**UNIVERSITY OF GHANA**

**DEPARTMENT OF PSYCHOLOGY**

# ROAD TRAFFIC ACCIDENTS IN GHANA: EXAMINING ROAD USER ATTITUDE AND BEHAVIOUR


**BY**

**ABUBAKAR ABDUL – LATEEF**

**(10272276)**

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**A THESIS SUBMITED TO THE GRADUATE SCHOOL OF THE UNIVERSITY OF GHANA, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF PHILOSOPHY DEGREE IN SOCIAL PSYCHOLOGY**

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## DECLARATION

I declare that this thesis was done by me as a student of the Department of Psychology, University of Ghana under the supervision of Dr. Wiafe Akenteng-Brenya, and Dr. Angela Anarfi Gyasi-Gyamerah, both of the Department of Psychology. Except for the references to other people's work which have been duly acknowledged, I declare that this study was my own work.

I further declare that the work has never been submitted in whole or part for any degree in this University or any other University or Institution.

CANDIDATE ..... 09/11/2020

Abubakar Abdul-Lateef Date

SUPERVISOR (LEAD) ..... 09/11/2020

Dr. Wiafe Akenteng-Brenya Date

SUPERVISOR (SECOND) 09/11/2020

Dr. Angela Anarfi Gyasi-Gyamerah Date

## DEDICATION

To Tipaga (my Wife), and Tiyumba, (my Daughter). This is for you both with love.

**ACKNOWLEDGEMENTS**

I thank ALLAH for granting me the strength and energy, as well as resources to undertake this study.

I acknowledge the immense contributions of my supervisors, Dr. Wiafe and Dr. Angela, right from the start of this work through to the end. Your valuable instructions and guidance throughout this study is appreciated, as well as your enduring patience with me.

To all my participants who volunteered their time and knowledge for this study, this work would not have being without your efforts. Thank you all, and God richly bless you all.

To G/Sgt. Zimpa Hamidu, I can't forget to single you out for appreciation for all that you did for me. You hosted me and gave me all the comfort I needed to undertake this study. Let alone your overall assistance in the course of this study. I can't thank you enough; you are a brother and a friend indeed. The efforts of the following are also appreciated: G/Sgt Emmanuel Arnah (of Police Techiman), G/Cpl Mohammed Aligidi (of Police Kaneshei),

A special thanks also to my collegues at work for all the support. L/Cpl Bugri Salifu, and late G/Sgt Emmanuel Opoku (alias O P). You gave me every support I needed but sadly, even before the work is complete, O P departed unannounced. O P! Rest in peace.

To my family and friends, I say thank you so much. Your constant support is always immense. I appreciate you all. My big brother, Jibriel Baba Fuseini (Techiman), and Sadat Abdul – Rauf, you both proved once again that you can always be relied upon. I can always call on you any time. May Allah keep us all together.

And finally to all those who contributed in one way or the other, I cannot mention all of you, but you are all appreciated. Thank you all.

**Abstract**

Road traffic accident (RTA) has become a major developmental challenge in Ghana. It is the second leading cause of death in the country after malaria, and also come with immeasurable economic and public health effects. This qualitative study based on grounded theory method and comprising in-depth interviews was used to examine the road user attitude and behaviour in relation with road traffic accidents in Ghana. 27 adult participants (male: *n* = 19; female: *n* = 8; age range: 18-50 years) consisting of traffic police officers (*n* = 11), drivers (*n* = 4), motor riders (*n* = 4), and pedestrians (*n* = 8) were purposively sampled, and interviewed using semi-structured interview guides. Four major themes emerged from the data analysis: 1) road is not meant for only transport, 2) commitment to road traffic law enforcement, 3) knowledge of traffic rules and regulations, and 4) fatigue. The study concluded, with a substantive grounded theory - the small picture theory, that the complex interaction among social relations, social need, and the now effect, combine to render road traffic law enforcement ineffective and resulting in the ultimate failure of road traffic interventions in the country. The findings of this study are very significant for stakeholders in the road traffic management in their quest to make Ghana a country with the safest road transportation system in Africa.

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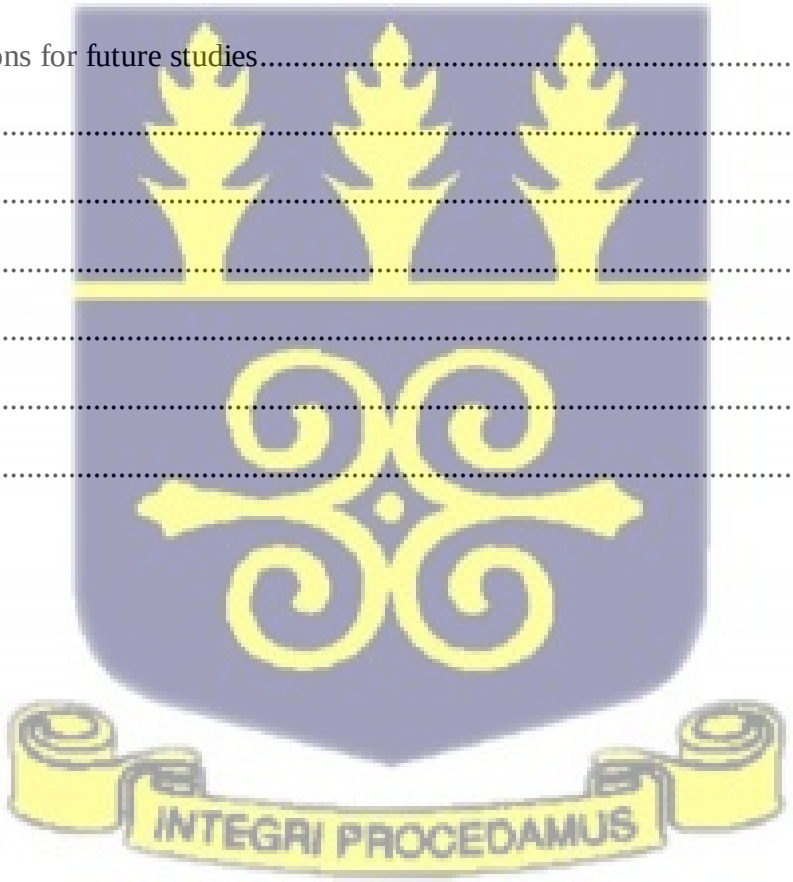


# CHAPTER ONE

## Introduction

### Background of the Study

Road traffic accident (RTA) is a global menace that has been of great concern to many – individuals, local authorities, governments as well as international organizations. The menace of RTAs stems from its incalculable effects on human lives, public health, and economic resource of communities and countries the world over.

According to Amedorme and Nsoh (2014), road traffic accident is when a road vehicle collides with another vehicle, pedestrians, animal or geographic or architectural obstacle. Given that the problem of RTA is having monumental effects on a global scale, the problem of RTA containment has been considered a global public health priority (WHO, 2018). To this end, the United Nations (UN) declared the decade 2011 to 2020 as the 'decade of action for road safety', and the UN sustainable development goal 3.6 enjoined world leaders to commit to half the number of RTA deaths by the year 2020 (Gbebreysus, 2018).

Despite these commitments on the global level, among others, to address the impact of RTA, the problem of RTA is actually getting worse, according to the World Health Organization. Deaths from RTA have now reached one million and three hundred and fifty thousand (1.350, 000) a year. This means that three thousand and seven hundred (3,700) people are dying every day through road traffic accidents (WHO, 2018).

Road traffic accident has equally been identified as the eighth cause of death for all age groups, surpassing HIV/AIDS, Tuberculosis (TB), and diarrheal diseases (WHO, 2018). Juxtaposing this finding to the 2002 World Health Organization strategic report reveals a worsening situation with road traffic deaths. RTA moved from being the tenth ($10^{th}$) leading cause of all deaths in 2002 (Abane, 2012; WHO, 2002) to the present eighth leading cause of

deaths. Injuries from RTA is the leading cause of death for people aged 5 to 29years (Coleman, 2014; WHO, 2018).

Global economic impact of RTA is estimated at 518 billion dollars spent per year. This amount of money, though substantial, is only a fraction of what is spent annually in combating tuberculosis, HIV/AIDS and diarrheal diseases, despite the fact that deaths resulting from RTAs surpass that from these diseases combined (WHO, 2018).

RTA and its effects are more pronounced or prevalent in lower and middle income countries (LMIC). Despite having relatively fewer numbers of motor vehicles, the death rate in lower income countries is three times higher than in high income countries. The average rate of death per hundred thousand (100,000) population in lower and middle income countries (LMIC) is 27.5%, whilst the average rate of death per hundred thousand (100,000) population in high – income countries is 8.3% (WHO, 2018). With only one per cent (1%) of the world's motor vehicles, lower income countries record as high as thirteen per cent (13%) of the world's road traffic deaths. Middle-income countries, with fifty-nine per cent (59%) of the world's motor vehicles, record an overwhelming eighty per cent (80%) of the world's road traffic deaths. And high-income countries, with forty per cent (40%) of the world's motor vehicles record only seven per cent (7%) of world's road traffic deaths (WHO, 2018). Thus lower and middle income countries (LMIC), with sixty per cent (60%) of the world's motor vehicles, account for ninety-three per cent (93%) of global road traffic deaths, whilst high-income countries, with forty per cent (40%) of the world's motor vehicles account for just seven per cent (7%) of global road traffic deaths. Africa's traffic-related deaths (28.3 deaths per hundred thousand people) remain the highest globally (Agyeman, 2018).

To tackle this menace of RTA in lower and middle income countries, of the 518 billion dollars estimated to be spent annually on RTA, 65 billion is estimated to be spent in

lower and middle income countries (including Ghana) (Coleman, 2014; WHO, 2018). This amount spent on RTAs in lower and middle income countries is said to be higher than what these countries receive per year in development aid (Coleman, 2014). Domestically about one to three per cent of Africa's gross national productivity is used to cover accident-related costs (Peltzer, 2011).

Notwithstanding the financial and political commitments being put in place, no reduction in the number of deaths were observed in any low income country between 2013 and 2016 (WHO, 2018).

In Ghana, the RTA story and history is nothing different from the general picture in lower and middle income countries as identified in the world health organization global status report (2018). RTA has been identified as a huge menace in the country with incalculable economic, public health, and socio-psychological effects. It has been identified as the second cause of death in Ghana after malaria, with a reported one thousand and nine hundred (1,900) road accident deaths annually (Amedorme & Nsoh, 2014). The death and injury situations associated with RTAs in the country seem to be increasing with every year that passes. An increasing trend of deaths due to RTAs was observed by Abagala et al (2013). Deaths from RTAs were found to increase from 7.4% in 2006 to 10.9% in 2011. Similar trend of increase was captured in the 2016 national road crash statistics. The number of fatal crashes increased by 7.6% over the crashes recorded in 2015. Total number of road traffic fatalities for 2016 increased by 15.6%, and the overall number of casualties increased by 1.3% over the 2015 figures (NRSC, 2016). As of the end of the year 2016, the total number of motorists who died as a result of RTAs stood overwhelmingly at 2,198 nationwide (Graphic online, 2017; NRSC, 2017).

Within the first quarter of 2017, Ghana recorded over 2,500 road traffic accidents. This resulted in 426 deaths and 2,523 injuries. But by June 2017 RTAs in Ghana resulted in one thousand and fifty-nine (1059) deaths and five thousand nine hundred and ninety-seven (5997) injuries (National Road Safety Commission, 2017). This was an increase of 2.4 per cent for deaths and 13.1 per cent for injuries compared to same period for 2016 (Agyeman, 2018).

The menace of RTAs in Ghana continues to plague the country, and daily or occasional reportage of RTAs are replete in the traditional media (newspapers, radio and TV stations), the internet (World Wide Web), as well as social media (Facebook, whatsup, etc.). In March 22, 2019, about ninety lives were lost in just two separate road accidents in the country, one along the Techiman – Kintampo road, where sixty (60) people reportedly died, and the other along the Cape Coast road in the Central Region, where thirty (30) people died (Graphic online, 2019). From the beginning of the year 2019 to the end of the first quarter, an overwhelming six hundred and ninety-six (696) people died through RTAs in Ghana. This was an increase of 17.5% over the figures for RTA deaths (592) for the first quarter of 2018. As the death figures for the first quarter of 2019 increased over the figures for the same period in 2018, same was the total number of accident cases, which increased by 6.95% from 33,193 in 2018 to 3,415 in 2019 (Daily Graphic, 2019; Graphic online, 2019; NRSC, 2019). By the first half of the year 2019, the total number of people who died through RTAs had increased to 1,252, which was an increase of 3.3% over the figures for first half of 2018 (1,212) (Graphic online, 2019). The challenges of RTAs in Ghana are so daunting, as far as deaths and injuries are concerned, that Coleman (2014) identified it as an important morbidity and mortality problem, as well as a health finance problem in Ghana.

Generally, victims of RTAs in Ghana have been those in the active work age group, predominantly young adults. As observed by the National Road Safety Commission, about

60% of road accident victims in Ghana are males between the productive ages of 18 and 55years (NRSC, 2017). The 2016 data indicated that the 26 to 35years age-group is the modal age group in the fatality statistics, with married working males the most at-risk group in traffic (NRSC, 2016). The highest share of road traffic accident fatalities in Ghana is borne by pedestrians (39.5%), followed by motor cycle riders, with 20.9%, and bus occupants with 17.5% (NRSC, 2016; WHO, 2018). This is a substantial number of the country's human power and skilled labour force that are lost to RTAs annually. The overall scenario is even bleaker when the social effect of these fatalities on family relations and dependents of victims are taken to account. Thus the human and social cost of RTAs in the country cannot be overemphasized.

The economic cost of RTAs in Ghana, according to the National Road Safety Commission's 2007 report, as quoted by Kudebong et al (2011) was estimated to be 1.6% of the country's Gross Domestic Productivity (GDP), which was equivalent to one hundred and sixty-five (165) million US dollars. Assessing the economic burden of motorcycle accidents alone in northern Ghana, Kudebong et al (2011) estimated it to be about 1.2million dollars, with fifty-two per cent (52%) being accident related and forty-eight per cent (48%) being casualty related. In a quantitative survey of 123 road accident victims in the Kasena-Nankana Districts (Navrongo) to assess the effects of road traffic accidents on society, Abagale et al (2013) found the average costs of RTAs to the household to be US$6007 and the cost to the employer to be US$7625. The annual mean cost of a RTA to a poor household was found to be US$49 which represented 183% of the annual income of those households, and 5% of the average income of a rich household.

Haunting or troubling as the cost of RTAs to the country might be, examining Ghana's transport system holistically reveals no luxury of choice or alternative for the

country, at least not foreseeable in the near future. And this makes it all the more important that the efforts and commitments at improving road safety are not reneged.

Ghana's transport system is predominantly road transport, with the Ministry of Transport revealing that about 98% of freight and overwhelming 95% of passenger movement in the country is carried by road transport (MOT, 2007). Sasu-Mensah (2015) found road transport to account for 94% of freight and 97% of traffic movement in the country. Rail, air and water transport systems in Ghana are ineffective and sometimes virtually non-existent.

Internal or domestic air transport is so limited and somehow expensive and out of reach of majority of the population. Coupled with a lack of adequate air transport infrastructure in the country, only two domestic routes are linked to the national capital. Although there are domestic airports in the regional capitals of Kumasi, Tamale, Takoradi, Sunyani, Wa, Ho, Bolga and several other airstrips in the country, most of these are used only occasionally and have no navigation equipment as well as essential services (Sasu-Mensah, 2015). Few private airlines operate domestic air transport in the country, mainly through the routes of Accra, Kumasi, Tamale, and Takoradi.

Rail transport in the country is equally limited and ineffective, operating mainly on pre – independence routes and infrastructure. Attempts by subsequent governments to improve intercity rail connections have not been that successful thus far, limiting rail transports to some few routes in Greater Accra and Western Regions.

Water transport is virtually non-existent in the country, baring the Volta lake ferry. Ferry services on the Volta Lake is operated by the Volta Lake Transport Company (VLTC), which has five ferry crafts carrying passengers and vehicles from one bank of the Volta lake to the other (Sasu-Mensah, 2015). But by far the transport potential of the Volta Lake is said

to be largely unexploited due among others to inadequate port navigation facilities, insufficient land connections, and the existence of submerged trees (Sasu-Mensah, 2015).

Given these national transport scenarios, road transport remains by far the most common, accessible and affordable, and in most instances the only available and possible means of transport. To this end, the socio – economic and political activities and progress of the country has been, and is largely dependent on its road transport infrastructure. The volumes of passenger and freight transport by road will therefore remain very high in the country, and so may the road crashes, injuries and deaths unless and until the RTA dynamics are well understood and effectively addressed.

Given the economic, public health, and social burden of RTAs in Ghana as espoused in the earlier literature, several measures have or are being taken to address the canker of RTAs.

First is in the area of legislation. The road traffic act of 1999 (Act 567) has been passed, which establishes the National Road Safety Commission (NRSC), to regulate road usage so as to ensure safety on our roads. The act also stipulates the objectives, functions as well as the composition of the commission. The road traffic act of 2004 (Act 683) and the road traffic regulation of 2012 (L.I 2180) as well all together form the legal framework for the effective management of usage of road transport infrastructure in the country.

Linked to the legal framework is the question of enforcement of road safety laws and regulations to ensure compliance. This is a shared mandate of the Police Motor Traffic and Transport Department (MTTD), the Driver and Vehicle Licensing Authority (DVLA), Custom Exercise and Preventive Service (CEPS), and the National Road Safety Commission (NRSC). The DVLA is responsible for the testing and licensing of drivers/riders and vehicles

in the country, as well as the approval of vehicles road worthiness. It also inspects and approves vehicle safety devices.

The Motor Traffic and Transport Department (MTTD) of the Ghana Police Service is the department with the responsibility of road traffic law enforcement. The department ensures the compliance of road safety regulations and the apprehension and prosecution of road traffic offenders.

The National Road Safety Commission (NRSC) established by Act 567 of 1999 with the object of developing, promoting as well as coordinating policies in relation to road safety in the country. It is mandated to ensure safety on our roads and to carry-out road safety education and campaign in the country. To ensure this, the commission rolled out and completed the national road safety strategies I (2001 – 2005) and II (2006 – 2010), and now on the verge of completing strategy III in the year 2020 (NRSC, 2018). These are strategies with far reaching aims of ensuring ultimate safety on our roads. Evaluations of these policies have informed the various interventions that the road safety commissions carry out in the country, including the national road safety policy which provides the guidelines for the planning and management of road safety interventions (NRSS, 2011).

In collaboration with the Ministry of Education, a program is being put in place for the teaching of road safety in schools. Road safety and related issues are planned to be taught as a subject in both basic and senior high schools in the country, as part of a new curriculum that has been introduced by the Ghana Education Service (GES) (The Daily Statesman, 25/09/2019 p6). This is in line with the mandate of the commission as captured in section 2(1b) of Act 567 to encourage the development of road safety education as part of the school curriculum in Ghana.

