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**AN EXAMINATION OF FACTORS INFLUENCING SAFETY WITHIN THE
BODABODA TRANSPORT SECTOR IN KENYA**

Evanson Mwaengo Mugwe

MPPM /079154/14

A research dissertation submitted to Strathmore University in partial fulfilment of the
degree of Master of Public Policy Management of Strathmore University



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June 2018

Approval

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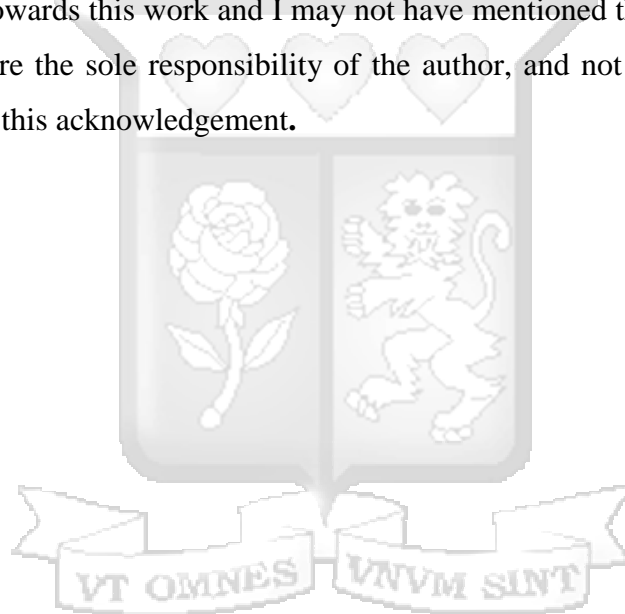
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DEDICATION

This dissertation is dedicated to my parents, the late Stephen Mugwe and Mrs Christine Mugwe. Their love and dedication has always been a source of inspiration.



ABSTRACT

The purpose of the study was to examine factors influencing safety within the bodaboda transport sector. The study was restricted to Lang'ata Sub-County as the area typically has a wealth of bodaboda operators. The objectives of the study were to examine to what extent flexibility and accessibility, affordability, employment opportunities and informality influenced safety within the bodaboda transport sector. Data was collected using questionnaires and analysed using descriptive statistics. The findings generally revealed that most bodaboda operators are young males below the age of 30 who in a desperate quest to find employment/incomes opt to engage in the bodaboda transport business. Indeed, the findings revealed that the overwhelming quest for incomes drove most bodaboda operators to unsafe operations including over speeding, non-use of helmets and carrying more than the prescribed one passenger per trip. Lastly the study recommended the formalisation of the sector in order to enhance regulation and management, which in turn will reduce the incidence of accidents in the sector.

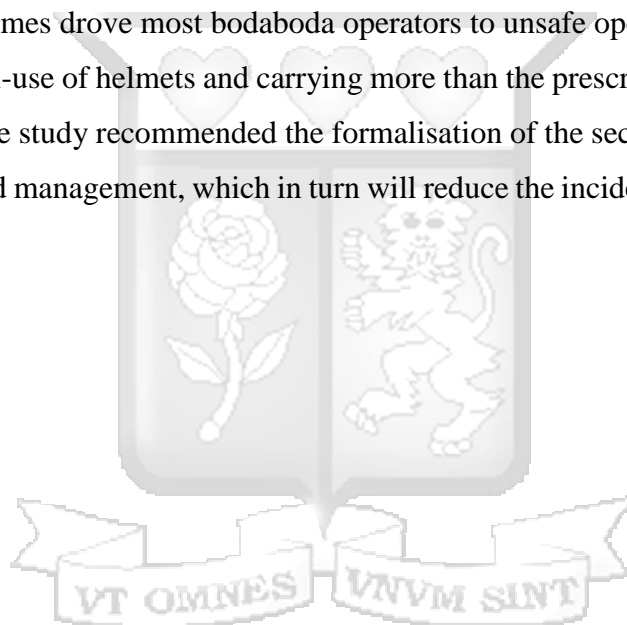


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LIST OF ABBREVIATIONS

ACEM-	Association des Constructeurs Européens de Motocycles
CSSJ-	Canadian Social Science Journal
EU-	European Union
INTP-	Integrated National Transport Policy
KEPSA-	Kenya Private Sector Alliance
NMSAP-	National Motorcycle Safety Action Plan
NPS-	National Police Service
NSWRTA-	New South Wales Roads and Transport Authority
NTSA-	National Transport and Safety Authority
PPE-	Personal Protective Equipment
PPP-	Public Private Partnerships
PSV-	Public Service Vehicle
USA-	United States of America
USDT-	United States Department of Transportation
WBSCD-	World Business Council
WHO-	World Health Organisation



DEFINITION OF TERMS

<i>Bodaboda-</i>	motorcycle ordinarily used as a means of transport within East Africa
<i>Data reliability-</i>	refers to data repeatability or consistency
<i>Manoeuvrability-</i>	the quality of moving freely
<i>Public transport-</i>	a system of buses, trains etc. running on fixed routes on which the public may travel
<i>Safety-</i>	freedom from danger, risk or injury
<i>Socio-economic-</i>	circumstances involving both economic and social factors



CHAPTER 1:INTRODUCTION

1.1 Overview

This chapter attempted to first provide a background to the study. Essentially, such background detailed a brief history of the emergence of the bodaboda transport mode. Secondly, the chapter proceeded to set out the statement of the problem under inquiry. From the statement of the problem, the research objectives and questions were provided. Finally, the chapter set out the justification and scope of the study.

1.2 Background of the Study

Despite the presence of numerous matatus and buses within the context of public transport in Kenya, the demand for public transport particularly in the large urban areas of Nairobi, Kisumu, Mombasa and Nakuru is still largely unmet. This shortfall, coupled with a move 7 years ago by the then Finance Minister, Amos Kimunya to zero-rate all motor-cycles below 250cc in a populist move to provide employment to the youth and a means of transport has now ensured that motorcycle transport popularly referred to as 'bodaboda' has become a ubiquitous feature of Kenya's public transport (Achuka, 2015).

According the Traffic Act, Laws of Kenya, (Cap 403, 1989) a motorcycle is defined as a motor vehicle with less than four wheels the weight of which unladen does not exceed eight hundred weights. Popularly referred to as 'bodaboda' in Kenya, the motorcycle has rapidly become a significant mode of public transport in Kenya and the East African region. The ancestor of the bodaboda-taxi in Sub-Saharan Africa is the bicycle-taxi used in the transport of men and goods in especially rural areas since colonial times. Bodaboda as a transport mode within the East African region grew from small beginnings in the late 1960s at Busia (Malmberg, 1994).

