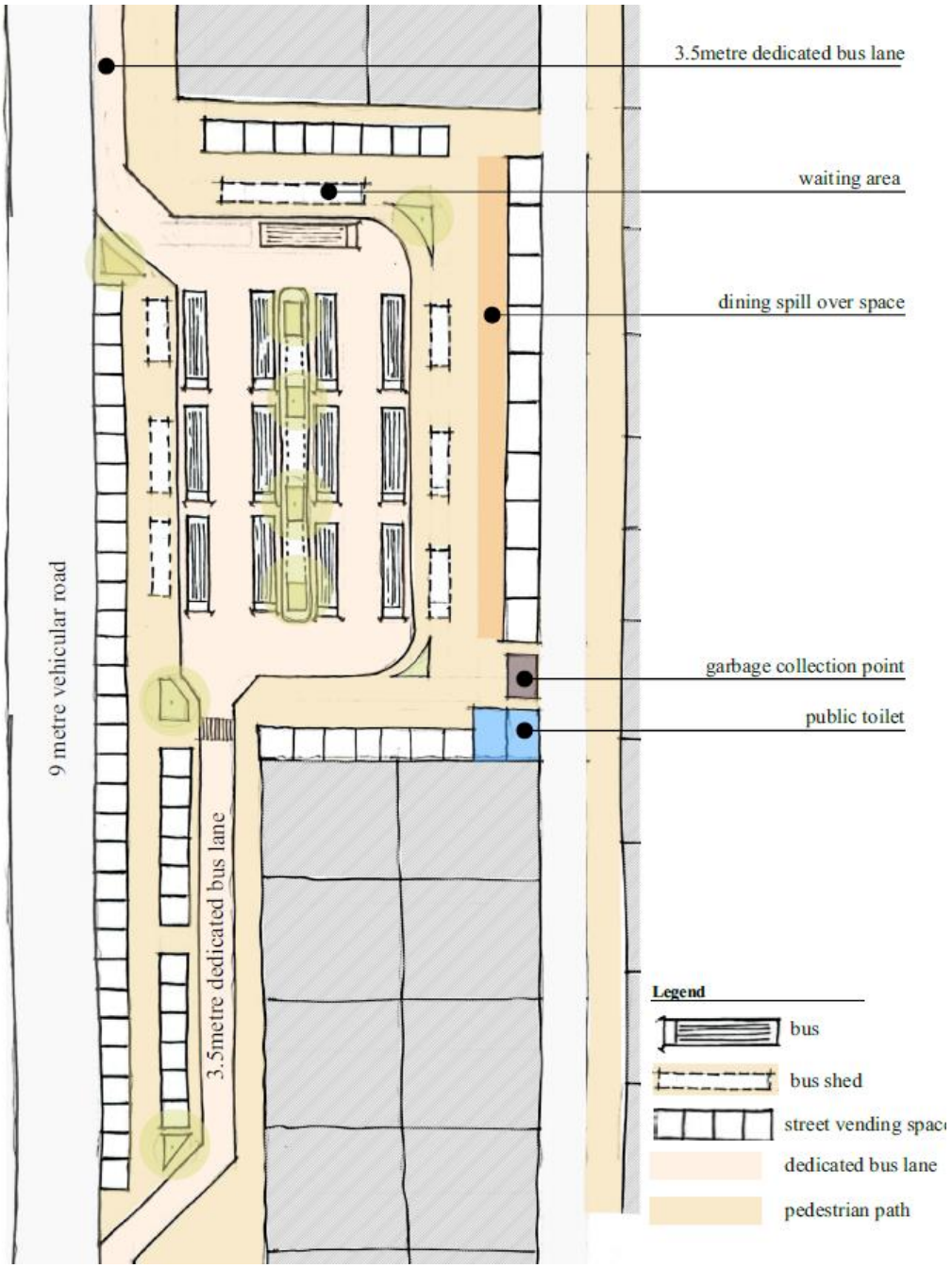


***Figure 149**: Proposed spatial organization concept for Transport Node Markets. Source: Author 2022*

Creating safer places for pedestrians to travel along roadways may encourage more people to use transit systems. It is critical to ensure that pathways have appropriate width, surface and are separate from motor vehicle traffic. The sidewalk should be paved with smooth, stable and non-slip durable material to ensure pedestrian's safety while accessing transport nodes.