In this sense, the ultimate road safety in the country is among others contingent upon the effectiveness of, and effective collaboration among these institutions.

Available literatures on RTAs in the country have identified three main causes: mechanical, human (road user attitudes and behaviours), and environment or engineering (Abane, 2012; Coleman, 2014; NRSC, 2016; & WHO, 2018). But while mechanical, engineering and natural causes all together account for 40 per cent of RTA in the country, human attitudes and behaviour (human factor) alone has been found to account for 60 per cent of RTA, with speeding and drink driving the major contributing factors (Coleman, 2014; NRSC, 2018; & WHO, 2018).

According to Ajzen (1993), an attitude is an individual's disposition to react with a certain degree of favourableness or unfavourableness to an object, behaviour, person, institution, or event - or to any other discriminable aspect of the individual's world. Therefore the human attitudes and behaviours that account for majority of the road traffic accidents can be understood in terms of the degree of favourableness to those behaviours among road users in Ghana

Given these developments, this study aimed to explore in detail and understand the road user attitude and behaviours in the road traffic accidents analysis in Ghana. This was expected to help relevant state institutions and stakeholders in the road traffic management reduce to the minimum, the incidents of road traffic accidents in the country, and thereby achieve the National Road Safety Strategy (NRSS III) and the UN sustainable development goal 3.6.

**Statement of Problem**

In the efforts to address the menace of road traffic accidents and fatalities in the country, the National Road Safety Strategy I (2001 – 2005) was implemented which aimed to reduce road accident fatalities by 5% by the year 2005, using 1998 as the base year. The strategy further aimed to reduce by 20% the number of road accident fatalities by the year 2010, as well as develop the capacity to influence the quantity and quality of road safety interventions in the country. An evaluation of the strategy in 2006 revealed that its implementation provided a very useful tool for the development and management of road safety efforts, and enhancement in the institutional, technical, regulatory and enforcement capacities of the NRSC and its key stakeholders. However, the implementation of the strategy could not achieve the stated objective of reducing by 5% the road traffic fatalities by 2005 (NRSS III, 2011).

Upon the review of strategy I, the implementation of strategy II (2006 – 2010) became necessary, and for the first time, a national vision for road safety – Ghana, a country with the safest road transportation system in Africa – was formed and adopted. Strategy II (NRSS II) was aimed at reducing Road Traffic Fatalities (RTFs) on a year-on-year basis, and to achieve a total of less than 1000 fatalities by the year 2015, with emphasis on pedestrians and bus/mini bus occupants (NRSS III, 2011). Despite the improvements made in reduction in the annual rate of increase in road traffic crashes (RTCs) over the preceding years, strategy II as well could not achieve the objective of less than 1000 fatalities by the year 2015.

Ghana is at present on the verge of completing road safety strategy III (NRSS III, 2011 – 2020), which incidentally coincides with the United Nations global plan for the decade of action for road safety (2011 – 2020). By this, countries are enjoined to commit to half the number of road fatalities by the year 2020. Given that the problem of RTA

containment has been considered a global public health priority. The United Nations (UN) declared the decade 2011 to 2020 as the decade of action for road safety, and the UN sustainable development goal 3.6 enjoined world leaders to commit to half the number of RTA deaths by the year 2020 (Gbebreysus, 2018), Little progress is being made (W.H.O., 2018).

Progress is being made in this regards in terms of legislation, use of seat belt, and children restrain system. But less progress is being made as far as speed limit and drink driving are concerned.

Though available literature has highlighted these human road user attitudes and behaviours (speeding, drink driving, jay walking, use of mobile phones etc.) as major causes of RTA in Ghana, not enough exclusive attention has been paid to it given that 60 per cent of RTA in Ghana are said to be human related (attitudinal and behavioural). In the light of this it was important to ask; what and how these human behaviours and attitudes persist despite the empirical or glaring evidence of havoc over the years?

**Purpose of the Study**

The purpose of the present study was to understand, from the view point of participants, the underlying factors or variables that are sustaining the human factors (attitudes and behaviours) identified in the literature as major causes of RTA in Ghana

**Objective of the Study**

General objective of the study was to understand the views of participants as far as human attitudes and behaviour as cause of RTA are concerned.

Specific objectives of the study were to understand participants' views on:

i. Speeding as cause of RTA in Ghana

ii. Drink driving as cause of RTA in Ghana

iii. Pedestrians' behaviours as cause of RTAs.

**Significance of the study**

The study was expected to bring to the fore the views and understanding of drivers and motor cycle riders and pedestrians, the contribution of human factors (attitudes and behaviours) to RTA in Ghana.

It was also expected to bring to the attention of relevant institutions, stakeholders in road safety and government, the human causes (attitude and behaviour) of RTA from the perspectives of drivers, motor riders and pedestrians who are key actors in RTA. This was to ensure that effective measures are put in place to help nib RTA in the bud.

The study was also expected to add to existing knowledge on road traffic accidents in the country, so as to help fill the gaps identified in the road traffic accident analysis. It was also expected to be of help to future studies in the area of road accidents and road safety in the country and beyond.

# CHAPTER TWO

## Literature Review

This chapter of the study was focused on the theoretical framework on which the study was based. It also included the review of related studies on road traffic accidents in Ghana, with emphasis on findings and critiques of the earlier studies. The chapter also captured the research questions that the present study sought to answer.

### Theoretical Framework

The theoretical frameworks that were used in this study to understand the attitudes and behaviours of road users in Ghana were the social learning/cognitive theory, the theory of planned behaviour, social constructivist theory, and the theory of Knowledge.

**Social Learning/Cognitive Theory**: Social learning theory was propounded by Bandura (1977), and later developed into social cognitive theory (Bandura, 1986, 2005). The theory posits that human behaviour is influenced by the reciprocal interaction of the person, environment, and the behaviour within a social context. The cognition and previous experiences with behaviour, the external social context in which the behaviour occurs, as well as aspects of the behaviour such as outcomes achieved. This interaction is the construct of the theory referred to as reciprocal determinism. In this study, the reciprocal interaction here will help in examining the attitude and behaviour of road users in line with the overall objectives of the study.

The second construct of the social learning/cognitive theory is Behavioural Capacity. This relates to the ability of a person to perform behaviour through essential skills set. There is thus emphasis on knowledge or expertise that a person has at performing the behaviour. In relation to this study, the ability, competence or skills set of drivers, motor riders, and pedestrians in the use of road in the country and how that influence road user behaviour.

Observational learning is the third construct of this theory. The theory emphasise that people do not only learn from their own experiences, but also from the experiences of others. People observe the behaviour of others and reproduce it or model it. We learn behaviour by observing and modelling others engage in that behaviour. In respect of the present study, road user attitude and behaviour is influenced in part by road users modelling the behaviour of others on the road.

The next construct of social learning/cognitive theory is Reinforcement. Reinforcement increases the likelihood of a behavioural response. It is the internal or external response that affect whether the behaviour is continued or discontinued. Reinforcement can be negative or positive, and can also be induced by environment or self-induced. It is greatly influenced by past experiences that shape or affect the likelihood that a person will engage in a particular behaviour as well as the reason for the behaviour. In this study, road user attitude and behaviour in respect of drink driving/riding, speeding and pedestrian use of road is positively or negatively reinforced by past experience with speeding and drink driving/riding among others.

Another construct of social learning/cognitive theory is Expectation. This construct emphasise the anticipated consequence of behaviour. Before engaging in any behaviour, people anticipate the consequence or outcome of their actions. Expectation is also influenced by past experience. In relation to the present study, drivers, motor riders, and pedestrians all have their individual or respective expectations before they use the road. Therefore the anticipated consequence of speeding, drinking, and indiscriminate crossing of road influence road users decisions to engage in such acts.

The final construct of social learning/cognitive theory is Self-Efficacy. This is the level of confidence a person has in his or her ability to perform a behaviour successfully. It is

a person's belief in their own ability and capability to exercise control over their own functioning and events that affect their lives. In this study, self-efficacy on the part of drivers and motor riders influence their behaviour in relation to speeding and drink driving/riding, and on the part of pedestrians influence where and how they cross or use the road. Their confidence and belief in their own ability make them engage in the road user behaviours as identified by study.

**The Theory of Planned Behaviour:** The theory of Planned Behaviour was propounded by Ajzen (1985) to explain human behaviour. It is an extension of the theory reasoned action (Ajzen & Fishbein, 1975). The theory was developed as a general model to predict and explain behaviours across a wide range of different types of behaviours. This theory proposed that people are more likely to engage in a particular behaviour if they evaluate the said behaviour as positive, and if they think that significant others wanted them to perform the behaviour. The theory established a strong influence of other people on a person's behaviour, in that not only do positive evaluations lead to the performance of behaviour, but also the thinking that significant others want the behaviour performed. Thus the thinking or evaluation of people around you regarding a particular behaviour influences your likelihood of performing that behaviour. Thus the positive perception of the behaviour leads to higher intention and people are more likely to perform that behaviour.

In this regard, road user attitudes and behaviours are influenced on the one hand by the positive evaluation of those behaviours by road users, and on the other hand by the thinking or perception of road users that significant others equally have such positive attitude or perceive that behaviour as positive. In this sense, road users will engage in behaviours such as speeding, drink driving, jay walking among others when they evaluate such behaviours positively and when they think that those people around them also approve of those behaviours.

**Theory of Knowledge (TOK):** The theory of knowledge was propounded by Gregg Henriques (2005) to explain human behaviour. According to this theory, there are three ways to understand and explain human behaviour.

The first principle under this theory is termed investment. According to Henriques, investment here refers to the work effort directed towards change. Work efforts are directed towards particular outcomes. In relation to this study, we can understand road user attitudes and behaviours that we observe on our roads as investments that are directed towards certain outcomes. The tendency to speed, overtake, talk on mobile phone whilst driving among others are all investments with underlying expected outcomes.

The second way of explaining human behaviour as espoused by this theory is social influence. This is the process by which one person's actions impact the investment of another person. The processes of social influence involve competition, cooperation, and how or whether exchanges move people closer or further apart. This could be related to the impact of drivers' road user behaviour on passenger mobility, or the impact of pedestrian behaviour on the road on the activities and movement of other road users. Social influence is also explained as resource. This is the capacity, as individuals, to move other people in accordance with our interest. It is said to reflect the level of respect and or social value people show others, as well as the extent to which people can sacrifice for others.

The third way of explaining human behaviour, according to the theory of knowledge, is justification. This is the systematic structure and the legitimising function of verbal communication. With the attitude and behaviour of road users, justification here could be the positive evaluations of their actions on the road, which could lead to the continuation of such actions.

**Constructivist Theory** (**Social Constructivism):** Constructivists or otherwise known as Social Constructivism is actually a philosophical worldview or idea that explains human actions and meaning making. The idea of social constructivism originated from the works of Berger and Luekmann (1967), Lincoln and Guba (1985) among others (Creswell, 2014). The central idea of social constructivists is that individuals seek understanding of the world in which they live and work, and in doing so develop varied and multiple subjective meanings of their experiences.

In relation to this study, road users seek their own understanding of road use and construct their own subjective meanings about road usage. It is these subjective meanings formed by road users that inform their behaviours on the road. Crotty (1998) summed social constructivists view in three main assumptions:

- The first assumption is that human beings construct meaning as they engage with the world they are interpreting. The emphasis here is on the individual subjective meaning making as he/she goes about interacting with the world in the course of work and daily life.
- The second assumption by Crotty (1998) is that humans engage with their world and make sense of it based on their historical and social perspectives. Thus the individual subjective meaning making of the world is influenced by the respective historical and social perspectives of the individuals.
- The third assumption is that the basic generation of meaning is always social, arising in and out of interaction with a human community. In this case, the individual meaning making is not done in isolation, but in relation to social setting within which the individual lives and interacts.

**Review of related studies**

In trying to understand the road user attitudes and behaviour, and how they contribute to road accidents in the country, literature on the causes of RTAs in Ghana were reviewed with the object of understanding not the causes of road accidents, but the underlying human attitudes and behaviours (human factors) regarding road use in the country. The causes of RTAs in Ghana are fundamentally not different from what have been found in other countries around the globe, especially in Africa as well as other low and middle income countries (Adejugbagbe et al, 2013; WHO, 2002; 2018). It appeared as though available literature on RTAs in Ghana and for that matter Africa and the world had exhausted the causes. Perhaps as far as the causes of RTAs in Ghana are concerned, there is nothing hidden under the sun. We have reached a point in the discourse on the causes of RTAs in Ghana where one can make a claim of saturation, and that no new cause of RTAs exists to be found.

Mountains of scholarly literature on the causes of RTAs in Ghana have ultimately arrived at similar or the same findings and conclusions. Causes of RTAs in Ghana have been generally categorized into three – human factor, mechanical and environmental factors (Abane, 2012; Agyeman, 2018; Coleman, 2014; NRSC, 2016; Sasu-Mensah, 2015; & WHO, 2018). Other literature has also identified engineering and natural cause such as weather condition (Abane, 2012; Amedorme & Nsoh, 2014; & Moen et al, 2005).

While mechanical, engineering and natural causes all together are said to account for 40 per cent of RTA in the country, human attitude and behaviour alone has been found to account for 60 per cent of RTA, with speeding and drink driving the major contributing factors (Coleman, 2014; NRSC, 2018; & WHO, 2018).

**Mechanical Factors:** Mechanical factors or causes of RTAs in Ghana have been identified among others as old (second hand) cars and vehicles, malfunctioning electrical system, worn-out tyres, and brake failures.

In a study using descriptive data from statutory bodies and media houses' report on RTAs in the country as well as academic papers on RTAs, Coleman (2014) found old cars, mechanical safety and maintenance status of cars as responsible for RTAs in the country. Coleman (2014) identified that old cars were relatively prone to safety defects and accidents. Sasu-Mensah (2015) made similar findings in respect of old cars, indicating that the condition of vehicle can be responsible for RTA. He cited particularly the conversion of cargo vehicles to passenger vehicles, as well as poor maintenance of vehicles as causes of RTAs in Ghana.

Another mechanical factor identified as responsible for RTAs in Ghana is the use of worn-out tyres (Ackaah & Afukaar, 2010). Examining trends in road traffic accidents in Ghana over a 21year period (1991 – 2012), Siaw, Duodu and Sarkodie (2013) used accident report collected from the National Road Safety Commission and found the use of defective tyres as one of the causes of RTAs in the country. This finding has since been collaborated by the Executive Directed of the National Road Safety Commission, May Obiri Yeboah, that 15.2% of vehicles involved in fatal crashes had some form of defect prior to the crash, and that about 4.4% of vehicle crashes are caused by tyre burst or blow – up (Muzu, 2014).

According to data from the National Road Safety Commission, as stated by Muzu (2014), 75% of tyres imported into the country are used ones. That means 3 out of every 4 car tyres in Ghana are second hand or used tyres. We actually have 'Used Tyre Sellers Association', with a membership of about 200 based in Accra and Kumasi (Muzu, 2014). But the dealership in used or second hand tyres is actually in all regions and towns in the country. These tyres are mostly imported into the country from the United Kingdom, Germany, Japan

and France, and most are said to be those of accident vehicles and others known as 'store reject', and are actually as good as new ones according to the PRO of the Used Tire Sellers Association Mr Stephen Amankwa, in an interview with the Daily Guide Newspaper in March, 2014.

Concerns have been raised about the continued importation and use of these second hand tyres in the country, prompting calls for a ban on the importation of used tyres into the country. But in a stakeholder forum on tire standards in the country, the Executive Director of the National Road Safety Commission, May Obiri Yeboah clarified that the ban was rather on sub-standard tyres (those tyres that do not meet the requirement of the road regulation law - L.I 2180) and not on used tyres (Daily Guide Africa, 02/09/2013). Per section 52 of the road regulation law (L.I 2180), the standard for tyres to be used in this country is to have a depth tread of 1.6millimetre and should not be more than four years old. Thus any car tyre, weather brand new or used one, which does not meet this stated standard, is not approved for use in Ghana.

For standard tyres to be imported and used in the country, the enforcement bodies in this case the Ghana Standards Authority (GSA) and the Driver and Vehicle Licensing Authority (DVLA) have to be more effective. However it has been found that the least inspected parts of the vehicle by the DVLA are the tyre speed rating, tyre tread wear patterns and test driving of vehicles (Coleman, 2014). The DVLA rather pays more attention to vehicle lighting system and the sight of drivers, ignoring in the process the tyre depth tread and age.

Examining the overall contribution of mechanical factors to RTAs in Ghana, and Africa at large, reveal that its effects or contribution is minimal. Thus its contribution is just like the contribution of environmental factors. In Africa the contribution is said to range

between 2% and 2.4% of the total number of RTAs recorded, but when combined with environmental factors the overall contribution increase to between 6.2% and 16.0% (van Schoor et al, cited in Sasu-Mensah, 2015). But these figures are a bit higher when it comes to Ghana. In a study, Amo (2014) found that 87.46 per cent of RTA in Ghana cannot be linked to the fault of the vehicle before the incident. This indicates that contribution of mechanical factors cannot be blamed for the overwhelming majority of the RTAs that occur in the country.

Despite the relative minimal contribution of mechanical factors to RTAs in Ghana, the extent to which we can pin road accidents down to mechanical factors in the country require further scrutiny. Many of what have been classified as mechanical factors are actually in effect human factors, and ought to be viewed in relation to human decision making. The importation and use of old cars, the purchase and use of sub-standard tyres, as well as the maintenance failures on the part of vehicle owners and drivers, and the lack of enforcement on the part of state institutions mandated to do so are all deliberate human decisions. In this case people take or make decisions to use sub-standard vehicle parts or fail to maintain vehicles and that result in RTAs. Enforcement agencies also fail to do their work and that result in RTAs, and at the end of the day we blame it on mechanical factor just because there is a tyre burst or engine failure. To this end, the mechanical factors in RTAs in Ghana can better be understood from the view point of human decision making in terms of vehicular use in the country.

One of such decisions is of economic motive. The use of sub-standard and old cars and vehicle parts are relatively cheaper than use of new and standard ones, making it more economical for owners and drivers/riders of vehicles in the country to deliberately patronise old and sub- standard parts. New tyres for instance cost between 150cedis and 700cedis whilst used tyres cost between 40cedis and 200cedis (Muzu, 2014). Therefore the use of old

tyres or sub – standard tyres and its contribution to RTAs in the country can better be understood and addressed from the economic and enforcement angles, which are both human factors, rather than the mechanical angle we presently focus.

**Environmental Factors:** Environmental factors have also been identified as one of the causes of RTAs in Ghana, and together with mechanical factors mentioned earlier contribute about 40% of road traffic accidents in the country. Among the environmental factors said to be responsible for RTAs are weather condition, visibility and state of the road network.