The term 'bodaboda' is itself a corruption of the term 'border border' and it formerly was used to describe a transport service provided on a man's bicycle which was equipped with a padded cushion fitted over the rear carrier. However, come the early 1990s, the bicycle-based carriers started to compete with light motorcycles that significantly extended the range and load carriage of services. Currently, bodabodas typically meet short-distance, low capacity transport demands particularly within

areas that are not otherwise accessible by conventional transport modes such as motor-vehicle transport.

The number of motorcycles all over the world has increased tremendously over the last decade. In countries in Sub-Saharan Africa, Latin America and Asia, the increased use of motorcycles as a preferred means of public transport has been attributed to their ease of manoeuvrability, ability to travel on poor roads/rough terrain and of course presence of ready demand. Indeed, commentators have cited other advantages of motorcycle transportation -“Boda-boda”- as being inexpensive, quick, evades traffic, can use narrow paths in peri-urban areas, available day and night and can also be fun to ride (Odera, 2009).

In Taiwan for example, by 2007, the number of automobiles per ten thousand people was 2500 while motorcycles were 5000 (Pochet, 2007). Even the Global Financial Crisis of 2008 could not slow down the growth in motorcycle numbers; the global motorcycle market grew 6.5% in 2008. Unfortunately, in tandem with this growth, there has also been an increase in road accidents, traffic management problems, pervasive noise and an increase in local air pollution and greenhouse gas emissions (Kumar, 2011).

According to WHO (2013), road crashes kill at least 1.3 million people each year and injure 50 million worldwide, a toll greater than deaths from a disease such as malaria as reported by World Health Organization (WHO). Ninety percent of these casualties are in low and middle-income countries. Also, according to the stated WHO study, each year 260,000 children die on the roads and another million are seriously injured, often permanently disabled. By 2015 road crashes as reported by World Health Organisation were the leading cause of premature death and disability for children aged 5 years and above.

The road injury epidemic is a crisis for public health and is a major contributor of poverty. Ward and Billingsley (2009). Despite the above shortcomings, the bodaboda sector does have significant positives. Economic growth in Kenya has been fuelled by public investment in infrastructure, including railways, roads and energy, as well as domestic consumption. This growth model has generated high economic growth, and

also some jobs. However, these jobs are neither sufficient nor sufficiently productive as stated in the Kenya Economic Update of March 2016. Unemployment among the youth (who constitute 35% of Kenya's population) stood at 67% as at 2014 according to the Kenya Country Report on Youth Employment of 2014. The National Youth Situation Analysis Report (2009) states that despite Government commitment towards tackling youth unemployment in Kenya, very little by way of a concrete strategy to address the issue has been formulated.

The aforementioned problem of unemployment and under employment has led many Kenyans, in a quest for economic survival, to flock into the bodaboda business. With the volumes of revenue generated, able businessmen actively bought thousands of motorcycles and in the process created jobs for especially the youth (Factors Influencing Motorcycle Transport on Creation of Employment Opportunities in Kenya; A Case of Bungoma South Sub-County, Bungoma County, (2014).

Despite the foregoing mishmash of pros and cons and apart from the Integrated National Transport Policy promulgated in 2009, there has been very little done with regard to the development of a comprehensive transport policy in Kenya. Indeed, the Integrated National Transport Policy hardly gives specific focus on bodaboda transport. With respect to existing legal frameworks including the Traffic Act, Cap 403 and the National Transport and Safety Authority Act, No. 33 of 2012 (Act No. 33, 2012), there are no specific regulations targeting bodaboda transport. There are however several haphazard provisions regulating issues such as wearing of helmets and reflectors, carrying capacity and insurance, scattered rather randomly in the aforementioned statutes. However, there is no specific body of laws/regulations specifically tailored to manage the bodaboda sector.

Ultimately, this study proffered recommendations for inclusion into the existing legal and policy bodaboda safety framework with the hope that the said recommendations would translate to reduced accident (mortality and injury) statistics within the said sector.

1.3 Statement of the problem

Motorcycle injuries constitute a major but neglected emerging public health problem in developing countries and contribute significantly to overall road traffic injuries statistics (Peden et al ,2002). Motorcycle injuries are among the leading causes of disability and deaths and the main victims are the motorcyclists, passengers and pedestrians in their young productive age group (Peden et al ,2002).

Aside from the fact that bodaboda operators have arguably and largely been overlooked in public discourse about road safety, compared to car occupants, motorcycle riders and their passengers are relatively unprotected. The likelihood of serious injury or death faced by motorcyclists is therefore higher than for other groups of users of motorized transport according to the World Health Organisation Motorcycle-Related Road Traffic Crashes in Kenya Facts & Figures Report of 2011. According to the National Transport and Safety Authority Accident Report of 2015, between January and April 2015 bodaboda related road accident fatalities were 804 compared to 734 in the same period in 2014. This represents a rise of 9.5% rise over the same period year on year.

Despite numerous reports highlighting the above-enumerated challenges, there's a serious dearth of studies that specifically seek to address the issue of safety within the bodaboda sector in Kenya. This study came up with specific recommendations for inclusion into the existing bodaboda safety policy framework.

1.4 Research Objectives

The research study was based on the following objectives:

- i. To identify factors driving growth of the bodaboda transport sector.
- ii. To establish which of the drivers of growth of the bodaboda sector most affect safety within the sector.

1.5 Research Questions

Based on the foregoing research questions, the study answered the following questions:

- i. What are the main factors behind growth of the bodaboda transport sector?

- ii. Which of the factors supporting growth of the bodaboda sector most influence safety within the said sector?

1.6 Significance of the Study

It is hoped that findings of this study will help stakeholders in the bodaboda sector to devise appropriate strategies to reduce the number of accidents within the said sector. Bodaboda users will benefit by embracing best practises of using bodabodas while the owners and operators will adopt safer operational procedures and habits. It is also hoped that government will formulate and enforce policies that will enhance safety within the bodaboda sector.

1.7 Scope of the Study

The study was confined to Lang'ata Sub-County in Nairobi County. Naturally, the study's main respondents comprised of bodaboda riders within the said sub-county. This location was selected for its popularity by bodaboda operators as a base for operations. It thus provided sufficient numbers of respondents.

1.8 Conclusion

The bodaboda sector together with its train of benefits and challenges has been scrutinized in the foregoing parts of this study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provides the reviewed literature of the studies that have been done on factors influencing growth of the boda boda sector. Specifically, the chapter provided a review of previous studies on challenges and proffered solutions to the said challenges.

