

**AN ASSESSMENT OF TRAINING AND SAFETY NEEDS OF  
MOTORCYCLISTS IN KENYA.**

**BY**

**MINJU ELVIS MAINA  
(07/03851)**

**A Thesis Submitted in Partial Fulfillment of the Requirements for the  
Degree of Master of Business Administration (Corporate Management)  
of the School of Business KCA University**

**NOVEMBER 2011**

## DECLARATION

This Research Thesis is my original work and has not been submitted for a degree in any other university or Institution

Minju, Elvis Maina      Sign:..... Date.....

This Research Thesis has been submitted for examination with our approval as university Supervisor.

Dr. Joseph Wadawi      Sign: ..... Date.....

School of Business

KCA University

## **DEDICATION**

This project is dedicated to my loving wife Mercy who has supported me all through morally, physically and emotionally. Special thanks to my two sons, Minju and Mwai and my daughter Becky who showed love, patience and support throughout the course. Their understanding was outstanding. May God bless you all.

## **ACKNOWLEDGEMENT**

My sincere gratitude goes to all those who contributed in one way or another towards the undertaking of the project work.

I would like to thank my lecturers who tutored me throughout the course. Special thanks go to Dr. Joe Kibuye Wadawi who constantly and tirelessly reviewed my work offering valuable guidance and advice.

Finally many thanks to staff of Motorcycle Association of Kenya who assisted and supported me in many ways.

The research work could not have been possible without the kind understanding and perseverance of my dear wife Mercy and our sons and daughter Minju, Mwai and Becky. Many thanks to Almighty God, for his love and blessings.

## ABSTRACT

The motorcycle population in Kenya has soared in the recent past with the motorcycle numbers on Kenyan roads rising to 350,000 units from 30,000 units in seven years (2003 – 2009) according to government economic survey 2009. With the increase in numbers of motorcycles there has been concern as the riders are major causes of fatal road accidents. Riders are not properly trained and this compromise riding standards and road safety as training is inadequate. Motorcyclists can avoid some of the crashes with proper training. Currently some hospitals across the country are dedicating special wards for crash victims because of their numbers and frequency.

The research work analyzed and assessed the safety and training needs that the motorcyclists require in order to reduce accidents on Kenyan roads. The study applied descriptive research to obtain precise information concerning the motorcyclists in Nairobi and five of the suburb towns with a population of one hundred motorcycles each.

A simple random sampling procedure was adopted to select the sample of eighty motorcyclists in each locality after every ten minutes as they arrive at their work stations. Data was collected using questionnaires containing both structured and unstructured questions. After the field work, the questionnaires were checked for completeness, consistency and accuracy then arranged for coding. The data was then transcribed and analyzed using Microsoft excels to generate statistically inferable information.

It was found out that the motorcyclists are male between ages 16-25years, with good basic education, who are self employed with half being married. They are not ignorant of the statutory requirements governing the operations of the motorcycles and they seem to be aware of all the rules. It was established that less than ten per cent have the requisite riding license. Although fifty six per cent indicated that they had actually attended a riding school, only fifty five per cent of those who attended sat for the government test and only fifty three per cent of the ones who sat for the test passed. This shows that only fifteen per cent of the motorcyclists have passed the government test with only six per cent being able to produce their licenses.

# Table of Contents

<b>DECLARATION .....</b>	<b>I</b>
<b>DEDICATION.....</b>	<b>II</b>
<b>ACKNOWLEDGEMENT .....</b>	<b>III</b>
<b>LIST OF TABLES.....</b>	<b>VII</b>
<b>ABBREVIATION.....</b>	<b>VIII</b>
<b>DEFINITION OF TERMS.....</b>	<b>IX</b>
<b>CHAPTER ONE .....</b>	<b>1</b>
1.1    BACKGROUND OF THE STUDY .....	1
1.2    PROBLEM STATEMENT.....	2
1.3    GENERAL OBJECTIVES .....	2
1.3.1 <i>Specific objectives.....</i>	<i>2</i>
1.3.2 <i>Research questions.....</i>	<i>3</i>
1.4    IMPORTANCE OF THE STUDY.....	3
1.5    SCOPE OF THE STUDY.....	4
1.6    CONCEPTUAL FRAMEWORK .....	4
2.0    LITERATURE REVIEW .....	6
2.1    INTRODUCTION .....	6
2.2    DESCRIPTION OF A MOTORCYCLE .....	6
2.3    HISTORY OF MOTORCYCLE .....	6
2.4    POPULARITY .....	7
2.5    MOBILITY.....	8
2.6    TRAINING.....	9
2.7    MOTORCYCLE TRAINING .....	9
2.8    REQUIREMENTS AND INCENTIVE .....	10
2.9    RESEARCH DONE .....	12
2.10   SAFETY .....	12
2.11   ROAD TRAFFIC SAFETY.....	13
2.13   CAUSES OF ACCIDENTS .....	16
2.14   CONSEQUENCES OF ACCIDENTS.....	16
2.15   PERSONAL PROTECTIVE EQUIPMENT .....	17
2.16   FUNCTION OF PPE.....	17
2.17   ITEMS OF PPE .....	18
2.18   CURE OF THE PROBLEM .....	20
2.19   CURRENT LEGISLATIVE .....	21
2.20   TREND IN MOTORCYCLE AS PUBLIC TRANSPORT IN KENYA.....	21
2.21   WHY THE SUDDEN UPSURGE OF MOTORCYCLES.....	22
2.22   EFFORTS GEARED TO STREAMLINE THE INDUSTRY .....	22
<b>CHAPTER THREE .....</b>	<b>23</b>
3.0    RESEARCH METHODOLOGY .....	23
3.1    RESEARCH DESIGN .....	23
3.2    THE POPULATION .....	23
3.3    SAMPLE AND SAMPLING DESIGN .....	23
3.4    DATA COLLECTION METHOD.....	24
3.5    INSTRUMENTATION.....	25
3.6    DATA ANALYSIS AND PRESENTATION .....	25
<b>CHAPTER FOUR .....</b>	<b>26</b>

4.1	INTRODUCTION .....	26
4.2	MOTORCYCLISTS PROFILE.....	26
4.2.1	<i>Gender of the motorcyclists</i> .....	27
4.2.2	<i>Marital Status of respondents</i> .....	27
4.2.3	<i>Age of respondents</i> .....	28
4.2.3	<i>Occupation of respondents</i> .....	28
4.2.4	<i>Education of the respondents</i> .....	29
4.2.5	<i>Courses attended</i> .....	29
4.3	STATUTORY REQUIREMENTS GOVERNING MOTORCYCLE OPERATION .....	30
4.3.1	<i>License required</i> .....	30
4.3.2	<i>Mandatory age of a license holder</i> .....	30
4.3.3	<i>Act governing operation of motorcycles in Kenya</i> .....	31
4.3.4	<i>What to have in order to operate a motorcycle</i> .....	31
4.3.5	<i>Body governing the operations of a motorcycle in Kenya</i> .....	32
4.3.6	<i>Additional requirements the government should insist on to curb an errant motorcyclist</i> .	32
4.4	MOTORCYCLIST COMPETENCY ON THE ROAD .....	32
4.4.1	<i>Whether motorcyclists have attended any training institution in riding</i> .....	33
4.4.2	<i>Riding school attended</i> .....	33
4.4.3	<i>Lessons contained in the curriculum</i> .....	34
4.4.4	<i>Theory and practical lessons contained in the curriculum</i> .....	34
4.4.5	<i>Assessment Test after the course</i> .....	35
4.4.6	<i>Fees paid for the course</i> .....	35
4.4.7	<i>Government test after the course</i> .....	36
4.4.8	<i>Passing the government test</i> .....	37
4.4.9	<i>License number</i> .....	37
4.4.10	<i>Period license held</i> .....	37
4.4.11	<i>What motorcyclists should do to improve competency</i> .....	38
4.5	SAFETY GEAR.....	38
4.5.1	<i>Riding gear usually worn</i> .....	39
4.5.2	<i>Whether ever involved in an accident</i> .....	39
4.5.3	<i>The person to blame in the opinion of the respondent</i> .....	40
4.5.4	<i>The other party in the accident</i> .....	40
4.5.5	<i>Nature of the accident</i> .....	41
4.5.6	<i>Whether the respondent was taken to hospital</i> .....	41
4.5.7	<i>Accidents involved in, during the year</i> .....	42
4.5.8	<i>Whether they carry extra helmet for the passenger</i> .....	42
4.5.9	<i>What riders should do to improve safety</i> .....	43
<b>CHAPTER 5 .....</b>		<b>44</b>
5.1	INTRODUCTION .....	44
5.2	CONCLUSION .....	44
5.3	LIMITATION OF STUDY .....	45
5.4	RECOMMENDATIONS .....	46
5.5	RECOMMENDATIONS FOR FURTHER RESEARCH .....	47
<b>APPENDIX 1.....</b>		<b>50</b>
<b>QUESTIONNAIRE .....</b>		<b>50</b>
<b>FINANCIAL BUDGET .....</b>		<b>56</b>

## List of Tables

Table 1	Road Accidents Victims 2006 -2009
Table 2	Determining sample size from a given population
Table 3	Target Population
Table 4	Gender of the motorist
Table 5	Marital status
Table 6	Age of respondents
Table 7	Occupation of respondents
Table 8	Level of education
Table 9	Courses attended
Table 10	Required licence
Table 11	Age limit
Table 12	Law of Kenya
Table 13	Pre - requisites
Table 14	Motorcycle body
Table 15	Attended schools if any
Table 16	School name
Table 17	Total lessons
Table 18	Number of theory lessons
Table 19	Number of practical lessons
Table 20	Assessment test done
Table 21	Course fees
Table 22	Government test done
Table 23	Test done
Table 24	In possession of the licence
Table 25	Duration licence held
Table 26	Opinion on competency
Table 27	Type of riding gear
Table 28	Accident involvement
Table 29	Accident responsibility
Table 30	The other party
Table 31	Nature of accident
Table 32	Hospitalization
Table 33	Number of accidents involved
Table 34	Extra helmet carried
Table 35	Extra reflective jacket carried
Table 36	Own opinion on riders safety