In a mixed method study to analyse the causes of RTAs in the Kumasi Metropolis, Amedorme and Nsoh (2014) randomly sampled 137 commercial drivers in the Metropolis for a study. Using a mix of questionnaire, interviews and observations, they found unfavourable weather conditions and bad nature of roads as major causes of RTAs in the study area. Sasu-Mensah (2015) found similarly that poor condition of road network was a major risk factor to drivers and riders alike.

However, in another study, the contribution of weather condition to RTAs was found to be insignificant, as RTAs mostly occurred on the road on occasions when the weather conditions were good and clear (NRSC, 2012; 2016; & Sasu-Mensah, 2015). Moreover, the number of RTAs that occur on rainy days has been found to be insignificant and minimal as compared to the number of RTAs that occur on non-rainy days and in clear weather,

Juxtaposing this to the question of visibility that has also been identified as contributory factor to RTAs, data from the National Road Safety Commission reveal that the peak hour of occurrence of RTAs are between the hours of 6pm and 8pm (NRSC, 2016). Other literature has found the hours of 4pm and 6pm as the peak period of RTAs occurrence in the country (Sasu-Mensah, 2015). Given these data, the overall impact and contribution of

weather visibility to RTAs in the country is minimal, as the visibility within the hours of 4pm and 8pm can hardly be described as poor.

Bad nature of road network is yet another of the environmental factors that is said to be responsible for RTAs in the country (NRSC, 2012; 2016; 2017; Sasu-Mensah, 2015; & WHO, 2018). Although bad or poor road network has been blamed for RTAs in the country, majority of the RTAs actually recorded on good and tarred roads and not on bad roads. An estimated 70% of road crashes occur on flat and straight road (Haadi, 2014). Higher number of fatalities are recorded on tar good roads (81.75%) and clear weather (91.75%) (Amo, 2014). The evidence of more road accidents occurring on good and tarred roads actually lends credence to the speed hypothesis as have been found in respect of causes of RTAs in the country.

Moreover, anecdotal evidence in the country does not support the hypothesis or findings that bad nature of road network cause road traffic accidents. Rather the effects of poor or bad road network, as revealed by the media, are mostly felt in travel time and damage to vehicles. Speaking to Citi TV, Citi FM, Joy FM and other media networks, drivers and passengers generally complain of time spent on their travels on bad roads as well as damage to vehicle parts as a result of poor nature of the road network, but not road accidents. To this end, the overall contribution of bad or poor road network to RTAs in Ghana require extensive scrutiny. For the evidence and data available seem to suggest that the impact is more on vehicular and passenger and freight mobility, as well as vehicular damage than on road accidents.

**Attitudinal and Behavioural Factors (Human Factors):** Human factors have been identified as the main causes of RTAs in the country. The contribution of human factors alone to the road traffic accident statistics (60%) is more than all the other identified causes

put together. These human factors include speeding, drink driving, jaywalking, the use of mobile phones whiles driving, and sleeping or driving tired.

Human attitudes on the road have had the most telling effects as far road crashes are concerned, as have been identified by the literature on RTAs in the country. It is estimated that about 80 to 90% of all road traffic accidents results from the negative human attitudes, behaviours and perceptions (Abane, 2010; Obeng-Odoom, 2010). In a similar finding, the road traffic accident data for 2017 revealed that about 90% of road crashes were as a result of human errors (NRSC, 2017).

The National Road Safety Commission's road accident statistics for 2012 revealed that increase in road accident fatalities on the N1 Highway and the Accra – Cape Coast – Takoradi highway was directly attributable to speeding on the part of drivers, and the unwillingness of pedestrians to use the pedestrian foot bridges.

In a related study, Abagale et al (2013) using a quantitative survey to understand the effects of road traffic accident in the Kassena Nankana District, found that careless driving and indiscriminate road crossing were responsible for road accidents.

Of all these human factors - negative attitudes, speeding, drink driving, and indiscriminate crossing of roads - stand out for particular attention. Speeding as a cause of RTA has received as more scholarly ink as the whole phenomenon of road traffic accident itself. Indiscriminate crossing without attention to traffic, as well as disregard for road signs have also received fair share of the literature (Dankyi, 2010; Derry et al, 2007; Ofosu-Ackaah, 2010; Siaw et al, 2013).

With respect to speeding, given its significant contribution to RTAs in the country, special attention needs to be paid to identifying and understanding those conditions that

trigger or sustain speeding on the roads despite the havoc associated with it, as well as those conditions that controls or seek to control speeding in order to reduce if not prevent road crashes. In the light of this, rain (bad weather condition) and bad or poor road network seem to rather serve as obstacles to speeding, thereby reducing the incidents of road accidents in these cases. Although law enforcement agencies are seldom found on the road during rainy days, road accidents during rainy days are actually relatively fewer compared to road accidents on non-rainy days and on clear weather. Rains in this case therefore serve as natural checks on speeding, and perhaps more effective checks than the mandated state institutions do.

In same vein, poor or bad road networks record relatively fewer road accidents compared to good and tarred roads (Amo, 2014). These findings partly explain why speeding is the single most identified cause of RTAs in the country. On good and tarred roads, and in clear weather, drivers and riders are presented or perceive a card blanch to speed as they wish without any impediment.

It is apparent from this that poor road network and bad weather condition (rain) appear to be succeeding where law, road traffic regulations, road signs and enforcement bodies seem to be failing – speed control. As far as drivers and motor riders are concerned, it appears that the only thing that can regulate or control speed on the roads has to be physical obstacle.

Closely related to this is the fact that about 50% more road deaths occur on the non – urban road facilities than on urban roads (NRSC, 2016). Urban is explained as city or municipal areas, characterized by a concentration of residential, commercial and industrial buildings and activities. Areas not characterized by these are non – urban. Therefore the congested nature of urban roads probably makes it more difficult for drivers and motor riders

to speed, thereby recording lesser crashes and deaths. But with non – urban (trunk) roads where no such congestion exist, drivers can speed without any obstacle, and thus result in 50% more deaths on such roads.

In respect of motor riders, Kudebong et al (2011) examined the economic burden of motorcycle accidents in Northern Ghana and found that majority of motor riders (71%) did not possess valid driving license from the DVLA. The study also found the abuse of alcohol and the lack of formal motor bike training as contributing to motorcycle accidents in the study area. Thus the negative human attitudes and behaviours that have been identified with drivers were found to be with motor riders as well, indicating that the negative human factors so identified cut across or are common among all road users in the country.

The road user behaviours of pedestrians have equally received scholarly attention as far as road traffic accidents are concerned. Together with motor riders, they have been classified as the most vulnerable road users worldwide (WHO, 2018). Pedestrians and motor riders bear the highest burden of road accidents in the country in terms of fatalities and casualties (NRSC, 2016; 2018). However despite the risk of fatalities and injuries to pedestrians, the negative road user attitude of pedestrians and their indiscriminate crossing of road without attention to road signs and traffic have generally persisted in the country. These attitudes include the failure of pedestrians to use pedestrian foot bridges in the country (Abegale et al, 2013; Dankyi, 2010; Ofosu-Ackaah, 2010; NRSC, 2012; NRSC, 2016).

In October 16, 2019 alone, between 30 and 100 pedestrians were arrested by Police for 'dangerously' crossing the Madina – Adentan highway despite the completion of foot bridges along the highway for pedestrian use. Two days after these arrests and the media publicity it got, pedestrians were still observed jaywalking and failing to use the foot bridges (Citi FM, 18/09/2019). Thus neither the road crashes nor Police arrest and prosecution could

deter or is deterring pedestrians from crossing the road indiscriminately. There were media reports of police and military personnel meting out corporal punishment or instant justice to pedestrians who fail to use the foot bridge at Madina Zongo junction in Accra. These were hard measures in response to pedestrians' indiscipline and indiscriminate use of the road, thereby endangering their lives.

It is certain that in the quest to ensuring safety on the roads, constant policing of pedestrians' road use is practically impossible. What is possible though is to understand pedestrian road user behaviour from their view points or perspectives.

**Critique of the literature**

From the review of the literature above, it was obvious that we have chalked up enough success at identifying the causes of road traffic accidents in the country. As stated earlier, one could make a claim of saturation as far as identifying the causes of RTAs in Ghana are concerned. From mechanical, environment to human factors, available literature appeared to have exhausted every facet or possible cause of RTA in the country, leaving little room, if any, for further exploration of causes of RTAs.

However, despite the success at identifying the causes of RTAs, the literature provided less successful story as far as offering explanation as to what account for the recurrence of road accidents, and how interventions seemed to be failing. This left a huge gap in the road traffic accident debate and analysis begging to be filled. Road traffic management strategies and interventions have been implemented within certain periods of time, reviewed, and improved upon. But the ultimate goals of reducing the road traffic casualties and burdens have generally not been met. It was this gap in the literature that needed to be explored and filled.

**Research Questions**

Based on the literature reviewed above, the present study was guided by three main research questions:

1. What meaning do road users make of road and road accidents in the country?

2. How are road traffic interventions failing in Ghana?

3. What accounts for the increase in road accidents despite the known causes?

# CHAPTER THREE

# Methodology

## Research Approach

The present study employed the qualitative research approach. This is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem (Creswell, 2014). Thus the study adopted the qualitative research approach because it intended to understand the phenomenon of road traffic accidents from the viewpoints of, and meaning made by participants – drivers, motor riders, Police officers and pedestrians.

Lindlof and Taylor (2002) further explain that qualitative research seeks to identify, explore and explain the attitudes, actions and perceptions of people within a social setting and the meaning they make of their actions, without subjecting it to rigorous mathematical computations. As the literature above has shown, the actions of people – drivers, pedestrians and motor riders – classified in the literature as 'human factors' have been the major cause of RTAs in the country. Therefore in order to understand and explain these human actions, the attitudes, perceptions underlying these actions as well as the meaning participants make of their behaviours, the most appropriate approach to adopt is the qualitative research approach.

Qualitative research approach is grounded in the constructivist worldview, or otherwise known as social constructivism. This is the view that individuals seek understanding of the world in which they live and work. And that they develop subjective meanings of their experiences, meanings directed toward certain objects or things (Creswell, 2014).

The goal of the research in this case, as outlined by Creswell (2014) was to rely as much as possible on the participants' views of the situation being studied. The historical and cultural settings of participants are understood by focusing on the particular or specific

context in which they live and work. Setting broad and general questions so that the participants can construct the meaning of a situation, as the researcher sets to make sense of the meaning they make about their world.

**Research Design**

Research designs are types of inquiry within qualitative, quantitative, and mixed methods approaches that provide specific direction for procedures in a research design (Creswell, 2014). Research designs are otherwise known as strategies of inquiry by other scholars (Denzin & Lincoln, 2011).

Various research designs exist for the different research approaches identified above, and the choice of a research design is first influenced by the particular approach the research adopts. The present study adopted the qualitative research approach as noted earlier. The research designs that have been identified under qualitative research approach include narrative research, grounded theory research, ethnography, phenomenology and case study research design. Discourse analysis and participatory action research have also been identified as viable ways of conducting qualitative research (Creswell, 2014). In the present study, the research design that the researcher used was the grounded theory.

**Grounded Theory:** This is a qualitative research strategy in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study (Creswell, 2014). Grounded theory was first developed and presented by two sociologists in California, Barney Glaser and Anselm Strauss (Khan, 2014; Glaser & Strauss, 2009). Glaser and Strauss defined grounded theory as 'the theory that is derived from data, systematically gathered and analysed through the research process' (Strauss & Cobbin, 1990). According to Charmaz (2003, 2014), grounded theory is a method of conducting qualitative research that focuses on creating conceptual frameworks or theories through

building inductive analysis from the data. In this sense, the qualitative research is conducted through a set of systematic inductive methods aimed towards the development of theory.

According to Crooks (2001), grounded theory is ideal for exploring integral social relationships and the behaviour of groups where there has been little exploration of the contextual factors that affect individual's lives. This is where the appropriateness of grounded theory in this study is grounded. This study intended to explore the phenomenon of RTAs from the human perspective that has not been particularly explored and understood in the past, especially in relation to the meaning people make of their actions and attitude on the road that have been found to cause road traffic accidents. As Glaser (1978) put it, grounded theory is to 'get through and beyond conjecture and preconception to exactly the underlying processes of what is going on, so that professionals can intervene with confidence to help resolve the participant's main concerns'.

Thus the present study explored the human factors (attitudes and behaviours) in RTAs in the country, with the aim of understanding from the viewpoints of respondents or participants, the overall human culpabilities in RTAs, so as to develop a substantive grounded theory on RTAs in the country. This made grounded theory the ideal approach in conducting this study.

**Population/Research sites**

Research sites that were sampled for the study were the Techiman Municipality in the Bono East Region, the N1 (George Bush) Highway and the Kaneshie – Odorkor (Dr Busia) Highway both in Accra.

**Techiman**. Techiman is the capital of the Techiman Municipality and the capital of the newly created Bono East Region (Ibrahim, 2019). It has a population of 147,788, with

13.6% of the population being youthful (GSS, 2010). More than 7 out of 10 (74.2%) of the population aged 15years and older are economically active, with 95.3% of the economically active people employed. The remaining 4.7% are either in school, engaged in household duties, disabled or sick. Techiman is mainly inhabited by the people of the Bono ethnic group, but the town is cosmopolitan comprising of other people of different or diverse ethnic groups, socio – economic and political backgrounds (Antwi, 2017).

Techiman is located in the centre of Ghana, with link roads to Kumasi, Wa, Sunyani, Kintampo en route to Tamale, as well as Nkoranza and Wenchi. Given this location, almost all passenger and freight transport from the Northern Regions of Ghana to the South and vice versa pass through Techiman. So too are transport to other countries like Burkina Faso, Mali, Togo among others.

Techiman is also a huge business hub, with one of the biggest and busiest markets in the country. The market attracts traders from all over the country, as well as other African countries including Ivory Coast, Togo, Burkina Faso, and Niger. The combination of the huge market, strategic location of the town and over 95% of economically active people in employment attract huge vehicular traffic to and from the town. And with this huge vehicular traffic comes frequent road traffic accidents. The Techiman – Kintampo – Tamale road for instance has been identified as one of the road accident hotspots in the country (Koranteng, 2018). Thus the choice of Techiman as a site for the study was considered appropriate.

The other research sites were the N1 (George Bush) highway and the Kaneshie - Odorkor (Dr Busia) highway both in Accra. These highways were selected for this study because they have been identified in the literature as major accidents scenes in Accra. These highways are also two of the busiest highways in the capital, attracting huge vehicular and

pedestrian traffic all the time. They were therefore appropriate for recruiting participants for the study as they were readily available.

**Sampling**

Sampling is the process of selecting participants and sites for conducting a research. Various sampling techniques exist for the conducting of research. This ranges from random sampling, semi-random sampling to purposive sampling. The appropriateness of each sampling technique depends on the particular research design to be used for the study and well as the purpose of the study. In the present study, drivers and motor riders who had been involved in road traffic accidents, some personnel of the Police Motor Traffic Department, and pedestrian in some selected streets in Accra were sampled for the study.

The study employed the purposive sampling technique to select participants and sites that were used for the study. This is a sampling technique in which participants and sites are selected for the study based on their peculiar characteristics. As the present study is a qualitative research design with the character of data collection in natural settings and the aim of participant meaning making, the most ideal technique for site and participant sampling was the purposive selection of sites and participants. As Creswell (2014) stated; 'the idea behind qualitative research is to purposefully select participants or sites that will best help the researcher understand the problem and the research question'. In this sense, for the research problem in this study to be well understood there was no other technique for sampling that could help in the process than to purposively select those participants or respondents and sites that were best placed, based on experience and location, to provide the needed information.

The Police Motor Traffic and Transport Department (MTTD) is part of the enforcement wing of the road traffic management in the country, which has partly been blamed for the spate of RTAs in the country. Understanding the road user attitudes and

behaviours (human factors) in RTAs from the perspectives of the traffic police was important in addressing the problem effectively. Police personnel who were sampled for the study were those personnel who had served in the MTTD for at least five years prior to this study. Those who served less than five years with the motor traffic department were excluded from the study. This criterion for selection helped in recruiting personnel with reasonable level of experience and exposure in road traffic management and investigation.

Drivers and motor riders who were sampled for the study were those above the age of eighteen years who had been involved in road traffic accident within the last three years prior to this study (not earlier than 2017). This sample was obtained through the assistance of police officers at the Techiman Divisional MTTD. Those drivers and riders who were involved in road accidents before the year 2017 were excluded from the study. This criterion also helped in reducing the possibility of forgetfulness and thereby inaccurate responses from participants.

The attitude and conduct of drivers on the roads have mainly been blamed for most of the RTAs that occur in the country. In fact the human factor (attitudes and behaviours) or cause of RTAs have predominantly been blamed on drivers' over speeding and drink driving. Motor cycle riders on the other hand have been both culprits and victims of RTAs in the country. They record the second highest share of accident fatalities in the country, behind pedestrians. The contributions of drivers and motor riders to road transport and RTAs are so enormous that their perspectives were so important in understanding the human road user attitude and behaviour.



Pedestrians who were sampled for the study were those above eighteen years who failed to use pedestrian footbridge or traffic signal on major highways in Accra. Pedestrians continue to bear the highest share of RTA fatalities in the country (NRSC, 2016; 2018), and

have been described by the World Health Organization as one of most vulnerable road users (WHO, 2018).The continues rise in the number of pedestrian fatalities in the country required that the understanding and meaning of pedestrians in the road traffic debate and analysis was never ignored. Thus the aim of this study was to explore, understand and bring to fore the viewpoints of pedestrians as far as road usage and RTAs are concerned. Pedestrian use of footbridge, traffic signal, and crossing of road were thus observed along the Kaneshie-Odorkor highway and the N1 highway, and field notes were recorded by the researcher. This criterion was based on the fact that pedestrian vulnerabilities in road traffic accidents were mainly the results of pedestrian attempting to cross the road or highways.

**Sample size**

Sample size is the number of participants or sites to be used in a study. There is no unanimity as to the number of participants or sites to be used in a qualitative research. In other words, sample size in a qualitative research is not specific. It depends to a large extent on the particular qualitative design to be used – phenomenology, grounded theory, narrative, case study or ethnography (Creswell, 2013). The particular qualitative design that was used in this study was the grounded theory design. With this design, a sample size of between twenty and thirty participants is appropriate (Creswell, 2014). However, another approach to sample size from grounded theory perspective is saturation, where you stop data collection when the categories are saturated. That is when gathering new or fresh data no longer reveals new insights or properties (Charmaz, 2006).

In this study, the researcher purposively sampled twenty-seven (27) participants for the study: eleven (11) Police personnel from the Techiman MTT D, four (4) drivers, four (4), riders who have been involved in road traffic accidents, and eight (8) pedestrians.