Buffers should be provided for the safety and comfort of pedestrians; it is desirable to provide a buffer between the sidewalk and the roadway. The pedestrians walking along the route of movements shall be buffered by the commercial blocks opening inwards towards the pedestrian paths (as shown in the plan above) and the commercial blocks can be buffered from the motorists through landscaping such as shrubs and trees.

5.3.3 Spatial Relationship between the Transport Node and Street Traders

The spatial layout of the Transport Node market is a critical design component. It is necessary to create a profitable environment for matatu operators and street traders. This can be achieved by understanding the relationship between the two systems. Analyse the land uses and landmarks that have strong pull qualities for pedestrians. These will act as destination points that can be used as "magnets" to attract pedestrians into the transport node market.

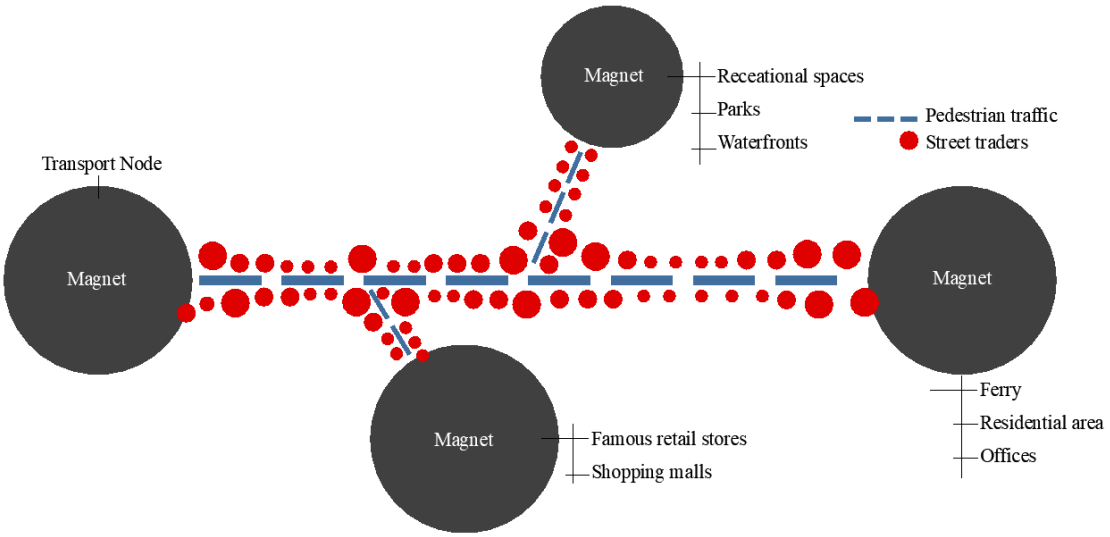


***Figure 150**: Spatial relationship between transport nodes, street traders and other magnets. Source: Author 2022*

To increase the chance of consumers accessing the street vendors, it is necessary to create a layout where all traders are exposed to the passers-by. This will give the transport operators and trades the exposure needed to have potential income.

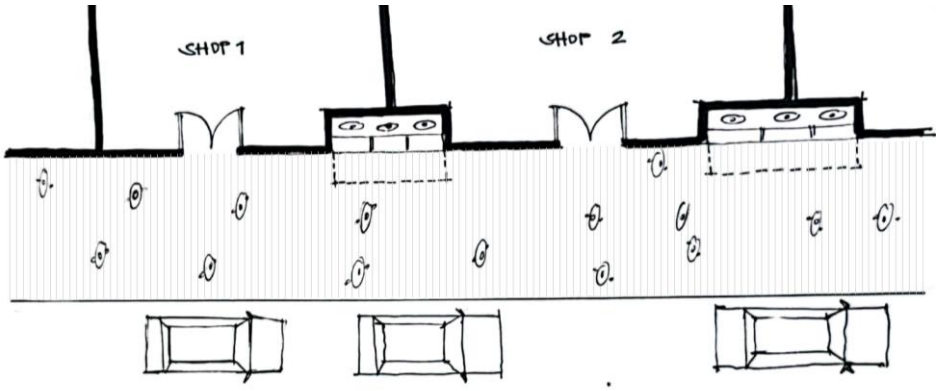
5.3.4 Space Sharing in Street Markets

Streets are places of importance and collective ownership by urban dwellers; they create a place of identity, cultural and social interaction and economic exchange. The design of streets within the sphere of transport nodes should have programs that integrate street vendors by planning and setting aside specific lanes that begin from the matatu stage to a connecting point or landmark to accommodate the street vendors. Urban edges should create space for street traders not only along the street but also along the public-private interface of a commercial street.

