

**PREVALENCE AND IMPACT OF STRESS ON BEHAVIOUR OF  
MATATU DRIVERS IN NAIROBI**



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### DECLARATION

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

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## DEDICATION

This work is dedicated to my mother Ricarda Njoki and my late dad Nicasio Mutero for the important roles they have played in my life

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## ABSTRACT

*Matatu* drivers in Kenya may often encounter high number of stressful situations such as being uncertain about the possibility of meeting a set target of revenue by the employer, having to drive on bad roads, encountering traffic jam, high possibility of being arrested by traffic police, and being threatened by terror gangs. Using Conservation of Resources theory and Palmer's stress model, this study aimed to investigate the prevalence and effects of stress on *matatu* drivers in Nairobi with a view of suggesting possible solutions to driving problems that may arise as a result of stress. An explanatory case study research design was used in this study. Out of the 18000 *matatu* drivers, the targeted population was 304 drivers of *matatus* plying the route from Nairobi city center to Kenyatta University entrance and the route from Nairobi city center to Kawangware. Using systematic random sampling technique, a sample size of sixty drivers was selected for the study. Questionnaires and focused group discussions were used for data collection. Simple descriptive statistics such as means, frequencies, percentages and ranks were used to explain the meaning of the collected data. Charts, graphs or tables were also used to give clear analysis of data collected using the structured questions. The findings of this study show that *matatu* drivers go through various challenges that make them experience stress. The stress experienced by the *matatu* drivers can be prevented or managed by: reducing the number of daily working hours; coming up with strategies to deal with corruption issues in the *matatu* industry; ensuring *matatu* drivers sign a proper job contract agreement with the employers; improve road infrastructure in Nairobi; and teach *matatu* drivers various stress management skills.

## ABBREVIATIONS/ACRONYMS

**COR** – Conservation of Resource

**CSUD** – Center for Sustainable Urban Development

**DC** – Demand Control

**ERI** – Effort Reward Imbalance

**KRA** – Kenya Revenue Authority

**MOA** – Matatu Owners Association

**MWA** – Matatu Welfare Association

**PSV** – Public Service Vehicle

**SACCO** – Savings and Credit Cooperative Organization

**SPSS** – Statistical Package for the Social Sciences

**TLB** – Transport Licensing Board

## OPERATIONAL DEFINITION OF TERMS

**Matatu** – Is a van, mini-bus or bus used in Kenya as a public mode of transport for passengers and their goods, excluding buses run by limited companies. The passengers travelling in this vehicle are charged fares that are determined by various factors such as the distance travelled, demand for the service at particular times, road condition and weather conditions.

**Motivation** – Internal and external factors that stimulate desire and energy in people to be continually interested in and committed to a job and to exert persistent effort in attaining a goal.

**Palmer's stress model** – Is a model developed in 2001 by a Psychologist called Palmer to explain the relationship between the main stress-related hazards, the organizational, and individual symptoms, and the outcomes.

**Psychoactive drugs** – Any chemical that once taken into the body, produces emotional, cognitive and behavioral changes which may be pleasurable or desirable to the user but may have many negative psychological and social consequences.

**Strain** – subjective or observable states of distress

**Stress** – Any circumstances that threaten or are perceived to threaten one's well-being and tax one's coping abilities

**Stressor** – A stimuli in the environment that may be interpreted by a person as threatening

**Working conditions** – The terms of service which include, safety while at work, proper remuneration, proper housing, leave and relaxation, medical care, pension, and promotion schedule.

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 BACKGROUND OF THE STUDY

Drivers of public transport vehicles commonly referred to as *matatus* in Kenya are the focus of this study. *Matatu* drivers in Kenya work in an industry which largely determines their working environment. *Matatus* are privately owned vehicles used for public transport, with a capacity to carry seven to about fifty two fare paying passengers.

The *matatu* industry makes crucial contribution to economic growth and development in Kenya. By 2004, it was estimated that the industry controlled over 80% of passenger transportation in Kenya (Ndung'u et al 2004). Up to date the *matatu* industry plays a very significant role by ensuring majority of workers and students, as well as many other travelers in Kenya are ferried from one destination to another. The industry also creates a lot of employment opportunities for Kenyans since there is a lot of workforce required to offer service, such as the managers, accountants, drivers, and conductors. Since its inception in 1973, the industry has been experiencing an exponential growth in size and in terms of employment creation.

By 2004, the industry had an estimated fleet of about 40,000 vehicles, of which 11,000 operated in Nairobi (Ndung'u et al 2004). Statistics obtained from the Kenya Revenue Authority (KRA) Transport Licensing Board (TLB) office reveal that by November 2011, 18, 000 *matatus* were registered and operating in Nairobi. *Matatu* industry therefore plays an important role in Kenya's economic development. In many parts of the country it is the main mode of transport

taking people to and from work. It also provides employment to many Kenyans hence it is a source of livelihood for many people.

However, behind this success story in the *matatu* industry, there are various challenges encountered by its employees, particularly the drivers. This is because the working environment in the *matatu* industry, often, does not seem conducive especially for someone who is driving and needs peace of mind in order to concentrate on the road. *Matatu* industry in Kenya is characterized by a plethora of actors, with diverge, and sometimes conflicting social, economic and political interests. The main actors are: *matatu* owners; *matatu* operators (driver and conductor); regulators/civil associations (ministries, Transport Licensing Board/TLB, traffic police, *Matatu* Owners Association/MOA, and *Matatu* Welfare Association/MWA); support industry (stage managers, mechanics, and petrol attendants); and Kenya community at large. All these stakeholders with varying and conflicting interest, one could expect tension in the industry.

The various stake holders quite often contribute to the poor working environment for the *matatu* drivers. For example, in a research carried out by Graeff (2009), Mutongi (2006), and Ndung'u et al (2004) various interests were highlighted such as: the *matatu* owners' main interest is making income and at times are so demanding regarding the amount of money they want to get from the driver after the days work and it may be less of their concern whether the driver and the conductor encountered some challenges during the day or not; the traffic police at times demand for bribes from the *matatu* drivers and failure to get it may lead to the arrest of the driver for even a vague reason; the ministry of roads and transport at times neglect the roads repair work leaving the roads used by *matatus* in a deplorable condition; some passengers may want to pay less money for fare and at times pick a quarrel with the conductor hence become a

source of distraction for the driver; other passengers may even end up insulting or picking a fight with the conductor and the driver. All these are challenges that a *Matatu* driver in Kenya is likely to experience in a day of his work. Moreover, the physical working environment of the industry is poor. According to Graeff, (2009), *Matatus* operate in congested and poorly constructed roads (some of them full of pot holes), insecure environment due to terror gangs that at times take control of their various stages, roads full of vehicles in bad mechanical conditions, and many vehicles driven by drivers who do not obey the traffic rules. The end result of this struggle is increased cost of running the business; poor service delivery; poor working conditions for the *matatu* driver; and greater risk of road traffic accidents (Graef, 2009).

The various challenges in the *Matatu* industry are not unique to Kenya only but also to other African countries. Kouakou & Fanny Dian (2008), supported by the European Union, did a study in Africa, on the public transport system in the African countries and their findings show that in many African countries, public transport is still poorly developed and draws very little interest. The findings reveal that public transport operators in Africa are confronted with numerous problems, one of the most crucial being the insufficient and in adequate transport infrastructures. This leads to various challenges experienced by the public transport vehicle drivers.

Thika Road and the road from town center to Kawangware which are the focus of this study largely mirror the description of work conditions described above. Although Thika road has been constructed elevating it to a super high way, many of the other related factors may remain largely the same, for example demands by the vehicle owners, taking of bribes by the traffic police, failure by the drivers to obey the traffic rules, and long working hours are likely to

persist. The constructed road may also pose new challenges such as more fatal accidents in case of over speeding, and possibly more demands by vehicle owners since they may argue that there is no traffic jams challenge any more. Generally, *matatu* drivers work in a deplorable working environment that could be conceptualized as stressful (Legree, et al 2003). With so many stressors in the work place the drivers are likely to risk their lives, passengers and the entire society.

Graeff (2009), in her research done on “The *Matatu* Industry in Kenya” shows that most *matatu* drivers tend to drive recklessly, as their income and job security is dependent upon daily passenger loads yielding the daily profit mark set by the *matatu* owners. This means that, regardless of the challenges expected on the Kenya roads such as traffic jam, bad road condition or even at times bad weather, the *matatu* driver must give a certain amount of money to the vehicle owner. The implication is that too much pressure is put on the driver to get the required amount of money. To accomplish this, the drivers may end up breaking traffic laws, thus, weave in and out of traffic, cut off other vehicles, use sidewalks to bypass traffic jams hence putting pedestrians at risk, and over-speed when possible. It is important to note that the behaviors resulting from that struggle to meet the daily target set may also lead to other situations that can generate stress. For example if the *matatu* driver cuts off other vehicles, the drivers of those vehicles are likely to insult him and trigger an angry reaction that can make him experience more pressure psychologically. Stress experienced by any worker is likely to have various impacts depending on the situation that generates stress and the capacity to cope by the person experiencing stress (Kompier, and Levi, 1993).

Stress can be defined as any circumstances that threaten or are perceived to threaten one's well-being and tax one's coping abilities (Weiten, 2006). The threat may be to immediate physical

safety, long-range security, self esteem, reputation, peace of mind, or many other things that one values. Stress can take its toll on an individual in many ways whereby it produces both biological and psychological consequences (Weiten, 2006). The psychological aspect of stress may be manifested in factors such as anxiety, depression, and emotional burnout among other effects. In addition to psychological consequences, continuous exposure to stress, results in a decline in the body's overall level of biological functioning due to the constant secretion of stress-related hormones (Feldman, 2000). Over time, stressful reactions can promote deterioration of body tissues such as blood vessels and the heart, ultimately making us more susceptible to diseases as our ability to fight off infection is lowered (Shapiro, 1996). All these factors affect the behavior of an individual. This conceptualization of stress is summarized in the following table.

### Strain Domains

Physical	Psychological	Behavioral
Cardiovascular disease	Anxiety	Alcohol/substance abuse
Headaches	Depression	Violence
Increased blood pressure	Tension	Sleep disturbances
Increased cortisol levels	Emotional burnout	Fidgeting & increased risk taking

Sources: Beehr (2000); Lawton & Parker (1998); Spector, Dwyer, & Jex (1988).

When examining these strains, it is arguable that many would impact on an individual's ability to perform important tasks, such as driving. Behavioral strains such as increased risk taking and

alcohol/psychoactive drugs abuse represent potential dangers to road safety. In this study, what will be of greater interest are the psychological and social consequences of stress that are most likely to interfere with a drivers' good concentration on the road and hence lead to high risk of causing an accident.

Many everyday events such as driving on a bad road, having car trouble, quarreling with a passenger who is not happy with the service offered and being stuck in traffic jam are all stressful and constitute a possible psychological aspect of stress such as anxiety, tension, and emotional burn out (Weiten, 2006), yet this is the kind of environment a *matatu* driver in Kenya operates in. The question for this study is how this kind of environment affects the drivers.

## 1.2 STATEMENT OF THE PROBLEM

Although the *matatu* drivers work in an environment that seems quite un-conducive for efficient working, little is known on how stress from that environment affects their behavior. *Matatu* drivers in Nairobi work in a difficult environment that may affect their way of driving. The drivers are for example expected to meet targets for the employer yet the inevitable challenges they often encounter on the roads make it so difficult for them to meet the set target. They are also supposed to strictly follow the traffic rules yet doing so appears to make it hard for them to meet their targets. Many roads in Nairobi are in a deplorable condition hence making the work for *matatu* drivers difficult. In some of these roads traffic jam, among other challenges, has become the order of the day.

An employee working in an environment that doesn't favor efficient working is likely to experience stress that can result to poor performance at work. This is likely to occur in

situations where, for example, the employee's workload is more than his/her capability to handle or there are threats to the employee's well-being and source of income.

Various studies have been done in the past to investigate the effects of stress on drivers, either in general, for example a study done in Denmark by Evans, Johansson, and Rydstedt (1999), or certain categories of drivers such as truck drivers (Hartley and El Hassani 1994), show a link between driving and stress. However, the circumstances of the drivers in these investigations are different from the ones of the Kenyan *matatu* drivers in relation to the work environment and the stakeholders whose interests and decisions may affect the drivers.

There is therefore need to find out the link between stressful working environment and *matatu* drivers' ability to function efficiently while at work, considering their unique Kenyan situation. For example if a *matatu* driver constantly encounters traffic jam and is always under pressure to meet a certain target in terms of profit, then he/she might end up disobeying traffic rules hence work under fear of causing an accident or being arrested by traffic police. Understanding the prevalence and effects of stress on *matatu* drivers will help us come up with strategies to improve productivity in the *matatu* industry and manage/prevent stress.

### **1.3 PURPOSE OF THE STUDY**

This study aimed at investigating the effects of stress on *matatu* drivers in Nairobi with a view of coming up with possible solutions to driving problems arising as a result of stress.

## 1.4 OBJECTIVES OF THE STUDY

The specific objectives of the study were:

1. To find out the views of *matatu* drivers on the nature of their work
2. To establish if the *matatu* drivers experience any form of pressure related to their work
3. To find out the *matatu* drivers' views regarding stressors related to the type of work they do
4. To find out *matatu* drivers' views about the effect of stress on their driving.
5. To find out what needs to be done to improve the working environment of *matatu* drivers.

## 1.5 RESEARCH QUESTIONS

The following research questions were used to guide the study:

1. What are the views of *matatu* drivers in Nairobi regarding the nature of their work?
2. Do *matatu* drivers in Nairobi experience any form of pressure related to their work?
3. What are the *matatu* drivers' views on stressors related to the type of work they do?
4. What are the *matatu* drivers' views about the effect of stress on their driving?
5. What needs to be done to improve the working environment of *matatu* drivers?

## 1.6 JUSTIFICATION AND SIGNIFICANCE OF THE STUDY

Stress, in many occasions, affects people's productivity at work. This results to losses in various industries and therefore it is important for people to understand the impact of stress in their work in order to come up with proper stress management/prevention skills. In the *matatu*

industry, stress is likely to have a negative impact on the drivers yet they make an important contribution in the industry and economic development of Kenya.

