

UNIVERSITY OF KWAZULU-NATAL

**THE IMPACT OF NEGATIVE ATTITUDE TOWARDS SAFETY COMPLIANCE IN
UNITRANS FUEL AND CHEMICAL**

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DECLARATION

I *Mduduzi Mzwandile Olive Sondezi* declare that

- (i) The research reported in this dissertation, except where otherwise indicated, is my original research.
- (ii) This dissertation has not been submitted for any degree or examination at any other university.
- (iii) This dissertation does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
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ABSTRACT

South Africa is among those countries that have the highest rate of road accidents in the world. Road accidents have a negative impact on a country's development; therefore reduction of road accidents is a priority for the South African government in general, and road transporters in particular. Unitrans Fuel and Chemical (UFC) is one of the major road transporters of dangerous goods in South Africa; this study was undertaken to explore the impact of negative attitudes on safety compliance at UFC by its truck drivers. The focus of the study was informed by the element of human failures, and the role played by such failures in road accidents.

In light of driver behaviour being a product of non-tangible elements such as attitudes, feelings and beliefs, the quantitative study undertaken, sets out to explore the impact of negative attitudes on safety compliance. A sample was taken from the UFC's Clairwood depot, and data collected was analysed using descriptive statistics. Other non-parametric tools were also used to analyse data. The findings are presented in Chapter Four. The researcher used a Likert Scale instrument to measure elements of attitude amongst UFC drivers.

The results clearly indicate attitude plays a major role in the lack of safety compliance by drivers. The study also provides recommendations to address issues of driver attitude that are clearly illustrated by the figures in Chapter Four. Recommendations will allow UFC to address areas of negative driver attitude displayed by respondents to the questionnaire. The study recognizes that changing driver behaviour is not an easy task, and commends UFC for the effort applied in addressing this problem.

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CHAPTER ONE

Overview of the study

1.1 Introduction

This study seeks to explore challenges relating to negative attitudes of truck drivers towards safety compliance. Quantitative research techniques have been applied, with the objective of establishing statistical indicators on the study's research questions. In order to reduce truck-related accidents at Unitrans Fuel and Chemical, KwaZulu-Natal region, this study recommends means of mitigating negative attitudes.

Chapter one provides an overview of the concept of attitude, the motivation for this study and the problem statement. Chapter one also presents a problem statement, objectives, key research questions, and limitations of this study.

1.2 Motivation for the study

Unitrans Fuel and Chemical (UFC) has been monitoring and rewarding performance of truck drivers that have driven for millions of kilometres without being involved in road accidents. UFC is committed to improving road safety, through its safety initiatives and through enforcing road traffic compliance by all UFC drivers. The South African Department of Transport (DoT), through the Arrive Alive campaign runs campaigns on road safety. The issue of road accidents continues to be a priority concern in South Africa, hence the need for the DoT and business to join hands in reducing road accidents.

This study has identified underlying reasons for negative attitudes towards safety initiatives by drivers, and has highlighted the impact a driver's negative attitude has on safety compliance. The knowledge derived from the study will allow road safety practitioners to develop more appropriate road safety initiatives, in order to deal with attitude-related non-compliance.

Beneficiaries of the study:

- Unitrans Fuel and Chemical – this study will help the company to understand the impact of negative driver attitude on safety compliance, thereby enabling the development of appropriate programmes to deal with negative attitudes.
- Truck drivers – through more effective safety initiatives and through the ability of UFC to better explain the need to comply with all safety initiatives, this study will save many drivers’ lives.
- Other road transporters - Road transporters interested in understanding reasons for their drivers not complying with safety initiatives, may be assisted in developing safety strategies so as to improve compliance.
- Behavioural researchers – this study will contribute to assisting researchers in the field of truck driver behaviour, to better understand why other truck drivers have a negative attitude towards safety compliance.

The sample used in this study was only from the KwaZulu-Natal Clairwood depot. Drivers from other regions such as Gauteng and Cape Town, may reflect different attitudes from those of KwaZulu-Natal drivers.