The study illustrated that visibility is one of the vital principles in visual merchandising. A wide range of solutions may be adapted to make provisions for street markets on city streets.

a) Space Sharing along Public-Private Interface

Provide facilities for street traders alongside existing roads and building frontages. The spaces should be laid out in a manner that does not block the visibility of buildings. This can be achieved by providing niches between building along the facades. This will clear the path for pedestrians. This type of solution will limit the demographic of street traders. This form of structure will attract street traders trading in a specific merchandise with a higher revenue turnover to enable them to pay the rent. This also means that they will conduct a business that is prescribed under the businesses provided by the county government and is thus eligible for issuance of a business permit.



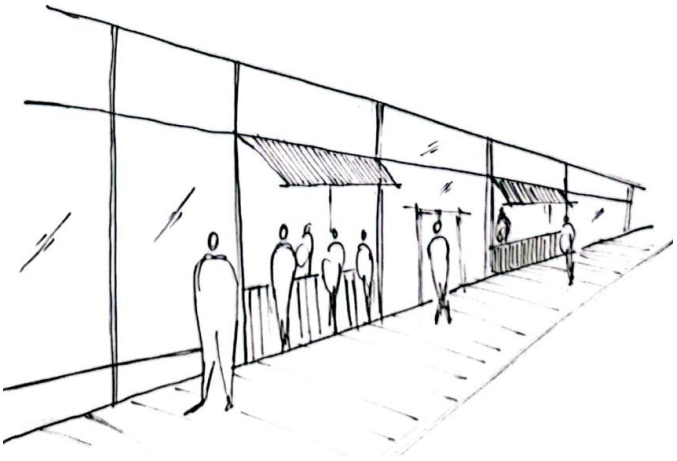
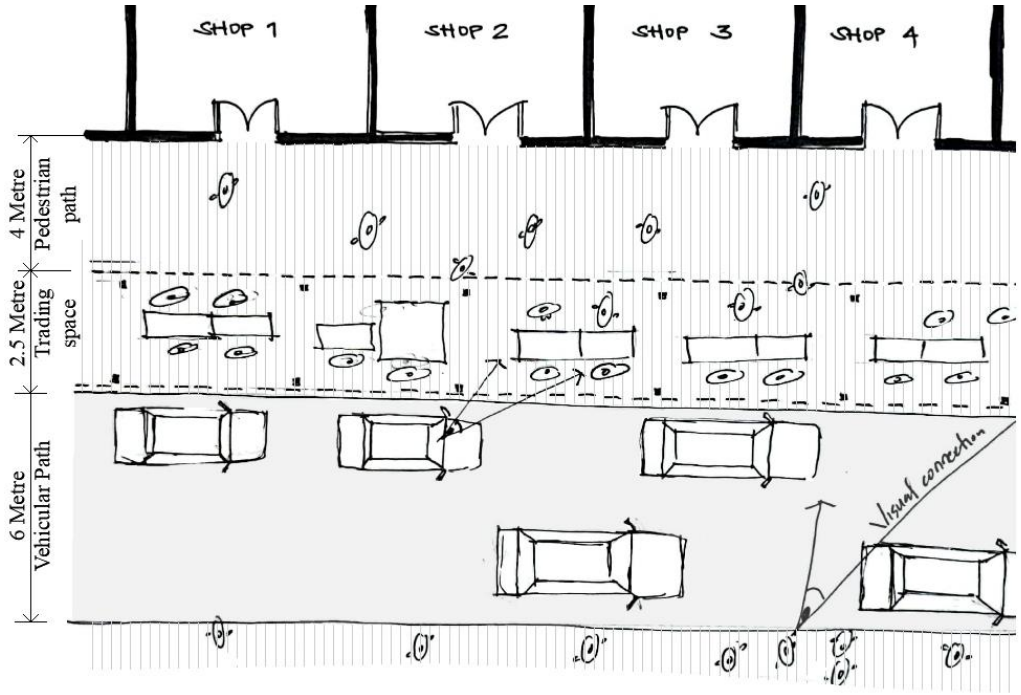


Figure 151*: Provisions for street traders along the building edge. Source: Author 2022*

b) Space Sharing Along the Pedestrian Path

The second recommendation is to prevent vendors from blocking the building edges and arranging the trading spaces along the outer edge of the pedestrian path perpendicular to the buildings and the road. The recommended minimum measurements for a clear pedestrian path are 4 metres. This will accommodate the passers-by, the buyers and the populace coming from the building blocks. The trading space requirements ranges between 2metres to 2.5metres.