## Abbreviation

AAK	-	Automobile Association of Kenya
ATS	-	Australia Transport Safety
CSC	-	Canada Safety Council
GOK	-	Government Of Kenya
IAM	-	Institution of Advanced Motorists
KSI	-	Killed or seriously Injured
MAIDS	-	Motorcycle Accidents In Depth Study
MAK	-	Motorcycle Association of Kenya
MSF	-	Motorcycle Safety Foundation
NHTSA	-	National Highway Traffic Safety Administration
PPE	-	Personal Protective Equipment
PSV	-	Public Service Vehicle
POSPA	-	Royal Society for the Prevention of Accidents
S/Injured	-	Seriously Injured
SL/injured	-	Slightly Injured
UK	-	United Kingdom
USA	-	United States of America
WHO	-	World Health Organization

## **Definition of terms**

- Boda boda - These are motorcycles/bicycles normally used as taxis.
- Cordura - Thick strong fabrics known for their durability and resistance in abrasions, tears and scuffs.
- Kevlar - Used to manufacture gloves, sleeves and jackets and other articles of clothing designed to protect users from cuts, abrasion and heat.
- Matatu - Road transport mini-buses for ferrying passengers at a fee which are privately owned.
- Mungiki - This is a politico-religious group and a banned criminal organization in Kenya.

# CHAPTER ONE

## 1.1 Background of the study

Demand for motorcycles as a mode of transport has soared in recent years in Kenya. These cycles are found in Nairobi, other towns and rural areas where they have established themselves as convenient taxis or as they are popularly known boda bodas. Ability to maneuver and evade traffic jams as well as low fuel consumption and pocket friendly fares have won them a niche in the transport business sector. They now jostle with four wheelers on the roads where they enjoy the advantage of weaving their way out of traffic snarl-ups.

Growth in motor cycle numbers has been rapid such that the country now has an association of individuals who own these machines. The motorcycles increase on the Kenyan roads has come with a myriad of problems. Some of the problems are increase in the number of fatal accidents involving them. However there are a number of good things that these motorcycles have addressed. The motorcycles have filled a gap which was there pertaining to failed public transport and many commuters are using motorcycles as an alternative mode of transport.

The motorcycle industry is now employing thousands of youth whether in transport sector where many youth have bought these cycles and are using them as boda bodas. Many people are also getting employment in the industry either when importing these motorcycles to the time they are being sold. Very many motorcycles dealers have mushroomed around the country. The study aims at finding the training and safety needs of the motorcyclists.

## **1.2 Problem Statement**

The motorcycle market in Kenya is expanding rapidly. Motorcycles registered rose from 2084 units in 2003 to 16293 in 2007 then to 51412 in 2008. In 2009 an average of 7000 motorcycles were being registered every month according to the government's economic survey 2009 (GOK, 2009).

The number of motorcycles on Kenyan roads is causing concern as their riders are major causes of fatal road accidents. Motorcyclists have surpassed matatu drivers as the road users responsible for a majority of the accidents. The statistics by traffic departments further shows that in June 2009, 180 motorcycles were primarily responsible for accidents compared to 148 matatus. In May 2009, 163 matatus were faulted compared to 100 motorcycles.

The police blame the current trend on the influx of motorcycles which are quickly replacing bicycles as boda bodas. Thanks to their affordability after the government waived duty on new units and their spare parts. According to the Kenya police traffic department, the influx of motorcycles has come with reckless riding, with many riders ignorant of existing traffic laws (Daily Nation, 2009). The research is to find out the training and safety needs that the motorcyclists require in order to reduce incidences of fatal accidents.

## **1.3 General objectives**

To establish the training and safety needs of motorcyclists.

### **1.3.1 Specific objectives**

1. To develop a profile of motorcyclists
2. To assess statutory requirements governing motorcycle operations
3. To establish general and specific causes of motorcycle accidents

4. To establish a framework for training Motorcyclists

### 1.3.2 Research questions

The following questions will be relevant to the research

- 1 Why are motorcyclists responsible for the majority of road accidents?
- 2 Do motorcyclists wear safety gear when riding?
- 3 Do motorcyclists attend riding schools?
- 4 What should be covered by motor cyclists in a training program?

### 1.4 Importance of the study

The study will aim at assessing the safety and training needs of motorcyclists and recommend ways of addressing them in order to curb the fatal road carnage that is being experienced on the Kenyan roads.

The following groups are considered to benefit from the study

- i. **Business people who operate riding schools:** When the training and safety needs are established a curriculum for training the motorcyclist will be developed and passed to the riding schools, who will proceed in training the respective motorcyclists at a fee.
- ii. **Motorcyclists:** They will benefit in that they will be competent on the roads and also knowing what kind of safety gear to wear and this will decrease substantially the incidences of accidents being experienced on the roads.
- iii. **General Public:** They will benefit by knowing that the motorcycles as a mode of transport is safe and thus have confidence in it and avoid using much expensive modes of transport.
- iv. **Government:** By recognizing the causes of motorcycle accidents, the government can embark on training the motorcyclists which will have an effect of having safe roads and decongestion of the hospitals.

## 1.5 Scope of the study

The study focused on training and safety needs of motorcyclists and was conducted specifically in Nairobi, Ngong, Kiserian, Ongata Rongai, Kitengela and Athi river townships.

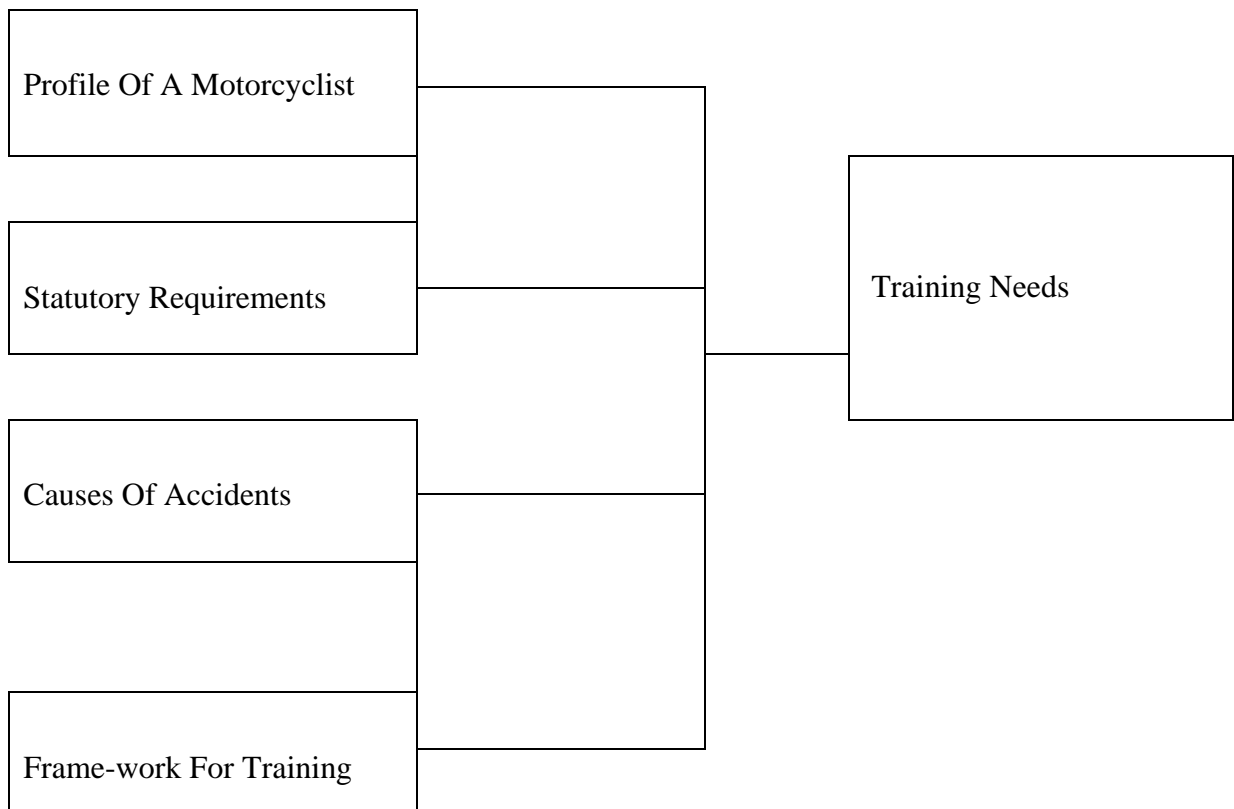
## 1.6 Conceptual Framework

This study was carried out with the following conceptual framework as a guide.

**Figure 1:** Conceptual framework

### Independent Variables

### Dependent Variables



The profile of a motorcyclist will determine what kind of training including the number of lessons required. If the majority of the motorcyclists have basic academic

qualifications, training will be easy because of literacy. Knowledge of statutory requirements is a prerequisite in training. A motorcyclist must know what he is required to have before she can venture into the roads. Causes of motorcycle accidents should be identified before a meaningful training could be conducted, to ensure that important factors that influences these causes, are fully addressed in the training program. A comprehensive training program must be established which addresses the training needs of a motorcyclist including the safety aspects.

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

#### **2.1 Introduction**

Literature review discusses published information in a particular subject area within certain period of time. It involves analyzing issues in a summary form which provides framework for proposals. The chapter will focus its concern in the training and safety needs of motorists on Kenyan roads.