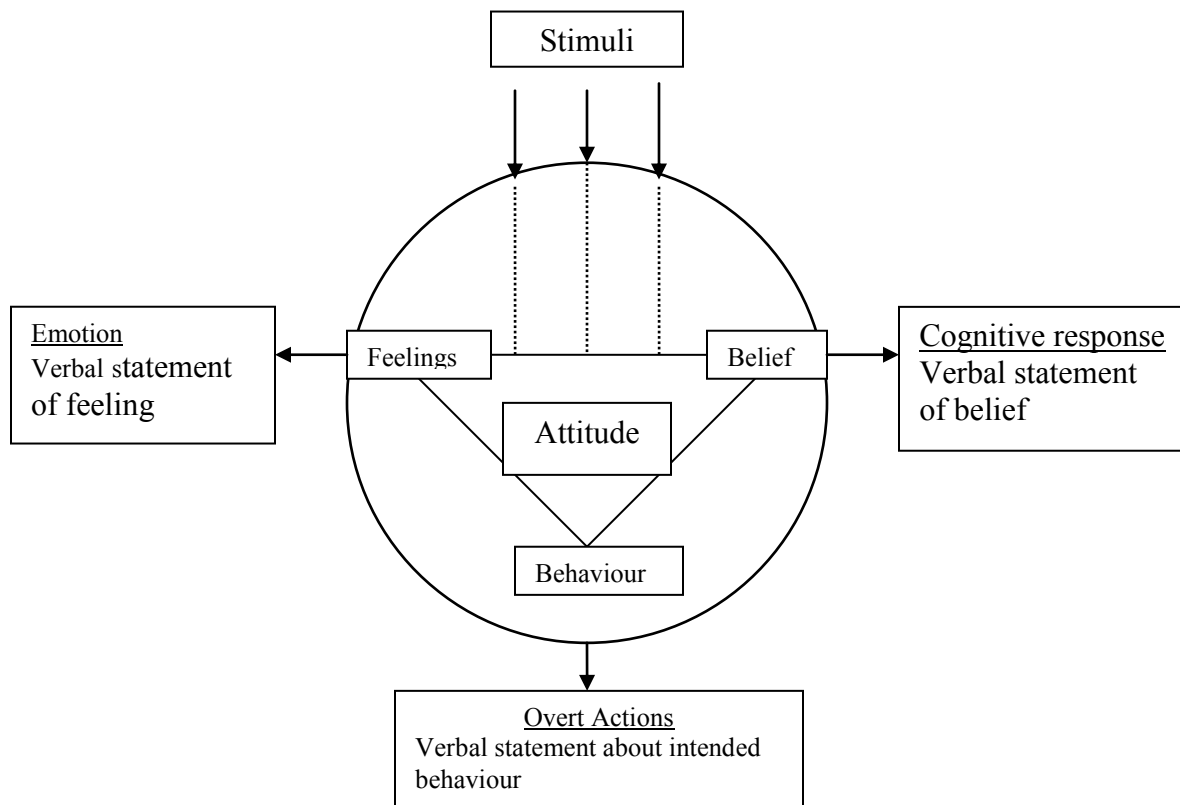
1.3 Focus of the study

This study focused on issues underlying driver behaviour, and reasons for truck drivers not complying with certain safety initiatives. The sample was taken from the KwaZulu-Natal region of Fuel and Chemical. Drivers at the KwaZulu-Natal region are subjected to a wide range of policies, procedures and other safety initiatives developed by UFC and UFC customers. The UFC division transports fuel and chemicals on behalf of petrochemical companies, throughout sub-Saharan Africa. Owing to the hazardous nature of some of the chemicals, petrochemical companies demand very high safety standards.

The KwaZulu-Natal depot of Unitrans Fuel and Chemical subscribes to ISO 9001, ISO 14001 and OHSAS 18001 standards. ISO 9001 is an international standard on quality management, ISO 14001 is an international standard on environmental management, while OHSAS 18001 is an international standard for occupational health and safety systems. The need to comply with all international standards demands that UFC develop a culture of compliance, to satisfy customers in terms of safety initiatives and other legislative requirements.

Understanding driver attitude becomes critical to creating a culture of compliance. According to Spooncer (1992), attitude is made up of components as illustrated in Figure 1.1.

Figure 1.1 Components of Attitude



Source: Adapted from Spooncer (1992)

1.4 Problem statement

The problem facing UFC is that certain truck drivers continue to ignore safety initiatives and road traffic regulations. Much time and many financial resources have been allocated to putting systems into place and to implementing programmes geared to improving safety compliance at UFC. The challenge remains to assess the effectiveness of these programmes, and the ability to help all drivers, „buy into“ the safety culture. Previous research indicates attitude plays a role in driver behaviour, hence the need to explore the impact of negative attitude on safety compliance.

UFC has tried to quantify the cost implications of road accidents; however, the language of financial costs only makes sense at executive level, making not enough sense to ordinary drivers. A different way of communication is required to relay the message to truck drivers. This study highlights the problem of effective safety communication and has recommended ways of resolving the communication problem. The South African Department of Transport is in the process of implementing a demerit point system, where drivers will be credited with 12 points in order to operate on a public road. Operating points will be deducted for every road traffic offence. A loss of all 12 points will result in the suspension of a driver“s licence.