2.2 Factors influencing growth of the bodaboda sector

2.2.1 Flexibility and Accessibility

Bodabodas provide feeder services to disparate modes such as intercity buses, provide access to areas otherwise inaccessible by vehicular modes services or directly compete with other modes for passengers (Mutiso, 2011). Moreover, Mutiso (2011) further states that bodaboda taxis provide ‘for hire’ area wide transport services operating out of “stages which are fairly evenly geographically distributed within most urban areas in Kenya and most of its operators indicated that most of their service trips are to carry passengers to or from work activity destinations.

Outside Kenya, Cervero (2000) opines that in the Philippines, informal operators such as motorcycle riders can easily alter schedules, routes and operating practices in response to shifting market conditions. In Cameroon, the inherent versatility and flexibility of motorcycle taxis is in acute contrast to the rigidity and inflexibility of other established modes such as buses. (Nadwoli, 2014). Nadwoli (2014) states further that to move from one zone to another populations are often obliged to forgo the regular taxi cars to hire the service of a bodaboda which has the possibility to slip between vehicles, baffling the elementary rules of the road code. Otuya et al (2011) states that bodabodas are a low-cost mode of transport which can drastically improve people’s mobility and have realistically been made accessible to most Africans.

2.2.2 Affordability

Affordability refers both to the low cost of acquisition by bodaboda owners and low fares charged by the operators. Cervero (2000) states that commercial motorcycle public transportation continues to prevail in most cities of developing nations, due to

its affordability by all people irrespective of societal socioeconomic statuses. Mutiso (2011) states that Kenyan motorcycle taxis have emerged very recently stimulated by the introduction of a zero-rated import duty on motorcycles below 250 cc in the 2006 national budget, a fact that has seen a tremendous growth in the numbers of bodabodas on Kenyan roads.

According to Wawira (2014), various private sector initiatives have contributed to the increase in bodabodas on Kenyan roads as was the case when Toyota Kenya, through its Tsucho Capital subsidiary when it launched a pilot scheme in Kisumu to empower the bodaboda riders to own motorcycles without collateral. Not to be outdone by Toyota, Yamaha-Kenya in 2013 embarked on a National promotional road show dubbed 'Bike ya Nguvu Bei poa.' Spanning six regions namely Western, Nairobi, Coast, Rift valley, Central and Eastern. Through the road show Yamaha encouraged the youth and other entrepreneurs to take advantage of a unique financing deal that enabled customers to purchase a motorcycle by paying Kshs 350 a day (Wawira, 2014).

Alternatively, bodabodas have become an attractive form of transport because of their relative affordability. In Kisumu and Nakuru, tuktuk and matatu fares are on average higher than bodaboda fares (Mutiso, 2011). Such affordability is not merely restricted to Kenya. In the Dominican Republic the cheapest and most common form of public transportation by 2005 was the motorcycle taxi (Amann and Sieber, 2005). Cervero (2000) further adds that in the Philippines, motorcycle taxis covered the streets in swarms; they stationed in gangs at intersections, outside of supermarkets, in front of bars and near the beaches because of their great demand.

Their charges were the cheapest well under 50 cents to the higher of only one United States Dollar (USD). The fare for Habal-habal trip in Davao City was almost twice that of ordinary tricycles because in most cases, it monopolized certain routes. Moreover, without the side-cabs common to tricycles, it could traverse urban roads under heavy traffic. The new mode for servicing passengers living in areas where roads were not fully developed as well as during peak traffic hours in the urban city is getting encouraged.

2.2.3 Employment opportunities

In a majority of cities in developing countries, the private sector is the dominant supplier of public transport services and provides employment to a large number of people. A case in point is that of Lagos for example, where there are over 100,000 minibuses and 200,000 commercial motorcycles, providing direct employment to over 500,000 people (Nadwoli, 2014). Assuming one public transport worker per household (with an average household size of 5) then, well over two million people receive their sustenance from the sector (or 15 percent of the total population) (Nadwoli, 2014).

Cervero (2000) noted that informal transport such as motorcycle taxis in most impoverished cities, comprises as much as 15% of total employment in the said cities. In Dhaka, Bangladesh the figure is close to 30% with a good 100,000 plus men and boys hauling patrons and goods abroad Pedit cabs for a living. Adding in intermediate goods and services like vehicle maintenance and local vehicle production, assemblage, and parts retaining, increases the percentage even more. The use of motorcycle for public transportation came into Nigeria out of necessity where most workers who were retrenched from their work places because of the economic downturn in the early eighties had to resort to using their motorcycles to start carrying passengers from one point to the other as a means of sustenance especially in the urban centres of the country (Hook, 2006).

The unemployment rate in Kenya was last reported at 40 percent in 2011 (Wawira, 2014). Overall, unemployment rates in rural areas are much lower than those in urban areas. Nadwoli (2014) states that overall unemployment rates in rural areas are much lower than those in urban areas. This is partly because many young people migrate to urban areas to look for employment. As far as the economic survey 2010 stated, the total number of units (vehicles) registered in Kenya experienced a 32.8 percent increase in 2009. The increase is mainly attributed to higher registration of motor and auto cycles which rose significantly accounting for 56.3 percent of total registered units. (Wawira, 2014). As a result, motor cycles have become an opportunity to get into the lucrative transport business. Many bought the motorbikes for their children or brothers to do business with. Others bought these motorbikes and hired idle youth to do business with them and give them a certain amount of money at the end of the day (Wawira, 2014).

2.2.4 Informality of operations

Wawira (2014) states that hordes of young male youth find it easy to enter the bodaboda transport business due to the relative ease of operating motorbikes as opposed other transport modes including buses which require formal training. With regard to training and capacity within the bodaboda sector in Kenya, there appears to be a lack of approved training schools, which may perhaps explain the high incidence of accidents among bodaboda riders. Hurt et al, observe that most motorcycle riders in accidents are essentially bereft of training. Of the said riders, 92% were self-taught or learned from family or friends.

The training capacity problem in Kenya is perhaps in line with general trends in Kenya among road public transport operators. Indeed, this problem of inadequate training appears to pervade the entire Kenyan public transport sector. According to Moraa, (2010), generally 75% of PSV drivers were not adequately trained. PSV driver training is monopolized by commercial driving schools which are not subjected to any inspections by the government (Chitere, 2006 & Moraa, 2010). Indeed WHO (2012) reports that 34 out of 100,000 people die as a result of motorcycle accidents in Kenya. On the other hand, riding a motorcycle in the State of Michigan in the United States of America requires one to have his or her license endorsed by acquiring an endorsement referred to as a C-Y which requires one to have passed a written knowledge test and a skills test.