**Demographics of Participants**

| S/NO | PARTICIPANT | AGE | SEX | EDUCATION | DURATION OF INTERVIEW | LANGUAGE SPOKEN |
|---|---|---|---|---|---|---|
| **1.** | POLICE 1 | 41-45 | M | SENIOR HIGH | 55min, 13sec | ENGRLISH |
| **2.** | POLICE 2 | 46-50 | M | TERTIARY | 39min, 09sec | ENGLISH |
| **3.** | POLICE 3 | 36-40 | M | TERTIARY | 52min | ENGLISH |
| **4.** | POLICE 4 | 41-45 | M | SENIOR HIGH | 41min, 17sec | ENGLISH |
| **5.** | POLICE 5 | 46-50 | F | TERTIARY | 45min, 11sec | ENGLISH |
| **6.** | POLICE 6 | 31-35 | M | SENIOR HIGH | 32min, | ENGLISH |
| **7.** | POLICE 7 | 26-30 | F | SENIOR HIGH | 38min,14sec | ENGLISH |
| **8.** | POLICE 8 | 31-35 | M | SENIOR HIGH | 53min, | ENGLISH |
| **9.** | POLICE 9 | 36-40 | F | SENIOR HIGH | 33min, 13sec | ENGLISH |
| **10.** | POLICE 10 | 26- | M | SENIOR | 9min, 37sec | ENGLISH |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 30 | | HIGH | | |
| **11.** | POLICE 11 | 31-35 | M | SENIOR HIGH | 14min | ENGLISH |
| **12.** | DRIVER 1 | 41-45 | M | JUNIOR HIGH | 35min, 51sec | HAUSA |
| **13.** | DRIVER 2 | 31-35 | M | SENIOR HIGH | 51min | TWI |
| **14.** | DRIVER 3 | 26-30 | M | JUNIOR HIGH | 33min, 18sec | ENGLISH |
| **15.** | DRIVER 4 | 41-45 | M | JUNIOR HIGH | 49min | ENGLISH |
| **16.** | RIDER 1 | 36-40 | M | JUNIOR HIGH | 54min, 13sec | HAUSA |
| **17.** | RIDER 2 | 36-40 | M | SENIOR HIGH | 39min, 15sec | ENGLISH |
| **18.** | RIDER 3 | 26-30 | M | JUNIOR HIGH | 32min, 42sec | ENGLISH/TWI |
| **19.** | RIDER 4 | 41-45 | M | SENIOR HIGH | 5min, 21sec | ENGLISH |
| **20.** | PEDESTRIAN 1 | 46-50 | M | SENIOR HIGH | 8min | ENGLISH |
| **21.** | PEDESTRIAN 2 | 18-25 | F | SENIOR HIGH | 7m, 15sec | ENGLISH |
| **22.** | PEDESTRIAN 3 | 26-30 | F | TERTIARY (PERSUING) | 15min, 35sec | ENGLISH |

| | | | | | | |
|---|---|---|---|---|---|---|
| **23.** | PEDESTRIAN 4 | 36-40 | M | TERTIARY | 7min, 39sec | ENGLISH |
| **24.** | PEDESTRIAN 5 | 31-35 | F | SENIOR HIGH | 9min, 12sec | ENGLISH |
| **25.** | PEDESTRIAN 6 | 18-25 | F | JUNIOR HIGH | 13min, 03sec | TWI |
| **26.** | PEDESTRIAN 7 | 26-30 | F | NIL | 11min, 05sec | TWI |
| **27.** | PEDESTRIAN 8 | 36-40 | M | SENIOR HIGH | 8min, 37sec | ENGLISH |
| **TOTAL** | **27** | | | | | |

**[Modal age (26 – 30; 36 – 40); Median age (35)]**

The results of this study were based on interviews of twenty-seven (27) participants in a qualitative study as described in the table above. Of this, eight (8) were females and nineteen (19) were males between the ages of 18 and 50 years. Further breaks down of the participants include the following: eleven (11) were professional traffic police officers (three females and eight males) drawn from the Techiman Divisional MTTD, in the Bono East Region. All the Police officers interviewed for this study had at least five (5) years' experience with the MTTD. Two officers, one male and one female (participants 3 and 5 respectively), each had a combined experience of road accident investigation and prosecution for at least twenty (20) years. A third officer (participant 1, male) had ten (10) years' experience with the MTTD, the last three years of which has been as a prosecutor. Another officer (Participant 2, male) had been with the accident squad for the last four years. Three of

the Police officers had tertiary education (first degree), and the remaining officers had at least secondary education.

The remaining sixteen participants included eight pedestrians (five females and three male), four (4) motor riders, and four (4) drivers (all males). Each of the drivers and motor riders has had at least five years of driving or riding experience, and had had personal experiences with road accidents in the past three years. Two of the motor riders had secondary education, and two had basic education. While for the drivers only one had up to secondary education. Two of the pedestrians had tertiary education (one still pursuing), four had secondary education, and only one (female, 26-30 years) said she did not attend school.

**Instruments**

Instruments for data collection in this study were three semi-structured interview guides, audio tape recorder, pen and a note book.

Three semi structured qualitative interview guides developed by the researcher were used to collect data on the road user attitude and behaviour of participants, - one interview guide for Police MTTD personnel, one for drivers and motor cycle riders, and another for the pedestrians. These interview guides were developed in line with the objectives of the study.

The interview guide for police participants was made up of demographics of participants and seventeen (17) open-ended questions on four main issues: experience of road accidents, speeding, drink driving/riding, and law enforcement.

The interview guide for driver and motor cycle rider participants was also made up of demographics of participants, and eighteen (18) open-ended questions on the issues of experience of road accidents, speeding, drink driving, and law enforcement.

The interview guide for pedestrians was made up of demographics of participants and nine (9) open-ended questions on the issues of experience of road accident, speeding, drink driving, and law enforcement.

The tape recorder was used in recording the interviews that were conducted. Responses from participants were captured on electronic tape and later transcribed for analysis. This recording of interviews helped capture every spoken word in the course of the interview.

The pen and note book were used to take down field notes and researcher observations during the course of the study. These field notes included the body language and expressed emotions of participants, as well as the general characteristics of the study setting.

**Researcher's role**

The interest in understanding the causes of road traffic accidents from the perspectives of road users and victims of road accidents (in this instance, participants), and the choice of the Techiman Divisional Motor Traffic Department as a site for the study were mainly influenced by the researcher's previous working relationship and experience with the department and personnel. Stationed at Tuobodom District (Techiman North) bêtween September, 2014 and January 2017, the researcher had the chance of working with the command and personnel of the Techiman Divisional MTTD in dealing with road traffic issues (including accidents). Within this period, the researcher took or received road accident complaints, referred road accident cases to the Techiman MTTD for investigations, and also visited (and witnessed) accident sites for preliminary inquiries.

The researcher working in this setting and with these participants fits perfectly to what Glesne and Peshkin (1992) described as 'backyard research'. But notwithstanding, the

previous work relation and experience aided the researcher in gaining entry and access to participants (both police personnel and accident victims) for the study, but not to influence the research process with any personal biases. In the light of this, the researcher put in every effort to ensure objectivity in the way the data was collected and understood, as well as the way the researcher interpreted the data and his experiences.

Moreover, the organization itself (Techiman MTTD) and the personnel of the department were not the subjects of interest in this study, and therefore whatever biases the researcher may have carried did not influence the observation, data collection and interpretation.

The other sites and participants for the study were two selected highways in Accra (N1 Highway and Kaneshie – Odorkor Highway) and pedestrians along these highways respectively. Beyond the researcher's own observations about pedestrian road use over the years, and media reportage on road accidents along these sites, the researcher had no other personal experience with these sites or pedestrian along the sites. Therefore the researcher approached this study with an open mind.

**Data collection procedure**

Ethical clearance for the study was obtained from the Departmental Research and Ethical Committee (DREC) of the Psychology Department of the University of Ghana. The researcher then obtained an introductory letter from the Psychology Department of the University of Ghana and took it to the research site (Techiman Divisional MTTD) in the Bono East Region to seek for permission to access both personnel and accident records for the study. At the MTTD in Techiman, the researcher met with the Divisional Command and introduced himself to Command and the purpose of the study. There upon the researcher was instructed to submit a summary of the proposed study, indicating the aims and objectives,

importance, as well as the scope of the study. The researcher duly submitted a summarised proposal as directed, and after which permission was granted to researcher to sample suitable personnel for the study.

Two research assistants helped in the recruitment of participants for the study by identifying officers who met the inclusion criteria to the researcher and also facilitating meetings with the officers. The researcher found that many officers at the Division had met the inclusion criteria. Three officers were recruited on the first day but only one interview was done. In all thirteen (13) officers were identified to the researcher, but in the end only nine (9) out of them had time for the study. Two officers were additionally sampled theoretically, bringing the total number of police MTTD participants to eleven (11).The recruitment process continued as the interviews were being conducted, and as and when an officer was ready the researcher met with them. The participants were reached out to by the researcher individually and time and venue for the interviews were agreed with them at their own conveniences.

Drivers and motor cycle riders were also recruited with the help of the police and research assistants. As with the police participants, these participants were also contacted individually by the researcher for the study. After consenting to take part in the study, time and venue convenient to each one of them for the interview sessions were agreed. In all four (4) drivers and four (4) motor cycle riders took part in the study.

Pedestrian participants for this study were recruited by the researcher on the N1 (George Bush) highway and the Kaneshie – Odorkor (Dr Busia) highway. Eight (8) pedestrians consented and took part in the study.

**COVID 19 Protocols**: The outbreak of the Corona Virus (COVID 19) has affected every facet of human life the world over. No aspect of human life has remained the same

after the COVID 19 outbreak – from business, economy, political, and of course social lives among others (WH O, 2020). To help curb the spread of the virus, the World Health Organisation instituted safety protocols to be observed by all. These included regular hand washing, the wearing of nose masks, use of hand sanitizers, and social distancing among others.

Ghana recorded the first two cases of COVID 19 on 12th March 2020, when two immigrants from Norway and Turkey tested positive for the virus (MOH, 2020; GHS, 2020). As at the time of data collection for this study, Ghana's COVID 19 cases were in excess of forty- six thousand (46000), with over three hundred (300) deaths although recovery was also high (over 45000) (GHS, 2020). Given that the virus is thought to spread through human contact or from person-to-person (CDC, 2020), and the main data collection method for this study was interview which involve personal or one-on-one meetings and interactions with participants, strict observance of the COVID 19 safety protocols were required.

In line with the safety protocols outlined by the WHO and the Ghana Health Service, the researcher himself before undertaking the study went through COVID 19 test at the Jubilee House in Accra, and the results came negative for the virus. The researcher then carried with him to the field medically approved nose masks, and hand sanitizer duly approved for that purpose by the Food and Drugs Authority.

Before each interview session, participants were provided with nose masks to put on, except those who already had their nose masks on. Each participant was also made to sanitise their hand together with the researcher before and after the interview sessions. Social distance of about two meters were also kept in each case between the researcher and participants, and the audio tape recorder was placed in between researcher and participant as the case applied to ensure that the recorded interviews were clear and audible.

**Pilot study**

Pilot study for the present research was conducted in Accra with five participants to ascertain the clarity and appropriateness of the data collection instrument up on approval from supervisors. The five participants comprised a Police officer, a commercial driver, and three pedestrians. Before the main study is carried out, pilot studies are highly recommended as a way of developing "relevant lines of questions" so as to assist in fine tuning the data collection procedure and instrument (Yin, 2009 p.92). The researcher conducted oral interviews with the five participants and recorded the interviews electronically. In each interview session, the researcher introduced himself to participants and also informed them about the purpose of the interview, and all five participants gave their oral or verbal consent to participate in the study. The ages of participants ranged between 24 and 39 years and they comprised three males and two females. The Police officer and commercial driver were recruited with the help of research assistants. The three pedestrians were however recruited conveniently by the researcher around the Dansoman junction to Darkoman junction stretch of the Kaneshie – Odorkor highway in Accra.

**Data analysis of pilot study**: The pilot study was conducted in five interview sessions with five participants. All participants spoke in English, with some infusion of pidgin. The interviews were recorded and transcribed by the researcher. The transcribed data was then analysed by the researcher, and the outcome is revealed in the following paragraphs.

**Lessons learnt from pilot study**. The pilot study proved very useful and helpful to the researcher in the quest to addressing the clarity and appropriateness of the data collection instruments (interview guides). Three separate but related instruments were piloted with the police, driver, and pedestrians.

The instrument for police proved appropriate and clear for main data collection, as the responses from this pilot threw lights on the study research questions.

Section 'C' of the instrument for drivers/riders was found to have some repetitions of questions, or questions that elicited the same or similar responses.

The study instrument for pedestrians however turned out to be too long and time consuming for participants. Because participants were chosen conveniently by the researcher they could not be interviewed for long as compared to the driver and police officer.

Some of the participants were not also comfortable or declined mentioning their ages to the researcher.

**Methodological changes**: Based on the outcome of the pilot study, the study instrument for pedestrians was revised. Some questions were eliminated and others reworded. Overall the number of questions in the instrument for pedestrians reduced, but enough to capture responses that addressed the study research questions.

Section 'C' of the instrument for drivers/motor riders was also revised to eliminate the repetitions.

And finally instead of asking for specific ages of participants, the researcher gave them age ranges to choose from. Example is 18-25years; 26-30years and so on.

Following from these revisions, the study instruments were now more appropriate, clear and ready for use in the main study.

**Interview:** All the interviews were conducted between the months of August and October 2020, and each interview lasted between 32 to 55 minutes, except for three participants who were part of those theoretically sampled (two police and one rider) in the

course of the study, and the pedestrians' interviews which lasted for between 7 and 15 minutes. The interviews were conducted in participants' language of choice or convenience (English, Hausa, and Twi), and field notes were recorded during each interview session to describe the context of the interviews. The interviews were scheduled with sampled participants at their own times, places and conveniences. The aim and purpose of the study were explained to the understanding of participants, and they were also assured of the confidentiality of their responses. The interviews were then conducted to ascertain the views of participants in relation to the subject under study and recorded electronically.

All but two of the interviews were conducted face-to-face. The researcher met with the participants personally or one-on-one and conducted the interviews. Only two participants, who were among those theoretically sampled, were contacted over the mobile phone for their responses. Six of the police participants were met at their homes for the interviews, whiles four were met at their offices. Drivers and motor cycle riders were also met at their homes or their work places as they deemed convenient, whiles all pedestrian participants were met on the N1 and Dr Busia highways in Accra. The face-to-face nature of the interview allowed for the understanding of the context within which participants behaved and provided an opportunity for the clarification and explanation of issues relating to the research to participants. The idea was to provide or allow for participants to freely provide their perspectives about the problem under study. As Figgou and Pavlopulous (2015) explained, the semi structured interview researcher sets the agenda on the basis of their own interest and topics, but allows room for the participants' more spontaneous descriptions and narratives.

All interviews were recorded electronically with the aid of an audio tape recorder, as well as researcher's cell phone recorder. This ensured that every spoken word was captured on tape for transcription and analysis.

**Field Notes**: In line with the character of qualitative research, aside interview, another source of data collection that was used in this study was observation, where the researcher took field notes at the research sites or settings on the behaviour and activities of individuals at the site (Creswell, 2014). In this study, the researcher was a nonparticipant observer of pedestrians' use of footbridge, traffic signals, and road crossing along the N1 highway and the Kaneshie – Odorkor highway both in Accra, taking down semi-structured notes on participants' behaviours as they occurred.

An observation protocol and interview protocol (forms used by a qualitative researcher for recording and writing down notes while observing or during the course of observation, and during an interview respectively) were used to record both descriptive notes, which captured the dates and times of each interview, observations about participants' behaviours, as well as quotes from the interviews that captured the researcher's attention; and reflective notes which captured the researcher's own speculations and notions about emerging themes in the study.

Though all interview sessions were recorded electronically, these field notes that were taken in the course of the interviews served as compliment to the audio recording. These field notes were later typed out and analysed together with the interview transcripts.

**Theoretical Sampling**: The researcher theoretically sampled six (6) participants in the course of the study. This was made up of two police officers, a motor cycle rider, and three pedestrians. The theoretical sampling was necessitated by the recognition of a gap in the study in relation to motor cycle riders understanding of road traffic rules and regulations, and the need for further information regarding the phenomenon of speeding as cause of road traffic accidents. Sampling is an 'on-going process' when it comes to interviewing (Holstein & Gubrium, 1995 p74).

The motor cycle rider and one police officer were recruited for the study from Tamale, in the Northern Region through a research assistant, and were interviewed over the cell phone by the researcher for their responses in respect of motor riders' road user behaviour up north for the purpose of comparative analysis. The other participants were recruited for the study at the Kwame Nkrumah Interchange in Accra, where the researcher had a face-to-face interaction with them and gained further insight into the phenomenon of speeding as cause of road accidents in Ghana.

**Data Analysis**

In line with qualitative research process, data analysis and interpretation were done concurrent with the data collection and the research write up. Thus as the data was being collected, analysis and interpretations were on going as well.

The procedure started with the organisation and preparation of the data for analysis. Here the raw data collected were put together. The oral interviews were fully transcribed verbatim. For five participants, the interviews were conducted in Hausa (3), and Twi (2) which was first translated into English by the researcher before being transcribed. The researcher understands and speaks both languages well and so could dispense with interpreter. The field data that were collected through observation were also organised and analysed in comparison with the transcribed interviews. The researcher then put all these data together and read through the data thoroughly, to get a general sense of what participants in the study were saying regarding the phenomenon under study.

**Coding**: Coding process begun after the first interview was conducted, and continued throughout the data collection period. The data was transcribed and read through thoroughly. This was the process of organising the data into segments of text and assigning words or phrases to the segments in order to develop a general sense of the data. Data was coded by

'classifying elements of the data into themes or categories and looking for patterns between categories, commonality, association, implied causality' (Gasson, 2004 p81).The researcher did the coding by hand.

In line with grounded theory data analysis as outlined by Noble and Mitchell (2016), and as well suggested by Corbin and Strauss (2008), the current study begun with open coding before developing into axial coding, and finally selective coding.

**Open Coding**: Open coding of the data was done by the researcher to generate initial concepts. Here the data generated from the study were broken into parts, examined by the researcher and making comparison. Statements and words emanating from the data and observations were used to develop concepts (Corbin & Strauss, 2008). As Strauss (1987) indicated, the researcher sought out for terms used by the study participants that could be thoroughly and "minutely" analysed (Strauss, 1987, p. 31) in order to move to coding of more general concepts. At the end of open coding, the researcher initially generated themes in excess of twenty five, covering the experience of participants in road accidents, to attitude towards drink driving, among others. The researcher looked for indicators, and constantly compared indicators with each other to identify new insights (Strauss, 1987). As the present study employed the grounded theory, the concept-indicator model was said to be the basis for grounded theory that "directs the conceptual coding of a set of empirical indicators" (Strauss, 1987 p.25 quoted in Feeler, 2012).