The implications of the points“ demerit system would mean companies need to decide what will be done with a driver whose licence has been suspended. The study has focused on the need to improve compliance, rather than simply dealing with the consequences. The government“s point system is a punitive measure to enforce road traffic compliance, while this study has focused on preventative measures.

Truck-related road accidents have serious implications to the economic wellbeing of South Africa. Businesses in South Africa have a social responsibility to reduce

truck-related accidents. According to the South African Department of Transport, the cost of road accidents in 2005 was about R40 billion (www.dot.gov.za).

1.5 Objectives of the study

The objectives of this study are:

- To explore the attitude of UFC truck drivers towards road-safety compliance.
- To explore the means of reducing truck-related road accidents.
- To explore effectiveness of current safety compliance campaigns.
- To provide information that can improve road traffic compliance of UFC KZN truck drivers.
- To recommend more appropriate measures to improve safety compliance at UFC KZN region.

1.6 Research questions

This study seeks to answer the following questions:

- Why do drivers continue to ignore both the company and the government road safety initiatives and regulations?
- What are the underlying perceptions of drivers with negative attitude towards safety compliance?
- What can be done to improve compliance with road traffic regulations and other safety initiatives?
- What can UFC do to reduce truck-related road accidents?
- What recommendations can be made to research?

1.7 Limitation of the study

Lack of South African research in the field of truck driver behaviour has been one of the limitations of this study. Owing to lack of local South African research, this study makes a great deal of reference to research undertaken in other countries. South African-researched material is not only specific to the area of truck driver behaviour, but also applicable to other areas of research.

Time constraints have been another limitation of the study, because some KZN drivers undertake cross-border transportation. Cross-border drivers are often away for a month, and therefore cannot be issued with questionnaires to complete while on the trip. The sample had to be focused on drivers that take shorter trips, including Durban to Johannesburg trips. Owing to time constraints of the study, sample size also had to be limited to drivers who are easily accessible. The level of education of truck drivers requires the questionnaire to be simplified and sometimes explained in a preferred language. Administration of the questionnaire could not be done electronically owing to the respondents' working environment and computer literacy. Computer literacy is not a requirement for truck drivers, and therefore all questionnaires had to be printed and handed to potential respondents.

1.8 Summary

The chapter has provided a broad overview of what this study covers, and the problems the study intends to address. Limitations of this study have also been listed. Chapter Two will review available literature in the field of truck-driver behaviour in relation to road traffic accidents, and theoretical background on attitude and behaviour.

Chapter three will describe the methodology of research adopted for this study and further details on the manner in which the study was conducted, and the nature of analysis applied.

Chapter four will present results of data analysis. Data presented will be discussed, so as to provide meaning and context to this study. Bar charts will also be used to illustrate some of the statistics presented.

Chapter five will provide conclusions on the extent to which data collected has provided answers to research questions. The chapter will also provide recommendations for UFC to overcome the challenge of driver non-compliance, and recommendations to overcome the study's limitations.

CHAPTER TWO

Literature Review

2.1 Introduction

South Africa is limited in research directly relating to negative attitudes of truck drivers. This chapter seeks to review literature in the field of driver behaviour, in order to demonstrate how negative driver behaviour impacts on road safety compliance of truck drivers. The chapter also draws on available behavioural models by international researchers in areas such as accident prevention and road safety, to further demonstrate the impact of negative driver behaviour on road safety compliance. Chapter two goes on to present driver behavioural challenges in South Africa and the need to ensure effective road safety communication to truck drivers. Owing to limitations in South African research relating to truck driver attitudes, the author will present road traffic offences as a manifestation of negative truck driver attitudes on the road.