It is therefore important to pay special attention to what may hinder their efficient working. A stressed *matatu* driver may end up being a danger to self and others due to high risk of causing an accident. This would in turn negatively affect the entire society in Kenya as the *matatu* industry plays a very important role in transportation of people and goods within the country. Understanding the effects of stress through an empirical study can guide those in the *matatu* industry to come up with programs that can help in dealing with the various problems related to impact of stress on *matatu* drivers.

Various categories of organizations or individuals will benefit from this study. These include:

- Policy makers especially in the ministry of roads and transport- The findings will help in understanding the various problems, in relation to the impact of stress on *matatu* drivers that negatively affect proper service delivery by the ministry. For example if they understand the various challenges that face road users due to driver stress related accidents, they may come up with better ways of reducing the number of road accidents in Kenya
- *Matatu* owners – They will get to understand how to avoid great losses incurred when stressed drivers engage in risky driving behaviors resulting from stress hence make their business more productive.
- The insurance companies – If the results help the various stakeholders take measures to prevent driver stress related accidents, the number of damage claims to the insurance companies by their clients will reduce.

- Traffic police – The findings will help come up with ways of reducing stress related accidents. If road accidents are reduced, that would also mean less work for the traffic police in Kenya hence they will have ample time to focus on other important issues.
- The entire Kenya population – Since the findings will help in coming up with ways of reducing stress related road accidents, this would mean less family members and fellow Kenyan citizens will continue to lose their lives through road accidents.
- *Matatu* operators, especially the drivers and the conductors – Once the various stakeholders in the *matatu* industry understand how poor work environment can contribute to various avoidable losses incurred; they will be able to create a conducive work environment for the drivers and conductors.

## 1.7 SCOPE AND DELIMITATIONS OF THE STUDY

The study was focused on the *matatu* drivers within Nairobi, and the main focus was on the route from Kenyatta University entrance to Nairobi city center and the route from Kawangware to Nairobi city center. Although this has helped to get in-depth information from the *matatu* drivers, it is difficult to generalize the findings of these two routes to the entire country or even the whole of Nairobi. This is because the factors affecting working conditions of the *matatu* drivers on these routes might be different from those in other areas.

The study sought to find out whether stress is one of the main factors that affect the *matatu* drivers' behaviors while driving. The working conditions of the *matatu* drivers were studied. This helped to understand whether the working conditions, if not conducive for efficient working, contributed to stress which in turn led to unsafe driving by the *matatu* drivers. The behaviors of the *matatu* drivers that may be as a result of various stressors (agents, conditions,

or other stimuli that cause stress to a person) were carefully analyzed. Various stressors such as long working hours and poor remuneration were studied.

Due to the nature of their work, some of the drivers found it a bit difficult to offer quality time for in-depth interviews but nevertheless, a deal was struck and they finally managed to sacrifice some of their time for the interviews.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 INTRODUCTION

The purpose of this study was to investigate the effects of stress on *matatu* drivers in Nairobi with a view of coming up with possible solutions to driving problems arising as a result of stress.

In this chapter, theories/models related to stress, literature deemed necessary to help understand stress in relation to the driving behaviors of the *matatu* drivers, and a theoretical framework showing relationship between stress and the driving habits of *matatu* drivers were reviewed.

#### 2.1 THEORETICAL FRAMEWORK

In this section theories that guided the study were reviewed. The important theories featured in this section are Conservation of Resources (COR) theory and stress model. The particular stress model reviewed was Palmer's stress model.

##### 2.1.1 CONSERVATION OF RESOURCES THEORY

Hobfoll (1989) developed Conservation of Resources Theory (COR) of stress which is based on the basic tenet that people strive to obtain, build, and protect that which they value (i.e. resources), and psychological stress occurs when these resources are lost, threatened with loss, or if individuals fail to replenish resources after significant investment. The resources referred to in this theory may be objects (e.g. home, clothes), personal characteristics (e.g. personal confidence, respect for self and others), psychological resources/conditions (e.g. job security, financial security and good marriage) and energies (e.g. time, knowledge). A cycle develops

where resources are constantly used and replenished and failure to replenish these resources leads to psychological stress.

In relation to this study, a *matatu* driver would constantly exploit such a resource as financial security by meeting his expenses while working and would need to replenish that. In case his expenses outweigh his earnings, then he would eventually exhaust his resources, hence experience stress. Also, in a situation where he has not really exhausted his resources but is not really certain whether his earnings would be enough to meet his needs, then his resources are threatened with loss and he/she would also experience stress or anxiety.

According to COR theory, individuals accumulate resources they can apply to accommodate, withstand, or overcome threats. For example, a *matatu* driver may accumulate personal resources, such as self esteem and optimize material resources, such as money. This is however determined by the way the employer provides good environment by offering good moral and material support to the driver. The *matatu* driver may also accumulate condition resources, such as status, and social support which are also largely dependent on the work environment. If a *matatu* driver is earning good money and behaves in a way that shows respect for self and other people, then he/she uses and replenishes the status resource well. Stressful or traumatic events consume these resources, thereby augmenting their sensitivity to subsequent stressors. For instance a *matatu* driver working in an environment whereby he/she is not treated well by employer, drives on a bad road, and is harassed by other people while at work, he/she would therefore experience stress.

Hobfoll, (2001) proposed two important principles of the COR theory. One of them is that “resource loss is disproportionately more salient than resource gain” (Hobfoll, 2001). This principle has its basis on the findings in the psychology literature, whereby other things being

equal, negative events appear to elicit more physiological, affective, cognitive, and behavioral responses than neutral or positive events (Taylor, 1991). For example, if a *matatu* driver constantly encounters traffic jam hence making it difficult to reach a certain target of profit expected, he/she would experience a negative psychological impact of greater magnitude than the positive psychological impact that could have been experienced if there was no traffic jam encountered.

The second major principle of COR emphasizes the importance of resource investment. Hobfoll (2001) proposed that “people must invest resources in order to protect against resource loss, recover from losses, and gain resources. A *matatu* driver, for example may invest in such resources such as financial security and good relationship with other stakeholders in *matatu* industry such as *matatu* owners. Furthermore, those with greater resources are more capable of resource gain and those with limited or fewer resources are more susceptible to resource loss (Hobfoll & Lilly, 1993). For example, if a *matatu* driver is earning little money that only meets the basic human needs and has nothing to save, he/she becomes more susceptible to resource loss and eventually the resources are completely depleted, hence ends up being stressed.

### **2.1.2 PALMER'S STRESS MODEL**

Palmer et al (2001) developed a simple model of stress that could be used to explain the relationship between the main stress-related hazards, the organizational and individual symptoms, and the outcomes. The model addresses seven major hazards that can cause stress for employees. One of the hazards, culture, is subsumed into the other six hazards. Culture is seen to influence or be part of the six main hazards and this is reflected in the following figure.

## Model of Work Stress © Palmer & Cooper 2004

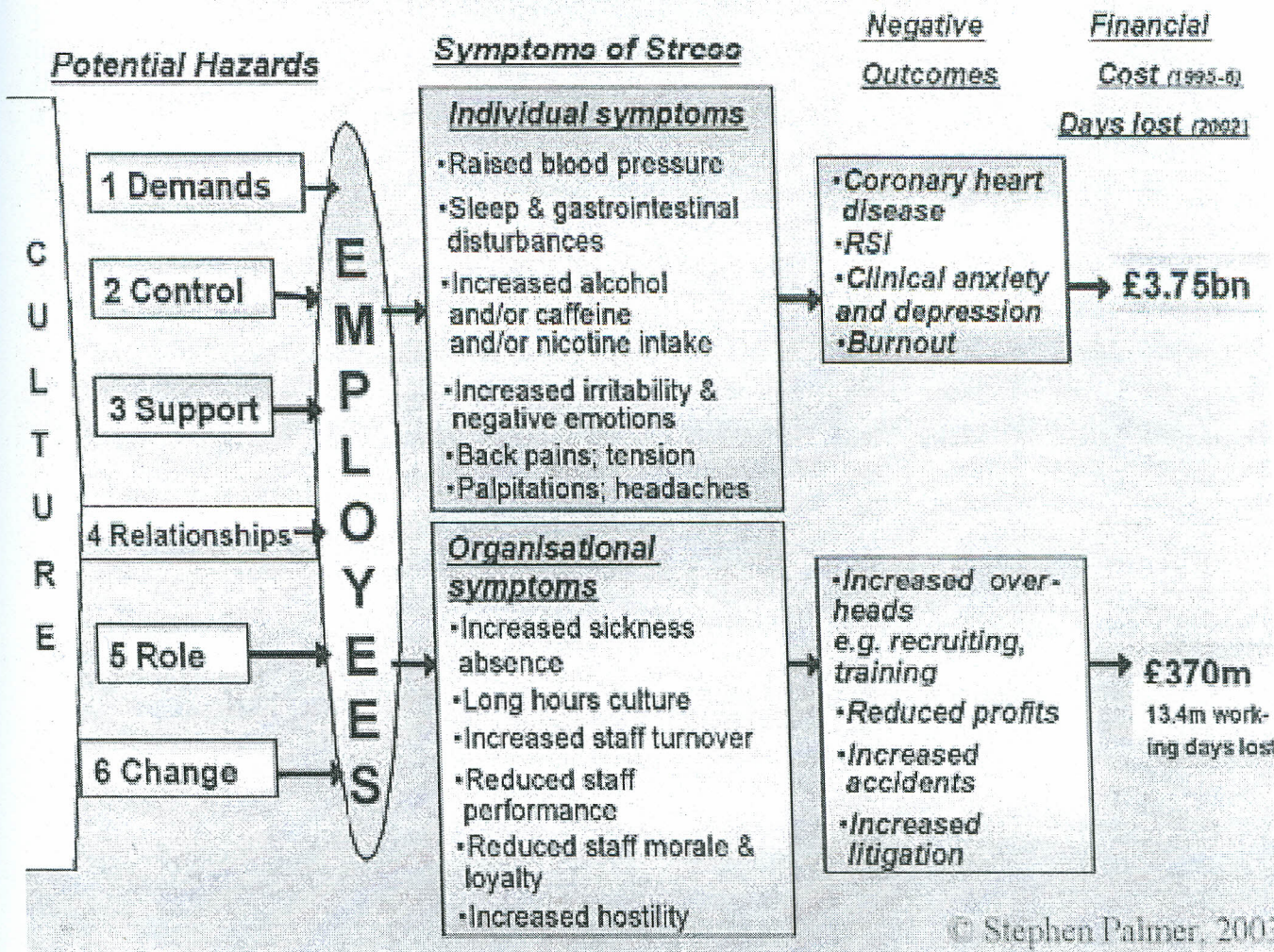


Figure 2.1

The six hazards are:

**Demands:** includes exposure to issues such as workload, work patterns and work environment (for example volume and complexity of work, shift work, and unrealistic deadlines would determine whether a *matatu* driver experiences stress or not);

**Control:** how much say and involvement the person has in the way they do their work (for example control balanced against demands, lack of autonomy, and too much supervision for a *matatu* driver would most probably lead to stress);

**Support:** includes the encouragement, sponsorship and resources provided by the organization, line management and colleagues (for example training for core functions of job and catering for individual differences should be catered for to avoid experience of stress by a *matatu* driver);

**Relationships:** includes promoting positive working to avoid conflict and dealing with unacceptable behavior (for example bullying and harassment of a *matatu* driver by terror gangs would lead to stress);

**Role:** refers to whether the organization ensures that they do not have conflicting roles or vague job descriptions ( For example a *matatu* driver who has never been told in clear details what his/her work entails may constantly experience tension due to lack of clear knowledge on what the employer expects of him/her)

**Change:** refers to how the organizational change (large or small) is managed and communicated in the organization (for example whenever there is change in the way of running the *matatu* business a *matatu* driver should be made to understand why the change was necessary).

In general, the theory sheds light on various demands that can lead to stress in a work environment. There are work demands placed on *Matatu* drivers that have to be met, that could lead to stress. As Highlighted earlier *matatu* drivers are controlled by different interested groups that might have conflicting interests leading to the various challenges that stress the *matatu* drivers. As a result, the *matatu* drivers may end up presenting with the various symptoms of stress highlighted in the theory, for example increased irritability and negative emotions leading to increased risk taking while driving. The outcome of this may be increased number of accidents hence loss of human resource and income for the country.

In summary, Hobfoll's Conservation of resources Theory of Stress mainly illuminates on what causes stress. According to COR theory, we experience psychological stress when our resources are threatened with loss, or when we fail to replenish resources after significant investment. *Matatu* drivers would for example, experience stress when they exhaust such resources as financial security or personal resources and they are not able to replenish them. The theory helps us to understand why people experience stress and hence this would help us learn how we can prevent or manage stress. Palmer's stress model, on the other hand, sheds light on six specific hazards that lead to stress hence it helps us understand areas that we need to focus on if we have to manage stress in our lives, and also why we should prevent or manage stress. Both are very relevant and helpful in an effort to investigate the impact of stress on *matatu* drivers

and how various strategies can be used to prevent or manage stress. The COR theory and Palmer's model complement each other by giving us different perspectives from which we can understand the sources of stress and why we should come up with various ways that can help us prevent or cope with it.

## 2.2 REVIEW OF RELATED LITERATURE

### 2.2.1 THE MATATU INDUSTRY IN KENYA: A HISTORICAL OVERVIEW

The *matatu* business started evolving in Kenya in the early 1950s as a response to unmet travel demands by Kenyans. After Kenya's independence in 1963, many Africans started migrating from their countries and especially those from East African countries to Kenya, particularly to Nairobi, seeking employment opportunities and this led to expansion of informal settlements hence high demand for traveling services (Graef, 2009; Mutongi 2006).

Most of the people living around Nairobi were too poor to afford buying cars or even afford private transport. In order to serve the needs for these people, some middle income earning people bought minibuses and used them in offering transport services for people moving from the rural areas to Nairobi and from informal settlements around the city (Lee-Smith, 1989). There was constant increase in demand for the public transport service both in Nairobi and rural areas. This led to rapid increase in the number of these mini-buses used for the transport and eventually they acquired the name *matatu* (Ndung'u et al, 2004). In 1973, the Kenya president, Mzee Jomo Kenyatta issued a decree officially recognizing *matatu* as a legal mode of public transport in Kenya. The decree allowed *matatu* owners to operate the business without any form of licensing (Mutongi, 2006). "The main idea was to increase and make the mobility of people

more efficient and create more jobs in the informal sector” (Kimani et al 2004) hence reduce many people’s psychological stress that could have resulted from lack of employment. As Nairobi became dependent upon *matatus* to transport people to and from various destinations located in the metropolitan area, their numbers increased from 400 in 1973 to an estimated 15,000 *matatus* in the Nairobi metropolitan area in 2009 (Graeff, 2009). Data obtained from KRA’s TLB office on 29<sup>th</sup> November 2011 reveal that by that time there were 18,000 *matatus* registered to operate in Nairobi. With time, various *matatu* SACCOs have emerged and taken over the running of the *matatu* business. This eventually has changed the working environment for the *matatu* drivers. The working environment for the *matatu* driver largely depends on the employer and other key stakeholders in the *matatu* industry.