#### **2.2 Description of a motorcycle**

The Traffic Act Cap 403 Sec.2 defines a motorcycle as a motor vehicle with less than four wheels. This classification includes the two wheelers or three wheelers popularly referred to as Tuk Tuks. Motorcycles come in different kinds, each specially designed for different riding conditions. Those intended for use on paved roads and highways are called street motorcycles. Off-road motorcycles are designed for riding on dirt roads and trails. Racing motorcycles are lighter and more powerful. They vary considerably depending on the task which they are designed, Such as long distance travel, navigating congested urban traffic, cruising, sports and racing or off-road conditions. A motorcycle (also called motorbike, bike or cycle) is described by Oxford English dictionary (2009) as a two-wheeler motor-driven road vehicle but with an internal combustion engine.

#### **2.3 History of motorcycle**

The first internal combustion, petroleum fueled motorcycle was the “Petroleum Reitwagen.” It was designed and built by the German Inventors Gottlieb Daimler and Wilhelm Maybach in 1885. They attached a four stroke gasoline engine to a wooden bicycle frame and added two extra side wheels for stability. The engine turned the rear wheels with pulley. The inventors called their invention the Reitwagen (riding car).

Until World War I, the largest motorcycle manufacturer in the world was India producing over 20,000 bikes every year. By 1920 this honor went to Harley-Davidson with their



motorcycles being sold by dealers in 67 countries. By 1930, DKW took over as the world's largest manufacturers (Abrams, 2009).

After World War II, the BSA group became the largest producer of motorcycles in the world producing up to 75000 units per year in the 1950s. The German company WSU held the position of the largest manufacturer from 1955 until 1970s. Today the motorcycle industry is mainly dominated by Japanese companies such as Honda, Kawasaki, Suzuki and Yamaha, although Harley Davidson and BMW continue to be popular and supply considerable markets. Other major manufacturers include Piaggio group of Italy, KTM, Triumph and Ducati (Barrinueve, 2008).

In addition to large capacity motorcycles, there is a large market in smaller capacity (less than 300cc) motorcycles, mostly concentrated in Asia and African markets. This area is dominated by mostly Indian companies with Hero, Honda emerging as the worlds' largest manufacturers of two wheelers. Other major producers are Bajaj and TVS who have sold more than 9 million units to date. The Chinese manufacturers are not left behind and they are currently dominating the low cost markets with models like Skygo king, Ranger, Zongshey, Forcin etc. (Barrinueve, 2008).

## **2.4 Popularity**

Motorcycles are one of the most affordable forms of motorized transport in many parts of the world and for most of the worlds' population, they are also the most common types of motor vehicles. There are approximately 200 million motorcycles (including mopeds, motor scooters and other powered two and three wheelers) in use worldwide or about 33 motorcycles per 1000 people. This compares to around 590 million cars or about 91 per 1000 people. As of 2002, India with an estimated 37 million motorcycles/mopeds was home to the largest number of motorized two wheelers in the world. China came a close second with 34 million motorcycles/mopeds. (Broughton,2005).

In numerous cultures, motorcycles are the primary means of motorized transport. According to the Taiwanese government for example "the number of automobiles per

10,000 population is about 2500 and the number of motorcycles is about 5000". In places such as Vietnam, motorized traffic consists of mostly motorbikes, due to lack of public transport and low income levels that put automobiles out of reach for many (Davis, 1993).

The four largest motorcycle markets in the world are all in Asia, China, India, Indonesia and Vietnam. The motorcycle is also popular in Brazils' frontier towns. Amid the global economic down turn of 2008 the motorcycle market grew by 6.5%. Recent years have seen an increase in popularity of motorcycles elsewhere in the USA registration increased by 51% between 2000 and 2005. This is mainly due to increasing fuel prices and urban congestion. A consumer report subscriber's survey of mainly United States, motorcycles and scooter owners reported that they ride on average of only 1600km per year, 82% for recreation and 18% for commuting. Americans put 16,000 - 19,000km per year on their cars and light trucks. (Hiroka, 2008).

The motorcycle market in Kenya is expanding rapidly. Motorcycles dealt in rose from 2084 units in 2003 to 16,293 in 2007, then to 51,412 in 2008. Currently, an average of 7000 units are being registered every month and the motorcycle population in Kenya stands at approximately 350,000 units according to government economic survey 2009.

## **2.5 Mobility**

People choose to ride motorcycles for various reasons, riders opt for a personal two wheeler as a cost efficient alternative to infrequent and expensive public transport systems, or as a means of avoiding or reducing the effects of urban congestion. In places where it is permitted, lane splitting also known as filtering allows motorcycles to use space between vehicles to move through stationary or slow traffic.

In some countries motorcycles are exempt from congestion charges usually levied to other vehicles, they are also exempt from toll charges, motorcycles are also allowed to park on foot paths allowing them to park easily in central business districts.

In other cities motorcycles are not charged for parking and are generally allowed to park on the sidewalk, rather than occupy a space which might otherwise be used by a car.(AMA motorcycle hall of fame website)

## **2.6 Training**

According to wikipedia, the free encyclopedia, (<http://en.wikipedia.org/wiki/training>).

The term training refers to the acquisition of knowledge, skills and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful competencies. It forms the core of apprenticeships and provides the backbone of content at schools. It is also an organized activity aimed at imparting information or instruction to improve the recipients' performance or to help him or her attain a required level of knowledge or skill. It is the process of bringing a person to an agreed standard of proficiency by practice and instruction.

## **2.7 Motorcycle Training**

Motorcycle training teaches motorcycle riders the skills for riding on public roads. It is the equivalent of drivers' education for a car driver. Training beyond basic qualification and licensing is also available to those whose duty includes motorcycle riding such as police. An addition rider courses are offered for street riding refreshers, sport riding, off-road techniques and developing competitive skills for the motorcycle racetrack (Walker, 2006).

In many developed countries riders are now either required or encouraged to attend safety classes in order to obtain a separate motorcycle driving license. Training can help to bridge the gap between a novice and experienced rider as well as improving the skills of a more experienced rider. Skills training would seem to be the answer to reducing the KSI (killed or seriously injured) rate among motorcycle riders. However, research shows that some, who undergo advanced skills training are more likely to be at a higher risk while using the roads (Rutter & Quine, 1996). This risk compensation effect was commented on in the findings of the evaluation of the "Bike safe Scotland", scheme where a number of those who undertook training said they rode faster in non-built-up areas after the

course (Ormston et al., 2003). This is not to say that training is not important, but that more advanced training should be tempered with psychological training (Broughton 2005).

In the United States, the Motorcycle Safety Foundation (MSF) provided a standardized curriculum to the states that, provide low cost safety training for new and current riders. Two states, Oregon and Idaho, eschewed MSF's curriculum in favor of their own. Even with over 1,500 locations in USA, and over 120,000 annual students, MSF only trains about 3% of the owners of 4,000,000 new motorcycles sold for highway use. Motorcycle injuries and fatalities among US military personnel have continually risen since early 2000s. (Evans, 2004).

Among other initiated programs, the Air National Guard seeks to understand why national safety programs haven't sufficiently reduced mishaps and how those programs might be modified to cause productive behavioral change.

In the United Kingdom, for example, organizations such as the IAM and ROSPA offer advanced motorcycle rider training with the aim of reducing accidents rates. There is often an added incentive to rider in the form of reduced insurance premiums. In Canada, the Canada Safety Council (CSC), a non-profit organization, provided motorcycle safety training courses for beginner and novice riders through its Gearing Up training program. Again, as in the USA and UK, the focus is on improved rider skills to reduce accidents rates. Insurance premiums may be reduced upon successful completion as this program is recognized and supported nationally by the Motorcycle and Moped Industry Council (MMIC). (Walker,2006).

## **2.8 Requirements and Incentive**

Mandatory motorcycle training known as compulsory basic training is common in Europe. There are also schools and organizations that provide training for beginners and refresher courses for experienced riders. In the United Kingdom, organizations such as the Institute of Advanced Motorists (IAM) and Royal Society for the prevention of accidents (ROSPA) offer advanced rider training with the aim of reducing accident rates.

Advanced training is optional but there is often an added incentive to riders in the form of reduced insurance premiums.

Many motorcycle training courses in the USA use the motorcycle safety foundation (MSF) course materials. Completion of such courses often results in lower insurance rates. In Kenya the government is yet to publish a curriculum for training motorcyclists and each individual training school uses its own course materials but according to the Ministry of transport the harmonized curriculum has been agreed with the stakeholders and will be published by this year 2011. Motorcycle Association of Kenya has one of the best curricula which includes the following:

One needs to be 16years and in possession of driving license.

Training consists of five different sections

Introduction, off-road training, off-road riding, on-road training and on-road riding.

One needs to complete one stage before he moves to the next. Before starting the introduction stage one needs to pass a basic sight test, all one needs to do is to read a standard license plate from 3 meters away either using glasses if needed. The introduction stage is class based and introduces basic road safety and how to act on roads. The other four sections are all practical based. The off- road training involves an introduction to the main parts of the bike and how every component works. One will be made to walk with the bike and then finally get to know how to ride it. This off- road segment involves riding at different speeds and then moves on to how to act at junctions and how to turn and it also covers stopping and starting as well as how to do an emergency stop.

Later, one is allowed onto the road after the instructor is satisfied that the student is competent.(MAK, 2010}. The traffic rule requires that anyone who rides a motorcycle must have either a permit license and must be a person over 16 years.

## **2.9 Research Done**

The US Hurt Report begun in 1976 and published in 1981, expresses disdain for the ignorance and misinformation about motorcycle safety among riders studied, noted that 92% of riders in accidents had no formal training, and that when interviewed, riders frequently failed to take responsibility for their errors, or even perceive that accident avoidance had been possible. The final recommendations of the report include the advice that, “The Motorcycle Rider Course of the Motorcycle Safety Foundation should be the prerequisite (or at least co-requisite) of licensing and use of a motorcycle in traffic”.