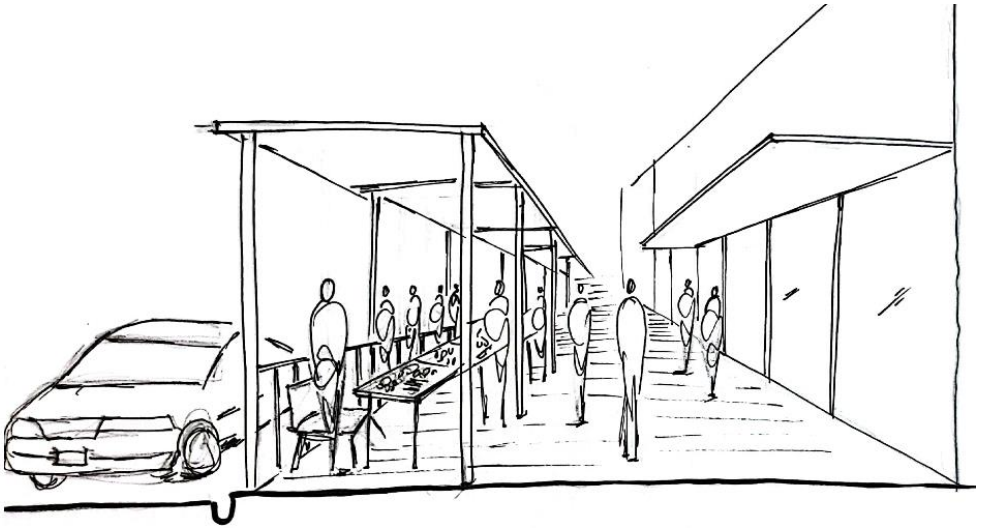
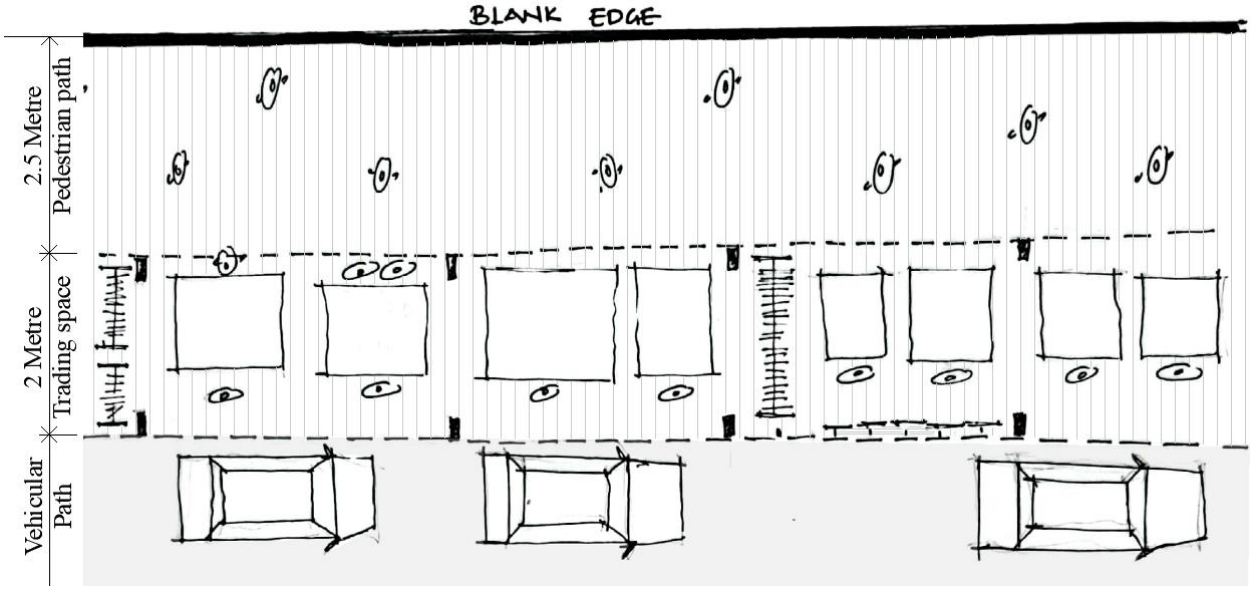


Figure 152*: Provisions for street traders along a pedestrian path opposite building frontage. Source: Author 2022*

c) Space Sharing Along Blank Edges

When designing for street traders along routes of movement that have inactive edges; blank walls and fences, the following recommendations are made:

For a path that is between 4 to 4.5metres wide, only one lane of trading space should be planned and designed. For a path with a minimum width of 6metres, two lanes of commercial spaces can be accommodated with a pedestrian path in between.