The skills test measures basic riding to see if the rider can handle normal and hazardous traffic situations (Carrie, 2010). As a result, only approximately 12 out of 100,000 people die as a result of motorcycle accidents in the United States of America. Alternatively, it has proved difficult for the government of Kenya to regulate the bodaboda industry. However, some operational discipline is provided by the “associations” to which the majority of bodaboda operators belong, although most have only a local jurisdiction (Wawira, 2014). Indeed, poor regulation of motorcycle transport has been linked to a combination of weak institutions, government interventions that actually distort transport markets, powerful influence of anti-reform stakeholders and infrastructure deficiencies (Kumar, 2011).

As a result of this, organisation and ownership of systems within the bodaboda sector in the developing part of the world is characterised by haphazard and uncoordinated operations. Poor policing and enforcement of existing traffic rules in Kenya provides rich incentives for mostly young male youth to venture into the bodaboda transport business (Wawira, 2014). Further, institutional fragmentation in the road safety sector has been identified as a key contributor to the lack of a comprehensive approach to regulating the conduct of public service vehicle drivers in Kenya (Chitere & Kibua, 2004).

Indeed, Chitere & Kibua, (2004) further opined that the lack of a clear policy guideline on whether the government favours private or public transportation is a serious institutional constraint that has created a situation where there is no clear strategy around what is ideal as a way to meet the demands of public transport in Kenya. Indeed, this policy/strategy lacuna has created opportunities for all and sundry to get into the bodaboda transport business without due regard to issues around training, registration, compliance or even suitability of individuals to provide bodaboda transport service.

2.3 Research Gaps

The dearth of data supporting the putative correlation between factors including training, use of safety gear and inadequate policing and suspected resultant accidents poses a serious challenge to this study. This problem is associated with the fact that the sector is largely informal hence poorly researched. Also, obtaining reliable data specific to accidents caused or involving bodabodas remains a daunting challenge.

Additionally, the issue of corruption as a contributory factor in road traffic accidents is poorly supported by research or previous studies. Thus, corruption as a contributory factor is largely supported by a preponderance of anecdotal accounts over empirical data. The reliability of such anecdotal data cannot be verified.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focused on the research methodology used in carrying out the study. It covered research design, population and sampling, data collection methods, data analysis approaches, research quality and ethical issues under consideration.

3.2 Research Design

Essentially, this study employed a quantitative design. Quantitative research is the systematic investigation of observable phenomena via statistical techniques. Quantitative studies were preferred in this study because they enabled use of statistics to generalize findings and also because they are great at establishing relationships between variables especially when establishment of cause and effect is desired. Lastly, quantitative studies were preferred because they enhanced objectivity and reduced bias as the researcher will in no way influence responses from respondents. The study identified gaps in the existing bodaboda transport safety policy framework in Kenya which in turn informed proposed remedies thereof.

3.3 Population and Sampling

The study population comprised of bodaboda riders or operators within Lang'ata Sub-County within the larger Nairobi County. According to the Commission on Revenue Allocation (CRA) Report on Kenya Country Facts, 2011, the population of Lang'ata Sub-County is said to consist of 11.3% of the entire population of Nairobi County

With respect to establishing a representative sample size, I employed the use of Slovin's Formula as follows: -

$$n = N / ((N - 1) E^2 + x)$$

Where n= number of samples

N= total population

E= error tolerance=0.05

X=95% confidence level

As far as National Transport and Safety Authority is concerned (the same was confirmed through a phone call as there are no official statistics on bodaboda rider numbers in Nairobi County), there were 130,000 registered bodabodas within Nairobi

County, as at the end of February, 2017. As described earlier, the Commission on Revenue Allocation (CRA) Report on Kenya Country Facts, 2011, states that the population of Lang’ata Sub-County is said to consist of 11.3% of the entire population of Nairobi County. Therefore, based on that, I approximated the population of bodabodas in Lang’ata Sub-County to be 11.3% of 14444.44 (population of bodabodas in Lang’ata Sub-County) which gives a population of approximately 1633 bodabodas in Lang’ata Sub-County.

Thus, to solve for

$$n = \frac{N}{([N-1]E^2 + x)} = \frac{1633}{([1633-1]0.05^2 + 0.95)} = 312$$

I thus used a sample size of 312 bodaboda operators

The study employed convenience sampling method for reasons of convenience and affordability.

3.4 Data Collection Methods

The data collection instrument used in the study was questionnaires.

3.4.1 Questionnaires

Questionnaires are primarily useful for collecting primary data since the respondents can read and then give responses to each item. The main advantage of questionnaires is that they can reach a large number of subjects (Orodho, 2004). The questionnaire will be administered to bodaboda operators, members of the public, NTSA and police officers. The questionnaire for bodaboda operators had 2 sections: - general information questions and safety questions.

3.5 Data Analysis

Data was analysed and presented using descriptive statistics. The data was then presented through frequency distribution. Inferences were then drawn from the frequency distribution.

3.6 Research Quality

External validity is the degree to which results from a study can be generalized to other places, time periods, subject populations, etc. (Eller, Gerber, & Robinson, 2013).

These aforementioned sampling procedures ensured representativeness of the sample which in turn enhanced the external validity of the study.

Reliability refers to the extent to which results of applying an instrument can be replicated (Eller, Gerber, & Robinson, 2013) and for research purposes, whether the findings of a research can be replicated. A pilot test questionnaire was used for purposes of ensuring reliability is achieved.

3.7 Ethical Considerations

The purpose, importance and indeed benefits of the study were explained to respondents. For example, a formal letter was presented to bodaboda operators. However, bearing in my mind the environment in which bodaboda riders work and also their levels of literacy, an introductory chat detailing the purpose, importance and benefits of the study was also used.

In order to ensure informed consent, respondents were notified of the purpose of the research, the subject matter of the interviews (including what it will not cover), a credible estimate of the length of time that was needed to complete interviews and questionnaires and that their participation in the research process was voluntary. Subsequently, express consent to participate in the study was sought and obtained from the respondents. Data collection only proceeded once informed consent had been obtained and access to consent forms was restricted to the researcher.

For purposes of anonymity, data collection from bodaboda riders excluded the collection of any personal information that could have been used to identify the said drivers and the forms were coded for data collection and analysis purposes. Confidentiality was maintained throughout the research process; no information identifying respondents was disclosed at any time during and after the research process.

Researcher contact details were availed to all the respondents.

CHAPTER 4: DATA ANALYSIS, PRESENTATIONS AND INTERPRETATIONS

4.1 Introduction

This chapter presented and discussed the analysis of the data collected from various respondents. The data was interpreted according to the research questions. The data was analysed and presented in form of frequency and percentage tables.