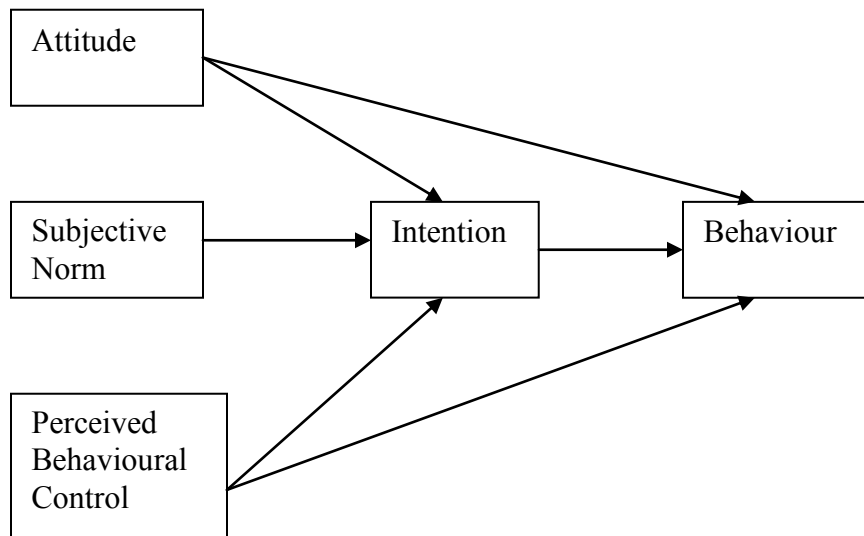
Reports from international bodies such as the World Health Organization have been used to highlight the extent of road safety challenges globally, and the role South Africa and other developing countries can play in improving road safety. The material presented indirectly points to the problem of negative attitudes by truck drivers and hence it becomes evidence of shortfalls in training efforts by companies in combating negative driver behaviour.

2.2 The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) is one of the major developments in the field of driver behaviour. According to Ajzen (1995, 1998) as cited by Poulter, Chapman, Bibby and Clarke, Crundall (2008) the TPB seeks to create an understanding of volitional and non-volitional human behaviour, and advocates the best predictor of behaviour is the person's intention to perform the behaviour (Poulter et al.,2008). In the context of the study undertaken by Poulter et al. (2008), the TPB theory suggests there is a logical explanation for people's not complying with stated requirements, meaning their behaviour is intentional.

Based on the TPB model, understanding the underlying drivers or motivators of undesired behaviour is very important in finding effective solutions to behavioural problems (Poulter et al., 2008). The TPB model is illustrated in Figure 2.1.

Figure 2.1 The Theory of Planned Behaviour



Source: Adapted from Poulter, Chapman, Bibby, Clarke, Crundall (2008)

The TPB model in Figure 2.1 indicates behaviour is a manifestation of attitude, subjective norm and perceived behavioural control. The three factors that feed into behaviour create the intention to behave in a particular manner. Attitude is a product of a person's beliefs about an object or action. The importance of understanding individual beliefs becomes critical when exploring driver attitude, as intended by this study. The area of driver belief system can be recommended for further studies; this study will only focus on the attitude element of the TPB model. The research instrument will provide some indication of underlying driver behaviour.

Parker et al. (1992b) analysed the relevance of the TPB to driver behaviour and revealed intentions accounted for forty two point three percent of drinking and

driving cases, forty seven point two percent of speeding cases, twenty three point four percent of tailgate cases and thirty one percent of dangerous overtaking cases (Poulter et al., 2008). The above findings suggest behaviour is intended. South African drivers will continue to speed and violate most safety and traffic rules for reasons perceived as important by the drivers, hence the need to dig deeper into the element of attitude and the role attitude plays in safety compliance.

Poulter et al. (2008) conducted research on UK drivers, finding traffic violations were perceived as drawing less social pressure or subjective norms in relation to other violations. A further study on speeding violations conducted by Newman et al. (2004) in Australia, as cited by Poulter et al. (2008) revealed lower speeding intentions of drivers driving company vehicles compared with those driving private vehicles. The relationship between company vehicles and private vehicles is indicative of the punitive implications associated with company vehicles, and not so much with road traffic compliance. The findings on drivers driving company vehicles, in relation to the TPB model, indicate the effect of drivers' perceived behavioural control, which then shifts the balance of non-compliance to attitude (Poulter et al., 2008).

The TPB suggests behaviour is fed by intention, which is also fed by three components: attitude, subjective norm and perceived behavioural control. According to the TPB model, attitude has a fifteen percent direct impact on behaviour and a thirty four percent indirect impact through intention. Poulter et al. (2008) further suggested in dealing with behavioural changes, managers need to focus on factors that feed behaviour. Attitude is one of the key factors, and the challenge of dealing with attitude is in the ability firstly to identify attitude, followed by a process to change the negative attitude (Poulter et al., 2008).

The study conducted by Poulter et al. (2008) suggested behaviour is a product of beliefs, social pressures and perceived consequences. This study will focus on

attitude, which is more profound than the other elements reflected in the TPB. The TPB model clearly reflects the role of attitude on behaviour (Poulter et al., 2008).

Fuller (2005) conducted a study on driver behaviour in Ireland, and found a relationship between perceived behavioural control and lack of compliance may not be a reflection of a particular driver, but rather, the environment under which the driver operates. The driver's operating environment may be shaped by productivity incentives or management controls. Fuller's findings are contrary to those of Poulter et al. (2008) in the analysis of the TPB model (Fuller, 2005).