**Memo Writing**: while coding the data, the researcher also wrote down ideas that occurred to him, ideas about the codes and how they related to each other. By this memo writing, the researcher was also able to capture ideas or themes that required further exploration, and this stimulated further constant comparison. As recommended by Glaser

(1978), a researcher should always interrupt coding to memo an idea that has just occurred to them.

**Axial Coding**: Axial coding was done to develop and link the concepts generated in open coding into conceptual families. Axial coding is the search for relationships between coded elements of the data (Gasson, 2004). It should examine elements such as antecedent conditions, interaction among subjects, strategies, tactics and consequences (Strauss, 1987). The researcher in this regard collapsed some of the themes or concepts into others, there by merging similar or related concepts and thus reducing the concepts initially generated to four major themes with related sub themes. Constant comparative examination of similarities and relationship among themes emerged a substantive grounded theory from this data.

**Selective coding**: the final coding process was selective coding. This has been defined by Strauss and Corbin (1998) as the process of integrating and refining categories, so that "categories are related to the core category, ultimately becoming the basis for the grounded theory" (Babchuk, 1996). The emergent themes were linked to the core theme of road traffic accidents in the country.

**Establishing Trustworthiness**

One of the areas for which qualitative studies is sometimes criticised is trustworthiness (or reliability in quantitative studies). In the present study, the researcher adopted 'qualitative reliability' strategies proposed by Lincoln and Guba (1998) to help increase trustworthiness on the research findings.

One important means of increasing trustworthiness of qualitative findings is triangulation of data. The researcher ensured this by constantly comparing data in the study. As the interview processes went on, the researcher compared data and emerging themes from

previous interviews to subsequent interviews for validation. Data from interviews were also compared with researcher's field notes to ensure trustworthiness. The researcher also ensured trustworthiness by the combination of observation in addition to interviews.

As qualitative researcher's role is so instrumental in a study, the researcher attempted to control his own bias by first declaring his role in the study. By seeking multiple viewpoints and constantly comparing data from the media and other qualitative documents, conformity of the research findings were increased.

# CHAPTER FOUR

## Results

The current study was aimed at understanding the road user attitude and behaviour that are accounting for the gruesome road traffic accidents in the country. The perspectives of professional traffic Police Officers (MTTD), drivers, motor riders, and pedestrians were sought in in-depth semi-structured interviews conducted by the researcher. Responses obtained from these participants in respect of their experiences of road traffic accidents, the phenomenon of speeding, drink driving/ riding, as well as the enforcement of traffic rules and regulations contributed in no small way to addressing the main research questions in this study. The researcher was able to obtain valuable information about the road user attitude and behaviour from the participants, who cover almost all categories of road users in the country.

The three main research questions in the study are addressed here, with relevant supporting evidence in the form of quotations from the participants.

The data was analysed in line with grounded theory data analysis as outlined by Noble and Mitchell (2016), and four distinct themes emerged which addressed the study research questions. The four major themes included:

1. Road is not meant for only transport.
2. Commitment to road traffic law enforcement
3. Knowledge of traffic rules and regulations
4. Fatigue

The themes and related subthemes are presented in the table below

| THEME | SUBTHEME 1 | SUBTHEME 2 | SUBTHEME 3 | SUBTHEME 4 |
|---|---|---|---|---|
| Road is not meant for only Transport | Trade and Commerce | Competition | Will of God | |
| Commitment to Road Traffic Law Enforcement | Enforcement Capacity | Interference | Abuse of Power/Influence | Deterrence |
| Knowledge of Traffic Rules and Regulations | Illiteracy/Ignorance | Instinctive drive | Learning | Vicarious learning |
| Fatigue | External pressure on drivers | Being in hurry | Road user state of mind | |

Table 2: Themes and Subthemes.

Theme 1 addressed the first research question; what meaning do road users make of road and road accidents in the country? Themes 2 and 3 both addressed the second and third research questions; how are road traffic interventions failing in Ghana?, and what accounts for the increase in road accidents despite the known causes. Theme 4 also addressed the third research question; what accounts for the increase in road accidents despite the known causes? A detailed discussion of the themes are presented as follows

**Theme 1: Road is not meant for only transport**

The first major theme that emerged from the data was that, road mean more to participants than just for transport. Theme one addressed the first research question: what meaning do road users make of road and road accidents in the country? This theme was coded so based on the responses given by participants as well as researcher's field notes on the study context. There was a general response from participants that pointed to the fact that when you think road, think everything. To many participants, especially pedestrians and drivers, the road is a theatre for trade and commerce and a direct source of daily bread. The transport function of road was as important to participants as the commercial function. Data from the interview responses and researcher's field notes captured these feelings. Two pedestrian participants who failed to use the footbridge at Lapaz, on the George Bush (N 1) highway had this to say:

I came here (the N1 high way) to buy a microwave. So I went here (pointing to the other side of the road) to ask … so when I finished I decided to cross from here. But I did not do well (Pedestrian participant 1).

You know this is where I sell. My stuff are here (pointed to some items by the side of the road) so I carry some to sell in the traffic, but I went there (across the road) to my sister. She is there …we are all selling (Pedestrian participant 7).

Evidence of the commercialisation of roads, captured in researcher's field notes, was seen in part from the conversion of roads to lorry parks and loading stations, as well as one-stop shopping centres. Literally all human consumer goods could be found on the road, as participants held the notion that basic consumer goods are sold and can be bought on the road. *"This is where I do my shopping all the time, but I actually live around here so I just come to buy stuff"* (Pedestrian participant 4).

Thus there was the clear evidence of competition among drivers, motor riders, pedestrians and hawkers for space on the road.

Participants also emphasised the high influence of speed and alcohol on road traffic accidents, but another theme that emerged here was the will of God. Many participants noted that some accidents are just by the will of God and that there is nothing a human being can do about that. *"But some of the accidents are the will of God. The accident I had with the child I was not speeding, it just happened by the will of God",* rider participant 1 noted. *"All is God. If God says I will get an accident it will happen, so before you move you ought to pray for God's protection"* ( Pedestrian participant 8).

**Theme 2: Commitment to road traffic law enforcement**

Theme two addressed both research questions two and three. In relation to the theme of commitment to road traffic law enforcement, there was a general notion from all participants that the commitment to enforcement of traffic rules and regulations leaves much to be desired. All police participants lamented the lack of commitment on the part of people in high authority to enforce the rules and regulations that govern the use of road in the country.

Police participant 1 had this to say:

When it comes to enforcement of road traffic regulation, when police are on the road they arrest and prosecute offending drivers for failing to renew license, drink driving, over speeding etc. but when police are not on the road how do they enforce the law? You are toothless; you only investigate the accident (after it has happened).

Police participant 5 shared a similar view:

From February up to now (the time of the interview) we (MTTD) have been instructed to leave the road. No one should check drivers' license, no one should check documents of the vehicle, so we (MTTD) are not on the road. So the vehicles will definitely be overloaded because no one is checking them.

The consequent of this directive, as noted by Police participant 1 is that;

They (drivers) don't respect any Police apart from the MTTD … they know that is only MTTD who may arrest and take them to court, the other guys (Police officers who are not with the MTTD) they don't respect them. They only respect the MTTD personnel who are supposed to check them. So when we are on the road the accidents do minimise.

The theme of commitment to road traffic law enforcement is described further in relation to the sub themes of enforcement capacity, interference, deterrence, and abuse of power.

**Enforcement capacity:** The first sub theme that emerged from the data in relation to enforcement of law was the enforcement capacity of the Police. Evidence from Police participants' responses revealed that though the Police MTTD had both personnel and logistical challenges, it had the capacity to detect speeding and drink driving or drink riding, as well as the capacity to enforce the laws or prosecute offenders. Both the equipment or tools and expertise to be able to detect speeding were available, as captured in the following responses:

…we have the accident prevention squad, they have all the machines we use to check over speeding, and the machine (pole) we use to check the height of the vehicle, over loading, the weight of vehicles, all the machines are with them (Police participant 1).

What we use is the speed gun…so when you exceed the speed limit we point our speed gun at your vehicle it will detect from your speedometer direct. So we press it and it will read, it is a video recorder. So we see the movement of your vehicle as the car is approaching …we signal you to stop and we play the video for you to watch, the vehicle number will also appear so you can't challenge (Police participant 10).

Even if the speedometer is faulty, as many vehicles in the country are said to be, the speed can still be detected, as Police participant 7 clarified. *"…yeah, the moment the speed meter gun is pointed at your vehicle, I point it directly to where the bonnet is it captures your speed whether your speedometer is working or not".*

In case an accident occurs in the absence of the police, speed can still be detected, as Police participant 4 noted:

…an MTTD officer who is put on duty to investigate an accident case will be able to determine the speed that the person was, even though he cannot give you the accurate number, but he can be able to tell you this guy was in a top speed by looking at the impact of the accident, the impact of the crush.

Participants also emphasised the capacity to detect and to prove intoxication or drink driving. Police participant 1 stated that

Is not suppose (blood alcohol content) to be beyond 0.8. Beyond 0.8 you are intoxicated, and we are provided with that machine, the alcoholmeter, to be checking drivers and we are doing well. When we suspect that a driver is drunk we let him take a breath test and the results we get we record it.

Police participant 4 further explained that: *"when we do that (breath test) and the machine is not able to … he was on alcohol but we still see that the person's behaviour is not right then we go for blood test in the hospital to prove further".*

**Interference:** The sub theme of interference was echoed by all Police participants as far law enforcement is concerned. People of influence in society, people in authority were said to be the guilty parties in interfering with work of law enforcement agencies to impede enforcement. From politicians, religious leaders, opinion leaders, to even senior security officers, the interference was said to be daily routines.

Talking about enforcement, sometimes politicians, other senior police officers, chiefs and other opinion leaders don't help us (the MTTD) to do the enforcement. You arrest somebody and they call you, is my uncle. You arrest somebody and a Minister will call the Regional Commander, and the Regional Commander will call the MTTD Commander and the MTTD Commander will also call you and say leave that person (Police participant 3).

There are also interferences from some of our big men in this country. You arrest a vehicle for an offence, a call will come from elsewhere that this is my friend. Because the person is a big man you can't turn him down (Police participant 2).

We are also part of the road accident, in the sense that you might arrest somebody who was driving whilst drunk. For we who enforce the law alright for the person to be prosecuted. But you realise some politician or some of our top heads come in and go, a phone call and you allow the person to go, next time he will do a worse thing. It makes the MTTD officers' work difficult to enforce. Somebody commits an offense; he is brought here for the offence committed. You come out and senior police officer comes to you that oh he is a brother; he is a cousin, so how will the law be enforced' (Police participant 4).

Participant drivers and motor riders also gave responses that pertained to interference in the work of traffic law enforcement in the country, although they appeared to view the interference in a positive light because it turned to benefit them. In response to a follow up question on 'how frequently do the police stop and check you for over speeding and drink driving', rider participant 1 responded:

They arrested me (for riding without helmet and license), so I called 'in charge' (identified late as a Police Inspector) and he talked to them before they allowed me go. The guy (arresting officer) was very stubborn; he refused to take the phone and wasted my time for almost 30 minutes before.

Driver respondent 2 also responded that:

I was arrested twice last year in Tuobodom (for expired license) and Jema (for over speeding). I have a brother who is a Police officer in Accra, so I called him on phone to talk to them, but I still gave them something (money).

Another form of the issue of interference had to do with familiarity. Whereas interference, as described above, mainly came from outside influences like politicians, chiefs, opinion leaders and sometimes police officers themselves, familiarity was found to be mainly influence from within. This could also be described as favouritism from MTTD officers themselves as captured in the following responses: *"...familiarisation ...I know most of the drivers because I've been here for the past ten years. So they (drivers) see you oh (mentioned nick name), oh this and then other things"* (Police participant 7).

It is also a fact, for instance I just told you that anytime we came from Sunyani (to Techiman) things change. It is not that Techiman people don't work, they do. But you arrest somebody and a known person will call you and say he is my relative … any time you arrest any of

them they call somebody who knows you. So familiarity is also an issue. And that is why I think the Service Instruction of the Police should work; if you spend four years at a station you should be transferred (Police participant 3).

**Abuse of power/influence**: Closely linked to the sub theme of interference is the sub theme of abuse of power or influence. Common response identified in the data pointed to the phenomenon of abuse of power entrusted in the hand of people for the effective road traffic management. Participants reported of rampant flouting of road traffic rules by those in authority themselves – police officers, chiefs, opinion leaders, politicians and 'big men' among others. Evidence of this is found in the following participants' responses: *"...Over here, when they do anything (offend the law) they come and tell you they are from the palace"* (Police participant 8).

Our people now someone will speed beyond limit and will not be arrested because they (Police) know he is in the town and a certain big man. You the one without anything may come and pass and they will arrest you and leave the other one. (Rider participant 1)

Yes the laws are there, they make us aware, but sometimes the police take the law into their own hands because they are the police. Because when you are moving on the road itself, there are spots that police are not expected to stand on the lane because you are supposed to be on top speed. You can get to a place where you are surrounded by thick forest on both sides of the road, there because of armed robbers and stuff you are supposed to be on top speed, but before you realise police will appear and signal you to stop. In the process of stopping if care is not taken accident can occur (Driver participant 1).

..Let's take it that MTTD if they are on the road and a car or motor bike passes with speed you see they cause some problems. If someone is speeding, you the police you have checkpoints ahead, you can alert them to stop the person and arrest him. But today you will

see the police pick a motor bike or car to chase after that person … the more you are tracing the person he will not also willingly stop, and he can go and involve in accident (Rider participant 3)

The abuse of power was also noted by the police participants themselves in respect of chiefs, politicians, and the police officers as well. The response of Police participant 11 captured this point in these words.

I also urge my colleagues to enforce the law not thinking of getting anything from it because we are police officers that is why we are trained to enforce the law. So don't go there, arrest and think somebody has to pay you something, and if that person fails, then he will go to court. And whoever pays goes free. We cannot enforce the law with this kind of situation, no!

**Deterrence:** Another sub theme that emerged in relation to the theme of no commitment to enforcement is deterrence. Generally the cost of disobedience to traffic rules and regulations appeared so low or sometimes absent, so much so that road users appeared not deterred by punishment or the possibility of it. The idea that people of influence in society would abuse their power and influence in order to set free offenders of road traffic regulations mean that people are generally not deterred. This was echoed in the responses as follows:

Some of the drivers don't comply. A Police officer will meet you and arrest you for an offence on a duty post; when you get to another place where there is no Police MTTD there he will start to speed again (Police participant 2).

…he will be arrested for an offence here, prosecuted and when he is given bail continue his journey he will start similar offence. So due to that you can't say MTTD personnel we are not

doing our work. We are up to task, we are doing our work up to standard, only that it's the drivers and motor riders who are giving us problems (Police participant 7).

*"Yes (they are not deterred), because I know if the police arrest me and I call this person they will let me free, drivers don't care about it, they are not deterred at all".* (Police participant 9).

Driver participant 2 confirmed this point thus *"...as for between we and police...arrest is normal, we are like boyfriend/ girlfriend. They arrest us all the time but we understand each other. You know once you are a driver you cannot do without them, so it's normal".*

**Theme 3: Knowledge of road traffic rules and regulations**

Participants' knowledge of traffic rules and regulations also emerged as one of the major themes from the data. On this theme, the commitment to educating road users on rules and regulations, as well as general road safety was more evident. This is where a clearer evidence of collaboration among the various stakeholders in the road traffic management- Police, NRSC, DVLA, NIC - was found, as evidenced in the following participants' responses.

We normally go, sometimes they (NRSC, DVLA, and NIC) normally come to our place and we move to the road with them to educate drivers. Some of the drivers who have expired road worthy, cars that lack maintenance, they come with us and they see the work we are doing (Police participant 2).

When we talk of road safety we have the police, the commission (NRSC), the DCLA, and now the insurance commission (NIC) is also coming in. I know anytime the road commission does any programme they involve the Police and the DVLA. I also know that anytime the

DVLA want to embark on an exercise they involve the Police. So it means the collaboration is there (Police participant 3).

In addition to the education of road users captured in this theme, and the collaboration among stakeholders in ensuring that road user rules and regulations are understood, other issues related to the theme of knowledge of traffic rules and regulations were raised. These are described in four sub themes of illiteracy, instinctive drives, learning and vicarious learning

**Illiteracy and Ignorance:** Notwithstanding the efforts at educating road users on rules and regulations, illiteracy and ignorance remained big problems in ensuring compliance. All police participants revealed the effects of illiteracy and ignorance on the part of drivers and motor riders on road traffic accidents in the country.

Now to talk about accident in town, you go to where there is pedestrian crossing, which we call 'zebra crossing'. A pedestrian step on that white or the cross, the driver must stop for that pedestrian to cross, but drivers knock pedestrians on the crossing just because they don't know they have to stop for that pedestrian to cross. They always think that the pedestrian should run in crossing which should not be the case. (Police participant 9).

*"Illiteracy is also a cause of road accidents because even though people have acquired the license, they don't know what it's about, they just acquire the license. You cannot read the road signs yet you are driving"* (Police participant 4).

Majority of accidents are man-made accidents; we don't obey the rules and regulations that are laid down for our driving …and most drivers are not enlightened in driving - now though it is changing …they start as driver mates, learn and graduate to driving, so the education is not there. That person is licenced, he is driving but if you ask him what speed should you

move in town he cannot tell you; if you ask him what should be the gap between you and the driver ahead of you or the vehicle ahead of you he cannot tell you because they are not enlightened in that aspect (Police participant 3).

Responses of participant drives and motor riders as well as pedestrians were similar to the responses of police participants. Although all participants, except one (Participant pedestrian 5), had at least basic level education, of all the riders interviewed, none had a valid license. And the evidence that a lot of them did not know anything about road signs and road markings was found in the following response to whether participants are able to tell when they are speeding beyond limit. *"Oh for that one you can tell because the more the machine moves (pause) that is why the Whiteman made it with a speedometer. There is a red light, if you move 160,160plus that is danger, if you go beyond that line"* (Rider participant 1).

All participant drivers and motor riders knew that it is an offence to speed beyond limit (over speed), and to drink and drive or ride, but none of them knew the permitted alcohol limit, or care about speed limit.

Most drivers don't look at their speedometer, all they do is if there is no hump then we are going. And they don't consider other road users i.e. motorists, cyclists and pedestrians, and this people are mostly in town so if you speed in town definitely it's likely you will involve in accident (Police participant 3).

**Instinctive drives**: Related to the sub theme of ignorance and illiteracy was the sub theme of instinctive drives. Participants' responses pointed to the fact that drivers and motor riders generally relied on their instincts to determine if the speed at which they were moving was within or beyond limit permitted for that particular place or road. Their measure of speeding beyond limit was dictated neither by road signs nor the vehicle speedometer but by their own sense of judgement and instincts. The following responses echoed this point.