The *matatu* industry in Kenya is very important in determining the environment in which its drivers work. However it is of essence to understand that any industry’s working conditions may also be influenced by other factors in the country where it operates (Ndung’u et al, 2004). Situations in a country, like Kenya keep changing hence various changes expected to occur in the *matatu* industry as well. The management of the *matatu* industry plays a major role in determining the environment in which the *matatu* driver works and how he/she is affected in carrying out official duties.

### **2.2.2 WORK ENVIRONMENT FOR MATATU DRIVERS IN KENYA**

It is important to note that the environment in which *matatu* drivers’ work determine their general well being and their efficiency in their work. A *matatu* driver who works in a bad work environment may experience stress.

Various factors influence the environment in which the *matatu* drivers work. According to Graeff (2009) Job security is one of the major concerns for many drivers in Kenya. This is due

to the fact that most of them are employed as casual laborers and at times they don't have any written employment contract. The contract is often done verbally hence the employer can easily fire them at will (Graeff, 2009). Significantly, basic employment policy in Kenya does not cover *matatu* drivers (Graeff, 2009). Some of the *matatu* drivers working in the industry fear losing their jobs in case some *matatus* are kicked out of business. This fear is due to the fact that there have been various attempts by the government to phase out the 14-seater *matatus* in the near future (Graeff, 2009). Although at the moment this has been suspended, it is a great concern for majority of *matatu* drivers in Kenya since most of the *matatus* in Kenya are 14-seater and phasing them out means possible loss of job for the drivers.

The *matatu* drivers work in an environment where some cartels demand to be given a share of the profit made by the *matatu* crew for no good reason. For example, Miruri (2005) found out that a cartel known as *Mungiki* some times assign itself the mandate of regulating *matatu* operations in certain routes and demand payment for the regulation work. Although the Kenya law allows only the Transport Licensing board (TLB) to regulate *matatu* routes, in a certain moment, the cartel was collecting an average of Ksh. 400 from 14-seater *matatu* drivers and Ksh. 600 from mini-buses drivers every day (Muiruri, 2005) in order to operate in certain routes. Many Kenyans believe that the *Mungiki* sect members work together with top politicians for illicit financial gains and get protection from these politicians hence making it difficult for the police to stop their activities (Graeff, 2009). In the past, it has been alleged that the police receive weekly bribes from *Mungiki* sect members on certain *matatu* routes, which allow the *Mungiki* to conduct their business with impunity (Kahura, 2005). This contributes additional cost in the running of *matatu* business since some of the profit made has to be shared with the *mungiki* sect members.

*Matatu* drivers often complain that the traffic police also harass them and pull them over even when they have not done anything illegal (Mutongi, 2006). Therefore, they may be tempted to bribe the police to avoid the harassment.

### 2.2.3 GENERAL STRESS AND ITS EFFECTS

Stress generally affects how people function in many areas and this applies to the driving activity as well. A major stressful event such as threat of losing a job as a *matatu* driver if you don't meet certain difficult demands set for you can trigger a cascade of minor stressors, such as struggle to overlap in traffic jam and make more trips than practically possible, having to over speed, and so forth (Pillow et al 1996).

We might tend to think that what appear to be minor stresses such as being held up by traffic jam would produce minor effect, but it is important to note that this is not necessarily true (Pillow et al 1996). Stress tends to cumulate with time if there are many instances in which it is constantly encountered by an individual within a given duration (Seta & Wang, 1991). Routine stresses like driving on a bad road, encountering traffic jam, and having to beat a set deadline at work might be fairly benign individually, but collectively they could create great strain (Weiten, 2006). This stress may eventually lead to driver errors that would potentially cause an accident.

Previous studies done in Australia have shown that stress really does affect how people in Australia drive by making them have increased cognitive lapses, making more judgment errors, and having high tendency to violate traffic rules (Rowden et al., 2006; Westerman & Haigney, 2000; Davey et al., 2006). Due to the nature of work done by the *matatu* drivers in Nairobi, they are a group of people that has a high probability of being highly stressed (Odero, et al 2003). This is because they are most likely to encounter high number of stressful situations like being

uncertain about the possibility of meeting a set target of revenue by the employer, having to drive on a bad road, encountering traffic jam, high possibility of being arrested by traffic police, and being threatened by terror gangs (Graeff, 2009; Muiruri, 2005, Kahura, 2005).

#### 2.2.4 OCCUPATIONAL STRESS

Occupational stress refers to the kind of stress experienced in relation to work. Occupational stress occurs when there is a discrepancy between the demands of the environment/workplace and an individual's ability to carry out and complete these demands (Henry & Evans, 2008).

Ishikawa et al, (2009) did a study in Japan whose findings show that some of the common causes of occupational stress are: increased workload; high demand by the employers or customers; time pressures; uncertainty about job security; and lack of support by fellow employees.

Occupational stress may lead to physical symptoms such as fatigue, headache, stomach problems, muscular aches and pains, eating disorders, and sleeping disorders. Psychological and behavioral problems resulting from occupational stress may include anxiety, irritability, psychoactive substance abuse, feeling powerless and low morale (Jonge, Landsbergis, & Vegchel, 2005). These psychological and behavioral problems negatively affect workers and lead to poor performance. For example, a *matatu* driver who is anxious may end up being impatient and overlap when there is traffic jam or over-speed when the road is clear; an irritable *matatu* driver may end up being impatient with a slow driver ahead of him/her and attempt to overtake in a section of road where overtaking is not allowed; and a *matatu* driver who is using alcohol or psychoactive drugs may not make proper judgment when driving.

In their study, done in Germany, on occupational stress, Jonge, Landsbergis, & Vegchel, (2005) found out that the demand control model and the effort reward imbalance model are two work stress models that help to identify particular job characteristics important for employee well-being. The demand control (DC) model predicts that the most adverse health effects of psychological strain occur when job demands are high and the ability to make decisions is low. For example, if an employee faces high demand to meet unrealistically high target set by the employer in terms of profit and he/she has no opportunity to give personal views in setting the target, he/she is likely to experience high occupational stress leading to negative psychological impact.

The effort reward imbalance (ERI) model assumes that emotional distress and adverse health effects occur when there is a perceived imbalance between efforts and occupational rewards (Jonge, Landsbergis, & Vegchel, 2005). This means that if an employee, for example, is working so hard and getting low remuneration, the results would most likely be emotional distress and bad physical, psychological or emotional health. This study will help us understand how the demands, efforts, and rewards in the work of *matatu* drivers affect their well being.

A study by Bjørn Lau (2008) done in Norway sought to validate a Norwegian version of the Effort–Reward Imbalance Questionnaire (ERI-Q). Norwegian local authority workers took part and the study examined variables such as self-reported general health, psychological distress, musculoskeletal complaints and work-related burnout. People with high effort–reward and over-commitment scores had less favorable health scores, and those with low effort–reward and over-commitment scores had more favorable health scores. Bjørn’s was a general study on effort-reward imbalance without considering a specific group. This study will address effort reward imbalance in regards to *matatu* industry hence give an opportunity to consider unique circumstances under which *matatu* drivers work.

### 2.2.5 EFFECTS OF STRESS IN THE WORK PLACE

A study done in Denmark by Evans, Johansson, and Rydstedt (1999) show that drivers who have taken driving as a full-time job get exposure to a range of stressors such as traffic congestion, unpleasant work schedule, unpleasant behavior of other drivers, noise, bad climatic conditions, and ergonomic factors resulting to poorer health and work performance. A *matatu* driver, doing a full-time job, and getting exposure to the stressors mentioned above, may also end up having poor health and poor work performance (Palmer, et al, 2003). *Matatu* drivers in Nairobi often go through experience of traffic congestion and some times have got long working hours (Graeff, 2009). It is also not uncommon to encounter rude drivers who fail to obey traffic rules and at times are abusive if questioned by other drivers about their behavior (Graeff, 2009).

Kloimuller, et al (2000) examined stress-inducing factors for bus drivers in Thailand and found out that irregular driving services, long periods of sitting, and thermal conditions were the main stressors. In turn, the main strains experienced were unusual tiredness, headaches, and sleep disorders, which significantly impacted on the drivers' ability to work. A *matatu* driver in Nairobi may in the same way experience such stress-inducing factors as long periods of sitting and irregular driving services hence experience strains such as unusual tiredness, headaches, and sleep disorders.

A study done by Hartley and El Hassani (1994), in Australia, shows a significant relationship between self reported stress and traffic violations for full time truck drivers. However, a *matatu* driver may be working under unique circumstances different from truck drivers. For example the stakeholders in the truck industry are quite few while in the *matatu* industry they are many and with varying interests that are likely to bring about some conflicts and contribute to *matatu*

driver stress. A stressed *matatu* driver in Kenya, similar to the case of truck drivers in Australia, is also likely to violate traffic rules. In Australia, Carty, Stough and Gillespie (1998) studied psychological predictors of work-related motor vehicle crashes in a sample of Australian transport industry workers and found a significant positive correlation between occupational strain and self-reported crash involvement. Similarly, a *matatu* driver who is stressed and violates traffic rules is likely to be involved in a vehicle crash.

Stress experienced from work as shown in the reviewed literature above can affect individual functioning and henceforth interfere with concentration, which in turn raises the risk of causing an accident. This study will therefore seek to find out whether stress experienced by *matatu* drivers in Kenya, similar to the results of the research done in other parts of the world, really does affect the individual driver's concentration on the road hence raise the risk of causing an accident.

## **2.2.6 MANAGEMENT AND PREVENTION OF DRIVING STRESS**

Various studies done on work stress suggest several ways of preventing and reducing work stress (Leroy et al, 1984; Karasek, 1992; and Kompier & Levi, 1993). According to the findings of these studies, Stress management strategies can be directed at changing the work environment and/or teaching employees stress management or stress reduction skills. For example, the top management in a public transport industry may agree on getting feedback from drivers on their experience when they work in certain environments to assess stress level and if possible change the stressful work environment. In situations where the management may not be in a position to change the work environment, professionals such as psychologists may be invited to give training sessions to the drivers on stress management skills.

By changing the work environment, special attention is paid to the environment in which the employee works (Legree, et al 2003). For example if the working environment for drivers is not conducive (e.g. there are long working hours without rest, poor road network, and unrealistic targets to be met), then the solution would be to improve the work environment. An example of such an approach is the European Union Directive on health and safety which states that

“the employer has a duty to ensure the safety and health of workers in every aspect related to the work, following general principles of prevention: avoiding risks; evaluating the risks that cannot be avoided; combating the risks at the source; adapting the work to the individual especially as regards the design of workplaces; the choice of work equipment, and the choice of working and production methods, with a view to alleviating monotonous work and work at a predetermined pace and to reducing their effects on health” (Council directive 89/391/EEC, article 16 (1) of 12<sup>th</sup> June 1989 on the introduction of measures to encourage improvements in safety and health)

On the other hand, the driver can be taught ways of managing occupational stress without resulting to ways that create even more stress. Lavay, French, & Henderson (2006) suggest various ways of stress management that can be helpful for public transport drivers, for example, if a driver takes alcohol and/or other psychoactive drugs/substances to cope with stress, he needs to be taught other stress management strategies that can work (e.g. progressive relaxation exercises, meditation, and social support). The drivers can also be taught negotiation skills and strategies to ensure that they get a proper working environment. For example, Graeff (2009) suggests that drivers associations can be formed and used to help negotiate with other key stakeholders like vehicle owners and traffic police to ensure that their terms of work are reasonable hence avoid stressful work environment.

### **2.3 SUMMARY**

The job theories and stress model discussed above clearly show a link between stress and behavior at work. The literature review, further narrows down the focus from work in general to driving activity in relation to stress.

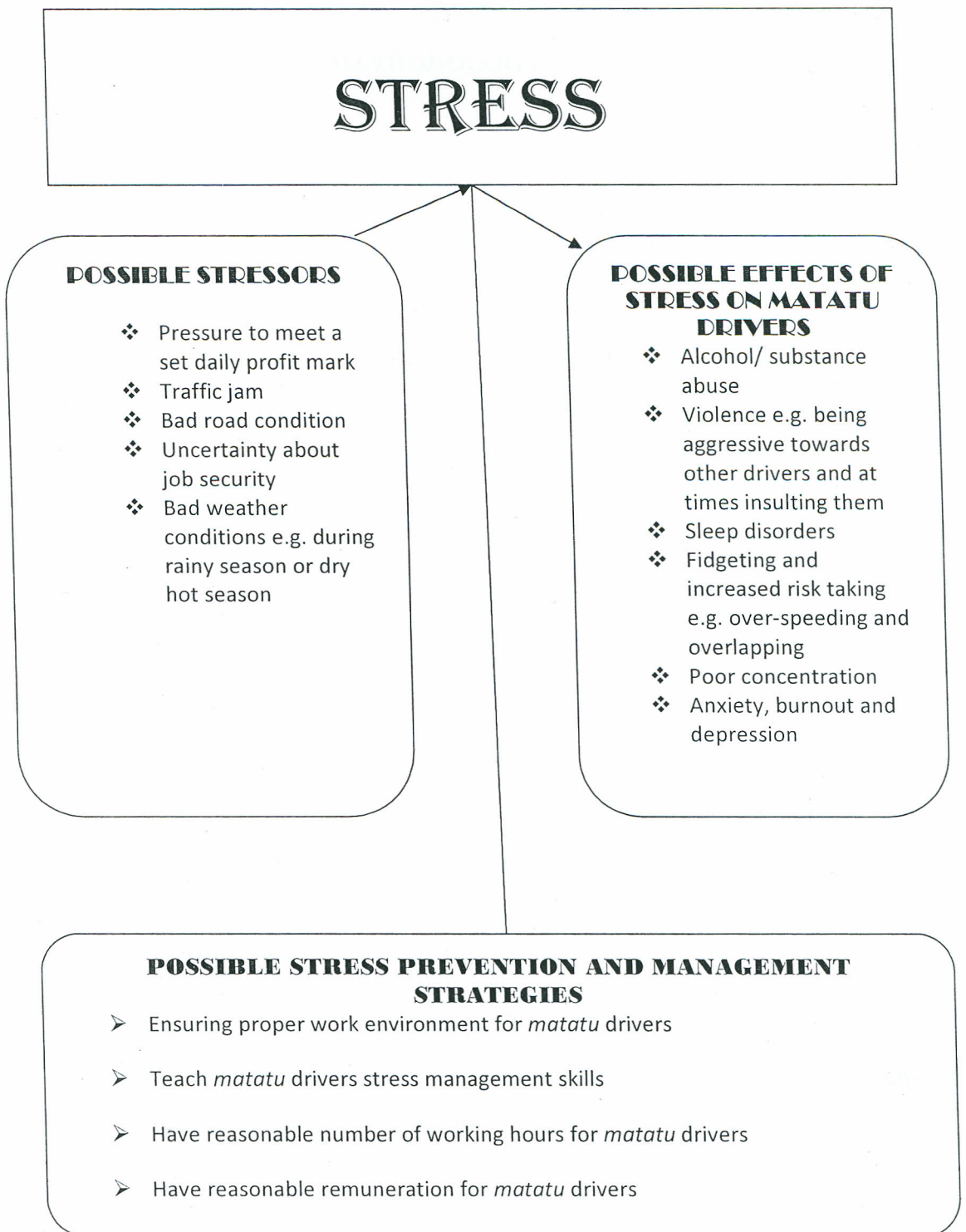
There is a possible link between work environment and driver stress. Bad working environment and stress may affect the general well-being of vehicle drivers. The general well-being of a driver, in turn, influences the behavior of a driver hence may result to stress or lack of it.