However, when the European Maids report, conducted in 1990 to 2000, looked at motorcycle accidents and the riding population, in societies where rider training was both widely available and in general mandatory, they were unable to find conclusive evidence that riders without training were more likely to be involved in accidents. Nor were their interviews able to discern a significant difference between the number of riders who had been in accidents who were unqualified to operate their motorcycles, and the number among those who had not been in accidents. The Maids study did find that drivers of other vehicles were less likely to fail to perceive motorcycles in accidents if they themselves had a motorcycle license, and that motorcyclists riding illegally without a license were more likely to have accident (Travers,2010).

The MAIDS report does not conclude that training is unnecessary, but rather states that their results are inconclusive. Hurts complaint was that in the absence of mandatory training, false information is passed from one generation of riders to the next, so it is to be expected that this particular problem would decrease in regions where training is generally mandatory. Years of riding and contact with other riders, in lieu of formal training, doesn't necessarily expose motorcyclists to accurate information. Open questions remain, however, such as why the overall safety of motorcycling in Europe is not significantly different than in the US.

## **2.10 Safety**

Safety is the state of being safe from French *sauf*), the condition of being protected against physical, social, spiritual, financial, political, emotional, occupational, psychological, education or other types or consequences of failure, damage, error, accidents, harm or any other event which could be considered non-desirable. Safety can also be defined to be the control of recognized hazards to achieve an acceptable level of risk. This can take the form of being protected from the event or from the exposure to something that causes health or economical losses. It is important to realize that safety is relative. Eliminating all risks, if even possible, would be extremely difficult and very expensive. A safe situation is one where risks of injury are low and manageable (Davis,1993).

## **2.11 Road Traffic Safety**

The term road traffic safety is an indication of how safe individual users are on some particular road, or on the roads belonging to some region. The main danger to road users is the likelihood of a traffic collision, such dangers can be reduced by individual road users operating cautiously and defensively, by building roads in alignment with competent traffic engineering practices, by application of rational traffic control methods and by designing road vehicles that are more able to avoid and survive collision. Road traffic crashes are one of the world's largest public health and injury prevention problems. The problem is all the more acute because the victims are overwhelmingly healthy prior to their crashes. (Davis,1993). According to the World Health Organization (WHO) more than a million people are killed on the world's roads each year. A report published by the WHO in 2004 estimated that some 1.2m people were killed and 50m injured in traffic collisions on the roads around the world each year and was leading cause of death among children 10 – 19 years of age. The report also noted that the problem was most severe in developing countries and that simple prevention measures could halve the number of deaths. The standard measures used in assessing road safety interventions are fatalities and Killed or Seriously Injured (KSI) rates, usually per billion passenger kilometers. In United States, crashes per million vehicle miles are typically used for road safety.(Evans,2004).

Speed is a key goal of modern road design, but impact speed affects the severity of injury to both occupants and pedestrians. For occupants, Joksch (1993) found the probability of death for drivers in multi-vehicle accidents increased as the fourth power of impact speed (often referred to by the mathematical term  $\Delta V$  (“delta V”), meaning change in velocity). Injuries are caused by sudden, severe acceleration (or deceleration), this is difficult to measure. However, crash reconstruction techniques can be used to estimate vehicle speeds before a crash. Therefore, the change in speed is used as a surrogate for acceleration. Interventions take many forms. Contributing factors to highway crashes may be related to the driver (such as driver error, illness or fatigue), the vehicle (brake, steering, or throttle failures) of the road itself (lack of sight distance, poor roadside clear zones, etc.). Interventions may seek to reduce or compensate for these factors, or reduce the severity of crashes that do occur. A comprehensive outline of interventions areas can be seen in Management systems for road safety (Foale, 2006).

## **2.12 Motorcycle Safety**

Motorcycle safety concerns many aspects of vehicle and equipment design as well as operator skill and training that are unique to motorcycle riding. Motorcycles have a higher rate of fatal accidents than automobiles – United States department of transportation data for 2005 from the Fatality Analysis Reporting System show that for passenger cars, 18.62 fatal crashes occur per 100,000 registered vehicles. For motorcycles this figure is higher at 75.19, four times higher than for cars. The same data shows that 1.56 fatalities occur per 100 million vehicle miles traveled for passenger cars, whereas for motorcycles the figure is 43.47 – 28 times higher than for cars. A national study by the Australian Transport Safety Bureau (ATS) found that:

- i. Motorcycle rider death rates increased among all riders age groups between 1998 and 2000
- ii. Motorcycle rider deaths were nearly 30 times more than drivers of other vehicles.
- iii. Motorcycle riders aged below 40 are 36 times more likely to be killed than other vehicle operators of the same age.



- iv. Motorcycle riders of 40 years and above are 20 times more likely to be killed than other drivers of that age.

According to 2005 data from the NHTSA, 4008 motorcycle occupants were killed on USA roads in 2004.

Additional data from USA reveals that there were over four million motorcycles registered in the USA. Motorcycle fatalities represent approximately five percent of all highway fatalities each year, yet motorcycles represent just two percent of all registered vehicles in the USA. One of the main reasons motorcyclists are killed in crashes is because the motorcycle itself provides virtually no protection in a crash. For example, approximately 80 percent of reported motorcycle crashes result in injury or death compared to 20 percent for automobiles. In Kenya since 1962, there has been gradual increase in road accidents, resulting to deaths and injuries occasioning enormous cost to the economy. By 2003 the country was registering over 3000 deaths through road accidents and 10,000 serious injuries, in year 2006, 2007, 2008 and 2009(Jan – May) (Daily Nation2009).

**Table No. 1: Road Accident Victims 2006 - 2009**

	2006		2007		2008		2009	
	Total	M/cycle	Total	M/cycle	Total	M/cycle	Total	M/cycle
Killed	2714	34	2893	35	3158	111	4072	263
S/injured	8722	155	9013	219	9206	396	10644	842
SL/injured	11838	229	13682	227	12162	305	9740	602
<b>Totals</b>	<b>23274</b>	<b>418</b>	<b>25588</b>	<b>481</b>	<b>24526</b>	<b>812</b>	<b>24456</b>	<b>1707</b>

**Source: Government of Kenya Traffic Department**

This has made road accidents a major contributor to the mortality rate in the country. Kenya Police have attributed the rising number of motorcycle accidents to the many unqualified motorists on the country’s roads. Riders do not have the requisite class F&G

driving license and neither them nor their passengers wear protective gear according to Rift Valley provincial traffic boss. (Daily Nation2009).

### **2.13 Causes of Accidents**

The two major causes of motorcycle accidents in United States are motorists pulling out or turning in front of motorcyclists and violating their rights of way and motorcyclists running wide through turns. The former is sometimes called a SMIDSY an acronym for sorry mate, I did not see you “.The latter is more commonly caused by operating a motorcycle while intoxicated (sorry mate I didn’t see you campaign.2008)

In Kenya most accident are caused because the riders are not properly trained and this has compromised riding standards and road safety in general as training is inadequate. The trainees do not go through theoretical lessons in Highway Code knowledge of the traffic act and practical lessons of model town. Sometimes the training is conducted by unqualified personnel. This may be fellow unlicensed riders or licensed but not experienced riders (without instructors’ license) this is according to Kenya traffic Department.

### **2.14 Consequences of Accidents**

Once collision has occurred, or the rider has lost control through some other mishap, several common types of injury occur when the bike falls:

- i. Collision with less forgiving protective barriers, or badly placed roadside “furniture” (lampposts, signs, fences , etc) This is often simply a result of poor road design, and can be engineered out to a large degree. Note that when one falls off a motorcycle in the middle of a curve, lamps and signs create a wall of sorts with little chance to avoid slamming against a pole.
- ii. Concussion and brain damage, as the head violently contacts other vehicle or objects. Riders wearing an approved helmet reduce the risk of death by 37 percent.(the New York times 2007).

- iii. Breakage of joints (elbows, shoulders, hips, knees, and wrists), fingers, spine and neck, for the same reason. The most common breakages are the shoulders and pelvis.
- iv. Soft tissue (skin and muscle) damage as the body slides across the surface of the road. This can be prevented entirely with the proper use of motorcycle specific protective apparel such as leather jacket or reinforced denim and textile pants.
- v. There is also a condition known as bikers' arm, where the nerves in the upper arm are damaged during the fall, causing a permanent paralysis of arm movement.
- vi. Facial disfigurement, in the absence of a full-face helmet, the unprotected face slides across the ground or smashes into an object. Thirty five percent of all crashes show major impact on the chin-bar area (Walker, 2006).

## **2.15 Personal Protective Equipment**

To address the risks of motorcycling, before and after a fall, motorcyclists use personal protective equipment (PPE, or more commonly “motorcycle gear”). Many developed countries now require certain articles of PPE, and manufacturers and governments recommend its extensive use.

## **2.16 Function of PPE**

- i. Improved visibility – Although for decades the popular image of the motorcycle rider had been of someone clad head-to-toe in black leather, in the light of the Hurt Report findings and the day-to-day experiences of motorcyclists themselves, many riders choose higher-visibility gear. Bright colors and retro-reflective striped are common on quality equipment.
- ii. Abrasion Resistance – Thick, tough leather provides the most abrasion resistance in a crash, but fabrics such as Cordura, Kevlar and ballistic nylon provide significant protective too. In addition, fabrics are generally cheaper, easier to maintain, waterproof and more comfortable in hot weather. Thick leather, which affords the most abrasion resistance, can be uncomfortable in temperatures exceeding 85F (29C) and above 100F (38C) may cause heat stress & loss of control with insufficient fluid replacement. Some PPE may be constructed of

fabrics made into a “mesh” that provides cooling and a stable surface for the attachment of padding.

- iii. Impact protection – Quality jackets and pants provide significant extra padding in the vulnerable joint regions described above. This can take the form of simple foam padding, or dual-density foam that stiffens when compressed, sometimes with plastic or carbon fiber out-shells that distribute the impact across the pad, integrated pieces can be found in some jackets.
- iv. Weather Protection – One important aspect of PPE not mentioned above is protective from elements. Extreme weather can make a long ride unbearable or dangerous. PPE provides protective from wind, rain and cold.