If I am driving on a rough road, I use my own experience to drive on the road… I don't use the speed limit that I will use on an asphalted road. And here too any time I move I concentrate on brakes, clutch and accelerator does not go down because on a rough road you can bump into a hole (Driver participant 1). *"...I also know the gap I should leave between myself and a car in front of me, if I am going to overtake I leave about one or two meters in case - not me but he - if something happens I can dodge"* (Driver participant 3)

If you are an experienced rider you will know that you are speeding beyond limit. Yes, so that time you know you should minimise because if the machine over speeds it loses strength, and so if something crosses your way, you… accident will happen (Rider participant 1).

This was coupled with the fact that many vehicles and motor cycles do not have functioning instrument panels, so drivers and riders are not able to read the speed, temperature and fuel level of their vehicles, as echoed by rider participant 3: *"...let's take a look at we ... many of our cars and motor cycles do not have the speedometer, but the more experienced you are, when you move you can tell that you are speeding beyond limit".*

**Learning and Vicarious learning**: Other sub themes that emerged from the data in relation to the theme of knowledge of traffic rules and regulations were the sub themes of learning and vicarious learning. These sub themes are described together here because they both involve learning. Learning is the permanent change in behaviour due to experience, and vicarious learning on the other hand is learning through the experience of others (Myers, 2009). Evidence from the data showed that participants or road users generally did not or do not learn from the experience of others or past road accidents not involving themselves (vicarious). In addition to not been deterred by punishment, responses from participants indicated that people turned to learn from their own accidents than from the accidents of others. Driver participant 2 responded that *"...it took me over nine months (after the*

*accident) and I did not drive again. But the experience I got from that thing that happened (road accident) whenever I'm in a car (pause) no matter what my mind is always on the road".*

Rider participant 1 also responded that *"...in town I cannot speed because I've had several accidents, and about two times I realised that speed was part of the cause ... if I did not speed, I could have protected myself".*

But despite the responses of learning from past accidents experiences, rider participant 1 and driver participant 1 reported haven involved in 'several' accidents mainly due to over speeding.

In a reply to a follow up question, rider participant 1 answered thus:

You see humans the way we are it is said that sometimes unless you face certain situation (pause), if you advise him he thinks you are worrying him. Because even among us sometimes someone will pass with a motor cycle and you say to him that oh your speed was so fast, he will reply you with insults … someone will even ask you if you buy fuel for him or whether you bought the motor cycle for him. But if the person himself gets involved in accident no one will tell him to control himself.

Driver participant 3 also responded in similar manner to this point thus *"...sometimes for prevention of accidents, you don't pray to God for a fellow driver to get accident, but the person unless the car injures him (through accident) he will not learn a lesson".*

**Theme 4: Fatigue**

The last major theme that emerged from the data was the theme of fatigue. This theme addressed the last (third) research question: what accounts for the increase in road accidents despite the known causes? Evidence from the data indicated that fatigue was a major

contributing factor to the increase in road accidents in the country. This view is summed in the following quotes from the data.

They (drivers) are tired, feeling sleepy but they will not take rest, they always want to go… the rule is that you don't drive more than four (4) hours. Yes after four hours you have to take about thirty (30) minutes rest before you continue. But this bus drivers drive from Accra to wherever they are going, they can drive to Techiman here, they can use eight (8) hours and they will not take a rest. When they come they are already tired, instead of resting they go in the night again, definitely they are human beings….and most especially in the night everybody in the bus is sleeping, nobody is communicating to keep him awake so that is why mostly serious or fatal accidents happen in the nights, because the drivers sleep off (Police participant 3). *"...most of the drivers are normally are tired, and they try to force and continue to get to where they want to go, so it normally causes accidents" (Police participant 6).*

Driver participant 3 also responded that *"...frankly I did not know how it happened (accident), it happened at once. Only that I felt exhausted on the way".*

In relation to the theme of fatigue, three sub themes emerged. This included external pressure on drivers, being in hurry, and road users' state of mind. These sub themes are described below.

**External pressure on drivers**: Participants provided reasons most drivers get fatigued and thereby cause accidents as a result, and one issue that dominated responses was external pressure that are brought to bear on drivers particularly commercial drivers. One such pressure, as noted by driver participants 2 and 3 was daily sales. For commercial drivers, the pressure to meet this daily sales and to also make some money to support the family was huge, prompting them to work extra hard. *"...yes like our daily sales some car owners will*

*(pause) depending on the vehicle, some will take one hundred cedis (GHC 100), some two hundred cedis (GHC 200) per day. And we have families too…"* (Driver participant 2).

…because we Ghanaians sometimes our desire for money out weights our safety desires. The person will return from a trip and supposed to rest and service the vehicle, but he will not. The next moment after he returns, he moves again without rest and not checking whether the brakes are good or there is oil in the engine (Driver participant 3).

Similar observations were also made by the police: *"Sometimes some too there is pressure on them, high sales. So because of the high sales or the influence of the income they want to gain, they try to force to where they are going"* (Police participant 8).

External pressure on drivers was not limited to high sales alone as evidenced in the responses above, as issues of family care and stuff were also mentioned.

**Being in hurry:** Another sub theme that emerged in relation to the theme of fatigue was the sub theme of being in hurry. This sub theme in particular was found with almost all category of road users interviewed for this study. Drivers, motor riders and pedestrians all gave various explanations of why they drove or rode tired, over sped or failed to obey traffic rules as being in hurry. For drivers and motor riders this was linked to the desire to get to destination as quickly as possible and the desire to meet social demands hence the fatigue. This was captured by the following quotes. *"Because of the speed (the accident occurred), we were in a hurry because some consultants were waiting on us at Sunyani, so I decided to overtake the vehicle ahead of me"* (Driver participant 1).

Explaining why she failed to use the pedestrian footbridge in crossing the road, pedestrian participant 2 said: *"Okay you see we Ghanaians we like short- cut, so I decided to cross this*

*side instead of using that footbridge. You see I was in a hurry, I was supposed to go to that place but I feel that I can cross this side, that's why".*

**Road users' state of mind:** The final sub theme under this section was the state of mind of road users. Here evidence from the responses pointed to self-induced fatigue in the form of drugs or alcohol consumption on the part of road users. Intoxication was said to affect the senses of road users and induce fatigue.

…the moment you take in alcohol, mentally you are not of your senses, and when you speed you don't even know you are speeding…some take drugs. When I say drugs I am including alcohol, and other drugs like narcotic drugs - cocaine, wee or Indian herm, anything that is narcotic, anything that is not permissible to take. Even though some of the drugs are permissible, but they advise you that when you take you don't drive, you don't use any machinery. For instance when you take blood tonic…right now, five minutes time you will sleep, so if you are driving you can imagine (Police participant 3).

*"When you drink it affects you and you feel so tired…even your eyes don't want anything to touch it, so you don't take in something that makes your eyes blur definitely accident could happen" (Driver participant 2).*

If a person drinks he cannot control himself even walking let alone riding a bike. If you watch today private cars, I can say majority of accidents involving private cars are linked to drink driving…because if someone drinks and drives, you can be in your lane and he will veer off and hit you and put you in debt (Rider participant 1).

Even when you are in your senses accident can occur unless God protects you, and you go and drink again you know that is from frying pan to fire. So alcohol itself even if you are not driving you can cause accident, because last in this area someone drunk and crossed the road

without knowing a car was coming. He got hit by the car and he died instantly (Driver participant 3)

# CHAPTER FIVE

## Discussion

The current qualitative study examined the road user attitude and behaviour of participants in relation to road traffic accidents in the country. The main aim of the study was to understand from the viewpoints of road users (police, drivers, motor riders, and pedestrians) the phenomena of speeding, and alcohol or drink driving/riding as well as pedestrian behaviour as causes of road traffic accidents in the country. It sought to add to an area that was critically missing in the road traffic accident studies and analysis in the country: the road user understanding of the phenomena. Whereas previous studies on the subject of road traffic accidents in Ghana have largely dealt with the causes, this study focused specifically on the most identified cause of road accidents in the country, referred to in the literature as human factors (Abane, 2010; Obeng-Odoom, 2010), with the main purpose of understanding the road user attitudes and behaviours in respect of road traffic accidents.

Data was collected for this study by means of semi-structured in-depth interviews, but field notes also served as important supportive means of data collection. The data was analysed in line with grounded theory data analysis proposed by Noble and Mitchell (2016).

In this chapter, the study research questions are reviewed, as well as the various themes that emerged from the data analysis. The relationships among the various themes are then discussed, and the substantive theory that emerged is presented. Significance of the study and recommendations for future studies are then presented.

**Road user understanding of what road mean**. A lot have been revealed in this study about road user understanding of road and road accidents. It emerged from the study that participants have their own understanding of road and road accidents. These understandings were largely based on what use participants made of road. In other words, participants have

conception of road and road use that are fundamentally different from the official conception. Whereas official conception of road is in respect of transportation, as captured in the national vision for road safety (NRSC, 2011), the road user conception of road goes beyond transportation. This discussion is proceeding on the premise that those people who do not have immediate use of the road are not seen on the road. To understand road user behaviour, therefore, is to ask what use is the road to people, why people use the road in the first place. Therefore participants understanding of road were based on their peculiar circumstances, and this generally reflected the use to which they put the road.

This particular finding was in line with the constructivist theory or the social constructivist view discussed earlier in chapter two, which states that individuals seek understanding of the world in which they live and work, and in doing so, develop varied and multiple subjective meanings of their experiences (Creswell, 2014). Participants generally developed their own subjective meanings of road use, and road accidents, and this subjective meanings influenced participants' behaviour on the road. It further lends credence to the assumptions of Crotty (1998) that as human beings engage with the world they are interpreting, they construct meanings based on their historical and social perspectives, and that the generation of meaning is always social (Creswell, 2014).

To pedestrians, including hawkers, the road is a place for everything buying and selling. As some of the participants revealed, they come to the road side to buy stuff, and to sell goods. Thus the increasing commercial activities along highways and roads in general have led to competition among pedestrians, hawkers, motor riders, and drivers for use of the same road network. This partly explains the high numbers of pedestrian victims or casualties of road accidents in the country, as found by the World Health Organisation (2018).

Participants also revealed that most drivers, especially commercial drivers, understand road to be for vehicular use only, and thus have no respect for other road users. The notion that roads are meant for cars or vehicles influence the driver behaviour on the road in relation to other road users, especially pedestrians. Participants reported of drivers failing to stop at pedestrian crossing for pedestrians to cross the road, expecting pedestrians to run instead. Police participant 3 observed this in his line of duty thus: *'drivers don't respect other road users, pedestrians, motor riders; because they think the road is for them'.*

Motor riders also did not understand that road traffic rules apply to them. Their understanding of the road traffic signals and instructions were that it applies to vehicles, and thus they move through traffic even when the traffic signal indicates 'red' for them to stop. This notion was expressed by most participants in the study area, including the motor cycle riders themselves. *"But back at North we don't do that"*; this was part of rider participant 1's response to how difficult is it for them to obey traffic rules and regulations. This response indicated that this particular rider behaviour could be specific to the study area, and that the same rider could behave differently to the same traffic signal in another area or community. This revelation was also consistent with social learning/cognitive theory's emphasis on leaning in a social context, with particular emphasis on external and internal social reinforcement.

To get further information on this, the researcher did a theoretical sample of two people (a Police officer and a motor cycle rider) in Tamale, the Northern Regional Capital, and it was confirmed from both participants that motor cycle riders in that area generally obeyed traffic rules. This affirmed the fact that the meanings that are attached to road and road use are socially constructed and must be understood in terms of the social context of people.

In tackling the menace of road traffic accidents, it is imperative to understand some of the road user behaviours as reactions to social situations probably unrelated to road in the first place. These could include poor community planning, availability and cost of stalls. Those people who were found buying and selling on the roads were mainly people within the lower socio-economic strata of the country, and their behaviour could be linked directly to their economic status. To this end their attitudes towards indiscriminate use of road turned to be positive, since it accrues some dividend for them in terms of income. The fact that the anticipated consequence of their behaviour accrues to their benefits reinforces their actions positively, making the likelihood of continuing the behaviour high as argued by social learning/cognitive theory (Bandura, 1977, 1986, 2005).

Some participants also held the believed that road accidents were by the will of God. The will of God hypothesis was one common response especially from drivers, motor cycle riders, and pedestrians. Although participants indicated the safety precautions they take whilst on the road, most of them believed that it's not their precautionary measures that protected them or prevented accidents per say, but that God protected them always. This confirmed the findings of Teye-Kwadjo (2019) that fatalistic beliefs about road traffic crash were positively associated with risky driving attitudes. A considerable number of Ghanaian drivers were found to belief in fate and destiny as important factors in road crashes (Teye-Kwadjo, 2017, 2019). It was only on the issue of drink driving or riding that the will of God hypothesis did not find favour at all. Participants generally did not feel that those who drink and drive or ride deserve any sympathy or leniency either from the law enforcement officers or from the general public. Drink driving or drink riding was seen as deliberate human decisions and actions, and those found culpable of this act should be punished accordingly.

**How are road traffic interventions failing in Ghana?** Participants in this study revealed that the major reason for the apparent failure of road traffic interventions in the

country is the lack of commitment on the part of those in authority to enforce rules and regulations. We've had the National Road Safety Strategy I which failed to achieve its objective of five per cent (5%) reduction in road fatalities by the year 2005, and the National Road Safety Strategy II which also failed on its objective of reducing road traffic fatalities on a year-on-year basis and to achieve a total of less than one thousand fatalities by the year 2015 (NRSC III, 2011). Ghana is scheduled to complete strategy III by the end of this year (2020), in coincidence with the UN decade of action for road safety. The World Health Organisation however warned that little progress was being made by many countries, including Ghana, in achieving the aim of reducing by half the number of road fatalities by the year 2020 (WHO, 2018).

Responses from this study revealed that the failures of these interventions in achieving the said goals had to do with commitment to enforce laws. Although participants responses revealed demonstrable capacity on the part of law enforcement authorities to enforce the rules and regulations that could ensure successful implementation of interventions, interference in law enforcement from people in authority as well as abuse of vested powers were said to undo all efforts at enforcement. The Police MTTD which is responsible for the enforcement of road traffic rules and regulations was revealed to have the capacity, in terms of personnel and equipment, to address the main causes of road traffic accidents, but interference from people in authority always stopped that from happening. Speeding and drink driving are the two most identified human attitudinal and behavioural causes of road traffic accidents in the country (Abane, 2012; NRSC, 2017; Obeng-Odoom, 2010)) and the main targets of road traffic interventions (NRSS II, 2011). And the Police Motor Traffic Department, as this study has revealed, has the equipment or machinery to be able to detect both speeding beyond limit (Speed gun), and drink driving (Alco meter) as well as the competent personnel to carry out investigation and prosecution. However interference

from 'big men' in the country has always impeded the enforcement of rules and regulations. Closely linked to the interference of law enforcement was the issue of familiarity. Participants' responses revealed that familiarity with law enforcement officers equally impeded law enforcement, as police officers are influenced by people familiar to them in the communities to bend the rules or let offenders go unpunished.

Another form of inducement of law enforcement officers was found to be monetary, where road traffic offenders bribe their way from prosecution or are coerced into paying money to law enforcement officers in lieu of prosecution. Consequently, road users are not deterred in flouting road traffic rules and regulations, leading to the failure of road traffic interventions in achieving its goals of reducing road traffic accidents and related fatalities.

One issue that has been brought to the fore with these revelations is social relations. The underlying issue here is that human is a social being, and the discussions above revealed the influence of social relations within the Ghanaian society. Power relations, family relations, and friendship, and the desire to keep these relations intact and favourable are the crux of the matter with interference in road traffic law enforcement in the country and hence the failure of road traffic interventions. The findings here highlighted the proposition of the theory of planned behaviour (Ajzen,1985), that people are more likely to engage in a particular behaviour if they evaluate the said behaviour as positive, and that if they think that significant others wanted them to perform the behaviour. The underlying human behaviours that cause road traffic accidents and the failure of road traffic interventions - speeding, drink driving, and indiscriminate use of road - persist because participants' attitudes towards speeding, and indiscriminate use of road, as well as interference in law enforcement turned to be viewed positively.

Road traffic offenders feel that they find themselves in a sort of trouble and they need someone's assistance to get out of it. Thus they evaluate any form of interference in this regard as positive, and they call on any known leader, family member or friend who is or who they think is in authority to offer that kind of assistance. Success at assisting an offender go off the hook is perceived as a sign of power or authority, and the one assisting to flout the law is seen as a good person. On the other hand failure to offer such assistance is perceived as a sign of weakness, and one who fails to offer such assistance is seen as a bad person. Thus social relations are affected either positively or negatively depending on whether a leader, family member, or friend is able to influence the law enforcement process to set a relation free.

Leaders have all the reasons to foster positive relations with people, not least for the sign of power and authority, and politicians especially because the 'good person' accolade is needed for elections. Family members and friends also need the 'good person' accolade in order to foster positive relations or keep their relationships intact. And the easiest thing to do in this milieu is to get the road traffic offender off the hook. This symbiosis reflects the central concept of social learning/cognitive theory - reciprocal determinism - the dynamic reciprocal interaction of person, social context, and behaviour (Bandura, 1986, 2005). In this case the positive evaluation of interfering with law enforcement in order to set road traffic offenders free, mean that road traffic interventions fail, and road accidents persist.

**What accounts for the increase in road traffic accidents**? Road traffic accidents are said to be on the increase in the country despite the fact that almost all the causes of road accidents are well known and documented. Participants in this study revealed several factors that account for this phenomenon. General ignorance and illiteracy on the part of road users - pedestrians, drivers, and motor riders - on traffic rules and regulations was instrumental in the increase in road accidents in the country. This is in spite of the efforts being made in

educating road users, especially drivers, on road safety and traffic rules generally. From legislation, to collaboration among key stakeholders in sensitising drivers and other road users, to the idea of introducing road safety education in the Ghanaian educational curricula (the Daily Statesman, 25/09/2019), the efforts at enlightening road users on traffic rules and regulations is commendable.

However, the inability of drivers and motor riders to read and understand road signs due to illiteracy and ignorance mean that huge gap exist in the education bit of the road traffic management yearning to be filled. None of the motor cycle riders interviewed for this study had a valid license from the DVLA, and majority of motor cycle riders across the country do not have valid license, and this confirmed the findings by Kudebong et al (2011). Drivers without license were mainly found to be private car drivers. While others had the license but were said not to understand traffic rules and regulations, and could not read nor write. It is thus apparent that what determines driving a vehicle or riding a motor cycle in Ghana is access to a vehicle or motor cycle, and not qualification to drive or ride. More attention is being paid to how to move the vehicle or motor cycle but not necessarily formal education on the process of driving or motor cycle riding. In this milieu drivers and motor cycle riders mainly rely on their own instincts and imaginations to determine speeding, and this result in over speeding and consequent road traffic accidents. Analysis on this point reveals a high degree of self-efficacy on the part of drivers and motor riders in this study, and in the country in general. Despite their ignorance of road traffic signs and rules, and vehicular instrument panel defects, drivers and motor riders generally had high confidence in their own abilities and competence to safely ride or drive their vehicles, with some indicating their ability to determine speed limit even without a functioning instrument panel on the vehicle.