The results of the past studies show a relationship between risky driving behaviors and stress. A stressed driver is more likely to engage in risky driving habits than a driver who is not stressed. Some of the studies also raise particular concern on the working environment for drivers' working environment.

This research sought to objectively assess: the work environment for the *matatu* drivers; whether the work environment constantly makes them experience stress; and whether there is a relationship between stress and their driving behaviors.

#### **2.4 CONCEPTUAL FRAMEWORK**

The following conceptual framework illustrates what would possibly bring about stress for the *matatu* drivers, the possible effects of stress on *matatu* drivers and some stress prevention/management strategies. Various stressors, such as pressure to meet set targets, traffic jam and uncertainty about job security would most likely bring about stress. There are several effects of stress on *matatu* drivers such as alcohol/substance abuse and poor concentration. However, there are some strategies that can help prevent or manage stress, for example ensuring proper work environment and teaching *matatu* drivers various stress management skills.



Source of the conceptual framework: researcher

**Figure 2.2: CONCEPTUAL FRAMEWORK**

## CHAPTER THREE

### METHODOLOGY

#### 3.1 INTRODUCTION

The purpose of this study was to investigate the effects of stress on *matatu* drivers in Nairobi with a view of coming up with possible solutions to driving problems arising as a result of stress. In this chapter, a clear explanation on how the research was carried out is given. This includes the research design; the site of the study; the study population; the sample and sampling procedure; research instrument used in the study; data collection and analysis; data management and ethical considerations.

#### 3.2 STUDY DESIGN

An explanatory case study research design was used in this study. This allowed for in-depth analysis and understanding of the various issues affecting the behaviors of *matatu* drivers. Case studies are primarily designed to investigate specific cases in depth. A case study may draw upon a range of methods, such as interviews and questionnaires, focus groups, observation (participant and non-participant), document and artifact collection and analysis (David & Sutton, 2007). Once a single entity in regards to impact of stress in the driving behavior of *matatu* drivers is studied, it will help to gain insight into other cases in Nairobi and Kenya at large.

### 3.3 LOCALE OF THE STUDY

This study was conducted in Nairobi on the road between Nairobi city center and Kenyatta University main entrance (route 45) and the route between Nairobi city center and Kwangware (route 46). The *matatus* plying route 45 cover a distance of about 20 kilometers from the Nairobi city center while those plying route 46 cover a distance of 10 kilometers.

The location for the two routes was very ideal for the study because this is a cosmopolitan area and therefore diverse ideas from drivers of different ethnic backgrounds were gathered. The *matatus* in the routes are also registered in different *matatu* Savings and Credit Cooperative Organizations (SACCOs) and therefore the challenges experienced are not limited to the experiences in any one particular SACCO. The study revealed that vehicle drivers in the two routes also experience most of the challenges highlighted in the previous studies done in the past such as traffic jam, harassment by terror gangs or traffic police, quarrelling with the passengers, and driving un-roadworthy vehicles (see Kahura, 2005; Graeff, 2009).

### 3.4 TARGET POPULATION

The study was carried out in Nairobi constituency in which there is a population of about 18000 *matatu* drivers. The *matatu* drivers of the vehicles plying the routes from Kenyatta University main entrance to Nairobi city center and from Kawangware to Nairobi city center were studied. The vehicles plying route 45 (from Kenyatta University entrance to Nairobi city center) constituted a population of about 200 drivers while those plying route 46 (from Kawangware to Nairobi city center) constituted a population of 104 drivers, hence a total population of 304 drivers. This number was arrived at after making enquiries from various *matatu* sacco's and a confirmation done by taking a census on them in the month of June 2012. To take the census, the researcher stood at a strategic point on the route followed by the *matatus* in the morning

hours between 7 am and 11 am when each of the *matatus* was expected to have made at least a trip to or from town. To ensure no *matatu* was counted more than once, registration numbers of the *matatus* were noted down. It is difficult to get the exact number of the *matatus* because, constantly, there are new *matatus* starting to operate on the route and others getting out of the business, while at times some of them may have changed the route or broken down for a period of time.

### **3.5 SAMPLING TECHNIQUES AND SAMPLE SIZE**

Two *matatu* routes were selected for the study. The selection was based on consultations with various *matatu* drivers and conductors, passengers, and personal experience of the researcher who has lived in Nairobi and constantly used *matatus* plying various routes for a period of over ten years. The total population of drivers in the two routes was 304. The sample size was 20% of the population, giving a total of 60 drivers. Systematic random sampling was used to get the sample of the *matatu* drivers to be interviewed. In order to do the sampling, the researcher and a research assistant stood at a strategic position where the *matatu* drivers terminated their journey, and every 5th driver was picked and requested to give an appointment for an interview until the desired sample size of 60 was attained. Forty drivers were selected from route 45 and twenty from route 46. Whenever a driver refused to participate in the study, the researcher moved on to the next fifth driver.

### **3.6 RESEARCH INSTRUMENTS**

Standardized questionnaire and focused group discussions were the main tools for collecting data. The questionnaire constituted questions that were simplified to help gather all the required data from the respondents within the shortest time possible. Both structured and unstructured questions were used in the questionnaire appropriately for ease of getting information and at the

same time get some in-depth information from the respondents. Structured questions were used to collect information from the individual drivers interviewed while unstructured questions were used to collect data from focused group discussions.

The convenient time for the focused group discussion was negotiated with the involved participants, the convenient time was found to be during off-pick hours when the drivers were taking a short break between 12pm and 1.30 pm. The focused group discussions helped collect some in-depth information from a group of more experienced drivers who were carefully identified by the researcher. The focused group discussions were done after administration of the questionnaires to individual drivers and identification of the various issues that emerged and needed more clear understanding. This helped in providing some basis for interpreting statistical results from the questionnaires.

### **3.7 VALIDITY AND RELIABILITY**

Clarity and comprehensiveness of the research instruments was ensured in order to attain validity in the study. For example, to ensure attainment of internal validity, the questions set for the study sought to answer the research questions in a comprehensive manner. The questions also addressed all the main issues related to *matatu* drivers in order to attain content validity. To attain external validity, the researcher was keen when sampling to ensure that the sample used in the study was truly representative of the study population. The terms used in the questionnaires were operationalised to attain construct validity. This was done by ensuring the questions asked to the respondents, for example to measure anxiety sought to find out real situations when the respondents' behaviors indicated experience of anxiety.

A test re-test procedure was carried out using ten *matatu* drivers to determine reliability of the research instrument. The instrument was administered to the drivers two times with a time interval of two weeks after the first administration. The two scores gotten were correlated to get coefficient of reliability. The results gave a coefficient of 0.85 and that was considered satisfactory for the instrument to be used in this study.

### **3.8 PILOT STUDY**

A pilot study involving ten respondents was carried out prior to the actual study. This gave assurance to the researcher that the research instrument being used was valid and reliable. The main aim of the pilot study was to help in checking whether there were any weaknesses or deficiencies in the research instrument and this gave an opportunity to correct them. The respondents in the pilot study were from the *matatu* route that constituted *matatus* moving from Nairobi city center to *Kahawa* West and were not included in the targeted sample of the actual study.

### **3.9 DATA COLLECTION PROCEDURES**

A research assistant who was conversant with scientific research procedures was recruited to help in data collection. The researcher and the assistant at first picked sixty respondents who were requested to fill-in the questionnaires. The picking of respondents was done by first identifying every fifth *matatu* in the morning hours between 7 am and 11 am, at the points where the drivers terminated their journey from town which are at Kenyatta University entrance and Kawangware respectively. Since most drivers took very short time to pick passengers going to town at that peak hour, an attempt was made only to book for an appointment with the drivers at their convenient day and time during the week, when it was not possible to book the appointment with any of the drivers, the registration number of the vehicle was noted down and

traced later in the day. About 100 drivers were at first identified so that despite the refusal by some drivers to participate in the study, the sample size of sixty respondents was still attained. Out of the drivers interviewed, twelve of them who were deemed more experienced were picked and divided into groups of six for two focused group discussions which were done within two weeks after the filling-in of the questionnaires.

On the appointment day the driver was given an explanation on what the research was all about and why it was important, asked to give personal consent, and then requested to fill-in the questionnaire. The researcher or research assistant encouraged the driver to fill in the questionnaire on the spot and gave it back. This ensured high return rate and at the same time offered an opportunity for any clarification required by the respondent.

### **3.10 DATA ANALYSIS AND PRESENTATION**

For easy analysis of the data collected, the filled up questionnaires were coded. For structured questions that required yes or no questions, or ranking such as strongly agree, agree, disagree, and strongly disagree, the various responses were analyzed with the help of Statistical Package for the Social Sciences (SPSS) and the number of responses from different respondents shown clearly in charts, graphs or tables. The researcher gave an explanation on what those numbers meant, for example when fifty five out of sixty drivers said they were satisfied with their working conditions, it was concluded that most of the respondents were not satisfied with their working conditions . Simple descriptive statistics such as frequencies, percentages and ranks were used by the researcher in giving explanations of the data. For unstructured questions that required personal explanation by respondents in their own words, the key elements that were important for the research were identified for various responses and then the interpretation, as discussed above done.

### **3.11 DATA MANAGEMENT AND ETHICAL CONSIDERATIONS**

The data collected was kept in a safe place and then, immediately the data collection process was complete, transferred to the computer for easy analysis using the Statistical Package for Social Sciences (SPSS). Several backup copies were made in software and stored safely to ensure confidentiality. The analyzed information was used to compile the report of the study findings. The analyzed information was stored in both hardcopy and soft copy and in that information identity of the respondents was concealed.

The necessary ethical considerations as required in a scientific psychological research study were observed. Authorization letter from Kenyatta University and a permit from the Ministry of Science and Technology were obtained before the data collection exercise. The researcher clearly described the research procedures to the participants, informed them about the purpose of the study, and then sought informed consent from them. Any participant's decision to decline taking part in the study was respected by the researcher and no coercion was used. Any information concerning the respondents was treated with confidence and their identities were concealed.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND DISCUSSION

#### 4.0 INTRODUCTION

The purpose of this study was to investigate the prevalence and effects of stress on *matatu* drivers in Nairobi with a view of coming up with possible solutions to driving problems arising as a result of stress. In this chapter, the data collected is presented, analyzed, and interpreted.

The data was collected from the *matatu* drivers operating *matatus* on the route from Nairobi city center to Kenyatta University entrance and from Nairobi city center to *Kawangware*.

The study was guided by the objectives and the research questions as formulated in chapter one.

The data was obtained through administration of 60 questionnaires to the drivers and two focused group discussions consisting twelve participants in total and six in each group.

In this chapter, the data collected is presented under the following headings:

1. Demographic information of the respondents.
2. Views of *matatu* drivers on the nature of their work.
3. Various stressors experienced by the *matatu* drivers in their work
4. *Matatu* drivers' views about the effect of stress on their driving.
5. What needs to be done to improve the working environment of *matatu* drivers.

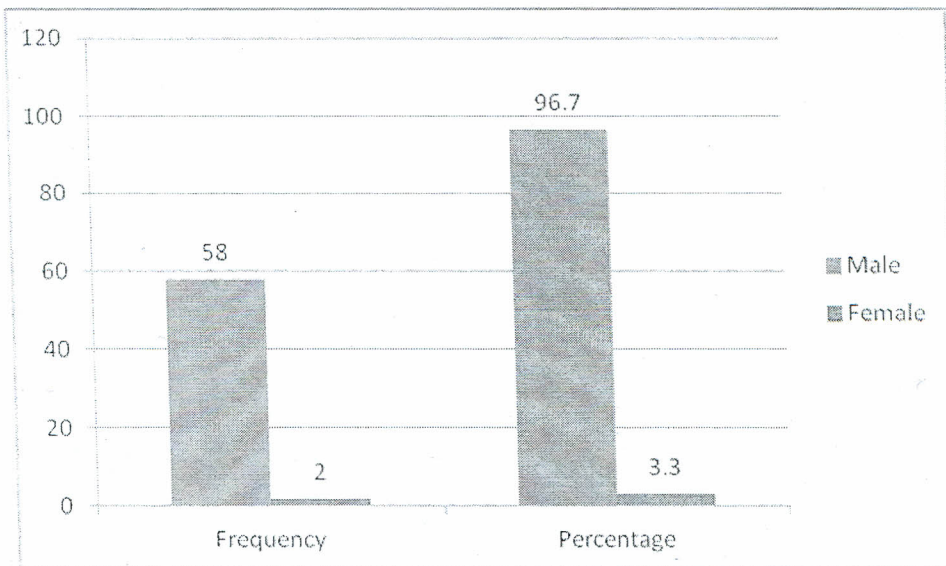
The findings are presented in form of statistical tables, pie charts and graphs as percentages and frequencies.