## **2.17 Items of PPE**

- 1) Helmet – A full face helmet provides the most protection. Thirty five percent of all crashes show major impact on the chin-bar area. However,  $\frac{3}{4}$  and  $\frac{1}{2}$  helmets also are available. Some motorcycle training institutions have banned the use of half-helmets.
- 2) Gloves – Commonly made of leather, cordura, or Kevlar, or some combination. Some include carbon fiber knuckle protection or other forms of rigid padding. Gloves designed specifically for motorcycle use have slightly curved fingers and the seams are on the outer surfaces to allow the motorcyclist to maintain his grip and control on the handlebars and clutch/brake levers. Some gloves also provide protection to the wrist.
- 3) Jackets – Generally made from leather, ballistic nylon, cordura or Kevlar or other synthetics. Most jackets include special padding on elbow, spine and shoulders. Airbag system technology is now available fitted to jackets and vests for accident protection and impact protection for both riders and pillions. Competition-approved hard armor is superior to soft padding. Competition-approved back and chest protectors can be worn underneath jackets. Inflatable airbag jackets can offer an additional airbag for neck support.
- 4) Pants – Made of the same material as jackets, usually including special protection for the knees and hips.

- 5) Boots – Especially those for sport riding, include reinforcement and plastic caps on the ankles, and toe area. Boots designed for cruiser-style riders often have steel-reinforced toes (However this reduces sensitivity of the foot when changing gear). Boots should always have a rubber sole (as opposed to leather or other less-flexible materials). Despite their toughness and protection, most boots are very lightweight. Some even include titanium plating.
- 6) Goggles or Helmet Visor – Eye protection is of utmost importance – an insect or a kicked-up pebble in the eye at speed has momentum to cause significant damage. Such an event could easily cause the rider to lose control and crash. Besides this danger, squinting into the wind is unpleasant at best and watering eyes are quite distracting.
- 7) Earplugs – Most riders experience substantial wind noise at speeds above 40 to 50 mph (64 to 80km/h). Ear plugs help protect against hearing damage, and reduce fatigue during long rides.
- 8) Vests – Made with high visibility colors and retro-reflective materials, vests can be worn over jackets to increase the chance of being seen and allow drivers to better judge the speed and position of riders, especially in adverse conditions of dark and wet.
- 9) Other PPE – Dirt bike riders wear a range of plastic armor to protect against injury from falling and hitting other riders and bikes, running into track barriers and being hit by flying debris kicked up by the tires of other riders' bikes. This type of armor typically covers the back, chest and sometimes the extremities.

It is increasingly common for gloves, jackets pants and boots to be outfitted with hard plastics on probable contact areas in an effort to ensure that when a motorcyclist contacts the ground, his clothing will permit him to slide relatively easily as opposed to “crumpling”, risking injury to body parts being stressed in abnormal directions. Since the first line of protection in crash contact is the outer shell of clothing, designers have moved that further from the body. The ultimate protective shell so far is airbag that stays with the driver as he flies off the bike. However, increasing use of “exoskeleton” plastic shield attached to clothing points toward design of a complete roll bar belted to the

driver. A near-stage design is a plastic of light alloy double “wheel” perimeter rim around the driver, over his head and in front and behind him. When the driver un-belts himself and gets off the bike, he leaves the wheel roll bar with the bike. But when the driver flies off the bike, the roll bar flies with him and makes contact with hard surface. The driver is relatively safe from contact, belted within a contact rim extending out around him. Riders sometimes use the acronyms MOTGMOTT and ATGATT, which stands for “Most Of The Gear Most Of The Time” and All The Gear All The Time”, when describing their personal gear preferences. (Travers,2010).

## **2.18 Cure of the Problem**

Motorcyclist can anticipate and avoid some of these crashes with proper training increasing their conspicuousness to other traffic and separating alcohol and riding .Kenya has several organizations which are dedicated to improving motorcycles safety by providing advanced rider training over and above what is necessary to pass the basic motorcycle test. These include the Motorcycle Association of Kenya and Riding School of Kenya. In united kingdom, the Institute of Advanced Motorist (IAM ) and royal society for the prevention of accidents(ROSPA) are in front line .Along with increased personal safety ,riders with these advance qualifications often benefit from reduced insurance costs. (wikipedia.org retrieved on 27/2/2011).

In recent years in Kenya, there has been rapid increase in alternative mode of transport namely, motorcycles which are playing an important role in people’s daily economic activities. The need to provide road infrastructure of this mode of transport has been a great challenge to government in both urban and rural areas .million of Kenyans use motorized means of transport. Boda bodas are now the source of income for thousands of youth in urban and rural areas. It is also worth noting that they provide convenient mode of transport to millions of rural Kenyans. This not withstanding they have become leading causes of death, disability and injuries. The situation is so bad that hospitals across the country are dedicating special wards for crash victims.

Although the government through the Ministry of Transport has gazetted several regulations geared towards improving safety standards in the country, observation is that

road accidents continue to plague the country mainly due to non observance of such regulation by road users. In an effort to address challenges being encountered in the road transport sector the Ministry of Transport spearheaded the development of national road safety plan(2009-2014) whose implementation is to be carried out by the newly constituted National road safety council .The council is expected to co-ordinate road safety efforts in the country and advise the government on all issues regarding road safety(Daily nation 2009).

## **2.19 Current legislative**

The Kenya traffic Act cap 403 defines a motorcycle as a motor vehicle with less than four wheels. Any person riding a motorcycle is required by law to be licensed under Sec.30 of the traffic act. This license must be endorsed for the respective class of motorcycle “F” for motorcycles capacity up to 50cc or “G” for motorcycle over 50cc engine capacity.

All motorcycles must be registered in country under sec 6(1) of the traffic act Any person of or above the age of 16years who qualifies to ride a motorcycle can be granted with a certificate and license for class F and G. A person only qualifies to ride /drive a PSV if;

In possession of a valid driving license for 4 years or more and be 24 years of age or more.

The carrying capacity for different classes of PSV motorcycles passengers are classified as pillion passengers. The motorcycles are not bound by transport licensing Act cap 404, yet, they are used as mode of public transport.

## **2.20 Trend in motorcycle as public transport in Kenya**

In the last three years ,there have been a sudden and rapid increase in use of motorcycles as a mode of transport in Kenya .The trend started in Machakos, Kitui in Eastern province Malindi, Ukunda in Coast, Kisumu in Nyanza and Busia and Kakamega in Western province. The trend has since expanded across the county. Unlike PSV which

only operated at specific time motorcycle (boda boda) operate 24/7(Kenya Police Traffic Department).

### **2.21 Why the sudden upsurge of motorcycles**

Motorcycles are cheap to operate as compared to PSVs, they can easily access and reach the remotest areas and roads that cannot be accessed by other modes of transport, they have emerged as a source of employment to the youth in rural and urban areas, they are relatively cheap and easy to acquire today than before, their consumption and maintenance cost is non-comparable to motor vehicles and their ability to maneuver and evade traffic jams as well as pocket friendly fares have won them a niche in transport business sector.

### **2.22 Efforts geared to streamline the industry**

Kenya now has an association of individuals who own motorcycles. The Motorcycle Association of Kenya was registered in 2009 to give motorcyclist a face and voice to be heard and to be recognized as a growing industry which is contributing positively to Kenyan economy in terms of employment and solving transportation challenges. MAK aims to train motorcyclist in safe riding to save lives. The association is holding free riding education seminars on roadside at motorcycle transportation place of operation to sensitize them on basic requirements of safe riding.

MAK technical director says that with the assistance of the Traffic Commandant through his base commanders in various towns the association has visited the towns and given free lessons and as a result accident incidents have fallen by approximately 50%. Although no tangible effort has so far been made to incorporate motorcyclists into the public transport system, the Kenya government introduction of new registration policy for motorcycles was a positive initiative. There is also a task force on standards and legislation on three wheelers.



## **CHAPTER THREE**

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Research design**

Research design is planning a strategy of conducting a research (malhotra,2006). This study applied descriptive research to obtain precise information concerning the current status of motorcyclists in their area of operation and drew valid conclusion from the factors observed .It also estimated the proportion of the population that has the characteristic and the discovery of association among different variables that was of interest to the study.

#### **3.2 The population**

A sampling frame of all the motorcyclists especially the boda bodas in Nairobi, Ngong, kiserian, Ongata Rongai and Athi river townships were examined. This constituted the population of interest and comprised all age groups both male and female, different religion denominations and levels of income. Each town had approximately 100 boda bodas according to Kenya traffic department

#### **3.3 Sample and sampling design**

This study adopted a simple random sampling procedure to select the sample of interest. From the population in each locality, eighty motorcyclists were selected as they congregated and arrived at their work stations after every ten minutes. The sample was arrived at using Education and Psychological Measurements tables for determining sample size from a given population.

Table 2 (Determining sample size from a given population)

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: “N” is population size

“S” is sampling size

Krejcie, Robert V., Morgan, Daryle W., “Determining Sample Size for Research Activities”, (Education and Psychological Measurements), 1970.

### 3.4 Data collection method

The data of interest to this comprised both primary and secondary data. Primary data consisted of originating data from the field for specific purpose of study at hand

.Secondary data consisted of information that already existed somewhere having been collected for some other purpose.

### **3.5 Instrumentation**

The primary data was collected using questionnaires which were administered to the motorcyclists as they arrived at their work stations. These questionnaires contained both structured and unstructured questions. The questions were closed and open ended. Structured questions were accompanied by possibly other alternatives from which respondent could pick an answer that describes the situation. Unstructured questions gave the respondent complete freedom of response and of own words. Secondary data was obtained from internet, Kenya road safety manuals, Kenya Police traffic department, local dailies and Motorcycle Association of Kenya records.

### **3.6 Data Analysis and Presentation**

After the field work, the questionnaires were checked for completeness, consistency and accuracy then were arranged to simplify coding and analysis. The data was then transcribed and analyzed using Microsoft Excel to generate statistically inferable information.