This study also revealed that fatigue was another reason road accidents are on the increase in the country. Participants indicated that tiredness on the part of drivers was a major

contributor to the road traffic accidents and fatalities in the country. The idea of driver or rider fatigue appeared in several ways, as evidence from the data showed. Commercial driver fatigue resulted mainly from 'sales pressure'. Sale pressure was an In-Vivo code provided by driver participant 3, and also echoed by Police participant 2. This has to do with the daily sales drivers give to vehicle owners, and it was said to be one reason for which commercial drivers work themselves out in order to make enough money for the vehicle owner and for their own domestic up keep. Sales pressure is linked with speeding as drivers are said to be in a hurry, and consequently have little rest on their trips. Pedestrians who also engaged in indiscriminate crossing of road indicated that because they were in a hurry. Private driver fatigue had more to do with drink driving, as most of drink driving issues found in this study involved private vehicles and mostly occurred in the evenings of weekends – Fridays, Saturdays, and Sundays. The overall effects of these behaviours are the increase in road traffic accident due to over speeding, drink driving, and jaywalking. This finding as well highlights the proposition of the theory of planned behaviour (Ajzen, 1985).

This study revealed that a lot of push factors are influencing the road user attitudes and behaviours of people. A road user might be at a particular spot, but what is influencing the behaviour may actually be hundreds of kilometres away and out of sight. Therefore to understand the road user attitude and behaviour that are responsible for these road traffic accidents is to understand these push factors or social pressure on the Ghanaian. The whole enterprise of the Ghana Private Road Transport Union (GPRTU) raises questions about driver income security, and retirement security. As observed in this study, commercial drivers under this do not have secured or guaranteed income. It largely depends on how much a driver is able to make per day on the road, and that in turn influences how drivers behave on the road. What appeared assured for drivers is that at the end of the day they have to deliver sales to vehicle owners. This scenario could be associated as well with commercial motor cycle

operators, although their work is deemed illegal. This analysis also highlights the proposition of social learning/cognitive theory (Bandura, 1977, 1986, 2005). Drivers engage in speeding with the expectation of making higher sales to meet vehicle owners' demand and domestic support. And success at meeting these demands reinforces the behaviour of speeding beyond limit permitted by law.

Seeking further clarity on this issue, the researcher theoretically sampled four passengers and asked them why they chose to travel with the State Transport Company (STC) or not. Two STC passengers from Accra to Tamale gave reasons of safety: *"STC is the safest in the country, I don't take my safety for granted"*, replied one passenger. The responses of the two passengers who did not choose to travel with STC were summed up thus: *'STC is crawling'*. Thus the STC passengers prioritised their safety while those who did not choose STC prioritised speed or time of travel. However, further qualitative study is required to establish the link between driver income security and speeding, with the comparison of STC drivers and GPRTU drivers given the relative safety of STC coaches as far as road traffic accidents are concerned.

**The emerging themes and relationships**

The themes that emerged emphasised that road safety and road traffic management operates in a continuum, from legislation, to education, to enforcement, and to road use. And the attitude and behaviour of road users come at the end of it all. This road safety continuum explained the general road user attitude and behaviour, which have been captured in four themes (presented in chapter four) and the emerging relationship among these themes. The road safety continuum starts with legislation, and this is where little, if any, problem exists in Ghana, as per the revelations in this study.

Therefore the relationships among the emerging theme here start from education, which is explained by the first theme – road is not meant for only transport, and the theme of knowledge of traffic rules and regulations. The next in the continuum, enforcement, is explained by the theme of commitment to road traffic law enforcement, and the final theme – fatigue, explained the road use.

**Road is not meant for only transport to participants**. This theme emerged from participants' responses as well as researcher's observation (field notes). It involved the notion of participants that road is not just for transport but for business. The attitude and behaviour of participants were influenced by the particular meaning they assign to road. Although the rules and regulation governing road use in the country are well documented, participants were not well informed on these regulations and had their own constructed meaning of road and road accidents. To pedestrian participants and hawkers the road is meant for commercial activities or trading in goods. Commercial drivers also understand the road to be an extension of lorry parks and loading stations. The education part of the continuum as related to this theme should include the recognition that road users themselves construct their own meaning of road based on their peculiar needs. And this conception of road and road accidents deviates from the official meaning as captured in the legal framework.

**Knowledge of traffic rules and regulations**: The emerging theme of knowledge of traffic rules and regulations is in relation to the education in the continuum of road traffic safety. Road user understanding of the rules and regulations governing the use of roads is paramount to achieving the targets of road safety in the country. This study revealed the collaboration among the Police, National Road Safety Commission, the DVLA, as well as the National Insurance Commission in trying to educate road users, especially drivers, on the safe use of the road. After the legal framework for road safety has been set, the important task ahead is the public or road users understanding of these laws and the application of same.

However this has been fraught with a number of challenges including illiteracy and ignorance, and this is where the link to the theme above exists. This study revealed that many a driver could not read and write, although some of them have acquired license. The inability to read and understand road signs and basic traffic regulations meant that drivers and motor cycle riders mainly formed their own meaning of road, and depended on their instincts to determine their speed, and therefore could not tell when they were speeding beyond limit.

**Commitment to road traffic law enforcement**: This emerging theme is the major issue with road traffic accidents in the country, and it relates to the enforcement part of the road traffic continuum. It is the weakest link in the road traffic safety continuum. The challenges found with the education of road users, or the road user ignorance and illiteracy are mainly because the commitment to the effective enforcement of traffic rules and regulations are not adequate. Driving vehicle or riding motor cycle without license (unqualified drivers and riders), speeding, drink driving or riding, and all manner of road traffic offenses persist mainly because of the interference with the work of law enforcement officers from 'big men' in the country. This interference impede law enforcement and create conditions in which road users are not deterred in breaking the road traffic rules and regulations, as has been found in this study. This is where the relation of this theme to the previous theme is cemented.

**The theme of Fatigue:** The last emerging theme is the theme of fatigue. This theme relates to the last part of the road traffic safety continuum – road use. It emerged from this study that road users - drivers, motor cycle riders, and pedestrians - turn to engage in behaviours that put themselves and other road users at risk of road accidents. These included speeding, tiredness, drink driving, and jaywalking among others. In the analysis of this theme, it emerged that many push factors are responsible for these road user behaviours, the crux of it being social pressure on the road user. These pressures on road users compel them

to engage in speeding, restlessness, indiscriminate crossing of roads among others, resulting in road traffic accidents. Linking this theme to the theme of commitment to law enforcement above, it is clear why road law enforcement officers would fail to implement traffic rules and regulations that could address these challenges.

Given the analysis and discussions thus far, it is possible at this point to view the core phenomenon of road traffic accidents in the country through the relationship among the themes in the "small picture theory".

**The Small Picture Theory**

Analysis of data from this study generated a substantive grounded theory, the small picture theory, to foster understanding of how road traffic interventions fail in Ghana, and why road traffic accidents keep increasing in the country. This emergent theory posits that any "big issue" is a collection of "small issues" left unattended, and thus the "big picture" is a "small picture" left unattended. The emphasis here is that the defeat of the canker of road traffic accidents lies in the ability to see the big picture of road traffic accidents in the small picture of single road accident. Road traffic interventions and policies are made based on the big picture of road traffic accidents, but the enforcement of these same interventions and policies fail based on the small picture evaluation. The big picture of road traffic accident is found in the road accident data or statistics that are compiled annually or periodically. This is the thousands of lives that are lost, the millions of cedis that are spent, the pressure on health care facilities, the social cost of road accidents, and the occasional gory accidents reported in the media among others. All these put together presents the bleak picture of road traffic accidents from which interventions are outlined. The big picture jolts actions and reactions; it raises serious concerns and heightens emotions.

But the big picture is simply a collection of single accidents from different parts of the country at different times. And until single incidents of reckless driving, drink driving, jaywalking, and speeding among others are seen in the light of the big picture of road traffic accidents, road traffic interventions will continue to fail and road accident will persist.

Therefore it is the argument of this theory that road accidents persist and road traffic interventions fail in the country because at the accident prevention stage, those responsible only look at the small picture, and take actions based on that. Single incident of drink driving is not punished because it's just one; single incident of speeding is also left off the hook because it's just one incident. Consequently these incidents go on unaddressed and the cumulative effect is the bleak picture that is captured in the national statistics.

That this small picture syndrome is sustained through three social concepts:

**Social relations**: The small picture is seen when there is an existing social relation between the road traffic offender and an authority. In this sense, social relations are favoured at the expense of road safety.

**Social need**: Small picture is seen when social need reciprocity exits between the road traffic offender and an authority. In this sense, the social need value is favoured at the expense of road safety.

**The Now effect**: Small picture is seen when the immediate effect of the road traffic offense is not fatal. Small picture is all about the here and now. So when the road traffic offender is yet to crash, no action is taken. A Police participant summed this up thus: 'unless there is death before we take action on the road'. Thus if the now effect is not fatal, then evaluation and action is taken based on the small picture.

The Small Picture Theory thus explains the human attitudinal and behavioural causes of road traffic accidents in Ghana. It emerged from this study that road traffic accidents and road safety operate in a continuum, from legislation, education, enforcement, to road use, and user behaviour.

In terms of legislation, Ghana has a legal framework in place for road safety, and has seen improvement in road traffic regulation over the years (Act 567, 1999; Act 683, 2004; LI 2180). In fact it is in the area of legislation that manifested improvement in road safety, as has been recognised by the WHO (2018).

The area of education and the enforcement of traffic rules and regulations appeared the weakest link in the road traffic management as the findings of the study revealed. The efforts at education appear to not take into account the road users' own understanding of the road traffic regulations and road use in general and thus operated at variance with many road users' views. But the weakest link as found in the study is with the enforcement area. Here as well, a combination of social related issues – relations, familiarities, reciprocity, among others have ensured that the laws on road safety largely remain un enforced, leading to the increasing incidents of road traffic accidents and the failure of road safety interventions in the country.

Therefore the complex interaction among social relations, social need, and the now effect, as espoused by the small picture theory combine to render road traffic law enforcement ineffective and resulting in the ultimate failure of road traffic interventions in the country.

**Assessment of Significance of the findings**

Results of the present study revealed the importance of understanding the views of people regarding the use of road in the country. As argued by social constructivist world view, participants constructed their own meaning of road and road accidents based on their social circumstances. It is therefore recommended that, practically, stakeholders in road traffic management take into account the perspectives of the end users of the road traffic interventions in the planning process.

The study also proved significant in identifying push factors that are motivating road user attitudes and behaviours in the country. Behaviours that are causing road traffic accidents on daily bases are viewed favourably because of the underlying issues that motivate that behaviour in the first place. In this case, addressing some of these road user behaviours may require policies and programs not directly related to road in the first place. Addressing the general wellbeing or the push factors in road user behaviour is paramount in attempting to improve road safety.

Findings of the study also revealed that enforcement of laws is the weakest link in the road traffic management continuum. This is significant in identifying the particular area to focus attention on in order to achieve the objectives of road safety interventions and reduce road traffic accidents in the country. Therefore in planning for road safety, or any intervention in the road sector, key stakeholders, the NRSC, DVLA, Police, and central government, as well as international partners would understand where emphasis is most needed in terms of attention, budgetary commitment among others.

**Strengths and Limitations of the Study**

One of the major strengths of the present study was that it provided for the attitude and behaviour of road users in respect of RTAs to be examined in great detail and in depth. The

open-ended nature of the interview questions provided for participants to fully and freely express themselves and to state their experiences of RTAs in the country without any restriction or hindrance. The researcher was also able to guide responses in line with the purpose of the study, as well as offer and seek clarification on responses from participants.

The second strength of the present study was trustworthiness. This is related to the strength discussed earlier above. The nature of the data collection (open-ended questions, observation and field notes) made it possible for the researcher not only to compare field notes with responses of participants, but also able to relate participant responses with the field notes recorded in the course of the interviews through observation. All these helped in increasing the credibility and trustworthiness of data collected. Thus the versatility of the research or data collection process contributed immensely to the trustworthiness of the study as several subjects were involved at any time of the data collection and analysis. Triangulation of data or relying on different and multiple data sets to compliment the interviews, helped in examining the differing aspects of RTAs in the country in line with the objective of the study.

Last but not the least strength of the study was flexibility of the process. The flexible nature of the present study allowed for the researcher to theoretically sample participants who were initially not sampled for the study. The flexibility helped the researcher to seek for more information and clarity arising from data obtained from interviews conducted. In this way the researcher was able to gain more insight into the problem under study, with new and different perspectives of the subject matter revealed.

Despite the strengths of the study discussed above, the presents study also had some limitations.

The first limitation of the present study was the non-inclusion of drivers and motor riders who had no road accident record prior to the time of this study. By failing to capture the

views and experiences of these people, the study lack the perspective of defensive driving, to reveal how other road users avoid or prevent road traffic accidents. More so the fact that some road users did not experience road accidents within the time of this study does not mean their attitude and behaviour on the road has no relevance in the road accident debate and analysis in the country. In a similar vein, pedestrians who were seen to use the pedestrian footbridge or traffic signals at the various research sites were not contacted for interview by the researcher.

The final limitation of the present study was the number of private vehicle drivers recruited for the study. In other words, the perspective of private vehicle drivers was limited, given that only one out of the four drivers recruited and participated in the study was a private vehicle driver. This is a limitation, especially given the fact that incidents of drink driving mostly involved private vehicle drivers as per police records and interview responses. Majority of unlicensed drivers and motor riders were also reported to be private drivers and riders. Although valuable information on incidents of drink driving/riding and its effects on road accidents was provided by police participants, not to include more of the main culprits (private drivers) in this regard to incorporate their views was a limitation of this study.

**Recommendations for Practice**

Based on the results of this study and the analysis of RTAs in the country thus far, it is of practical importance that deliberate policy decisions are made and concrete actions taken to remedy the canker of RTAs and its attendant consequences. In line with this, it is the recommendation of this study that NRSA in collaboration with central government liaises with the GPRTU to address the issue of speeding beyond limit, using STC as a model. The results of this study has proved that one of the push factors in speeding, especially with commercial drivers and riders is “daily sales”, which point to a general driver welfare issues.

The state transport company has an unparalleled safety record in the country, and could serve as a model to help transform and sanitise the road transport sector. Thus the collaboration with the GPRTU must go beyond education and sensitisation on road safety to include practical measures that could ensure the absolute safety of road transport in the country in line with the mission of the NRSA. To do this, challenges such as pressure of daily sales has to be acknowledged and addressed.

In addition to this, stakeholders in road safety must consider a mandatory installation of speed limiters on all vehicles in the country, both commercial and private vehicles. Installation of the speed limiting equipment must be a mandatory requirement for vehicle registration by the DVLA. These measures would go a long way to address over speeding and thereby reduce road accidents in the country to the barest minimum.

Related to the above, it is highly recommended that practical measures are taken to formalise the highly informal road transport sector by taking advantage of the on-going digitisation and digitalisation program by government. The challenges with road traffic law enforcement have been identified and discussed in this study, and the fact that road users in the country are generally not deterred in infringing rules, the informal nature of road transport operations coupled with irregularity in registration and licensing makes it all the more easier for road traffic offenders to escape from accountability. Formalisation of the road transport sector should help the various stakeholders and authorities in road safety to synergise data of vehicle ownership and registration, licensing among others. This would help increase the likelihood or certainty of arrest of traffic offenders and thereby reduce to the minimum the incidents of RTAs in the country.

It is further recommended by this study that a comprehensive road transport audit is carried out in the country to help address the challenges of old aged and rickety vehicles by getting

rid of them. This will help reduce road accidents and accident fatalities in the country, if not prevent it in the first place. Government must thus lead the way in drawing a comprehensive short, medium, and long term programme of action or intervention that would tackle holistically all the nuances of road transport. Given the effects of RTAs and the importance or contribution of road transport to the socio-economic and political development of Ghana, drawing up an intervention to reduce, if not prevent, road traffic accidents has become all the more imperative and stakeholders must do all they can to succeed in this regard.

Finally, it is recommended that stakeholders in the road traffic management in the country pay greater attention to road accidents and road traffic offenses in their singular or minute of forms, in line with results of this study and the proposition of the "small picture theory". This would make true the statement; "a stitch in time saves nine".

**Recommendations for future studies**

Further studies are needed in the first place to test the substantive grounded theory generated by this study. As noted by Strauss and Corbin (1987), this kind of grounded theory is limited to a specific area of study, in this case, road traffic accidents in Ghana. It is therefore recommended that extensive studies are done in this area in future so as to test this theory, and also to possibly generate it formally to deal with a 'larger, formal area of study' since it concerns social phenomenon.

The 'push factor' hypothesis linking income security to speeding and consequent road traffic accidents also require extensive qualitative and quantitative scrutiny. It is therefore the recommendation of this study that the issue be explored further in future studies. A comparative analysis of the operations of STC and GPRTU in this regard could help throw more light on the road traffic analysis.

And finally, the study recommended that future studies exploring social issues such as this, pay attentions to the world views of those people directly involved in it. This qualitative study was an eye opener.

## References

Abagale, M. D., Akazili, J., Welaga, P., Dalaba, M., Luu,Y., Abagale, S. A., & Oduro, R. A. (2013). *The Effects of Road Traffic Accidents on Society. The case of the Kasena Nankana Distrits, Ghana: a quantitative survey.* *https://www.thelancet.com*

Abane, A. M. (2010). Background characteristics and accident risk of commercial vehicle drivers in Cape Coast-Elmina area of the Central Region of Ghana. *Oguaa Journal of Social Sciences,* 1(4), 217 - 230.

Abane, A. M. (2012). *Of drivers, pedestrians and mechanics: Interrogating the road carnage phenomenon in Ghana*. Inaugural Lecture, Department Of Geography and Regional Planning. University of Cape Coast, Ghana.

Ackaah, W., & Afukaar, F. K. (2010). Prevalence of helmet use among motorcycle users in Tamale metropolis, Ghana: An observational study. *Traffic Injury Prevention. 11*(5), 522 - 525.

Adejugbagbe A. M., Fatiregun, A. A., Rukewe, A., & Alonge, T. (2014). Epidemiology of road traffic crashes among long distance drivers in Ibadan, Nigeria. *Africa Health Sciences*, 15(2), 22. https://dx.doi.org/10. 4314/ahs.v15i2.22

Agyeman, E. (2018). Towards Reducing the Dangers Associated with Road Traffic Accidents: Seat Belt Use and Explanatory Factors in the Accra Metropolis of Ghana. *Ghana Journal of Georgraphy, 10(1), 129 – 143.*

Amedorme, K. S., & Nsoh, N. S. (2014). Analysing the causes of Road Traffic Accidents in Kumasi Metropolis. *International Journal of Engineering Innovation and Research*, 3(6), 2277 – 5668.