#### 4.1 DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

The respondents' personal information that was considered important was their Gender, ages, marital status, education background, religious affiliation, and working experience. The information is considered important because various studies have shown that stress is moderated factors such as age, gender and individual beliefs (see Cox 1993).

##### 4.1.1 Respondents' gender

The data collected shows that the vast majority of respondents 96.7 percent were men while very few 3.3 percent were women. The following is a gender representation in the study as illustrated in figure 4.1 below.



**Figure 4.1: Gender distribution of the respondents**

In the focused group discussions, various factors were considered to have made most ladies keep off from the *matatu* driver job leading to the job being mainly dominated by men. Those factors are: the many risks involved such as harassment by terror gangs, police and city council

officers(*askaris*), other motorists, and also at times by some passengers; working as a *matatu* driver seems to be one of the jobs that have been culturally considered men's job in Kenya; the job requires one to work for long hours including early morning and late at night making it difficult for many ladies especially if they have children to take care of; and many people seem to consider it a job for people who are rough and have a "don't care" attitude hence most of the ladies would not like to be associated with the job. Some studies in the past have shown gender differences in job performance that reflect differences in women's and men's attitudes toward risk and competition, as well as toward personnel management and business organization – where these differences could be innate or learned (see Croson & Gneezy, 2009).

It is however important to understand that even if many men offer to do the job despite the various challenges encountered, it is not good for any person, whether man or woman to work under such conditions if they can be avoided. They reduce the productivity of those people working in the *matatu* industry and cause psychological problems such as stress and even physical health problems as highlighted by most of the respondents and participants in the interviews and focused group discussions.

#### **4.1.2 Respondents' age distribution**

The data obtained regarding the age of respondents shows that majority of the drivers were in the age bracket of 30-34 and 35-39 with a percentage representation of 26.7 percent and 25 percent respectively. Those below 25 years of age and over 50 years were quite few, with representation of 5 percent each. The remaining respondents were in the age bracket of 25-29 and 40-50 with a representation of 18.3 and 20 percent respectively. The following table shows the respondents' age distribution.

Table 4.1: Respondents' age distribution

Respondents' Age distribution	Frequency	Percentage
Below 25 Years	3	5
25-29 Years	11	18.3
30-34 Years	16	26.7
35-39 Years	15	25
40-50 Years	12	20
Over 50 Years	3	5
<b>TOTAL</b>	<b>60</b>	<b>100</b>

From the data obtained, it is evident that majority of the *matatu* drivers were in the age bracket of between 30 to 34 years and 35 to 39 years with percentage representation of 26.7 and 25 respectively. A number of factors could determine this, for example, most of the vehicle owners or *matatu* management team may want to entrust their vehicles to more mature people who are likely to have long driving experience.

Although the PSV regulations from KRA do not allow any person under the age of 25 years to get PSV license as shown by the literature reviewed in chapter two of this study, 5 percent of the drivers interviewed were below the required age of 25 years. This could be interpreted to mean that they did not have a PSV driver's license and if they had, they could have acquired it through corrupt means. This is probably a recipe for conflict with the police and corruption since if they are arrested by the police they may be tempted to bribe their way out.

#### 4.1.3 Respondents' marital status

Majority of the respondents interviewed were married, 48.3 percent. Those who were single had a representation of 25 percent. Separated respondents were 15 percent while the widowed ones were 8.3 percent. A small number, 3.3 percent were divorced. Their distribution is tabulated as follows:

**Table 4.2: Distribution of respondents' marital status**

Marital status of the respondents	Frequency	Percentage
Single	15	25
Married	29	48.3
Separated	9	15
Divorced	2	3.3
Widowed	5	8.3
<b>TOTAL</b>	<b>60</b>	<b>100</b>

The results obtained showed that majority of the respondents interviewed were married, 48.3 percent. This could be attributed to the fact that most of the drivers were already within the age when they were most likely to marry, i.e. between 30 and 40 years. This also means that they really needed work in order to meet the needs of their families. This is supported by Hobfoll's Conservation of Resources Theory reviewed in this study, which states that an employee would constantly exploit such a resource as financial security by meeting his expenses while working and would need to replenish that (Hobfoll 1989).

The data also revealed that 15 percent of the respondents were separated. An issue that came up during the focused discussions is that the nature of *matatu* drivers' work gave them very little time to be with the family and this could probably have led to some of the separation cases.

#### 4.1.4 Respondents' level of education attained

The data obtained showed that all the respondents had received some formal education.

Majority of the respondents had received secondary school education, 45 percent. Quite a high number of the respondents, 36.4 percent, had obtained post-secondary school education while 18.3 percent had received primary school education. This could be interpreted to mean that most of the *matatu* drivers had not only received basic education but they were well educated. The representation of the respondents' education level is shown in the following figure.

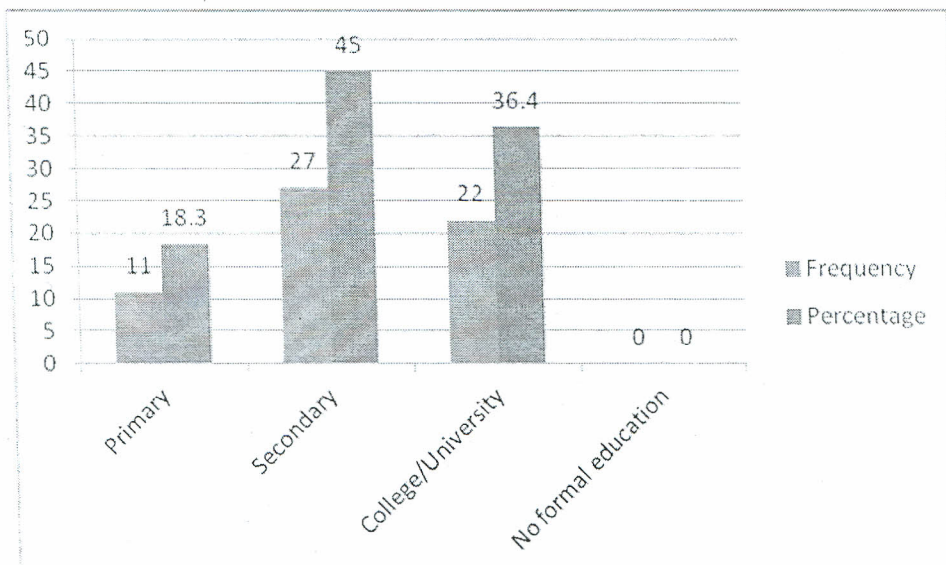


Figure 4.2: Distribution of the respondents' education level

#### 4.1.5 Respondents' religious affiliation

All the respondents had a religious affiliation and each belonged to one of the three kinds of religious affiliations as follows: Christians (85 %); Muslims (10 %); and Traditional Religions (5 %). Various religions have got some teachings, for example on moral issues that may influence people's behaviors in the society and therefore the drivers' subscription to various religions is important because it may have had some influence on the drivers' behaviors such as taking or failure to take alcohol. Their distribution is tabulated as follows:

**Table 4.3: Distribution of religious affiliation of the respondents**

Respondents' religious affiliation	Frequency	Percentage
Christianity	51	85
Islam	6	10
Traditional Religion	3	5
Others	0	0
<b>TOTAL</b>	<b>60</b>	<b>100</b>

#### 4.1.6 Respondents' working experience in the job

Getting to know the work experience was deemed necessary in order to find out if the data on the experience could communicate anything about employees being in the *matatu* business for long or stopped working after some time. The respondents were asked to say the period of time they have been working and the following is a representation of their work experience distribution.

Table 4.4: Distribution of the respondents working experience

Respondents' work experience in the <i>matatu</i> driver job	Frequency	Percentage
Two years or less	6	10
3-4 years	16	26.7
5-6 years	10	16.7
7-8 years	5	8.3
9-10 years	8	13.3
Over 10 years	15	25
<b>TOTAL</b>	<b>60</b>	<b>100</b>

The drivers who had an experience of two years or less were 10 %. Those who had 3-4 and 5-6 years experience were 26.7 % and 16.7 % respectively. The respondents with 7-8 and 9-10 year experience were 8.3 % and 13.3 % respectively. The ones who had over 10 years' job experience were 25 %.

An idea that came up from the focused group discussions is that in a certain moment, most of the drivers working in the *matatu* industry, eventually quit their job and find different jobs elsewhere. The reason for this was argued to be that there are so many challenges encountered by the *matatu* drivers and for long time, no way of dealing with the challenges adequately has so far been found.

#### 4.2 VIEWS OF *MATATU* DRIVERS ON THE NATURE OF THEIR WORK.

In this section, views of the *matatu* drivers on the nature of their work are presented. Several questions were used to help in collecting the relevant data and some of them were addressed in

focused group discussions to help get in-depth information on how they viewed the nature of their work.

#### 4.2.1 Drivers' views about their levels of tiredness on a scale of 1-5

A question on the respondents' level of tiredness was raised to help in finding out how much pressure they thought they were getting based on experiences from their daily work. A scale of 1-5 was used to measure the level of tiredness with 1 being the least tired and 5 being the most tired. Most of the respondents indicated their level of tiredness at 4 and 5, with a representation of 45 percent and 43.3 percent respectively. Those who indicated their tiredness level at 2 and 3 were 1.7 percent and 10 percent respectively. None of the respondents indicated the level of tiredness at 1. Their responses given in the following table.

**Table 4.5: Distribution of respondents views on their level of tiredness after their daily work**

Respondents' tiredness level on a scale of 1-5	Frequency	Percentage
1	0	0
2	1	1.7
3	6	10
4	27	45
5	26	43.3
<b>TOTAL</b>	<b>60</b>	<b>100</b>

Most of the respondents said that their work was very tiresome and by the end of the day they felt quite exhausted. This could be attributed to factors such as long working hours and the

various stressors experienced which will be discussed in the sections on the work pressure for the matatu drivers and stressors encountered later in this chapter.

#### 4.2.2 Drivers' views about how good or bad their working environment is

A question on work environment was raised to find out if the drivers found their working environment good for convenient driving. Ninety percent of the respondents said they didn't find their working environment good for convenient driving while only ten percent said the environment was good. The following table shows the responses of the drivers on their views about their working environment:

**Table 4.6: Distribution of *matatu* drivers views on their working environment**

Whether the driver thinks his/her working environment is good	Frequency	Percentage
Yes	6	10
No	54	90
<b>TOTAL</b>	<b>60</b>	<b>100</b>

The vast majority of the drivers said that they did not find their working environment good for convenient driving. In the focused group discussions, an idea that came up was that many factors such as traffic jam, long working hours, as well as harassment by the police, city council officers (*askaris*) and terror gangs made their working environment very un-conducive for convenient driving. People working in such environment are likely to experience stress hence there is need to improve their working environment. According to COR theory reviewed in this study, an employer needs to provide good working environment by offering good moral and material support to the employees to enable them withstand, or overcome what they may see as threats in their work (Hobfoll 1989).

#### 4.2.3 Drivers' encouragement by employer to come up with better ways of making work more productive

Respondents were asked whether their employer encouraged them to come up with better ways of making their work more productive and majority of them, 61.7 percent, responded yes to the question. 23.3 percent said that the employer encouraged them but only on rare occasions while 15 percent said that their employer didn't encourage them at all. Their responses are tabulated as follows:

**Table 4.7: Distribution of respondents' views on encouragement by the employer**

Encouraged by employer to make the work more productive	Frequency	Percentage
Yes	37	61.7
No	9	15
Rarely	14	23.3
<b>TOTAL</b>	<b>60</b>	<b>100</b>

The question on whether the employer encouraged the drivers to make the work more productive was discussed further in the focused group discussions and the following points to be noted came up: while the employer always reminded the drivers to come up with ways of making more money, no great concern was shown by the same employer on ways of making the *matatu* drivers working conditions and remuneration better (one of the participants said “*this is done by the employer for personal gains but not because he cares about our welfare*”); drivers were not much involved when the major stakeholders such as *Matatu* welfare Association (MWA), *Matatu* Owners Association (MOA), and The Ministry of Transport in Kenya were making decisions yet that would be the best forum for them to bring up ideas on how to make the work more productive. This implies that the drivers felt that they lacked proper support by

the employer which is considered important in Palmer's stress model reviewed in this study (Palmer et al, 2004).

#### 4.2.4 Drivers' involvement in important decision making

To find out the involvement of drivers in important decision making in the *matatu* industry, a question on whether they thought they needed to be more involved was raised. The vast majority, 90 percent, said they needed to be more involved while only 10 percent said they did not need to be more involved in important decision making. Their responses are given in the following table.

**Table 4.8: Views of *matatu* drivers regarding need to be more involved in important decision making**

<i>Matatu</i> drivers' need to be more involved in important decision making	Frequency	Percentage
Yes	54	90
No	6	10
<b>TOTAL</b>	<b>60</b>	<b>100</b>

These results could be interpreted to mean that the *matatu* drivers did not feel appreciated or considered as people who could come up with good ideas on how to improve the *matatu* industry. Employee involvement is a management and leadership philosophy about how people are most enabled to contribute to continuous improvement and the ongoing success of their work organization is important as presented in the Palmers stress model reviewed in this study (See Palmer et al, 2004).

#### 4.2.5 Employer's expectation that the driver will work overtime whenever there is a higher number of passengers than usual

Respondents were asked if their employer expected them to work overtime whenever there were more passengers than usual to be transported. The data obtained showed that majority of the drivers, 91.7 percent, were expected to work overtime by their employers. Only 5 percent of the respondents said that they were not expected by their employers to work overtime.

**Table 4.9: Views on the drivers' expectation to work overtime**

Respondent expected to work overtime	Frequency	Percentage
Yes	55	91.7
No	5	8.3
<b>TOTAL</b>	<b>60</b>	<b>100</b>

Further discussion on the same question in the focused group discussions led to some explanations on the overtime hours for the drivers and the benefits that went along with it. From the discussion, a point that came up was that when drivers worked overtime, they often earned some extra money, though not as much as they expected.