4.2 Questionnaire Return Rate

This study targeted bodaboda riders within Lang'ata Sub-County of Nairobi County. Out of the 312 intended respondents, only 159 questionnaires successfully administered, yielding a response rate of 51%. Saunders, Lewis and Thornhill (2007) suggested that a response rate of between 30% and 40% was adequate for analysis. Sekaran (2003) posited that a response rate of 30% was sufficient. Hager, Wilson, Pollack and Rooney (2003) and Babbie (2004) posited that a response rate of 50% was acceptable to analyze and publish the findings. Therefore, the response rate of 51% in this study was considered adequate.

4.3 Demographic Characteristics of Respondents

This section presents the demographic characteristics of the respondents with the aim of establishing the general background of the respondents that participated in the study. The areas that were to be discussed include gender, age, educational level, route commonly operated and how long the respondent has been operating bodaboda motorcycle

4.3.1 Gender of the respondents

Out of the 159 interviewed, all the respondents were male. Table 4.2 shows a summary of the gender of the respondents.

Table 4.1 Gender of the respondents

Gender	Frequency	Percentage (%)
Male	159	100
Female	0	0

The data depiction in Table 4.1 makes it very clear that bodaboda transport is a male-dominated sector as 100% of the respondents are male. This may be explained by the inherent dangers and indeed rigours associated with the sector. Bodaboda operations often involve run-ins with disparate road users especially when one considers the lack of dedicated motorcycle/bicycle lanes on most Kenyan roads. Further, the onerous nature of the sector places huge burdens on the human body hence the fact that men are more adapted to the sector.

4.3.2 Age of the Respondents

The study sought to establish the age of the respondents involved in bodaboda operations within Lang'ata Sub-county.

Table 4.2 Age of the respondents

Age Bracket	Frequency	Percentage (%)
30 or less	70	44
31-35	52	33
36-40	34	21
41-45	3	2
More than 45		

As depicted in Table 4.2, the study established that 44% of the respondents are below 30 years of age. This was followed by operators of between age 31-35 representing 33% of the respondents. The group between 36-40 years came third representing 21% of the respondents while the age group between 41-45 years represented only 2% of the respondents. None of the respondents were more than 45 years old. This shows that bodabodas are mainly operated by young men who are mostly fresh from school and who are desperate to make an income.

4.3.3 Experience of the Respondents

The study sought to establish the experience of the respondents interviewed. Table 4.4 summarizes the experience of respondents.

Table 4.3 Experience of the respondents

Experience (years)	Frequency	Percentage (%)
Less than 1	54	34
1-5	89	56
6-10	16	10
11-15	0	0
16-20	0	0
More than 20	0	0

Table 4.3 indicates that operators with less than a year's experience make up 34% of the respondents while those with between 1-5 years of experience make up 56%. Finally, operators with between 6-10 years make up only 16% of the respondents. None of the respondents had more than 10 years of experience in the sector. It is clear that most bodaboda operators are mostly young men who, having no alternative employment, venture into the bodaboda sector to make a living. Further, most operators have less than 5 years' experience in the sector which shows that the bodaboda sector is indeed a relatively new industry.

4.4 Licensing

It has been noted previously in this paper that road traffic accidents are a serious problem in Kenya. In that regard, it was the intention of this study to obtain from respondents their views on licensing, enforcement of traffic regulations, speeding as well as their use of required safety gear. The first question posed to respondents was whether they are licensed to ride bodabodas. Table 4.4 summarizes responses from respondents on the proportion of licensed and unlicensed bodaboda operators.

Table 4.4 Licensing

	Frequency	Percentage (%)
Licensed	88	55
Not licensed	72	45

Table 4.4 shows that 55% of the respondents admitted that they are licensed while a whopping 45% are not. This is consistent with the perception among the vast majority

of respondents that the police and National Transport and Safety Authority do not strictly enforce the traffic code. Additionally, the fact that a majority of respondents are also not licensed to operate bodabodas is consistent with the fact that a majority of them are also not formally trained on how to operate the said bodabodas. This may explain the high rate of accidents experienced in the sector.

It has been noted previously in this paper that the use of helmets and other safety gear reduces death and injury when road accidents occur. It was thus important to assess to what extent respondents in the area of study use the said safety gear.

4.5 Influence of factors on road safety

According to the Traffic Act, Cap 403, Laws of Kenya, motorcycles are proscribed from carrying more than one passenger. This requirement is informed by the fact that motorcycles are more prone to accidents when more than one passenger per trip is carried. Table 4.10 indicates that the majority of respondents at 36% strongly disagree that they carry more than passenger because the fares are low and hence they carry more than one to increase their incomes. On the other hand, most respondents at 63% strongly agree that they carried more than one passenger because passengers requested them to.

Meanwhile, 44% of respondents carried more than one passenger because police routinely ignored the habit and hence knew they could get away with the said habit. Interestingly 38% of respondents strongly disagreed that they carried more than one passenger because they were desperate to increase their incomes as that was their only source of income. It is thus clear that a majority of bodaboda operators carry more than one passenger because of customer requests. This may be explained by the fact that customers have more leverage over the operators than in other modes such as buses, a fact that affirms the flexibility and convenience of bodabodas but which paradoxically exposes both the operator and customers to injury and death as a result of the heightened likelihood of accidents.

Table 4.5 Rating the influence of factors on road safety

Statements	Strongly Agree		Agree		Strongly Disagree		Disagree	
	Frequency	%	Frequency	%	Frequency	%	Frequency	(%)
You carry more than one passenger because the fees from only one passenger are low	25	16	30	19	58	36	46	29
You carry more than one passenger because customers request you to	100	63	40	25	10	6	9	6
You carry more than one passenger because the police don't mind	20	12	25	16	70	44	44	28
You carry more than one passenger because I need to maximise my earnings as this is my only source of income	23	15	29	18	61	38	46	29

4.6 Influence of factors on road safety

Speed has been identified as one of the biggest contributors to the high incidence of accidents in the bodaboda sector as operators as speed renders the operators less able to control their motorbikes. Essentially, Table 4.11 below indicates that 44% of

bodaboda operators strongly agreed that they ride fast because of customer requests. On the other hand, 39% of operators disagreed that they ride fast because they are assured of police neglect/ignorance. However, 45% of operators strongly agreed that they ride fast in order to do as many trips as possible as that was their only source of livelihood.

Only 32% of operators agreed that they ride fast since the fares are low and hence need to do as many trips as possible to maximize on their incomes. From the foregoing, it can be inferred that the bodaboda sector is certainly an important employer and that in fact many young people directly depend on it for their livelihood. Indeed, most of the respondents cited the lack of jobs in Kenya as being the primary reason for them opting to engage in the bodaboda business.