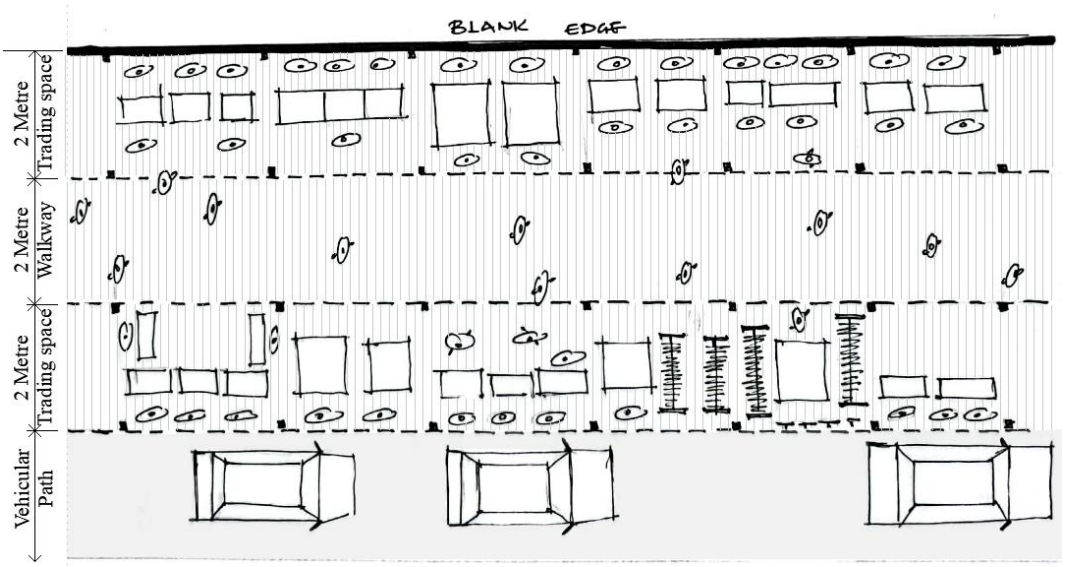


***Figure 153**: Provisions for street traders along a pedestrian path with blank edges. Source: Author 2022*

5.3.5 Types of Structures for Street Trading

Open structures are recommended to cater for all typologies of street traders within the semi-mobile and semi-fixed trader. This gives the traders opportunities to display their commodities in a manner that best suits them and in the process enhances the vibrancy created by the street markets. The open structures will contribute to the concept of "eyes on the street' enhancing safety within the space.

This research indicates the existence of a strong relationship between the street vendors' display elements that are utilized, such as folding tents, mannequins, clothes racks, shelves, and tables and visibility of the merchandise being sold. These display elements become the main visuals that form the street vendors' trading space.

5.3.6 Controlled Route of Movement

The controlled route of movement using barriers, balustrades and changes in levels, as seen in the case of the Likoni Matatu stage, influences the success of both the transport system and the informal market. One of the benefits is that matatus are not in competition with other modes of transport due to its nature to pick up and drop off passengers along the road since they are the first to encounter commuters. The traders benefit because the controlled route of movement will create

the ready market needed for the traders to survive since it will force both commuters and passers-by to use the same path. The barrier should not be a solid wall but one that encourages visual connectivity to other parts of the urban space. The use of vertical elements will create a certain sense of enclosure hence separating the circulation function from the trading activity.

5.3.7 Cultural Appropriation

The proposed structure should imitate the social culture of the area. This can be done by enhancing the social aspect or by the use of arches to respect the architectural style common in the Coastal town of Mombasa.

5.3.8 Vegetation

Soft landscaping placed at intervals along the route of movement or passengers' waiting area is necessary to provide functional efficiency of urban spaces and regulate the micro-climate of the area while enhancing the quality of the space.

5.3.9 Segmentation of Traders in Terms of Commodities Being Sold

In relation to the findings of the study, it is evident that certain commercial activities thrive when they are adjacent to complimenting uses. The eateries, snacks, drinks and fruit vendors compliment the matatu system by serving the commuters and the matatu operators. The rest of the commodities are household items that benefit both commuters and passers-by and are better located along the pedestrian route of movement as shown in the figure below.