Amo, T. (2014). The Influence of Drivers/Riders in Road Traffic Crashes in Ghana between 2001 and 2011. *Global Journal of Health Science*. doi:10.5539/gihs.v6n4p49.

Antwi, K. G. (2017, April 4). Putting Techiman on the Map of Ghana. *Modern Ghana.* https://www.mordenghana.com

Asiamah, K. O. (2019, September 24). Road Safety to be taught in schools. *Joy News.* https://www.myjoyonline.com

Babchuk, W. (1996). Glaser Or Strauss?: Grounded Theory And Adult Education. In *Proceedings of Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education* (pp. 17- 19). University of Nebraska. http://www.anrecs.msu.edu/research/gradpr96.htm

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (2005). The evolution of social cognitive theory.in K. G. Smith & M. A. Hitt (Eds), *Great minds in management*. (pp. 9 – 35) Oxford: Oxford University Press.

Brainbridge, J., Goc, N., & Tynan, L. (2008). *Medial and Journalism: New approaches to theory and practice*. Oxford University Press.

Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. Sage Publications, London

Coleman, A. (2014). Road Traffic Accidents in Ghana: A Public Health Concern, And a Call for Action in Ghana (and the Sub – Region). *Open Journal of Preventive Medicine*, 4, 822 – 828. http://dx.doi.org/10.4236/ojpm.2014.411092

Corbin, J., & Strauss, A. (1990). Grounded theory method: Procedures, canons, and evaluative procedures. *Qualitative Sociology, 13*(1), 3-21.

Council for Scientific and Industrial Research. (2017). *Road Traffic Crashes in Ghana, Statistics 2016.* Ministry of Transport.

Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative and Mixed Approaches* (2nd Ed). Sage Publications, Thousand Oaks.

Creswell, J. W. (2014). *A Concise Introduction to Mixed Methods Research*. Sage Publications.

Crooks, D. L. (2001). The importance of symbolic interaction in grounded theory research on women's health. *Health Care for Women International*, 22, 11-27

Dankyi, D. A. (2010, September 13). Tema records 75 deaths in 732 Accidents between January-September. *The Ghanaian Times*. http://newtimes.com.gh/story

Figgou, L., & Pavlopous, V. (2015). *Social Psychology*: *Research Methods*. Elsevier ltd.

Fosu-Ackaah, A. (2010). 330 Accidents on Airport Road in four months. *The Ghanaian Times*. http://newtimes.com.gh

Gasson, S. (2004). Rigor in Grounded Theory Research: An Interpretive perspective on generating theory from Qualitative Studies. Drexel University Libraries, USA.

Ghana Statistical Service. (2014). *2010 Population and Housing Census, District Analytical Report. Techiman Municipality*. https://statsghana.gov.gh

Glaser, B. G. (1978). Advances in the Methodology of Grounded Theory. *Sociology Press*, Mill Valley, CA.

Glaser, B. G., & Strauss, A. L. (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research. Aldine Pub. Co, New York.

Haadi, A. R. (2014). Identification of Factors that Cause Severity of Road Accidents in Ghana: a Case Study of the Northern Region. *International Journal of Applied Science and Technology*, 4(3) https://dx.doi.org/10. 4314/gjg.v10i1.7

Ibrahim, A. (2019, February 13). Techiman is regional capital for Bono East Region. *Joy News*. https://www.*myjoyonline.com*

Koranteng, A. K. (2018, April 5). Ghana's Deadly Roads. *Fair Planet*. *www.fairplanet.com*

Kudebong, M., Wurapa, F., Nonvignon, J., Norman, I., Awoonor-williams, J. K., & Aikins, M. (2011). Economic burden of motorcycle accidents in Northern Ghana. *Ghana Medical Journal*, 45(4)

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications, Inc.

Lowe, A. (1995). The basic social processes of entrepreneurial innovation. *International Journal of Entrepreneurial Behaviour and Research*, 1(2), 54-76.

Lowe, A. (1996). An Explanation of Grounded Theory. *Working Paper, Dept. of Marketing*, University of Strathclyde, UK.

Lowe, A. (1998). Managing the post-merger aftermath by default remodelling. *Management Decision*, *36* (2), 102-110.

Ministry of Transport. (2007). Environmental and Social Management Framework for Transportation Sector Development Program (Road Sector). *Centre for Environment and Health Research and Training report*. Accra.

Moen, J., Lundberg, P. A., Ekerholm, P., & Oksanen, L. (2005). Vole cycles and predation in temperate and boreal zones of Europe. *Journal of Animal Ecology*, 74, 1150 – 1159

Muzu, F. (2014, March 24). Second-hand tyres and road accidents. *Daily Guide.* http://*www.dailyguideghana.com*

National Road Safety Commission. (2002). *National Road Safety Strategy II (2001-2005). Ministry of Transport, Accra.*

National Road Safety Commission. (2012). *Road safety dialogue 4*(2).

Obeng-Odoom, F. (2010). Drive left, look right: The political economy of urban transport in Ghana. *International Journal of Urban Development, 1*(2), 33 - 48.

Peltzer, K. (2011). Road use behaviour in Sub-Saharan Africa. *Handbook of Traffic Psychology,* 503-518. Academic Press. doi:10.1016/B978-0-12-381984-0.10035-9

Republic of Ghana (2004). *Road Traffic Act, 2004 (Act 683). Assembly Press,* Accra

Republic of Ghana (2012). *Road Traffic Regulations 2012, (LI 2180). Assembly Press,* Accra

Republic of Ghana, (1999). *National Road Safety Act, 1999, (Act 56).Ghana Publishing Company*. Accra

Sasu-Mensah, S. (2015). Road Traffic Accidents on the Accra – Kumasi – Tamale Road Corridor. (Doctoral dissertation, University of Ghana). http://ugspace.ug.edu.gh

Siaw, A. N., Duodu, E., & Sarkodier, K. S. (2013). Trends in Road Traffic Accidents in Ghana; Implications for Improving Road User Safety. *International Journal of Humanities and Social Science Invention.* 2(11). 31 – 35. ISSN, 2319 – 7722 http//www.ijhssi.org

Strauss, A. (1987). Qualitative analysis for social scientists. *Cambridge University Press.* Cambridge, UK.

Strauss, A. L., & Corbin, J. (1998). Basics of Qualitative Research: Grounded Theory Procedures and Techniques (2nd. Ed). *Sage Publications*, Newbury Park, CA.

Strauss, A., & Corbin, J. (1990). Basics of Qualitative Research: Grounded Theory Procedures and Techniques. *Sage Publications*, Newbury Park.

Strauss, A., & Corbin, J. (1990). Grounded Theory Research: Procedures, Canons, and Evaluative Criteria. *Qualitative Sociology*, 13(1)

Strauss, A., & Corbin, J. (1998). Basics of qualitative research techniques and procedures for developing grounded theory (2nd Ed). *Sage Publications*, Thousand Oaks.

Teye-Kwadjo, E. (2017). Risk factors for road transport–related injury among pedestrians in rural Ghana: Implications for road safety education. *Health Education Journal* · July 2017 DOI: 10.1177/0017896917719736

Teye-Kwadjo, E. (2019). Risky driving behaviour in urban Ghana: the contributions of fatalistic beliefs, risk perception, and risk-taking attitude. *International Journal of Health Promotion and Education*, 57(5), 256-273, DOI: 10.1080/14635240.2019.1613163

Thornberg, R. (2012). Informed Grounded Theory. *Scandinavian Journal of Educational Research*, *56*(3), 243-259. doi:10.1080/00313831.2011.581686

World Health Organisation, & The World Bank. (2009). *Global status report on road safety*: *Time for action*. Geneva.

World Health Organisation. (2015). *Global status report on road safety: Time for action*. Geneva.

World Health Organization, (2018). *Global status report on road safety* 2018. Geneva: Licence: CC BYNC- SA 3.0 IGO.

World Health Organisation. (2008). *Global Status Report on road safety: time for action.* Geneva. www.who.int/voilence_injury_prevention/road_safety_status/2009

Yin, R. K. (2009). Case Study Research: Design and Methods. (4th Ed). *Sage Publishing,* Thousand Oaks, CA.

# APPENDICES

## APPENDIX A

DEPARTMENT OF PSYCHOLOGY
SCHOOL OF SOCIAL SCIENCES
UNIVERSITY OF GHANA

DEPARTMENTAL RESEARCH & ETHICS COMMITTEE (DREC)

25th July, 2020

Mr. Abubakar Abdul-Latef
Department of Psychology
University of Ghana

Dear Mr. Abubakar Abdul-Latef

**Protocol number**: DREC/014/19-20
**Project title**: Road traffic accidents in Ghana: Examining the road user attitude and behaviour
**Full Approval–Committee Reviewed Protocol**

In response to your application received on June, 02, 2020, the Departmental Research & Ethics Committee of the Department of Psychology, University of Ghana has considered the above mentioned application and the protocol has been granted **Full Approval**.

Any significant alteration(s) to the approved research protocol (i.e. **the Questionnaire/Semi-structured interviews, Informed Consent Form, Title of the Project, Research Approach and Methods**) must be submitted for review and approval prior to implementation. In case you have further queries, please quote the above reference number.

Note: Research data should be **securely stored** at an appropriate location and should only be **destroyed after 5 years.**

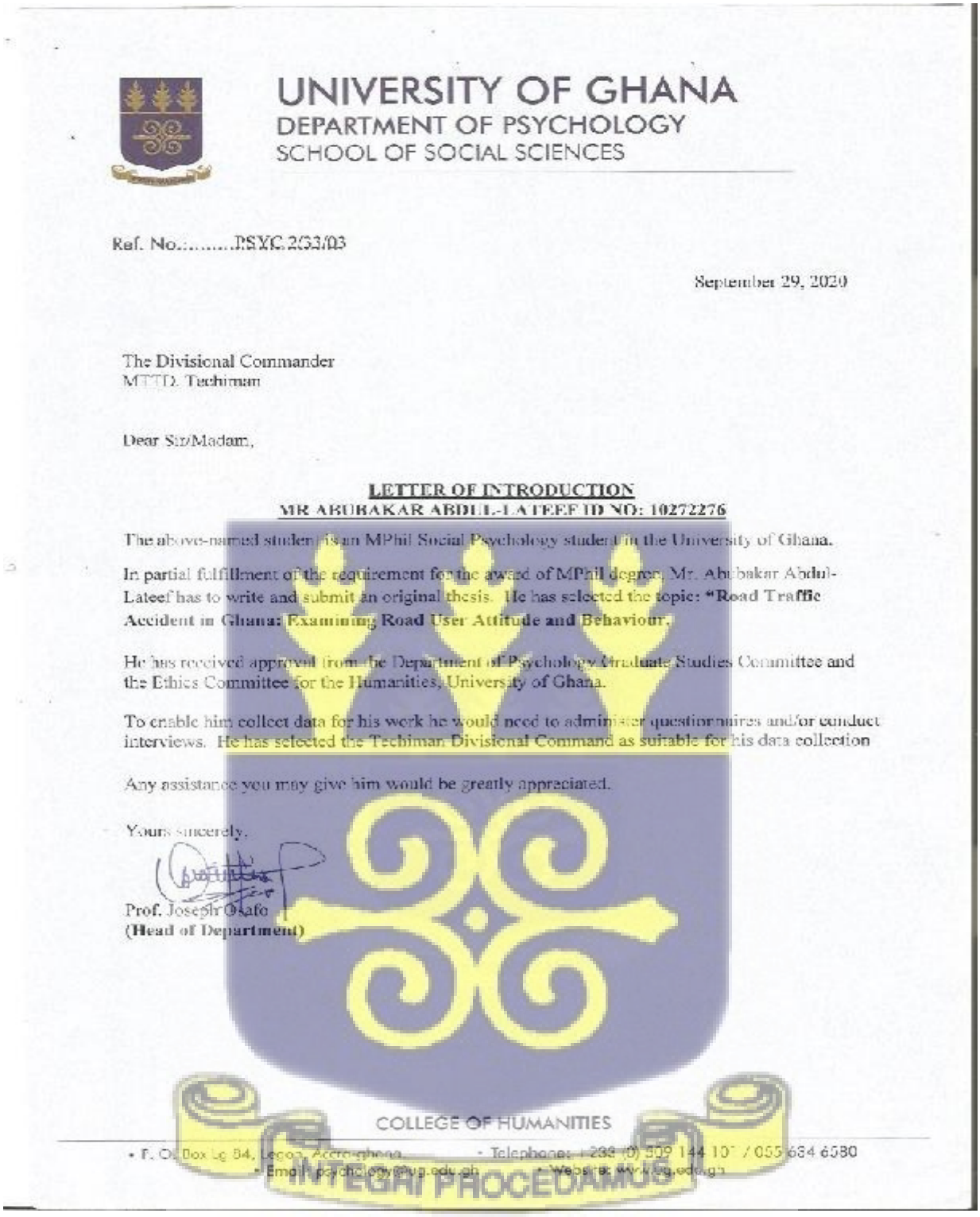
This ethical clearance certificate is valid for only 12 months from the date of issue. Thereafter, re-certification must be applied for on annual basis.

We take this opportunity to wish the very best in your research.

Yours faithfully,

Annabella Osei-Tutu, Ph.D.
Chair, Departmental Research & Ethics Committee (DREC)

**APPENDIX B**



UNIVERSITY OF GHANA
DEPARTMENT OF PSYCHOLOGY
SCHOOL OF SOCIAL SCIENCES

Ref. No.:.....PSYC.2/33/03

September 29, 2020

The Divisional Commander
MTTD, Techiman

Dear Sir/Madam,

**LETTER OF INTRODUCTION**
**MR ABUBAKAR ABDUL-LATEEF ID NO: 10272276**

The above-named student is an MPhil Social Psychology student in the University of Ghana.

In partial fulfillment of the requirement for the award of MPhil degree, Mr. Abubakar Abdul-Lateef has to write and submit an original thesis. He has selected the topic: **"Road Traffic Accident in Ghana: Examining Road User Attitude and Behaviour."**

He has received approval from the Department of Psychology Graduate Studies Committee and the Ethics Committee for the Humanities, University of Ghana.

To enable him collect data for his work he would need to administer questionnaires and/or conduct interviews. He has selected the Techiman Divisional Command as suitable for his data collection

Any assistance you may give him would be greatly appreciated.

Yours sincerely,

Prof. Joseph Okafo
**(Head of Department)**

COLLEGE OF HUMANITIES

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INTEGRI PROCEDAMUS

## APPENDIX C

## INTERVIEW GUIDE FOR POLICE

### A: EXPERIENCE OF RTA

First of all let us talk about your experience with RTA in the country

- What can you tell me about your experience of RTA in your line of work?
- Do you always think that there is a possibility of RTA before and when you are using the road?
- What do you do or do not do to on the road to stay safe and prevent RTA?
- Do you think RTAs are such massive problem in Ghana, and that we should be worried about it?

### B: SPEEDING

Now let's talk about what is arguably the most blamed cause of RTA in the country – speeding

- First tell me what your views are on speeding as cause of RTA
- How often do you encounter speed driving in your line of work?
- Are you (MTTD) able to detect speeding beyond limit?
- Under what condition will you consider speeding as good or positive?
- How do you feel when you encounter a speeding driver or rider?

### C: ALCOHOL (DRINK DRIVING/RIDING)

Let us move our discussion now to drink driving and riding

- What is the link between drink driving /riding and RTA?
- How rampant is the phenomenon of drink driving /riding?
- What are your feelings towards drunk drivers /riders?
- Do you think that we should be lenient towards those who drink and drive /ride?

**D: LAW ENFORCEMENT**

Now let us talk about your core mandate in the RTA discussion – Law Enforcement

- You are responsible for enforcing road traffic rules and regulation in this country, but the National Road Safety Commission (NRSC) blames the absence of 'dedicated MTTD' for non-enforcement of rules, hence RTA, what is your response to this, and how dedicated are you to road traffic law enforcement?
- How serious do you consider the offences of speeding beyond limit and drink driving?
- How effectively do you collaborate with other stakeholder institutions in ensuring road safety?
- What are the hindrances, if any, in the way of Police enforcement of road traffic regulations?

**Thank you for your time and responses**

## APPENDIX D

## AN INTERVIEW GUIDE FOR PEDESTRIANS

### A: EXPERIENCE OF RTA

Let's begin with your experience of road traffic accident.

- What can you tell me about your experience of road accident?
- Do you always think that there is a possibility of RTA before and when you are using the road?
- Why did you fail to use the footbridge and traffic signal provided for you?

### B: SPEEDING

Now let's talk about speeding as cause of RTA

- What are your views on speeding as cause of RTA in Ghana?
- In which way is speeding of benefit to you?
- How lenient do you think we should be towards speeding drivers/riders?

### C: ALCOHOL (DRINK DRIVING /RIDING)

Let's now talk about drink - driving/riding as cause of RTA

- What is your general opinion about alcohol intake and RTA?
- Do you think that we should be lenient towards those who drink and drive/ride?

### D: LAW ENFORCEMENT

Finally let us talk about enforcement of traffic rules and regulations

- Is adhering to road traffic rules and regulations that difficult for you, and why?
- How often would the law enforcement officers check you for indiscriminate use of the road?
- How effective are the law enforcement to you?

**Thank You for your time and response**

## APPENDIX E

## AN INTERVIEW GUIDE FOR DRIVERS/RIDERS

### A: EXPERIENCE OF RTA

Let us start our discussion with your experience of RTA

- In general terms, what can you tell me about your experience of RTA?
- Before and when you start using the road, do you always think of a possibility of an accident occurring?
- What kind of safety measures do you take before and when you use the road?
- Do you think that RTAs are such a massive problem in Ghana, and that we should worry about it?

### B: SPEEDING

Let us now talk about speeding as cause of RTA

- Can you tell me views about speeding as cause of RTA?
- How important is speeding to you in your daily work?
- What motivates or pushes you to speed when you drive/ride?
- How often do you drive/ride faster than other drivers/riders on the road?
- Can the phenomenon of speeding be controlled in the country?

### C: DRINK DRIVING/RIDING

Now let us turn our attention to drink driving/riding as cause of RTA

- First let me know what you think about the link between drink driving and RTA
- What can you tell me about your experience (personal or vicarious) with drink driving/riding?
- Does the use of alcohol have any effect on your driving or riding abilities?
- Do you think we should be lenient towards drunk - drivers/riders?

### D: LAW ENFORCEMENT

Finally let us talk about the enforcement of traffic rules and regulations

- First tell me what you know about the laws on speed limits, and alcohol intake level

- How do you ensure that you are within speed and alcohol limits permissible?
- How difficult is it for you to go by these rules and regulations?
- How frequently do the police stop and check you for over speeding and alcohol consumption?
- What is your general opinion about the performance of the Police (MTTD) in their traffic law enforcement duties?

**Thank you for your time and response**