Table 4.6 Rating the influence of factors on road safety

Statements	Strongly agree		Agree		Strongly Disagree		Disagree	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
You ride fast because the customer asked you to	70	44	60	38	7	4	22	14
You ride fast because the police will not arrest you	24	15	21	13	52	33	62	39
You ride fast because you need do as many trips as possible as the bodaboda business is	71	45	69	43	5	3	14	9

your only source of income								
You ride fast because the fare is low and you need to do as many trips as possible to maximize your returns	45	28	51	32	32	20	31	20



4.7 Influence of the factors on operators' use of helmets.

Table 4.7 Rating the influence of the factors the use of safety equipment by riders

Statements	Strongly Agree		Agree		Strongly Disagree		Disagree	
	Frequency	%	Frequency	%	Frequency	%	Frequency	(%)
You don't wear a helmet and provide one to the passenger because the police will not arrest me and the passenger	30	19	20	13	76	48	33	20
You don't wear a helmet and provide one to the passenger because I can't afford them	21	13	26	16	52	33	60	38
You don't insist on your passengers to wear helmets because the passengers prefer not to wear them	76	48	71	45	5	3	7	4
You don't wear a helmet and provide one to the passenger because I can easily get away even when	43	27	45	28	36	23	35	22

stopped by the police								
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Table 4.7 above indicates that 48% of respondents strongly disagree that they do not wear a helmet and provide one to their passengers because they are assured of police indifference to the habit while 38% of respondents disagreed that they do not wear and provide helmets to their passengers because they cannot afford them. On the other hand, 48% of respondents strongly agreed that they did not insist on the passengers wearing helmets because the said passengers did not want to wear them.

Only 28% of respondents however, agreed that they did not wear and provide helmets to their passengers because they could easily ‘slip away’ from arrest. It can be inferred from the foregoing that helmet wearing habits are largely influenced by passenger attitudes. Such is the desperation for income that operators feel obliged not to repel customers by insisting on them wearing helmets. This underpins the critical importance of the bodaboda sector as an employer/source of income to the extent that income-earning seemingly trumps safety considerations during operations.

4.8 Discussion of Findings

From the study, all the respondents were male, a fact that confirms that the bodaboda sector is indeed a male-dominated field. This may be explained by the fact that operations are largely rigorous and physically demanding hence their suitability to male operators. Additionally, most respondents were found to be less than 30 years of age which confirms that the sector is dominated by mostly young males who are forced by chronic unemployment to seek employment in the sector. Indeed, the study found that most of the respondents had less than 5 years’ experience in the sector, a fact that further corroborates bodaboda sector’s importance as a source of employment for young males in Kenya. The study also revealed that almost half of all respondents were not licensed to operate motorcycles. This may also indicate that a majority of operators are not formally trained, a fact that certainly explains the high incidence of accidents in the sector.

CHAPTER 5: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarized, discussed and made conclusions on the findings of this study in relation to the objectives put forward in chapter one. It also discussed the recommendations for further research as well as recommendations for policy and practice.

5.2 Discussion according to Research Objectives

5.2.1 Flexibility and Accessibility

It is clear from the data depicted in chapter 3 that the findings largely do not support the influence of flexibility and accessibility on safety within the bodaboda sector. While flexibility and accessibility are attractive to customers especially in gridlocked urban centres as was stated by Nadwoli (2014) where he stated that to move from one zone to another populations are often obliged to forgo the regular taxi cars to hire the service of a bodaboda which has the possibility to slip between vehicles, baffling the elementary rules of the road code, findings do not support the assertion that flexibility and accessibility substantially influences safety within the bodaboda sector.

5.2.2 Affordability

Despite affordability being identified as a key attraction for customers in most urban areas in Kenya as Mutiso (2011) stated, from the findings of the study, it is clear that affordable fares had very little effect on operators' propensity to ride their motorbikes at high speed. The same position holds in findings on the influence of low fares on operators' need to carry more than one passenger per trip.

5.2.3 Employment Opportunities

The need for incomes is certainly the biggest contributor to reckless behaviour in the bodaboda sector. The findings reveal that most operators draw all their incomes from the bodaboda business and as such are at the mercy of customers as in the case of customers requesting operators to carry additional customers, a fact that increases the likelihood of accidents in the sector. The study also revealed that customers literally choose whether to wear a helmet or not, with most operators left with no choice but to

ferry their customers devoid of helmets. Indeed, the study revealed that a considerable proportion of operators engaged in over speeding at the request of their customers, a fact that grounds the operators' need to secure incomes as being more important than safety. The findings are fairly in line with the majority of previous studies depicting the quest for incomes/employment as being the foremost consideration of operators in the bodaboda sector.

5.2.4 Informality of Operations

The study also revealed that the bodaboda sector is largely informal. The high number of unlicensed operators certainly supports the aforementioned observation. Poor enforcement of traffic rules especially when it is considered that most operators acted not in conformity with laid down traffic rules but in conformity with customer wishes was also revealed by findings of the study.

5.3 Conclusions

From the analysis above it can be concluded that the informal transport sector is growing at a rapid rate. The study results indicated that the main factor contributing to the growth of bodaboda business which is part of the informal transport sector is the high unemployment rate especially amongst the youth.

Indeed, the bodaboda industry has made a significant contribution to the conduct of economic and social activities which includes providing services in circumstances where other means of transport are unavailable and keeping youth engaged in some form of income generating activity which obviously tempers the hardships associated with unemployment.

However, the study also revealed that it is in fact the desperate quest for income that is the biggest contributor to accidents in the bodaboda transport sector. The compelling need for as many trips as is possible informs the unfortunately high incidence of over speeding which itself exposes riders to accidents. Moreover, bodaboda operators feel compelled to follow customers' whims as for example in the case of carrying more than one passenger per trip and the reluctance by customers to wear helmets, a fact that often lends itself to reckless behaviour on the roads.

5.4 Recommendations

From the analysis above it is clear that the bodaboda sector is now an important mode of transport and most importantly, a vital source of employment for multitudes of young Kenyans. Indeed, the sector is now an important contributor to the economy of Kenya.

Unfortunately, the sector is still largely informal, meaning most of the operations are not properly regulated. This lack of regulation supports the frequent cases of reckless operator habits including over speeding, carrying more than one passenger per trip and poor use of helmets. Interestingly, the importance of the sector as a source of employment largely contributes to unsafe operations as operators find themselves at the mercy of their customers particularly where such customers desire unsafe habits such as over speeding, non-use of helmets and the carrying of excess passengers.