Fuller (2005) stated indicators of driver performance may also influence driver behaviour. As much as this statement may be correct, such performance indicators cannot go against safety regulations. A typical example may be the use of a seatbelt, which remains a compliance challenge. No driver performance indicators can be set which do not include the use of a seat belt; however, drivers remain defiant in this area, even where vehicles are fitted with seat belt buzzers. The statement made by Fuller (2005) may explain how lack of consequences can reinforce negative behaviour (Fuller, 2005).

According to a report prepared by the University of Manchester for the London Department of Transport in the year 2000, attitude is based on beliefs about the consequences of behaviour; subjective norm is based on beliefs about social pressures to carry out the behaviour; and perceived behavioural control is based on beliefs about the ease or difficulty with which the behaviour can be performed (Department of Transport: London, 2000). Deducing from the statement above, analysis of the consequences of bad behaviour is important in order to understand the extent to which lack of serious consequences plays a role in reinforcing undesirable behaviour (London Department of Transport, 2000).

Hirschi and Goufredson (1993) were quoted in the London Department of Transport (2000) report to have said lack of self-control is the mechanism that triggers deviance. Hirschi et al. (1993) were of the opinion individuals with low self-control tend to succumb to the immediate benefits of deviant behaviour. The tendency to behave against set standards comes from internalized sanctions, which are stronger than social and legal sanctions. Social disadvantages, lack of parental supervision, and inattentiveness were found to be associated with misbehaviour and accident involvement.

The report also went on to state while most wrong behaviours are intentional, accidents are unintentional (London Department of Transport, 2000). Hirschi et al. (1993) highlighted the extent and depth of the behavioural problem, that the source of the problem is internalized and stronger than social or legal sanctions. The social element highlighted by Hirschi et al. (1993) relates to belief, which in turn influences attitude. The authors also highlighted inattentiveness, which may be the result of a poor attitude (Hirschi et al., 1993).

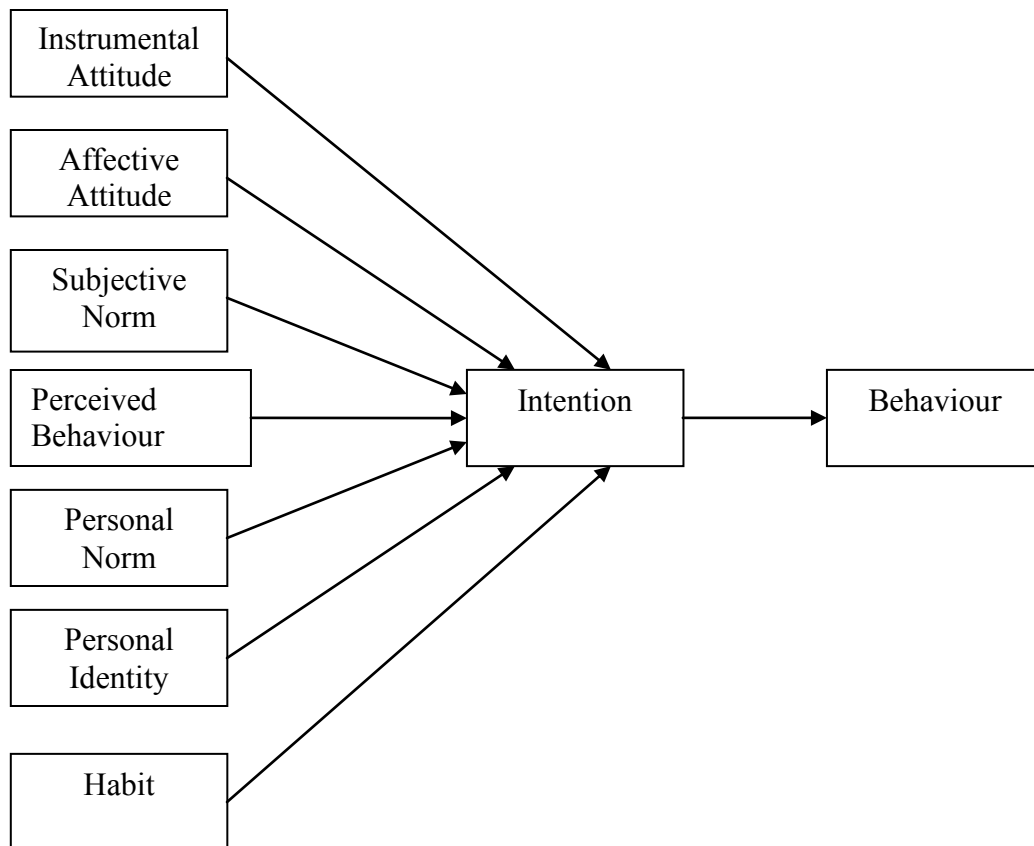
The London Department of Transport report suggested a more focused approach to behavioural change is to identify behavioural predictors of accidents and their underlying motivation. Violations in particular were found to be significant predictors of accident involvement, which suggests campaigns aimed at changing attitudes through education and increased detection, may be more effective in changing negative driver behaviour (London Department of Transport, 2000).