Since the government plans to upgrade the existing matatu stage to modern stages, it is recommended to cluster all waste generating commercial activities close to the terminus and provide storage facilities similar to the locker system at the upgraded matatu stage.

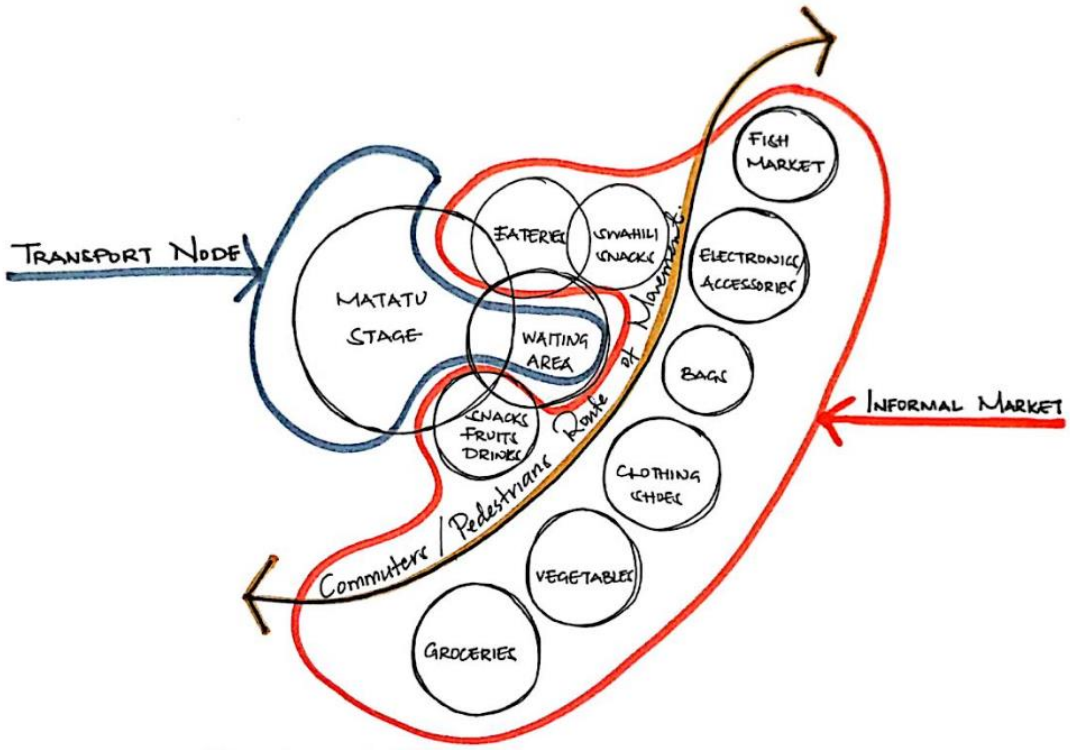


***Figure 154**: Relationship of commercial activities between matatu stage and route of movement. Source: Author 2022*

5.3.10 Provision of Street Furniture

The county government should provide lighting, scaled to pedestrians to encourage nighttime activities. As one traverses the streets of Mombasa, it is evident that it is part of the culture of Mombasa to have food displayed on the streets. This will also help reduce crime and disorder.

5.3.11 Ancillary Facilities

The design of markets should be anchored to support facilities such as toilets, water points, electricity, waste management and storage facilities. These facilities can be integrated to be part of the transport node in the upgrade of existing and proposed matatu stages. This is because support facilities are affordable and easy to manage when shared.

Storage facilities are much needed for majority of street traders other than the fixed traders who store their goods in their rented stalls. Storage facilities can be located and managed from one

point. It is proposed that storage facilities be located at the upgraded or modern terminals proposed by the County government. This is because there will be adequate space to load and offload goods.

Solid waste management requires special attention especially when dealing with street traders. A garbage collection point should be located at the terminal and waste generating trading activities located near the terminal. The conventional method of managing waste is to arrange for it to be taken by local authorities from the waste department.

Alternatively, movable containers may be placed at intervals of 20metres where the street traders can dump their waste. The purpose of having the containers portable is so that they can be easily emptied by the County government every evening after the end of all activities or the waste can be transported to the main collection point at the stage.

5.3.12 Policies

The government should effectively enforce the by-laws to regulate the activities of street hawkers and ensure that the rules and regulations are obeyed to the letter. This creates order within the streets and makes them devoid of congestion, conflicts, and waste. It is recommended that the state considers introducing a licensing regime under which all hawkers would have to obtain a license to spell out the conditions under which they could operate.