## CHAPTER FOUR

### DATA ANALYSIS AND INTERPRETATION

#### 4.1 Introduction

This chapter deals with the analyzing and interpretation of data which was collected with the aim of achieving the objectives set at the beginning of the study.

The study was carried out in Nairobi and its periphery suburbs mainly Ongata rongai, Athi River, Kitengela, Ngong and Kiserian towns. Eighty questionnaires were handed out to motorcyclists from each area and hence a total of 480 questionnaires, the respondents to the survey were 65, 64, 62, 62, 50 and 40 respectively in the above areas which were considered adequate for the study.

#### Number of respondents

Table 3 (Target Population)

Respondents	Frequency	Percentage %
Target Respondents	480	100
Actual Respondents	343	71

Source (Research date)

#### 4.2 Motorcyclists Profile

The research aimed at getting the profile of the motorcyclists in terms of Gender, marital status, age, occupation, education and relevant courses attended in order to find out whether any of the above attributes could be a contributing factor in their behavior.

#### 4.2.1 Gender of the motorcyclists

The result of the research showed that all (100%) of the respondent were male. This means that ladies are apprehensive about riding motorcycles especially boda bodas.

Table 4: (Gender of the Motorcyclist)

Gender	Frequency	Percentage %
Male	343	100
Female	-	-
Total	343	100

Source (Research data)

#### 4.2.2 Marital Status of respondents

It was necessary to find out the marital status of the respondent as views, interests and perceptions of those who are single might be different from those who are married.

Table 5 (Marital Status)

MARITAL STATUS	FREQUENCY	PERCENTAGE %
Married	169	49
Single	174	51
Total	343	100

Source (research data)

From the research findings, it is evident that slightly more single motorcyclists are riding compared to those who are married probably because married people have more responsibilities and they are risk averse compared to singles.

### 4.2.3 Age of respondents

Table 6 (Age of Respondents).

AGE	FREQUENCY	PERCENTAGE
16 – 19 years	51	15
20 – 25 years	163	47
Over 25 years	129	38
TOTAL	343	100

Source (research data)

The results showed that majority of the boda boda motorcyclists are between 16 – 25years which accounts to 62% motorcycling is associated with macho image and fun which are the hallmark of this age group.

### 4.2.3 Occupation of respondents

It was necessary to find out the occupation of the motorcyclists in terms of whether they are self employed or employed, in order to ascertain whether the motorcycles are theirs, or belongs to somebody else.

Table 7 (Occupation of the Respondents)

OCCUPATION	FREQUENCY	PERCENTAGE %
Self employed	285	83
Employed	58	17
TOTAL	343	100

Source (Research data)

Judging from the above results, motorcyclists are self employed eking their living from the proceeds of boda boda business.

#### 4.2.4 Education of the respondents

It was necessary to find out what level of education the motorcyclists have gone up to in order to assess whether they are able to understand the highway code.

Table 8 (Level of Education)

EDUCATION	FREQUENCY	PERCENTAGE %
UP to Primary	86	25
Up to Secondary	257	75
University and above	-	-
TOTAL	343	100

Source (Research data)

It was apparent from the table above that most of the motorcyclists have basic academic qualification but none has gone to university. The qualification is enough to enable them understand and learn the rules of the road.

#### 4.2.5 Courses attended

It was important to find out which relevant courses the motorcyclist has done which can assist them in their day to day riding escapades.

Table 9 (Courses Attended).

COURSED ATTENDED	FREQUENCY	PERCENTAGE %
Mechanical	118	35
Driving/riding	174	51
Any other/none	51	14
TOTAL	343	100

Source (research data)

From the above table it appears that most motorcyclists have done mechanical and riding courses which are important in road navigation.

### 4.3 Statutory requirements governing motorcycle operation

The research aimed at knowing whether the motorcyclists are conversant with the statutory requirements which govern motorcycles operations on the Kenyan roads.

#### 4.3.1 License required

Two hundred seventy four (274) of the respondents knew what license is required to ride a motorcycle with 21 having no idea of which license and 48 spoilt by filling all spaces.

Table 10 (Required License)

LICENCE REQUIRED	FREQUENCY	PERCENTAGE %
BCE	21	6
FG	274	80
Spoilt	48	14
TOTAL	343	100

Source (research data)

Majority of the respondents were aware of the type of license they are supposed to get before they could ride a motorcycle.

#### 4.3.2 Mandatory age of a license holder

In addition to knowing the kind of license required it was important to assess whether the respondent knows what the license entails as pertaining to the age limit.

Table 11 (Age Limit)

AGE LIMIT	FREQUENCY	PERCENTAGE
Under 16	-	0
16 – 18years	327	95
19 – 21years	16	5
22 – 32years	-	0
TOTAL	343	100

Source (research data).

From the above table it is evident that most of the motorcyclists do know the mandatory age of getting a class FG license with an overwhelming 95% getting it right.



### 4.3.3 Act governing operation of motorcycles in Kenya

It was important to find out whether motorcyclists are aware of laws governing their operations and the research aimed at finding whether they know the specific chapter.

Table 12 (Law of Kenya)

ACT OF LAW OF KENYA	FREQUENCY	PERCENTAGE %
Company Act	-	0
Traffic Act	333	97
Criminal Act	-	0
Boda boda	10	3
TOTAL	343	100

Source (research data)

The majority of the respondents seemed to know the Act governing the motorcycle operation in Kenya.

### 4.3.4 What to have in order to operate a motorcycle

In order to find out whether the respondents are aware of the basic requirements needed to operate a motorcycle on the road, it was found necessary to pose the above question.

Table 13 (Pre-requisites).

A must have to operate a motorcycle on the road	Frequency	Percentage %
License, Insurance cover, Reflective jacket, Helmet	343	100
Hat, Suit, Boots and Belt	-	-
Overall, City Council license	-	-
TOTAL	343	100

Source (research data)

All the respondents seemed to know what they must have in order to operate a motorcyclist on the road.

#### **4.3.5 Body governing the operations of a motorcycle in Kenya**

It was important to find out whether the motorcyclists appreciate the body that govern their operation in order to assess whether they are aware where to go in case of a problem or assistance.

Table 14 (Motorcycle Body).

<b>Body governing motorcycles operations in Kenya</b>	<b>Frequency</b>	<b>Percentage</b>
		<b>%</b>
Police	188	55
Government of Kenya	155	45
City Council	-	-
Mungiki	-	-
<b>TOTAL</b>	<b>343</b>	<b>100</b>

Source (research data)

The opinion of the respondents was split between police and the government of Kenya. Probably because they could not differentiate between the two. Otherwise it appears that they had an idea.

#### **4.3.6 Additional requirements the government should insist on to curb an errant motorcyclist**

Only 15 respondents commented, with opinions ranging from enforcement of law, dedicating a lane for motorcyclists, police not taking bribes, ensuring that every motorcyclist have gone to a riding school to dealing with Mungiki menace.

#### **4.4 Motorcyclist competency on the road**

In order to assess whether the motorcyclists are competent on the road, it was important to ask them relevant questions regarding where they went for riding lessons and whether they have riding licenses and also authentication questions of the answers given.

#### 4.4.1 Whether motorcyclists have attended any training institution in riding

The number of respondents who stated that they have attended a riding school was slightly more than half while the rest confessed that they never went to any riding training institution.

Table 15 (Attended School if Any)

Attended any riding school	Frequency	Percentage %
Yes	194	56
No	149	44
TOTAL	343	100

Source (research data).

#### 4.4.2 Riding school attended

It was important to find out from the respondents who answered that they have attended a riding school the name of the school to avoid cheating.

Table 16 (School Name)

Riding School attended	Frequency	Percentage %
A.A. of Kenya	35	18
Rocky	104	54
Sony	24	12
Other	12	6
Motorcycle Ass. Of Kenya	19	10
TOTAL	194	100

Source (research data)

From the above table it is apparent that those respondents who have attended a training institution have gone to the most popular ones.

#### 4.4.3 Lessons contained in the curriculum

It was important to find out from the respondents the number of lessons they took since a standard curriculum contains not less than fifteen lessons.

Table 17 (Total lessons)

No. of Lessons	Frequency	Percentage %
Five	58	30
Ten	36	19
Over Fifteen	100	51
TOTAL	194	100

Source (research data).

From the table above, 49% of the respondents apparently received less than fifteen riding lessons.

#### 4.4.4 Theory and practical lessons contained in the curriculum

It was important to counter check whether the total lessons contained in the curriculum both theory and practical comes to the number indicated in table 16.

Table 18 (Number of Theory Lessons).

Theory lessons	Frequency	Percentage %
None	-	0
Five	75	39
Over 5	119	61
TOTAL	194	100

Source (research data)

Table 19 (Number of Practical Lessons).

Practical lesson	Frequency	Percentage %
None	-	-
Five	80	42
Over five	114	59
TOTAL	194	100

Source (research data).

#### 4.4.5 Assessment Test after the course

The riding school curriculums demands that an assessment be done to the student before he/she is taken for the government test, hence it was important to find out how many motorcyclist underwent this exercise. It also serves to countercheck whether actually the respondent went to a riding school and whether he/she completed the course.

Table 20 (Assessment Test Done).

Did you do the assessment test?	Frequency	Percentage %
Yes	179	92
No	15	8
TOTAL	194	100

Source (research data).

Judging from the table above a vast majority of the respondents who went to training institution underwent assessment before doing the government test.

#### 4.4.6 Fees paid for the course

The standard tuition fees charged by riding schools is between Ksh.4,000/= to Ksh.5,000/=. Since most of the respondents had indicated that they attended popular riding schools the fees they paid is expected to lie in this bracket unless they were not speaking the truth.

Table 21 (Course Fees).

Course fees	Frequency	Percentage %
Ksh.2000 – 4000/=	16	8
Ksh.4000 – 5000/=	130	67
Over Ksh.5000/=	48	25
TOTAL	194	100

Source (research data).