According to the London Department of Transport report (2000), the TPB model was insufficient in addressing some of the behavioural challenges.

The extended model separated the attitude component into instrumental attitude and affective attitude. Personal norm and personal identity were also included.

The report clearly stated and elaborated on the role of attitude towards behaviour, particularly undesirable behaviour. This study focused on analysis of attitudes in relation to safety compliance, to determine the impact negative attitude has on compliance at UFC. The authors then extended the model, ultimately producing the following diagram reflected in Figure 2.2.

Figure 2.2 The Extended Theory of Planned Behaviour



Source: Adapted from Department of Transport: London (2000)

Researchers from Manchester University criticized the TPB model in its ability to effectively address the components of attitude, which appear to play an important role in driving violations. The additions to the TPB model improve the total number of variances in intentions, which can be explained. Direct measures of attitude, subjective norm and perceived behavioural control were used to test the usefulness of additional predictors of the TPB constructs. The model proved very

successful in placing into context the variances for drivers' intention to speed, (London Department of Transport, 2000).

The findings of the above do support the need to explore driver attitude and the role of attitude on safety compliance. The focus of this study will be on the attitude aspect of behaviour, in an effort to improve safety compliance. A study of a similar nature was conducted by Verschuur, and Hurts (2008), on Dutch drivers in 2007.

2.3 Safety Driver Modelling

Verschuur et al. (2008) developed a safety-driver behaviour model based on Reason's accident causation model. The study focused on six different variables, namely accident involvement, active failures, strategic decisions, psychological precursors, physical precursors and the Theory of Planned Behaviour (TPB) constructs. According to Verschuur et al. (2008), Reason's position is an accident is directly preceded by an unsafe act, which in turn is preceded by other factors remote from the accident site. The factors referred to by Verschuur et al. (2008) also have an impact on driver attitude, which is to be explored by this study (Verschuur et al., 2008).

Verschuur et al. (2008) have expanded on various models of driver behaviour to provide more understanding and to add a means of improving the effectiveness of the models. The safety-driver behaviour model focuses on improving understanding of human failures preceding an accident, drivers' attitudes, norms and beliefs and strategic trip-related decisions made by the driver. The authors have clearly stated the psychological and individualistic focus of the study must be its main limitation, because the study did not focus on the environmental aspects of accident causes. The individualistic focus by Verschuur et al. (2008) is not unique, but runs through most of the research material available to this study. The challenge encountered by researchers in addressing the root cause of

negative behavior, may be attributed to the behavioural problem's being psychological in nature. (Verschuur et al., 2008)

Verschuur et al. (2008) categorizes driver behaviour into active and latent failures, where latent failures lead to active failures under certain psychological preconditions. The two authors believe active failures to be mistakes and violations, while latent failures are faulty management decisions and related deficiencies in the management system. The authors, however, failed to provide details to support their argument, particularly when dealing with latent failures. (Verschuur et al., 2008)

The safety-driver behaviour model, suggests preventative measures to avoid future violations. The authors have hypothesized both psychological and physical precursors increase the likelihood of inattention errors and dangerous errors, but not that of violations. These psychological precursors are influenced by pre-trip decisions made by the driver. The safety driver model also lacks detail on how the model seeks to address latent failures (Verschuur et al., 2008).

2.4 Risk Appetite in relation to Driver Behaviour

Summala (1996) said in order to understand the mechanisms of driver behaviour, researchers need to divide accidents and accident exposure into smaller entities to arrive at basic units of exposure, which also represent fundamental driver tasks. Summala (1996) wrote a paper on accident risk and driver behaviour, and looked at the driving task and offered a concept of risk compensation. Summala (1996) also highlights previous pitfalls by researchers, where more emphasis has been placed on increasing the level of driver performance and decreasing environmental demands, while ignoring the fact that drivers have emotional tendencies other than safety (Summala, 1996).

Emotional tendencies referred to by Summala (1996) may also be triggered by attitudes drivers might have formed about a particular action on the road.