Since independence, the government has come up with a number of development policies aimed at stimulating economic growth, reduce unemployment and poverty. The policies include the Economic Growth policy (GOK 2003), Kenya Vision 2030, and the Kenya National Trade Policy 2009. Most of the policies recognise informal trade as Kenya's greatest employer and have identified the challenges faced by the sector, such as inappropriate design of space. Tuju (2019) states that despite the recognition of the existence of the informal sector in the urban space, policies and plans have failed to provide for space and standards for the sector. She argues that the existing strategy and permissible agenda for the management and control of the informal sector does not provide for space standards and effective development framework that outlines the policy vision for the sector's development.

Public transport in Kenya has attracted many policy debates which remain unresolved. A debate that continues to engage policy makers, practitioners and the public is how to handle the matatus, a form of public transport which has remained resilient to almost all policy responses. The matatu sector, which has operated with minimal regulations, requires supportive policies to enable its structural organisation and integration into the country's transport system. As stated by Mitullah et al 2013, the matatu industry has had 5 key turning points: the 1973 Presidential Decree, Michuki Rules, Central Business District (CBO) Decongestion, SACCO Company requirement and announcement of phasing out of 14-seater matatus. Mitullah's research into the operation of the matatu sector reveals policy twists and turns whose basis remain unclear. She further states that a sector with informal origins requires understanding before any policy intervention can be made.

Despite the challenges faced by the government in organizing the sector, the government still continues to focus on bringing sanity to the industry and ensuring that all stakeholders comply with laid down rules. Both the government and stakeholders are yet to come up with approaches that adequately address the challenges facing the industry. This is partly due to the ad-hoc nature of policy responses which are inadequately informed and lacking holistic consultation with relevant stakeholders. These factors are important for sourcing inputs into policy formulation, planning and enforcements of regulations. Matatus serve a huge population in Kenya and a pull out by the industry has the potential of creating an economic crisis.

This research proposes a further study on Policy and Intervention framework in relation to the informal sectors on both the matatu industry and the street traders.

5.3.13 THE TRANSPORT SYSTEM

5.3.13.1 Inclusion of the Informal Transit Industry into the Proposed Public Transport System

According to the ISUDP Mombasa 2035, there is a goal to transition local transport systems to Bus Rapid Transit (BRT) and upgrade the cases in study to modern bus stations. The Institute for Transportation and Development Policy (2020) proposes the transformation of the Mombasa - Malindi highway passing through the Mombasa CBD and leading up to the ferry terminal corridor for BRT. It is important to note that implementation of the BRT in Mombasa Island is not viable

due to the size of the island being 212.5 square kilometres and its narrow roads which cannot accommodate the BRT. The implementation of the BRT would mean demolition of houses, buildings and businesses along the road. Some buildings along the main roads, such as MacKinnon market and Holy Ghost Cathedral, are gazetted as national monuments. However, the upgradation of matatu stages to matatu terminals is a viable solution but as proposed with inclusivity to accommodate street traders.

A review of the "Second County Integrated Development Plan (2018-2022) of February 2018 under Infrastructure Development reveals that the County government of Mombasa has limited itself to improvements and expansions of listed roads, ferries, SGR Mombasa terminus, the Container Terminal Port and Moi International Airport as important elements in the transport industry. This appears to be a partial focus and not a comprehensive focus of the transport system for Mombasa.

It is interesting to note while ISUDP-2035 Mombasa recognizes that matatu services are below standard and unsafe for passengers, the former mentioned development plan subsequently developed fails to address itself to a major element of the transport system, the matatus, that caters for majority of the populace of Mombasa.

The study also aimed at understanding the operations of the informal transit industry. This meant analyzing the informal paratransit mode called matatus. Matatu SACCOs play an important role in addressing the concerns of stakeholders and can continue playing the role of integrating the matatus into the proposed comprehensive framework. A recommendation would be to include the informal matatu industry into the more extensive transport system. This can be done by shifting to use higher capacity vehicles because matatus have a seating capacity ranging from 14 to 25 passengers. Therefore, they use the road space less efficiently than buses with a minimum capacity of 50 passengers. This would be such a significant step in creating a transport system that integrates rather than alienates the matatu industry.

5.3.13.2Inclusivity of Other Transport services

The upgraded matatu stages or BRT stations should allocate space for other types of transport such as the tuk-tuks and boda-boda. This will minimize the negative appropriation of space along roads, junctions and pathways by the other types of transport services.