Majority of the respondents paid for tuition an amount which lies within the fees charged by most popular riding schools and for the ones who indicated that they paid less perhaps never completed the course and for those who paid over Ksh.5000/=, they could have paid for extra lessons after the assessment.

#### 4.4.7 Government test after the course

After the riding course, students are booked for the government test by the training institution, which determines whether a student is competent to be awarded a riding license. No genuine license is awarded before this test.

Table 22 (Government Test Done).

Did you do the government test?	Frequency	Percentage %
Yes	106	55
No	36	18
Silent	52	27
TOTAL	194	100

Source (research data).

It is evident judging from the table above that only slightly more than half of the respondents who went to training institution actually did the government test.

#### 4.4.8 Passing the government test

It was important to find out how many of those who did the government test actually passed to countercheck any of the respondents who could be cheating that she/he did the test.

Table 23 (Test Passed).

Did you pass the test?	Frequency	Percentage %
Yes	102	53
No	4	2
Silent	52	27
TOTAL	194	100

Source (Research data).

#### 4.4.9 License number

It was important to ask the respondent to indicate their license numbers if they passed the test and awarded with the license.

Table 24 (In Possession of License).

Indicated license	Frequency	Percentage %
Yes	6	6
No	96	94
TOTAL	102	100

Source (research data)

Very few respondents indicated their license numbers despite having said that they had passed the test. This could either mean that they never went for the test or the license has expired and were afraid to quote the number in case they are discovered.

#### 4.4.10 Period license held

The period a respondent had held a license is important since it shows the experience one has and also if the license is genuine.

Table 25 (Duration License Held).

Period license held	Frequency	Percentage %
Less than one year	8	8
1 – 2 years	13	13
Over 2 years	72	70
Silent	9	9
TOTAL	102	100

Source (research data).

Judging from the table above, majority of the respondents have held their licenses for more than one year and only 8% have held it for less than one year.

#### 4.4.11 What motorcyclists should do to improve competency

The opinions were varied as tabulated below.

Table 26 (Opinion on Competency).

What motorcyclists should do to improve competency	Frequency	Percentage %
Go to riding school	262	76
Observe law	24	7
Self discipline	5	1
Silent	52	16
TOTAL	343	100

Source (research data).

It is apparent from the above table that majority of the respondents appreciates going to a riding school in order to be competent.

#### 4.5 Safety Gear

It was important to find out whether the respondents wear riding gear which can prevent injuries in case of an accident.



#### 4.5.1 Riding gear usually worn

Table 27 (Type of Riding Gear)

Riding gear	Frequency	Percentage %
Reflective jacket alone	48	14
Helmet alone	69	20
Riding boots alone	32	9
Ear plugs alone	-	-
Reflective jacket & helmet	164	48
Reflective jacket/helmet/goggles and riding boots/ear plugs	30	9
TOTAL	343	100

Source (Research data).

From the above table, it is evident that very few motorcyclists appreciate proper riding gear.

#### 4.5.2 Whether ever involved in an accident

It was important to find out whether the respondents have ever been involved in an accident to establish how prone the motorcyclists are on the roads.

Table 28 (Accident Involvement)

Ever been involved in an accident?	Frequency	Percentage %
Yes	170	50
No	173	50
TOTAL	343	100

Source (research data).

From the table above it is apparent that half of all respondents have been involved in an accident.

### 4.5.3 The person to blame in the opinion of the respondent

It was important to establish how the respondents who admit having been involved in an accident accept the blame. If they blame themselves it shows that they accept responsibility and could be willing to change their riding habits.

Table 29 (Accident Responsibility)

Who was to blame	Frequency	Percentage %
Myself	62	36
Other party	108	64
TOTAL	170	100

Source (research data).

### 4.5.4 The other party in the accident

It was important to find out who the other party was whether another motorcyclists, pedestrian or motorist to establish who among them is at a higher risk of being involved in an accident with a motorcycle.

Table 30 (The Other Party)

The other party	Frequency	Percentage %
Motorcycle	45	26
Pedestrian	60	35
Automobile	65	39
TOTAL	170	100

Source (research data).

#### 4.5.5 Nature of the accident

Table 31 (Nature of Accident)

<b>Nature of accident</b>	<b>Frequency</b>	<b>Percentage %</b>
Serious	38	22
Minor	109	64
None	23	14
<b>TOTAL</b>	<b>170</b>	<b>100</b>

Source (research data)

#### 4.5.6 Whether the respondent was taken to hospital

It was important to know whether the respondent was taken to hospital in order to establish the seriousness of the accident.

Table 32 (Hospitalization)

<b>Taken to hospital</b>	<b>Frequency</b>	<b>Percentage %</b>
Yes	62	36
No	108	64
<b>TOTAL</b>	<b>170</b>	<b>100</b>

Source (research data).

#### 4.5.7 Accidents involved in, during the year

The research intended to establish the number of accidents the respondents were involved in during the year to find out how many are prone to being involved in accidents.

Table 33 (Number of Accidents Involved)

Number of accidents	Frequency	Percentage %
None	133	39
1 – 2	72	21
3 – 5	86	25
Over 5	52	15
TOTAL	343	100

Source (research data).

The number of those involved in accidents is more than those who have indicated in table 26. Meaning that, there were respondents who failed to disclose.

#### 4.5.8 Whether they carry extra helmet for the passenger

It is important for the riders to carry an extra helmet and reflective jacket for their passengers to use in case of an accident and this aspect is emphasized in training institutions since it is a requirement by the traffic act.

Table 34 (Extra Helmet Carried).

Extra Helmet	Frequency	Percentage %
Yes	200	58
No	143	42
TOTAL	343	100

Source (research data).

Table 35 (Extra Reflective Jacket Carried).

Extra reflective Jacket	Frequency	Percentage %
Yes	145	42
No	198	58
TOTAL	343	100

Source (research data).

#### 4.5.9 What riders should do to improve safety

The research work aimed at finding out opinion of the respondents on what they are supposed to do to improve on their safety.

Table 36 (Own Opinion on Riders Safety)

What to do to improve safety	Frequency	Percentage %
Training	50	15
Ride carefully	65	19
No comment	228	66
TOTAL	343	100

Source (research data).

## **CHAPTER 5**

### **RESEARCH CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS**

#### **5.1 Introduction**

The conclusions made in this chapter are based on the research findings. The recommendations have also been based on the conclusion. The study was carried out in Nairobi and its environs. The boda boda motorcyclists were the population of the study which was used to assess the training needs of motorcyclists in Kenya.

#### **5.2 Conclusion**

Based on the research findings some conclusions were arrived at which are hereby discussed with regard to the objectives of the study. With regard to the first objective of developing a profile of motorcyclists the study revealed that majority of boda boda motorcyclists are men. In fact all the respondents were male. This might be because of general nature of the profession which is viewed as risky making females shun it. 51% of the motorcyclists are married and 49% are single. Majority of the motorcyclists are between ages 16 years – 25 years which account to 62%. Motorcycling, being associated with macho image and fun are attractive to this age group. Most motorcyclists are self employed eking their living from the proceeds of boda boda business. 75% of the motorcyclists have basic academic qualifications being of secondary school level but none has gone to university. Most of them (86%) have apparently done mechanical and riding courses which are pre-requisite to good riding.

In conclusion a Kenyan motorcyclist is a male youth who is self employed either married or single with a basic education both academic and vocational. Based on the second objective which was to assess statutory requirements governing motorcycle operators, most respondents were knowledgeable on the governing statutes and seemed to appreciate the traffic act.

On the third objective of establishing the general and specific causes of motorcycle accidents, the study carried out showed that in spite of 56% of the respondents indicating that they attended a riding school and did the government test, they were reluctant to produce a valid riding license to prove that they are licensed riders. Hence it is logical to conclude that less than 10% of the riders on the road do not have a valid license (table 24) while half of them never attended a riding institution (table 15). Hence it can be deduced from the above, that motorcycle accidents are caused by lack of training of the motorcyclists.

Based on the fourth objectives of establishing a frame-work for training motorcyclists it was found out that the motorcyclist do not attend the training institutions although they appreciated that for them to be competent on the road they need to join a riding school. (table 26).It was further found out that the motorcyclists do not wear protective safety gear when riding and this is the reason why there are many fatalities in case of an accident.

### **5.3 Limitation of study**

There were various limitations to the study which included:

Time: due to time frame, it was not possible to research on all boda bodas in Kenya and had to narrow the research on Nairobi and its environs. Most motorcyclists were not willing to be interviewed because they were suspecting that the interviewers to have been sent by the police to gather information which could be used later to catch the errant motorcyclists, and it took a lot of time to convince them. Some motorcyclists were demanding to be paid if they have to complete the questionnaire since they reckoned that they were neglecting their work in doing so, whereas others were abandoning the exercise half way if they got a customer.

## 5.4 Recommendations

The research work aimed at establishing the training and safety needs of motorcyclists and the following recommendations are proposed:

(1) The government should formulate a standard curriculum for all the riding schools and encourage all potential and existing riders to attend riding schools in order for them to be trained taking into account their profile. The curriculum should contain the following aspects:

- a) Introduction which should be class based and introduces basic road safety and how to respond on the road, it should also teach them the necessity of wearing proper riding gear.
- b) Off road training which should involve an introduction to the main parts of the bike and how every component work, the novice should be made to walk with the bike and then finally get to know how to ride it at different speeds and how to act at junctions and how to turn and stop in an emergency.
- c) On road training which should involve student being allowed on to the road after the instructor is satisfied that he is competent. The whole course should contain not less than fifteen hours after which the student must be assessed on all aspects both theory and practical before being recommended for the government test.

(2) A way should be established of training the boda bodas in their places of operations rather than for them going to riding schools neglecting their profession which they rely on for their survival.

(3) Corporate organizations and government should explore a way of assisting in sponsoring the boda bodas, since most of them cited lack of funds as being major reasons as to why they don't attend training institutions.