There is thus an urgent need to mainstream the bodaboda sector into the overall road transport sector in Kenya. At the moment, the sector is given short shrift with the result that it is currently informally run despite its significant social and economic standing in Kenyan society. Indeed, such mainstreaming would ensure that the sector is considered whenever regard is given to road transport, employment, public health, infrastructural development and security. Also, the Treasury, Labour and Transport

Ministries, in conjunction with the Kenya Revenue Authority should promulgate a policy framework geared towards incentivizing income earning within the sector in order to enhance creation of formal employment and derivation of tax revenues from the said sector. Additionally, formalisation of operations would improve regulation, particularly enforcement of the traffic code by police officers, a fact that would deter errant behaviour both by the operators and their customers.

Lastly, it is vitally important for the sector to have specific policy and legal frameworks geared towards addressing all social, economic and legal concerns inherent in the said sector.

5.5 Suggestions for further research

Studies should be undertaken to establish whether the age of bodaboda operators has any influence on the likelihood of such operators causing road accidents. Also, further

studies should be done to find out to what extent corruption affects safety in the bodaboda transport sector.



REFERENCES

- Achuka, V. (2015, May 10). "Bodaboda: Two-faced crime spinner or economy driver?". Retrieved from Business Daily Website: <http://www.businessdailyafrica.com/markets/Boda-Boda-Transport-Crime-Motorcycles/539552-2712010-wnqmq/index.html>
- Amann, D., & Sieber, N. (2005). Transport in developing countries: renewable energy versus energy reduction. *Transport Reviews*, 25(6), 719-738.
- Association des Constructeurs Européens de Motocycles. (2004). *Guidelines for PTW – safer road design in Europe*. ACEM.
- Babbie, E. (2013). *The basics of social research*. Wadsworth: Cengage Learning.
- Carrie, L. S. (2010, November 15). *Training for the public motorcycle endorsement in Michigan*. Retrieved from http://www.michigan.gov/sos/0,4670,7-127-1627_46351_61092---,00.html
- Center for Active Design . (2016). *Vision Zero: Learning from Sweden's successes*. Retrieved from Promoting health through design: <http://www.centerforactivedesign.org/visionzero>
- Chitere, P. (2006). *Public service vehicles in Kenya; their characteristics and compliance with traffic regulations and prospects for the future*. Nairobi: Institute of Policy Analysis and Research (IPAR).
- Chitere, P., & Kibua, T. (2004). *Efforts to improve road safety in Kenya: Achievements and limitations of reforms in the matatu industry*. Nairobi: Institute of Policy Analysis and Research (IPAR).
- Edson, C., & Tandoc, J. (2007). *Motorcycle epidemic deaths and injuries*. Manila, Philippines : De La Salle University, Manila .
- Eller, W., Gerber, B., & Robinson, S. (2013). *Public administration research methods: tools for evaluation and evidence-based practice*. New York: Routledge.
- Elliot, M. A., Banghan, C. J., & Sexton, B. F. (2007). Errors and violations in relation to motorcyclists crash risk. *Accident Analysis and Prevention*, 39, 491-499.
- FRSC. (2007). *An article on FRSC Establishment Act*. Retrieved from Federal Road Safety Corps: <http://www.frsc.gov.ng>.
- Government of Kenya (GOK). (2009). *Integrated National Transport Policy, 2009*. Nairobi: Ministry of Transport-Kenya.

- Haddak, M., Pochet, P., Licaj, I., Vari, J., & Mignot, D. (2010). Socio-spatial inequalities in road traffic risk and daily travel in adolescence. *WCTR*, 10-19.
- Hager, M., Wilson, S., Pollak, T. H., & Rooney, P. M. (2003). Response rates for mail surveys of nonprofit organizations: A review and empirical test. *Nonprofit and Voluntary Sector Quarterly*, 32(2), 252-267.
- Hook, W. (2006). Urban transportation and the millennium development goals . *Global Urban Development Journal*, 2(1), 13-34.
- King'ori, Z. (2007). *Nairobi urban transportation challenges*. Retrieved from SCRIBD: <https://www.scribd.com/doc/2369220/Final-Report-Nairobi-City>.
- Kumar, A. (2011). *Understanding the emerging role of motorcycles in African cities: A political economy perspective*. Washington D.C: World Bank.
- Malmberg, C. (1994). *Case study on intermediate means of transport: bicycles and rural women in Uganda*. Washington D.C: World Bank.
- Manyara, C. G. (2016). *Combating road traffic accidents in Kenya: A challenge for an emerging economy*. In *Kenya After 50* . New York: Palgrave Macmillan.
- Matheka, D. M., Kipsaina, C., & Witte, J. (2015). Road traffic injuries in Kenya: a survey of commercial motorcycle drivers. *Pan African Medical Journal*, 21(1), 1-9.
- Mugenda, O. (1999). *Research Methods: Quantitative and qualitative approaches*. Nairobi: African Centre for Technology Studies.
- Mutiso, W., & Behrens, R. (2011). *'Boda Boda' bicycle taxis and their role in urban transport systems: case studies of Kisumu and Nakura, Kenya* . Nairobi: SATC .
- Naddumba, E. K. (2004). A cross-sectional retrospective study of boda boda injuries at Mulago hospital in Kampala-Uganda. *East and Central African Journal of Surgery*, 9(1), 1-4.
- Nandwoli, F., & Wekesa, N. (2014). *Factors influencing motorcycle transport on creation of employment opportunities in Kenya; A case of Bungoma South Sub-County* . Nairobi: University of Nairobi (Unpublished Master's Thesis).
- Nyatundo, O. (2013). *Factors influencing accident rates among motorcycle operators in Kisii town* . Nairobi: University of Nairobi (Unpublished Master's Thesis).
- Orodho, J. A. (2004). *Elements of education and social science research application in education and social sciences* . Nairobi: Masola Publishers.

- Otuya, W. I., Achoka, J. S., Musebe, R. O., & Achar, G. O. (2011). Management of Bicycle Taxi Operations in Kenya; A Case of boda boda in Kakamega town. *International Journal of Current Research*, 5(3), 13-25.
- Peden, M., McGee, K., & Sharma, G. (2002). *The injury chart book: A graphical overview of the global burden of injuries*. Washington: World Health Organization.
- Republic of Kenya. (1989). *Traffic Act of 1989*. Nairobi, Kenya: Government Printer.
- Republic of Kenya. (2012). *National transport and safety authority act of 2012*. Nairobi, Kenya: Government Printer.
- Rizzi, M., & Strandroth, J. (2011). The potential of different countermeasures in reducing motorcycle fatal crashes: what in-depth studies tell us. *Enhanced Safety of Vehicles*.
- Road and Traffic Authority. (2010). *Higher mass limit*. New South Wales: New South Wales Roads and Transport Authority.
- Road Safety Authority. (2014). *National Motorcycle Safety Action Plan (2010-2014)*. Dublin: Road Safety Authority-Republic of Ireland. Retrieved from Road Safety Authority (Republic of Ireland) : http://www.rsa.ie/Documents/Road%20Safety/Motorcycles/National_Motorcycle_Action_Plan.pdf
- Rodrigue, J. P., Comtois, C., & Slack, B. (2016). *The geography of transport systems*. New York: Routledge.
- Sekaran, U. (2003). *Research methods for business*. Hoboken, N.J: John Wiley & Sons, Inc.
- Solagberu, B., Ofoegbu, C., Nasir, A., Ogundipe, O., Adekanye, A., & Abdur-Rahman, L. (2006). Motorcycle injuries in a developing country and the vulnerability of riders, passengers, and pedestrians. *Injury Prevention*, 12, 266-268.
- Taiwo, S. (2007). *Motorcycle accidents in Nigeria*. Abeokuta: Bolatito and Sons Ltd.
- Thiel, S. V. (2014). *Research in public administration and public management: an introduction*. New York: Routledge.
- Tunde, A. G., Taiwo, O. A., & Matanmi, O. G. (2012). Compliance with Road Safety Regulations Among Commercial Motorcyclists in Nigeria. *Canadian Social Science*, 8(1), 92-106.