According to Summala (1996) the pace chosen by a driver is crucial to safety rather than his/her maximum skill level (Näätänen & Summala, 1974). Summala (1996) also suggested that in the process of introducing safety counter-measures, managers should take risk compensation into account. Summala (1996) went on to say that a driver will react to changes in the traffic system, whether the driver is in the vehicle or in the road environment, and that the reaction occurs in accordance with his/her motives. According to various authors as cited by Summala (1996), risk may be interpreted as the propensity of a system to produce an accident, in the sense of the propensity interpretation of probability (Summala, 1996).

Summala (1996) concluded by stating to understand mechanisms of the accident process, researchers must separate driver behavioural issues from other contributing factors. The emphasis is on distinguishing risk compensation from issues that underpin such behaviour; the theories that are aimed at explaining the behaviour become critical. Summala (1996) went on to say in order to adequately explain losses in accidents, behavioural changes should also be found. The author has focused on risk appetite, in the process of exploring the means of reducing road accidents. Risk appetite is an element of a driver's social structure (Summala, 1996).

Clarke (2006) examined drivers' response to hazards and ways in which risk reduction programmes can mitigate risky driver behaviour. In a paper titled, "The effect of habits as behavioural response in risk reduction programmes". Clarke (1996) suggested the behavioural response of drivers, in terms of writing a report depends on how the hazard is perceived (Clarke, 1996). Clarke (1996) said, "As operators interact with the system over time, operators will develop a repertoire of behaviours; such repertoire will be shaped by their experience of reality, including the risks associated with system operation" (Clarke, 1996).

According to Clarke (1996), the safety culture influences the behaviour of employees by shaping their perceptions of what is expected of them. Some of the key aspects of safety culture are, “perceived commitment of management to safety, visible management actions, and the relation between safety and the individual’s work outcomes” (Clarke, 1996). Clarke (1996) suggested the reporting procedure itself can deter drivers from reporting unsafe acts. Clarke (1996) created a distinction between various types of hazard, where he said routine hazards are not likely to be reported as they are perceived to be part of the day’s work (Clarke, 1996).

Clarke (1996) went further to state the way drivers respond to routine hazards is habitual, and is a result of continuous reporting with no corrective action taken. According to Clarke (1996), lack of effective corrective action supports the hypothesis drivers’ perceptions of management’s safety commitment would have a significant effect on drivers’ behaviour (Clarke, 1996). Clarke (1996) also suggested in order for attitude-change programmes to be successful, attitude change must be translated into behavioural change (Clarke, 1996). Attitude on its own is a difficult concept to grasp and measure. According to Underwood (2008), as cited by Du Plessis et al. (2008) “Attitude is lasting clusters of feeling, beliefs, and behaviour tendencies directed towards specific persons, ideas, objects and groups” (Du Plessis et al., 2008).

Clarke (1996) focused on behavioural counter-measures; he suggested habit breaking as a means of behavioural change. Clarke (1996) cited Fesinger (1957) to have said, “attitude change may result in a forced change in behaviour and a reduction in cognitive dissonance created by a conflict between attitude and behaviour”. Clarke (1996) argued there is a strong relation between attitude and behaviour, and in order to deal with behavioural change, dealing with underlying attitudes becomes important. Clarke (1996) went on to say if the target behaviour is attitude, change is not likely to be effective (Clarke, 1996).

Clarke (1996) concluded risk reduction measures will be unsuccessful, unless the risk reduction measures focus on habits that might be considered risky, replacing the risky habits with less risky routines. According to Clarke (1996), the first step in habit-breaking should involve bringing the problem to the attention of the driver. A group discussion on briefings, toolbox talks or safety meetings, where open discussion of the issue would oblige drivers consciously to re-evaluate the risks involved, would be an effective tool to use (Clarke, 1996).

The study by Clarke (1996) also highlights the effect of attitude on driver behaviour; however, more emphasis is placed on creating a safety culture with visible management actions, to ensure drivers develop a perception of what is expected of them. In the context of this study, Clarke (1996) suggested habit-breaking techniques as a means of changing driver behaviour (Clarke, 1996).

2.5 Driver behaviour on South African Roads

The Road Traffic Management Corporation (RTMC) report of March 2011 indicated forty point eleven percent of fatal road accidents relate to human factors. The remaining fifty point eight nine percent relate to tyre failure and road conditions. Human failure referred to in the RTMC report, reflects the degree to which drivers disregard rules and regulations of the road, and the practice of defensive driving in the case of professional drivers. Drivers continue to be the biggest contributors to road accidents on South African roads. By exploring the attitude of Unitrans Fuel and Chemical drivers, this study seeks to find factors that influence drivers to have a negative attitude towards safety compliance (Road Traffic Management Corporation, 2011).