It was argued that the main beneficiary was the employers because in such days when they work overtime, the daily profit target set was so high that the driver would end up getting very little. If the driver did not meet the target set for the day, at times he/she had to get some money from own pocket to give to the employer. It was also reported that the employer was usually the vehicle owner and he/she would pay the *matatu* driver depending on how much money he/she

made in a day. For example, the driver would be told by the employer that by the end of the day, he/she must give Kenya shillings 5000 and anything that is on top of that goes to his/her daily wage.

The employer would not care whether the driver faced any challenges such as encountering traffic jam in the course of duty. Similar findings were found in the literature reviewed in chapter two of this study on the work environment for *Matatu* drivers in Kenya (See Graeff, 2009). The high target set by the employer is likely to make the *matatu* driver anxious since he/she is uncertain of being able to meet the set target and this would also lead to stress.

#### 4.2.6 Respondents' views on whether their job interferes with personal life

It was deemed important to find out if the drivers felt that their work interfered with their personal/private life since this would help in understanding how the drivers view the nature of their work. In response to the question, 65 % of the respondents said their job interfered with their personal life while 13.3 % said it did not interfere with their personal life. The remaining 21.7 % of respondents said that their job sometimes interfered with their personal life. Their responses are tabulated as follows:

**Table 4.10: Respondents views on whether their job interferes with personal life**

Respondent's job interference with personal life	Frequency	Percentage
Yes	39	65
No	8	13.3
Sometimes	13	21.7
<b>TOTAL</b>	<b>60</b>	<b>100</b>

Various reasons were given for job's interference with the drivers' personal life from both the individual drivers' questionnaires and focused group discussions. It was reported that there was not enough time for the drivers to be with their family. This sometimes led to conflicts in the family since the spouse or children failed to understand why he/she did not have time for them.

Another point that came up was that at times when arrested by police or city council officers the driver had to use the money meant for personal needs to secure his/her release hence interfere with personal issues. It was also argued that the *matatu* driver at times gets into conflict with people well known to him/her due to the undesirable driving habits and this may spoil the good relationship with friends and other community members.

From the findings, it is imperative that the *matatu* drivers may end up getting stressed if the work issues conflict with personal life, for example, if the job issues make the *matatu* driver fail to have time for the family members, he/she may end up not being in good terms with the spouse/children and at times have quarrels. The bad relationship may make the driver anxious when driving hence may negatively affect his/her work performance or lead to traffic rules violation. From the literature reviewed, a study done by Hartley and El Hassani (1994), in Australia, also shows a significant relationship between stress and traffic violations for drivers.

#### **4.2.7 Respondents' way of forwarding their complaints or suggestions to the employer/management**

Regarding the way of forwarding complaints to the employer/management in the *matatu* industry, a question was raised on whether they felt the need to come up with a better way of forwarding the complaints. This question was important in finding out if the drivers thought

they had an efficient mechanism of raising their complaints. The vast majority, 91.7 %, of the respondents said they would need to have a better way of raising their complaints while only 8.3 % didn't think there was need to come up with a better way of raising complaints. The table below shows those responses:

**Table 4.11: Distribution of respondents' views on need for a better way of forwarding complaints**

Need for a better way of forwarding drivers' complaints	Frequency	Percentage
Yes	55	91.7
No	5	8.3
<b>TOTAL</b>	<b>60</b>	<b>100</b>

When the question on the way of forwarding driver complaints or suggestions regarding ways of improving their working conditions was addressed in the focused group discussions, what came up was the fact that they didn't have any effective mechanism of presenting their complaints/issues. This is because, as drivers, they did not have any group/association that mainly focused on their welfare. They usually discussed their issues with their employer who in turn would have an opportunity to help deliberate on them when he participates in a forum involving the *Matatu* Owners Association or with the Ministry of transport, but this rarely happened because *matatu* owners mainly focused on issues that only benefited them and not necessarily the *matatu* drivers. Quite often the only person *matatu* drivers said they dealt with regarding their welfare are their employers who are also the *matatu* owners and their issues were not addressed collectively as *matatu* drivers but as individual drivers with individual employers. One of the participants in the focused group discussion gave an example of the dealing between a house help and her employer. "The welfare of the house help is dependent on

*the decisions made by the employer, and this is quite similar with what happens to matatu drivers and their employers”.*

These findings may be interpreted to mean that there is no good relationship between the matatu drivers and employers. According to Palmer’s stress model reviewed in chapter two of this study lack of good relationship between the employer and employee may lead to poor work results and conflict for the employees (See Palmer et al, 2004) hence in this case matatu drivers may end up having conflicts.

#### **4.2.8 Respondents’ views on the level of control they have with their work**

A high percentage of the drivers interviewed reported feeling they had no control or had very little control over their way of working. 73.3 % said they had no control at all while 73.3 % said they had very little control. Those who said they had moderate control were 15 % and only 1.7 % said they had full control over their way of working. Their responses’ distribution is given in the following table.

**Table 4.12: Distribution of respondents views about control over their job**

<b>Respondent’s level of control with his/her job</b>	<b>Frequency</b>	<b>Percentage</b>
Full control	1	1.7
Moderate control	9	15
Very little control	44	73.3
No control	6	10
<b>TOTAL</b>	<b>60</b>	<b>100</b>

The same question was addressed in the focused group discussions and the idea that came up was that *matatu* drivers did not get an opportunity to air their views on the running of the *matatu* industry since they dealt with the vehicle owners directly. The vehicle owners are the ones who in turn could advocate for the welfare of the *matatu* drivers but they had not been able to do so adequately, hence the drivers felt they were not really in control of their job.

From Palmer's stress model reviewed, job control by an employee is important because failure to be in control may lead to experience of stress by an employee. Job control refers to how much say and involvement the person has in the way they do their work (Pamer et al 2004), for example control balanced against demands, lack of autonomy, and too much supervision for a *matatu* driver would most probably lead to stress. Various studies reviewed in chapter two of this project show that stress negatively affects job performance for drivers, for example by leading to poor concentration and failure to observe traffic rules (Rowden et al., 2006; Westerman & Haigney, 2000; Davey et al., 2006).

#### **4.3 VARIOUS STRESSORS ENCOUNTERED BY THE MATATU DRIVERS IN THEIR WORK**

In this section, various issues that may bring about too much pressure on *matatu* drivers in their work are addressed. The various questions asked to the respondents were meant to find out if they experienced too much pressure while at work.

#### 4.3.1 Drivers' work pressure on *matatu* drivers, in general, while on duty

Respondents were asked various questions to find out the issues that may have been making them feel they were working under pressure which may lead to driver stress. Their responses indicated that they were having several experiences that could bring up too much physical and psychological pressure to them as they performed their duties. Their responses were as follows: 58% said it was not easy to meet their set target of daily revenue; 80% were not well paid for the work done; 91.7 did not feel satisfied and happy with their working conditions; 93.3% were not in good terms with the traffic police; 61.7 found it difficult to obey traffic rules; 58.3 felt unsafe while at work; 55% drove un-roadworthy vehicles that lead to constant arrest by traffic police; 90% drove on a bad roads that lead to traffic jam and constant mechanical breakdowns of vehicles; 95% were constantly arrested for committing traffic offenses; 60% were harassed by terror gangs; and 91.7% had conflict with other road users. Their responses are tabulated as follows:

**Table 4.13: Various issues that put pressure on the drivers while at work**

VARIOUS DRIVERS EXPERIENCES WITHIN THE LAST TWO YEARS	YES		NO		TOTAL	
	F	%	F	%	F	%
Easily meet a set target of daily income	2	3.3	58	96.7	60	100
Being well paid for the work done	12	20	48	80	60	100
Feeling satisfied and happy with working conditions	5	8.3	55	91.7	60	100
Being in good terms with the traffic police	4	6.7	56	93.3	60	100
Finding it easy to obey the traffic rules while at work	23	38.3	37	61.7	60	100
Feeling safe while at work and with no fear of being harassed by terror gangs	25	41.7	35	58.3	60	100
Driving an un-roadworthy vehicle that leads to arrest by police or constant mechanical vehicle breakdowns	27	45	33	55	60	100
Driving on a bad road that leads to traffic jam and constant mechanical breakdown of vehicle	54	90	6	10	60	100
Being arrested for traffic offence or in a situation where you have to bribe the traffic police officers	57	95	3	5	60	100
Being harassed by terror gangs as they demand money or control of a stage	36	60	24	40	60	100
Having conflict with other road users such as drivers of the other vehicles and pedestrians	55	91.7	5	8.3	60	100

**Key:** F= Frequency; % = Percentage

From the findings as presented in the table above, it is imperative that the various experiences the drivers went through would most probably make them experience stress. For example, a

matatu driver who has great difficulty meeting a set deadline is likely to work under pressure. If the driver is also not paid well, he/she may not meet some of the basic needs, then he/she would be working under pressure due to negative thoughts about the unmet needs during work. From the reviewed literature in this study routine stresses like driving on a bad road, encountering traffic jam, and having to beat a set deadline at work might be fairly benign individually, but collectively as is the case for the matatu drivers interviewed, they could create great strain (Weiten, 2006).

From the drivers' responses, it is clear that majority of them were facing work issues that led to stress. Most of the issues analyzed in table 4.8 are inter-related. Some of the issues that put the drivers under pressure lead into other issues that make their work even more difficult. For example they have a daily target of profit to meet which they argued is usually high and puts them under a lot of pressure. In response to the situation, some of them decide to over-speed, overlap other vehicles in traffic jam and pick passengers in the middle of the road in an attempt to meet the set target. That behavior contravenes the set traffic rules and lands them into trouble with other road users, the passengers, and with the traffic police if they are caught. That is just an example of how so many stressful situations are inter-related.

#### **4.3.2: Respondents' working hours per day**

From the data obtained, it is quite clear that all the matatu drivers interviewed worked for long hours, specifically twelve to seventeen hours per day. Those who worked for 12 hours and 17 hours per day had a representation of 1.7 percent each. Respondents who worked for 13 hours and 14 hours had a representation of 21.7 percent and 23.3 percent respectively. Those who worked for 15 and 16 hours had a representation of 25 percent and 26.7 percent respectively.

Table 4.14: Respondents distribution of their working hours per day

Number of working hours per day	Frequency	Percentage
Below 12	0	0
12	1	1.7
13	13	21.7
14	14	23.3
15	15	25
16	16	26.7
17	1	1.7
Above 17	0	0
<b>TOTAL</b>	<b>60</b>	<b>100</b>

Most of the respondents said that their work was very tiresome and by the end of the day they felt quite exhausted. This could be attributed to the fact that the drivers worked for long hours. All of them worked for more than twelve hours every day. Additionally, most drivers worked for six or even seven days a week. According to International Labor Organization (ILO) Conventions 1 and 30, the standard or normal working hours for employees should not exceed forty-eight hours in a week and eight hours in a day. This means that *matatu* drivers exceeded those standard hours by over four hours in a day.

Convention 1 of ILO is applicable to the industrial undertakings which include among others mines, quarries and other processes for extractions of minerals, construction, maintenance and repair of buildings, railways, telephone installations, gas works, transport services (where *matatu* drivers fit in), etc. Long working hours may lead to experience of stress by employees

and this argument has been supported by some studies done in the past (Barsade, et al 1997; Goetzel, et al 1998).

#### **4.4 MATATU DRIVERS' VIEWS ABOUT THE EFFECT OF STRESS ON THEIR DRIVING.**

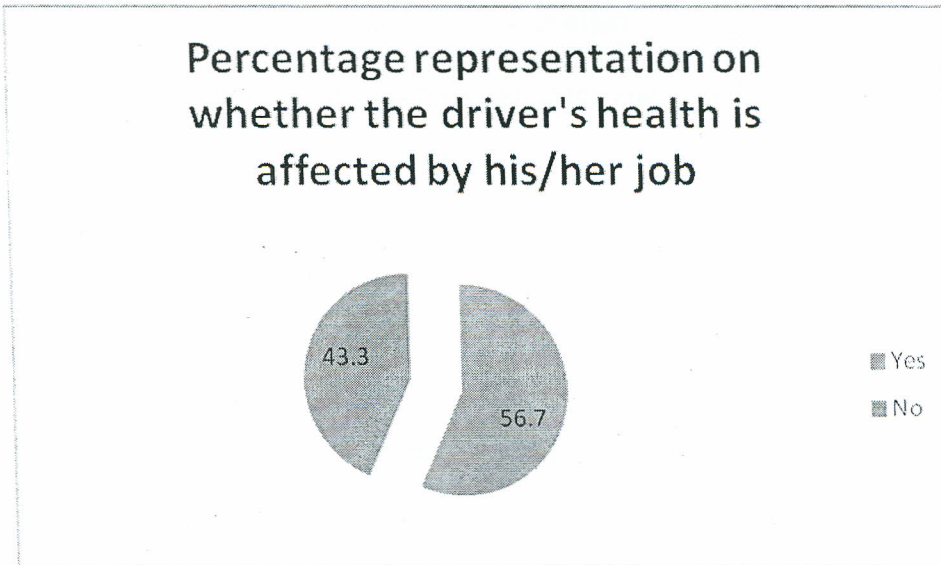
In this section, report of investigation on the various effects of stress on the behavior of *matatu* drivers is given. The effects may affect the productivity of the employees in the *matatu* industry and therefore it is important that they are investigated and well understood. Clear understanding of the effects of stress on the behavior of the *matatu* drivers can help come up with healthy ways of dealing with stress or come up with ways of minimizing it in the *matatu* drivers' job.

##### **4.4.1 Respondents' views on whether *matatu* job negatively affects their health**

A question on whether the *matatu* drivers' job negatively affected their health was raised. This question was important in finding out one of the ways in which the working conditions impacted on the drivers. 56.7 percent of the respondents said that their health was negatively affected by the job while 43.3 percent said it did not negatively affect their health. The results are tabulated and illustrated in a figure as follows.

**Table 4.15: Effects of *matatu* drivers' job on the respondents' health**

Whether job affects respondent's health	Frequency	Percentage
Yes	34	56.7
No	26	43.3
<b>TOTAL</b>	<b>60</b>	<b>100</b>



**Figure 4.3: Distribution of responses on how the drivers' health is affected by their job**

Various explanations on how the job affects the drivers' health were given in the individual driver's questionnaire and also in the focused group discussions. Due to the fact that drivers wake up very early in the morning and at sometimes the morning is very chilly, if the driver is not well covered with clothes, he/she might get pneumonia or flu.