As emphasized by Paul Bohannan, George Dalton (1968) and Stasik and Cissokho (2018) in *Markets in Africa* and *Bus Stations in Africa*, respectively, **both the markets and bus stations have various functions beyond the economic functions. These two spaces are loaded with social, economic, political and cultural significance.**

In conclusion, creating a comprehensive Transport-Market system is critical if the Mombasa County aspires to effectively address the multitude of issues caused by and associated with rapid urbanization.

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APPENDICES

Appendix 1: Observation Checklist

The following parameters were in the mind of the research to take note, pictures and sketches that would build up on the study

Urban Design Parameters	
1. Location 2. Adjacent Land use 3. Accessibility 4. Walkability	
Architectural parameters	
Transport Node	Street Market
1. Spatial organization 2. Routes of movement 3. Types of structures 4. Parking spaces 5. Waiting area 6. Any support amenities 7. Times of operation 8. Street furniture	9. Spatial organization of the trading space 10. Types of structures 11. Types of display facilities in use 12. Types of good being sold 13. Times of operation
Relationship of the Matatu stage to the street and vendors Any sharable space?	
Place Value Urban Elements	
1. Landmarks 2. Sense of enclosure 3. Layering of space. This refers to the degree to which people can see or perceive what lies beyond the edge of a street or public space 4. Visual richness	
Any linkages between buildings and the transport node market	

Appendix 2: INTERVIEW SCHEDULE FOR INFORMAL TRADERS

1. Who are your main customers?
2. When are your busiest times of the day and week?
3. How many days do you work here per week?
4. Do you make any payments to the government?
5. How did you acquire this space? Do you make payments for the space and to whom?
6. Do you receive any support from the government in terms of infrastructure: water, electricity, storage facilities, toilet facilities?
7. Where do you buy your goods from?
8. What kind of challenges do you experience as a street trader?
9. What's the relationship between street traders and the matatu system?

Appendix 3: INTERVIEW SCHEDULE FOR MATATU OPERATORS

1. How did the current location become a matatu stage?
2. What routes do you operate?
3. How long have the routes been operating
4. How do the Saccos co-ordinate?
5. What are the times of operation?
6. What are the peak hours or seasons?
7. Are they aware about BRT? Do they have an idea of how to integrate the matatu system into the BRT system?
8. What are the challenges you experience?
9. What's the relationship between street traders and the matatu system?

Appendix 4: INTERVIEW SCHEDULE FOR LOCAL AUTHORITIES

1. What are the current plans for the management of the informal street traders in Mombasa?
2. What departments have responsibilities managing the informal sector in Mombasa?
3. What are the main challenges of managing the informal economy in Mombasa? This includes the matatus and the street traders
4. What improvement plans does the county have for the matatu stage and in the informal traders around it?
5. Is there any master plan provided for the upgrading of the matatu terminal as indicated in ISUDP-Mombasa 2035?
6. In there any plan of integrating the matatu system into the BRT system?

Appendix 5:

S/No 981

DIRECTOR CITY INSPETORATE RECEIVED 20 DEC 2021 CITY OF MOMBASA

UNIVERSITY OF NAIROBI
Faculty of Built Environment & Design
DEPARTMENT OF ARCHITECTURE
E- mail: architecture@uonbi.ac.ke

P.O. BOX 30197,
Nairobi, Kenya
Telephone: 2724528
Telegrams: Varsity

Our Ref: UON/CAE/ABS/SF

15th December 2021

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: MS. ASYA ESSAJEE - TUTORIAL FELLOW, DEPARTMENT OF ARCHITECTURE AND 2ND YEAR, MASTER OF ARCHITECTURE CANDIDATE

The above named is a member of the Teaching staff in the Department of Architecture, University of Nairobi as Tutorial Fellow and also a registered Candidate for Master of Architecture degree in the Department of Architecture, University of Nairobi. She is currently carrying out Fieldwork for her Research and is expected to complete the course in August 2022.

We are kindly asking for your assistance to enable her collect the data she requires for her academic work. Any assistance accorded to her will be highly appreciated.

The information so obtained will be used for learning purposes only.

Yours sincerely,

CHAIRMAN
DEPARTMENT OF ARCHITECTURE
& BUILDING SCIENCE
UNIVERSITY OF NAIROBI

Arch. Musau Kimeu
CHAIRMAN
Department of Architecture

MK/ang