(4) Campaigns should be organized to encourage the motorcyclists to use safety gear whenever they are riding since this will have an effect of avoiding serious harm in case of an accident.



## **5.5 Recommendations for further research**

(1) It is true that no research is an end in itself. Therefore what the research has achieved in this area can only be considered to be little and requires further research work. From the insights gained in the course of the investigation, the research offers the following suggestions which could act as a direction to further research.

(2) This study might not have fully reviewed the specific causes of motorcycle accidents on Kenyan roads. The research to the knowledge of the researcher is among the first to document with this subject matter, therefore there is a wide field that remains untouched and the researcher recommends that further research be done on why motorcyclists are reluctant to join training institutions, a separate research can also be conducted on why the motorcyclists fail to put on proper riding gear.

(3) A research should be done to find out why the traffic police are unable to ensure that all motorcyclists are properly licensed.

Documenting the experience of motorcyclists in Nairobi and its environs is an assumption that the experiences are uniform throughout the country which necessarily does not hold true.

## References

1. Abrams N. (2009) *The Art of Motorcycle*. New York, NY. Chronicle books.
2. AMAdirectlink. <http://www.com/motorcycle> hall of fame. (retrieved march 10<sup>th</sup> 2011).
3. Barrinueve A. (2008, Nov 3rd) “That roar in the jungle is 15,000 motorbikes. The New York Times .pp A12.
4. Broughton D. (2005) *The complete guide to insufficiency*, New York, NY. Chronicle Books.
5. Davis R. (1993) *Death on the streets; cars and the methodology of road safety*, New York, NY leading edge press.
6. Evans L. (2004) *Traffic safety science Bloom field hills MI science serving society Philadelphia PA*.
7. Foale T. (2006) *Motorcycle Handling and Chassis design*, Tony Foale Designs pp. 4 – 6.
8. Government of Kenya, 2009. *Economic Survey*
9. Hiroka N. (2008 October 8th) “Motorcycle Makers battle it out in Vietnam” *Japan Times*, pp 5.
10. *Motorcycle Association of Kenya, The MAK handbook, 2010*.
11. Mukinda F (2009, August 12<sup>th</sup>). *Motorcycles now the main culprits in road crashes* .Daily Nation, pp14.
12. Patti M. (10<sup>th</sup> October 2008) “Vietnam eats, sleeps, dreams on motorbikes (<http://www.cs.monitor.com> retrieved 20<sup>th</sup> Feb. 2011).
13. *Oxford English Dictionary, 2009. Online. Oxford University Press*.
14. Rutter D. and Quine R. (1996) *Self reported motorcycle behavior*.
15. Adachi S. (2006) *fuel call powered motorcycles, journal of the security automotive engines of Japan*.
16. Travers. J. (1<sup>st</sup> June 2010) “Survey; motorcycles and scooter ate very satisfied with their bikes” (<http://blogs.consumetreports.org/cars/2010>). Retrieved 24th March 2011.

17. Government of Kenya,1998.Traffic Act cap. 403.
18. Walker M. (2006) Motorcycle Evolution design and passion,  
(<http://books.goggle.com>) retrieved 23<sup>rd</sup> March 2011.
19. Setright K. (1979). The guiness book of motorcycling facts and tests, Guinness Superlative pp. 8 – 18.

## APPENDIX 1

### QUESTIONNAIRE

#### QUESTIONNAIRE ON TRAINING NEEDS OF MOTORCYCLISTS IN KENYA

BACKGROUND INFORMATION: PLEASE TICK IN THE BOX

1. Gender 

Male	<input type="checkbox"/>
------	--------------------------

Female	<input type="checkbox"/>
--------	--------------------------
2. Married status 

Married	<input type="checkbox"/>
---------	--------------------------

Single	<input type="checkbox"/>
--------	--------------------------
3. Age 

16 years	<input type="checkbox"/>
----------	--------------------------

20 – 25 years	<input type="checkbox"/>
---------------	--------------------------

Over 25 years	<input type="checkbox"/>
---------------	--------------------------
4. Occupation 

Self employment	<input type="checkbox"/>
-----------------	--------------------------

Employed	<input type="checkbox"/>
----------	--------------------------
5. Education 

Primary	<input type="checkbox"/>
---------	--------------------------

Secondary	<input type="checkbox"/>
-----------	--------------------------

University	<input type="checkbox"/>
------------	--------------------------
6. Course attended 

Mechanical	<input type="checkbox"/>
------------	--------------------------

Driving or riding	<input type="checkbox"/>
-------------------	--------------------------

Any other?	<input type="checkbox"/>
------------	--------------------------

Section A – Statutory requirements governing motorcycle operations  
Please tick in the box.

What licence is required to enable you ride a motorcycle?

BCE	<input type="checkbox"/>
-----	--------------------------

E	<input type="checkbox"/>
---	--------------------------

A	<input type="checkbox"/>
---	--------------------------

FG	<input type="checkbox"/>
----	--------------------------

What age must you be to obtain the license?

Under 16	<input type="checkbox"/>
----------	--------------------------

Under 18	<input type="checkbox"/>
----------	--------------------------

Over 21	<input type="checkbox"/>
---------	--------------------------

Over 32	<input type="checkbox"/>
---------	--------------------------

Motorcycles are governed by which act of laws of Kenya?

Company	<input type="checkbox"/>
---------	--------------------------

Traffic	<input type="checkbox"/>
---------	--------------------------

Criminal	<input type="checkbox"/>
----------	--------------------------

Boda boda	<input type="checkbox"/>
-----------	--------------------------

What must you have to operate a motorcycle?

License, insurance cover, reflective jacket, helmet	<input type="checkbox"/>
--	--------------------------

Hat, suit, boots, belt	<input type="checkbox"/>
---------------------------	--------------------------

Overall, city council license	<input type="checkbox"/>
----------------------------------	--------------------------

Operation of a motorcycle is governed by which body?

Police	<input type="checkbox"/>
--------	--------------------------

Government of Kenya	<input type="checkbox"/>
------------------------	--------------------------

City council	<input type="checkbox"/>
-----------------	--------------------------

Mungiki	<input type="checkbox"/>
---------	--------------------------

What additional requirements should the government insist on to curb an errant motorcyclists?

--

Section B: Motorcycle competency on the road.  
Please tick in the box

Which riding school did you attend?

--

(2) How many lessons did the curriculum contain?

Five	<input type="checkbox"/>
------	--------------------------

Ten	<input type="checkbox"/>
-----	--------------------------

Over Fifteen	<input type="checkbox"/>
--------------	--------------------------

How many theory lessons did you do?

None	<input type="checkbox"/>
------	--------------------------

Five	<input type="checkbox"/>
------	--------------------------

Over Five	<input type="checkbox"/>
-----------	--------------------------

How many practical lessons did you do?

None	<input type="checkbox"/>
------	--------------------------

Five	<input type="checkbox"/>
------	--------------------------

Over Five	<input type="checkbox"/>
-----------	--------------------------

Did you do an assessment test after the course?

Yes	<input type="checkbox"/>
-----	--------------------------

No	<input type="checkbox"/>
----	--------------------------

How much did you pay for the course?

Ksh.2000 - 4000	<input type="checkbox"/>
--------------------	--------------------------

Ksh.4000 - 5000	<input type="checkbox"/>
--------------------	--------------------------

Over Ksh.5000	<input type="checkbox"/>
------------------	--------------------------

Did you do the government test after the course?

Yes	<input type="checkbox"/>
-----	--------------------------

No	<input type="checkbox"/>
----	--------------------------

Did you pass the test?

Yes	<input type="checkbox"/>
-----	--------------------------

No	<input type="checkbox"/>
----	--------------------------

If yes, what is the license No.?.....

(10) How long have held the license?

Less than 1 year	<input type="checkbox"/>
------------------	--------------------------

1 – 2 years	<input type="checkbox"/>
-------------	--------------------------

Over 2 years	<input type="checkbox"/>
--------------	--------------------------

(11) What should motorcyclists do to improve competency?

------------------

Section C:

Are motorcyclists wearing the proper safety gear?

Please tick in the box

Which one of the following do you wear each time you are riding?

Reflective jacket	<input type="checkbox"/>
-------------------	--------------------------

Helmet	<input type="checkbox"/>
--------	--------------------------

Riding suits/boots	<input type="checkbox"/>
--------------------	--------------------------

Riding goggles and gloves	<input type="checkbox"/>
---------------------------	--------------------------

Ear plugs	<input type="checkbox"/>
-----------	--------------------------

Have you ever been involved in an accident?

Yes	
-----	--

No	
----	--

In your view who was to blame?

My self	
---------	--

The other party	
-----------------	--

Who was the other party?

Motorcycle	
------------	--

Pedestrian	
------------	--

Automobile	
------------	--

How were the injuries?

Serious	
---------	--

Minor	
-------	--

None	
------	--

Were you taken to hospital?

Yes	
-----	--

No	
----	--

How many accidents have you been involved in this year?

None	
------	--

1 - 2	
-------	--

3 - 5	
-------	--

Over 5	
--------	--

Do you carry an extra helmet for the pillion rider?

Yes	
-----	--

No	
----	--

Do you carry an extra reflective vest for the pillion rider?

Yes	
-----	--

No	
----	--

What should riders do to improve safety?





## **APPENDIX 2**

## FINANCIAL BUDGET

1.	Stationery		
	(i)	1 flash disk @ 3000/=	= 3000
	(ii)	5 writing pads @ 100/=	= 500
	(iii)	10 reams typing paper @ 500	= 5000
	(iv)	2 tonners @ 5000/=	= 10000
	(v)	10 biro pens @ 20/=	= 200
	(vi)	Photocopying expenses	= 5000
	(vii)	Typing services	= <u>5000</u>
			28700
2.	Travelling		20000
3.	Miscellaneous		<u>10000</u>
	<b>TOTAL</b>		<b><u>58700/=</u></b>