The drivers work for long hours every day and the body doesn't get enough rest, hence it becomes weak and they easily get sick. Whenever there are more passengers, for example during holidays such as Easter, and Christmas, or when schools are closing/opening, they end up working for extremely long hours and very little time to sleep. This at times leads to sleeping disorders. According to Palmer's stress model reviewed in this study, sleep disturbance is one of the individual symptoms of stress (See Palmer et al 2004).

Matatu drivers go through many stressful situations in the course of work such as fear of being arrested by police or city council officers, conflict with vehicle owners, conflict with other road users or passengers, fear of causing an accident, and at times attack by criminal gangs.

Eventually they try to find a way of coping with the stress, and in the process some drivers end up engaging in heavy use of alcohol and other drugs which in turn negatively affect their health.

Alcohol/drugs abuse as a negative way of coping with stress may end up negatively affecting psychological and physical health of the matatu drivers. Findings of some of the literature reviewed in this research show that psychological and behavioral problems resulting from occupational stress may include anxiety, irritability, psychoactive substance abuse, feeling powerless and low morale (Jonge, Landsbergis, & Vegchel, 2005).

#### **4.4.2 Medical report's indication on the relationship between *matatu* drivers' job and his/her bad health**

To find out if there was anything to confirm the relationship between work and drivers' health, a question on whether any doctor/health worker's report on the driver's health had at any given time shown relationship between the two. From the data obtained, 36.7 percent of the respondents said yes while 63.3 percent said no. The findings are illustrated by the following figure.

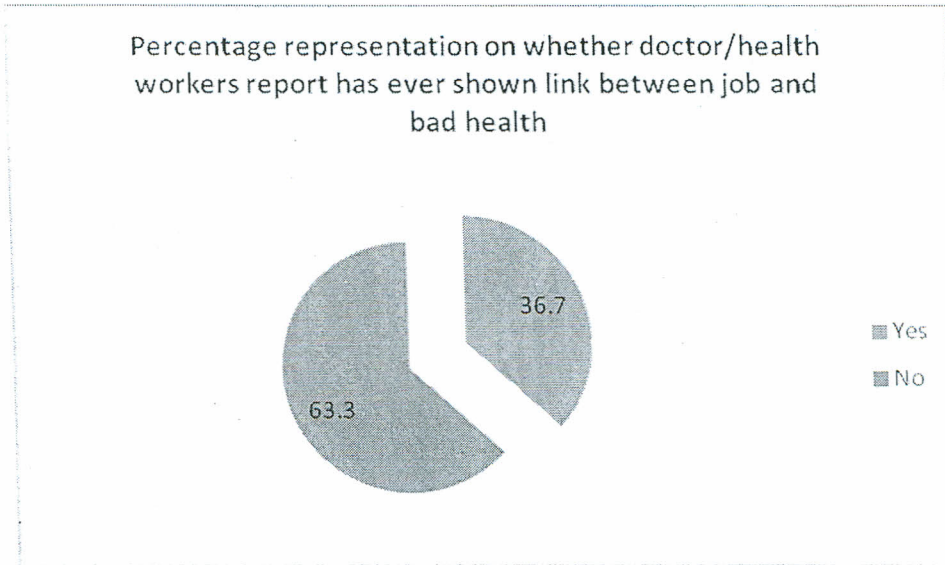


Figure 4.4: Relationship between job and health as indicated by doctors' report

#### 4.4.3 Matatu drivers' risk taking behavior as a result of too much pressure exerted by the job demands

To find out how the drivers coped with the work pressure such as having to meet the daily set target and competition with the other public service vehicles for passengers, a question was asked on whether they were involved in risk taking behaviors such as dangerous overtaking, overlapping or stopping in the middle of the road to pick passengers. Majority of the respondents, 90 percent responded yes while only 10 percent responded no. Their responses are tabulated as follows:

Table 4.16: Distribution of responses on whether matatu drivers were involved in risk taking while driving

Respondent's involvement in risks taking while driving due to work pressure exerted by job demands	Frequency	Percentage
Yes	54	90
No	6	10
<b>TOTAL</b>	<b>60</b>	<b>100</b>

The same question was discussed during the focused group discussions and the main argument by the participants was that if a driver fails to take the risks and drive as fast as possible in order to meet the daily target set by the employer, then he/she risks having to use money from his/her pocket to pay the balance to the employer. If one fails to meet the target for many days, there is also a risk of being sacked since he/she does not have a written job contract.

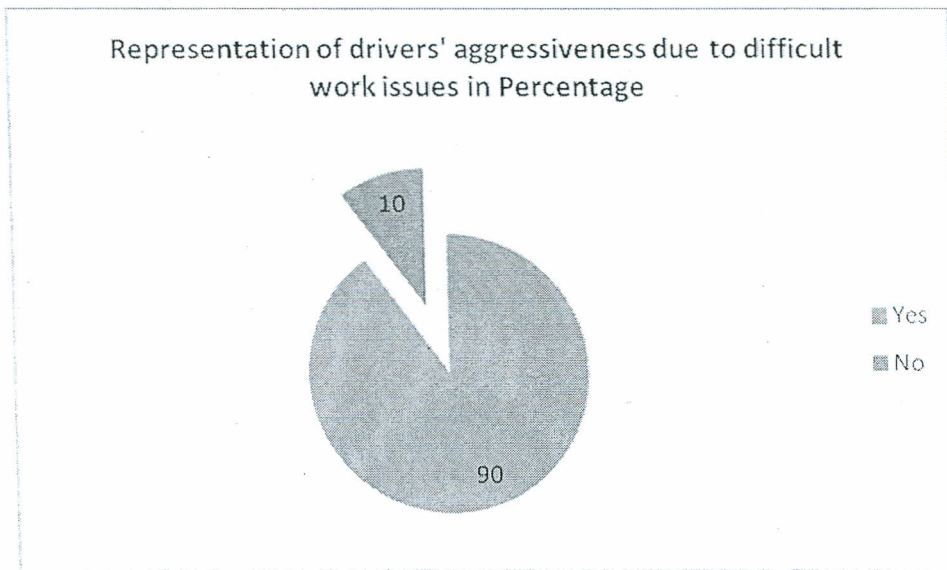
These findings can be interpreted to mean that there are times when the matatu drivers found themselves in a dilemma on whether to risk failing to meet the set daily target of revenue or break the traffic rules and risk being arrested or be involved in an accident. Findings from a research carried out on matatu drivers in Kenya by Graeff also showed that matatu drivers in Kenya often take risks while driving (See Graeff, 2009).

#### 4.4.4 Matatu drivers' aggressiveness toward other motorists

To find out how the drivers react to pressure, for example of meeting the daily target when there are many obstacles on the way, a question on whether sometimes they became aggressive towards other drivers on the road was asked. The vast majority of the drivers, 90 percent, said at times they got aggressive toward other drivers on the road while only 10 percent said they did not become aggressive. Their responses are presented as follows.

**Table 4.17: Distribution of respondents' aggressive behavior**

Whether respondent gets aggressive towards other drivers due to difficult work issues	Frequency	Percentage
Yes	54	90
No	6	10
<b>TOTAL</b>	<b>60</b>	<b>100</b>



**Figure 4.5: Distribution of respondents' aggressive behavior**

The findings showed that drivers at times got aggressive when stressed. Previous studies have shown that stressed drivers are likely to get easily irritated hence the possibility of being aggressive toward other people. Some psychologists argue that Psychological and behavioral problems resulting from occupational stress may include anxiety, irritability, psychoactive substance abuse, feeling powerless and low morale (Jonge, Landsbergis, & Vegchel, 2005).

#### **4.4.5 Matatu drivers' experience of sleeping problems due to difficult job issues**

To find out if drivers experienced sleeping problems perhaps due to long working hours or irregular sleeping patterns, a question was asked to individual drivers whether they had sleeping problems. Majority of the respondents, 81.7 percent, said yes while 18.3 percent said no. The distribution of their responses is given in the table below:

**Table 4.18: Distribution of respondents' views on their experience of sleeping problems**

Whether respondents work leads to sleeping problems as a result of work issues	Frequency	Percentage
Yes	49	81.7
No	11	18.3
<b>TOTAL</b>	<b>60</b>	<b>100</b>

To understand the issue more, the same question on sleeping problems for matatu drivers was discussed further in the focused group discussions and the main idea that came up regarding sleeping problems by drivers is that most of the drivers have very irregular sleeping patterns due to the nature of their work. Since they work for long hours, at times by the time one goes home it is already late at night and might also have some emerging personal issues to be addressed. There are some times the vehicle breaks down and keeps the driver waiting to get a solution, and even at times the driver is arrested and spends the night in the police cell. This was reported as having led to sleeping problems for quite a good number of *matatu* drivers. Palmers stress model reviewed in this study highlighted sleeping problems as one of the symptoms of stress (See Palmer et al, 2004).

#### 4.4.6 *Matatu* drivers' feelings on job satisfaction

The question on job satisfaction by the drivers was deemed necessary in order to understand the drivers' general feeling as a result of either too much pressure or working without much pressure. The drivers responded as shown in the table below:

Table 4.19: Distribution of respondents' views about job satisfaction

Respondent's Job satisfaction	Frequency	Percentage
Yes	13	21.7
No	47	78.3
<b>Total</b>	<b>60</b>	<b>100</b>

From the data above, it is clear that the vast majority of the drivers, 78.3 percent were not getting job satisfaction while only 21.7 percent said they were getting job satisfaction.

Various reasons were given by respondents for not being satisfied with their job and the same reasons came up during the focused group discussions. Harassment by the police and city council officers (*askaris*) was one of the reasons given. Respondents also said that they worked for long hours and were poorly remunerated. They also failed to get enough time to be with family and friends and often felt they were not appreciated.

Due to failure of job satisfaction, some of the matatu drivers said they were actually looking for a better job. It is important to note that if the drivers fail to get job satisfaction, they may not have the morale to work hence this may lead to poor performance in the matatu industry.

#### **4.5 WHAT NEEDS TO BE DONE TO IMPROVE THE WORKING ENVIRONMENT FOR MATATU DRIVERS**

In this section, various ways of improving the working environment for matatu drivers were explored based on the respondents' experiences. Understanding of what caused the drivers pressure in their work, their working environment and expectations helped in coming up with the various suggested ways of improving their working environment.

#### 4.5.1 Respondents' views on whether the number of working hours should be reduced to improve their working conditions

Drivers were asked whether they thought the number of working hours should be reduced to improve their working conditions. The responses obtained show that 90% of the respondents would want the number of working hours to be reduced while only 10% said they thought the number of working hours should not be reduced. Their responses' distribution on whether the number of working hours should be reduced is given in the following table.

**Table 4.20: Distribution of the respondents' views on reduction of working hours**

Whether the drivers' number of working hours should be reduced	Frequency	Percentage
Yes	54	90
No	6	10
<b>TOTAL</b>	<b>60</b>	<b>100</b>

From these findings, it is clear that most of the respondents thought reducing their number of working hours would improve their working conditions. This would be important since various challenges highlighted by the drivers such as sleeping problems and failure to get time for family and friends are brought about by long working hours.

#### 4.5.2 Vacations for *matatu* drivers

It was deemed important to find out if the respondents got time to go for vacations with family or friends as this would be one of the important ways of managing stress. Only a small percentage of respondents, 13.3 % said that they really used to take vacations with family and

friends while 56.7 percent said that they took vacations but in rare occasions. 30 percent of the respondents said that they did not take vacations at all. Their responses are given in the following table.

**Table 4.21: Distribution of responses on whether respondents go for vacations**

Whether driver takes vacations with family and friends	Frequency	Percentage
Yes	8	13.3
No	18	30
Rarely	34	56.7
<b>TOTAL</b>	<b>60</b>	<b>100</b>

In the focused group discussions, the idea that came up clearly on the same question is that *matatu* drivers rarely get time for vacations because during the time when other Kenyans get important moments for vacations, such as during Easter or Christmas, it is the time when the *matatu* drivers work even more since there is a high number of passengers to be ferried as they go upcountry. In such times, even the *matatus* operating within Nairobi sometimes are used to transport the passengers going to and from upcountry.

The respondents argued that what makes it challenging for them to get an opportunity for vacations even in other times is that their work contract is usually verbally done between the driver and the employer and doesn't have many details and provisions such as annual leave. Since the *matatu* drivers' pay is dependent on the amount of money they make in a day, it means that if they go for a leave, it would be unpaid leave and additionally, the driver may risk losing his/her job to someone else.

#### 4.5.3 What the drivers think should be done to make *matatu* drivers' work more relaxing and efficient

Respondents were asked to give views on how their work can be made more efficient and relaxing. Various views came up from both individual driver's questionnaires and the focused group discussions.

According to the various views collected, one of the important ways in which the driver's working conditions could be improved is by ensuring there is no tolerance to corruption within the *matatu* industry, the police force (since it is the one that enforces law) and the city council officers (since they are the ones in charge of ensuring there is order within the city). Due to corruption in the police force and the city council of Nairobi, it was argued that when some of the *matatu* operators break the rules and bribe their way out, they end up bringing about unfair competition to those drivers who are law abiding.

The respondents also argued that the drivers' remuneration needs to be raised since when they get low income, it becomes difficult for them to meet their basic personal needs such as food and house rent and this quite often leads to stress and lack of proper concentration when driving. Drivers who are poorly paid may also end up being easily corrupt since they are under pressure to make money hence may want to break the law, for example by over-speeding and when caught bribe their way out.

It would be good to have a government that consists of good and trustworthy leaders who can come up with good policies that would ensure the *matatu* industry is well run. Such a government would ensure that the *matatu* drivers are not oppressed by their employers.

Since the matatu drivers work for long hours, it would be important to reduce the number of working hours. This can be done by ensuring that two matatu drivers are allocated to one vehicle hence when one driver is on duty, the other would be taking rest.

Improving the roads conditions in Nairobi would be important. Poor road network often leads to traffic jam in the city and in turn makes the work for matatu drivers difficult. Pot-holes on some of the roads also lead to constant vehicle breakdown hence complicating work for the matatu drivers.

Taxation on the running of the matatu business needs to be reduced. Respondents argued that at the moment there is heavy taxation on matatu operators hence low income for them. Due to the heavy taxation, vehicle owners may find it difficult to offer good remuneration for the drivers.