- UK Government Policy . (2015). *2010 to 2015 government policy: road safety*. London: UK Government.
- UNICEF. (2009). *The Kenya national youth situation analysis report, 2009*. Nairobi: UNICEF.
- Wachira, L. M. (2014). *Integrating motorcycle transport in the urban transport planning in Nairobi County: Case study of Thika Super Highway*. Nairobi: University of Nairobi (Unpublished Master's Thesis).
- Wasike, W. (2001). *Road infrastructure policies in Kenya: Historical trends and current challenges. KIPPRA Working Paper No. 1.* . Nairobi: Kenya Institute for Public Policy Research and Analysis (KIPPRA).
- Wawira, V. G. (2014). *Factors influencing growth of informal transport sector: A Case of Bodaboda Transport in Central Division, Embu West District*. Nairobi: University of Nairobi (Unpublished Master's Dissertation) .
- World Bank. (2013). *The World Bank and Economic Commission for Africa mediation of sex in Southwest Uganda*. Washington D.C: World Bank.
- World Bank. (2016). *Kenya economic update, March 2016 : Kazi ni kazi - informal should not be normal*. Nairobi: World Bank Group.
- World Health Organisation . (2013). *Global status report on road safety*. Washington D.C: World Health Organization.
- World Health Organisation. (2012). *Global status report on road safety*. Washington D.C: World Health Organization.
- Zaal, D. (1994). *Traffic law enforcement: A review of literature. Report No.53.* . Nijmegen: Accident Research Centre: Monash University.

APPENDICES

APPENDIX A: Letter of Introduction

EVANSON MWAENGO MUGWE
P.O BOX 32173-00600
NAIROBI

Dear Sir/Madam

RE: Research Questionnaire

I am a Master in Public Policy and Management student at Strathmore Business School. My research project is entitled, “**An Examination of Factors Influencing Safety within the Bodaboda Transport Sector in Kenya**”. Essentially, the purpose of my study is to propose remedial recommendations to stakeholders in the bodaboda sector so that the said recommendations may be used to formulate policies that will enhance safety in the bodaboda sector.

Pursuant to the above-stated objective, it is incumbent on me to gather quantitative data for purposes of establishing key facets within the above-stated framework. In order to gather data for the research study, I have prepared a suitable questionnaire to be filled out by bodaboda riders. Pursuant to the above, I kindly request for your assistance in this academic endeavour by filling out the said questionnaire in full. Please note that your responses are extremely valuable to this research study.

Finally, your identity shall not in any way be revealed and your responses shall be kept strictly confidential at all times.

Thank you in advance for your co-operation. Feel free to contact on me on either of the following:-

0717110043 or tajebu79@gmail.com

Yours faithfully,

EVANSON MWAENGO MUGWE

APPENDIX B: Questionnaire for bodaboda operators

Instructions for filling out the questionnaire

- I. This questionnaire requires you to provide honest responses.
 - II. Please do not write your name on the questionnaire.
 - III. Your responses will never be linked to you personally.
 - IV. Your participation in this survey is entirely voluntary.
- Thank you for your co-operation.

Bodaboda Operators

Section A: General Information

In this section you are kindly requested to provide your personal information by ticking (☐) where appropriate.

1. What is your gender Male Female
2. How old are you
 30 years or less
 31 – 35 years
 36-40 years
 41- 45 years
 more than 45 years
3. In which areas around Lang'ata do you operate?
 Otiende
 Estates (Ngei 1 & 2, Akiba, Rubia, Southlands, Customs,)
 Nairobi Dam Area
 Phenom
4. For how long have you been riding motorcycles in this area?
 less than 1 year
 1-5 years
 6-10 years
 11-14 years
 more than 15 years

Section B: Regulation

1. Are you licensed to ride a motorcycle?

- a. Yes b. No

C.

1. Flexibility& accessibility, affordability, employment and informality negatively affect operators’ attitude towards carrying capacity in the bodaboda sector. Rate the truth of that statement:

4=strongly agree, 3=agree, 2= strongly disagree, 1= disagree

Statement	Please tick <input checked="" type="checkbox"/> appropriately			
	4	3	2	1
You carry more than one passenger because the fees from only one passenger are low				
You carry more than one passenger because customers request you to				
You carry more than one passenger because the police don’t mind				
You carry more than one passenger because I need to maximise my earnings as this is my only source of income				

2. Flexibility& accessibility, affordability, employment and informality negatively affect operators’ attitude towards speeding in the bodaboda sector. Rate the truth of that statement:

4=strongly agree, 3=agree, 2= strongly disagree, 1= disagree

Statement	Please tick <input checked="" type="checkbox"/> appropriately			
	4	3	2	1
You ride fast because the customer asked you to				
You ride fast because the police will not arrest you				
You ride fast because you need do as many trips as possible as the bodaboda business is your only source of income				

You ride fast because the fare is low and you need to do as many trips as possible to maximize your returns				
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3. Flexibility& accessibility, affordability, employment and informality negatively affect operators' attitude towards wearing of helmets in the bodaboda sector. Rate the truth of that statement:

4=strongly agree, 3=agree, 2= strongly disagree, 1= disagree

Statement	Please tick <input checked="" type="checkbox"/> appropriately			
	4	3	2	1
You don't wear a helmet and provide one to the passenger because the police will not arrest me and the passenger				
You don't wear a helmet and provide one to the passenger because I can't afford them				
You don't insist on your passengers to wear helmets because the passengers prefer not to wear them				
You don't wear a helmet and provide one to the passenger because I can easily get away even when stopped by the police				