It would be important to put into consideration acting on the various mentioned issues that may help improve the working conditions for the matatu drivers. They are views based on the experiences of the matatu drivers and they are in a better position to give views on ways of improving their working conditions.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### 5.0 INTRODUCTION

The purpose of this study was to investigate the prevalence and effects of stress on *matatu* drivers in Nairobi with a view of coming up with possible solutions to driving problems arising as a result of stress. In this chapter, the results of the study are presented in summary form. Conclusions and recommendations based on the findings are made, and finally recommendations for further studies to be done are made.

#### 5.1 SUMMARY OF THE FINDINGS.

The following is the summary of the study results:

##### 5.1.1 Demographic description of the respondents.

The data collected shows that 58 (96.7 %) of the participants were men hence this shows the *matatu* driving job is very highly dominated by men. Various factors such as culture and risks such as harassment by police and city council *askaris* or attack by terror gangs were cited as the main causes of domination of the job by men.

From the data obtained, it is evident that majority of the *matatu* drivers are in the age bracket of between 30 to 34 years and 35 to 39 years with percentage representations of 26.7 percent and 25 percent respectively. A number of factors could determine this, for example, most of the vehicle owners or *matatu* management team may want to entrust their vehicles to more mature people who are likely to have long driving experience. Those drivers in the age bracket 25 to 29 years constituted 18.3 percent, while those drivers over 50 years constituted only 5 percent.

Although the PSV regulations from KRA do not allow any person under the age of 25 years to get PSV license, 5 percent of the drivers interviewed were below the required age of 25 years.

Majority of the respondents interviewed are married, 48.3 percent. This could be attributed to the fact that most of the drivers are already within the age when they are most likely to marry, i.e. between 30 and 40 years. This also means that they really need work in order to meet the needs of their families. The data also revealed that 15 percent of the respondents were separated. An issue that came up during the focused discussions is that the nature of their work gives them very little time to be with the family and this could probably have led to some of the separation cases.

The data obtained showed that all the respondents had received some formal education. Majority of the respondents had received secondary school education, 45 percent. Quite a high number of the respondents, 36.4 percent, had obtained college or university education. This could be interpreted to mean that most of the *matatu* drivers have not only received basic education but they are well educated.

All the respondents belonged to three kinds of religious affiliation which are: Christians (85 %), Muslims (10 %), and Traditional Religions (5 %). The data obtained shows that majority of the respondents' religious affiliation is Christianity with 85 percent representation. This is a true representation of religious affiliation in Kenya whereby majority of the citizens are Christians.

From the data collected through questionnaires and focused group discussions on drivers' work experience, it can be argued that most *matatu* drivers in a certain period quit the job and venture into other kinds of employment. This is evident from the fact that although the business has

been in existence for over forty years, only a small percentage of drivers, 15 percent, said they had over ten years working experience.

### **5.1.2 VIEWS OF MATATU DRIVERS ON THE NATURE OF THEIR WORK.**

Most of the respondents said that their work was very tiresome and by the end of the day they felt quite exhausted. This could be attributed to the fact that the drivers worked for long hours - most of them worked for more than twelve hours every working day.

The vast majority of the drivers said that they did not find their working environment good for convenient driving. Factors such as traffic jam, long working hours, as well as harassment by the police, city council officers (*askaris*) and terror gangs were considered to make their working environment very un-conducive for convenient driving. People working in such environment are likely to experience stress hence there is need to improve their working environment.

The study results show that most of the drivers' employers expected them to work overtime whenever there were more passengers to be ferried. However, the drivers did not benefit as much as they expected from the overtime work.

Most of the matatu drivers interviewed said that they were not involved in important decision making. They would however want to be involved in important decision making regarding their work.

Matatu drivers' job interferes with their personal/private life. Various reasons were given for job's interference with the drivers' personal life, for example lack of enough time to be with family and friends.

Most matatu drivers do not have control of their job. They argued that their employers controlled most of what they did and quite often they did not involve them in important decision making.

### **5.1.3 WORK STRESSORS ENCOUNTERED BY THE *MATATU* DRIVERS WHILE ON DUTY.**

According to the findings, it is clear that majority of matatu drivers face work issues that lead to stress. Most of the issues that put too much pressure on matatu drivers are interrelated. Some of the issues that put the drivers under pressure lead into other issues that make their work even more difficult. For example they are given a daily target of profit to meet which they argue is usually high and puts them under pressure. In response to the situation, some of them decide to over-speed, overlap other vehicles in traffic jam and pick passengers in the middle of the road in an attempt to meet the set target. That behavior contravenes the set traffic rules and lands them into conflict with other road users, the passengers, and with the traffic police if they are caught.

Regarding the road condition, the drivers generally agreed that bad roads often lead to traffic jam. When there is traffic jam, they get worried that they may not make the number of trips required in order to meet their daily target of income, hence some of them end up over-lapping other vehicles. This, once again, puts them into conflict with the traffic police and other road users.

Most of the respondents said that their work was very tiresome and by the end of the day they felt quite exhausted. This could be attributed to the fact that the drivers worked for long hours. All of them worked for more than twelve hours every day.

#### **5.1.4 EFFECTS OF STRESS ON MATATU DRIVERS**

Stress experienced by the matatu drivers negatively affects them in various ways. Those effects of stress on them are counterproductive and therefore there is need to come up with various intervention strategies.

Due to stress, most matatu drivers experience effects such as: negative effect on psychological and physical health; risk taking behaviors; alcohol/drugs abuse; being aggressive towards other motorists ; family break ups; conflict with police, city council officers as well as other road users, and sleeping problems.

#### **5.1.5 WAYS OF STRESS PREVENTION OR MANAGEMENT FOR MATATU DRIVERS**

There are various ways in which stress for matatu drivers can be prevented or managed. The various stress prevention/management strategies depend on the understanding and willingness of the various stakeholders in the matatu industry to intervene.

The various ways of preventing/managing stress include: ensuring there is no tolerance to corruption by all stakeholders in the *matatu* industry; have proper job contract agreement between *matatu* drivers and their employers; proper remuneration for *matatu* drivers; reducing the number of working hours for *matatu* drivers; putting in place good leaders in the country; improving the roads conditions in Nairobi; and teaching *matatu* drivers various stress management skills.

## 5.2 CONCLUSIONS

From the findings of this study various conclusions can be drawn. The conclusions are based mainly on the views given by the respondents and the literature reviewed.

In general, matatu drivers in Nairobi find their work quite difficult and are not happy with various challenges encountered on daily basis as they carry out their duties. There is therefore need for proper intervention by the relevant stakeholders in the matatu industry to improve their working conditions

Too much pressure in terms of work demands and hazardous working environment is exerted on *matatu* drivers in Nairobi. This pressure leads to stress for the matatu drivers and is counterproductive. As a result matatu drivers in Nairobi generally view their work as being stressful and would wish to find a solution to the various stressful situations in their work.

Matatu drivers experience effects of stress in various ways and this makes most people find it difficult to do the matatu driver job. Various challenges have made many women keep off from the job leaving it to be dominated by men.

Matatu drivers in Nairobi know of various interventions needed to reduce stress in their work. If they get the necessary support from the various stake holders in the *matatu* industry, they would experience less stress and be more productive in their work.

### 5.3 RECOMMENDATIONS

1. The daily working hours for the *matatu* drivers should be reduced to be not more than eight hours in order to improve their working conditions
2. Each *matatu* should be assigned two drivers so that the work pressure on the drivers is reduced
3. There is need to come up with strategies to deal with corruption involving all the key stakeholders in the *matatu* industry
4. Matatu drivers need to have a proper job contract agreement with their employers so that as they work they are not too anxious about the possibility of losing their job
5. Improve road infrastructure in Nairobi to the level that will allow for smooth flow of traffic and free of potholes.
6. There is need for the professionals trained in psychology or counseling to educate *matatu* drivers in Kenya on ways of preventing or managing stress.

### 5.4 SUGGESTIONS FOR FURTHER RESEARCH

1. A similar study to be done in other big towns in Kenya in order to find out if matatu drivers in those other areas experience stress and come up with ways of addressing issues that bring about the stress.
2. Prevalence of stress and its effects on *matatu* conductors in Kenya because they work together with the drivers and probably various issues causing stress for the drivers may also cause stress for the conductors

3. Problems affecting the *matatu* industry in Kenya so that various issues negatively affecting the *matatu* drivers in the whole country may be understood and addressed accordingly
4. Ways of improving service delivery in The Ministry of Transport in Kenya because the ministry may have the capacity to address most of the problems faced by the *matatu* drivers if well managed.

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APPEDICES

RESEARCH QUESTIONNAIRE

Dear Respondent,

I'm Cyprian Mutero, a student at Kenyatta University, pursuing a Counseling Psychology Master's Degree Program. I am carrying out a research study to find out how stress impacts on the matatu drivers in Nairobi and the factors that may lead to the stress. This is with a view of helping come up with good programs that may help the drivers manage or prevent work stress. Your participation will help in highlighting the various challenges encountered by matatu drivers and come up with ways of preventing or dealing with them. To help me collect the necessary data please fill in this questionnaire to the best of your ability. Your participation in this research study will be highly appreciated. The information you give will be treated with utmost confidentiality. Thank you.

Cyprian C. Mutero

Researcher

Name.....

Sign .....

Date .....

Respondent

Instructions: Please fill in the spaces or tick [√] as appropriate

PART A

Q1. Gender a) Male [ ] b) Female [ ]

Q2. Age [ ] .....

Q3. Marital Status a) Single [ ] b) Married [ ] c) Separated [ ] d) Divorced [ ]  
e) Widowed [ ]

Q4. Level of education attained a) Primary [ ] b) Secondary [ ] c) College/University [ ]  
d) None

Q5. Religious affiliation a) Christianity [ ] b) Islam [ ] c) Traditional Religion [ ]  
d) Other (Please specify) .....

**PART B**

Q6. How much do you think your daily work makes you tired? Please use numbers 1 to 5 to indicate the level of tiredness, with number 1 being the least tired and number 5 being the most tired.

1. [ ]
2. [ ]
3. [ ]
4. [ ]
5. [ ]

Q7. Do you find the environment in which you work good for convenient driving?

- a) Yes [ ]
- b) No [ ]

Q8 Please, indicate whether you have or have not often been facing the following at work in the last one or two years that you have been driving:

	Yes	No
Easily meet a set target of daily income		
Being well paid for the work done		
Feeling satisfied and happy with your working conditions		
Being in good terms with the traffic police		
Find it easy to obey the traffic rules while at work		
Feeling safe while at work and with no fear of being harassed by terror gangs		
Driving an un-roadworthy vehicle that leads to arrest by police or constant mechanical vehicle breakdowns		
Driving on a bad road that leads to traffic jam and constant mechanical breakdown of the vehicle you drive		
Arrested for traffic offence or in a situation where you have to bribe the traffic police officers		
Harassed by terror gangs as they demand money or control of a stage		
Having conflict with other road users such as drivers of the other vehicles and pedestrians		

Q9. Does your employer encourage you to come up with better ways of making your work more productive?

- a) Yes [ ]
- b) No [ ]
- c) Rarely [ ]
- d) Do you think you should be involved or more involved in making important decisions regarding ways of making your work more productive? Yes ..... No .....

Q10. Does your employer expect you to work overtime when there is a higher number of passengers than usual to be ferried?

- a) Yes [ ]  
Do you get any benefit for that and if yes, how? .....  
.....
- b) No [ ]

Q11. Do you take any vacations with your friends or family to refresh from your work routine?

- a) Yes [ ]
- b) No [ ]
- c) Rarely [ ]

Q12. Are you looking for a better job?

- a) Yes [ ]
- b) No [ ]
- c) Planning to start applying [ ]

Q13. Are you satisfied with your present job?

- a) Yes [ ]
- b) No [ ] reason/s.....  
.....

**PART C**

Q14 How long have you been working as a *matatu* driver? .....

Q15a) How many hours do you work per day? .....

b) Do you think the number of working hours per day should be reduced to improve your

working conditions? Yes..... No.....

Q16 a) How many days do you work per week? .....

b) Do you think the number of days you work in a week should be reduced to improve your working conditions? Yes..... No.....

Q17 Does your work interfere with your personal life?

- a) Yes [ ]
- b) No [ ]
- c) Sometimes [ ]

Please explain your answer

.....

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.....

Q18 Do you have a particular way, in which you can forward your complaints or suggestions whenever you have them, regarding your work to the top management/employer in the *matatu* industry?

- a) Yes [ ]
- b) No [ ]

If yes, please explain

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.....

.....

c) Do you think there should be a better way of forwarding your complaints or suggestions to your employer/management in order to improve your working conditions? Yes..... No.....

Q19. Are *matatu* drivers' issues given enough attention by the concerned authorities in the *matatu* industry?

- a) Yes [ ]
- b) No [ ]

Please explain your answer briefly.....

.....  
.....

Q20 a) Does the management in the matatu industry have a particular way of dealing with drivers' complaints or concerns whenever they are raised? Please explain briefly.

.....  
.....  
.....

b) Do you think your employer should come up with better ways of dealing with your complaints or concerns in order to improve your working conditions? Yes.....  
No.....

Q21 What level of control do you have with your work?

- a) Full control
- b) Moderate control
- c) Very little control
- d) No control

Q22 What do you think should be done to make *matatu* driver's work more relaxing and more efficient? .....

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.....

**SECTION D**

Q23 Does your work negatively affect your health?

- a) Yes [ ]
- b) No [ ]

If	yes	please	explain	how
.....				
.....				

Q24 Have you ever gone to seek medical help and the doctor/health worker's results showed a possible relationship between your sickness and your working conditions?

- a) Yes [ ]
- b) No [ ]

Q25 Are there times when you find yourself taking risks such as dangerous overtaking,

overloading a vehicle, or stopping to carry passengers in the middle of the road due to work pressure? a) Yes [ ] b) No [ ]

Q26 Are there times when you take alcohol or any other drugs in an attempt to deal with the effects of work issues that you find difficult to cope with? A) Yes [ ] No [ ]

Q27 Do some of the difficult work issues make you angry to the point that you find yourself violent/aggressive towards other drivers? A) Yes [ ] b) No [ ]

Q28 Do you experience sleeping problems due to difficult issues related to your work? a)Yes [ ] b) No [ ]

Q29 Is there any other challenge, not mentioned above, that you encounter due to some difficulties in your job? Please mention it/them.

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