2.6 Road Accidents

Poor driving behaviour inevitably results in fatal crashes. In 2011, RTMC reported a national figure of 10 845 fatal crashes between March 2010 and March 2011, with KwaZulu-Natal contributing thirty eight point two percent of this total. According to the RTMC report of 2011, KwaZulu-Natal has the highest road accident rate. Truck drivers are both contributors to, and victims of, the crashes

mentioned in this paragraph. To be more specific, 1 226 articulated trucks were involved in fatal crashes between March 2010 and March 2011. Despite the increase in unlicensed and un-roadworthy vehicles on South African roads, the report reflects a steady percentage decline of road accidents and fatalities (Road Traffic Management Corporation, 2011).

The effect of the human factor in road accidents cannot be questioned, however, reporting of road accidents in rural areas remains a challenge, and statistics reflected in the RTMC's report may possibly be understated. The statement does not in any way seek to undermine increased levels of monitoring on South African national roads. Having drivers with a positive attitude towards compliance will go a long way to reducing road accidents.

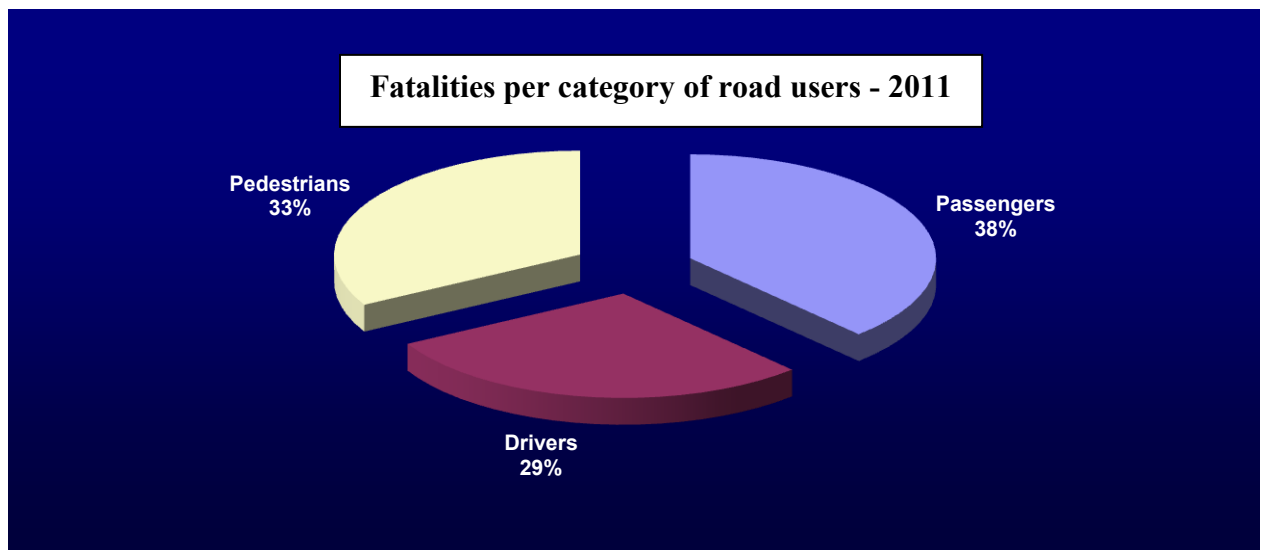
The objectives of this study are to look at how to reduce these accidents, by looking at truck driver involvement in particular. Trucks tend to have a larger negative impact when involved in accidents, than do smaller vehicles. Accident statistics as given in the previous paragraph may well be understated, because reporting road accidents remains a challenge in some parts of South Africa.

In a comparative study done by Howe-Dreyer (2006), on privately-managed and state-managed South African roads, eighty to ninety percent of road accidents were related to human factors such as fatigue, driving under the influence, driver incompetence and speeding. Howe – Dreyer (2006) was of the view that the aggressive driving culture of South African drivers is the major cause of accidents. The author suggested driver education as a remedial action to such aggressiveness. The author also believes irrespective of speed limits on the roads, drivers continue to drive at speeds which they consider to be safe and reasonable, depending on road and weather conditions (Howe – Dreyer, 2006). The aggression referred to by Howe-Dreyer (2006) may emanate from defensiveness or from some form of assertiveness by road users. Truck drivers, in particular tend to be more authoritative on the road, because their vehicles are

larger than other vehicles. Truck drivers are also lower on the income ranks, and can use their vehicles as a means of dominance, boosting their self-esteem. The aggression referred to by Howe-Dreyer may be the result of poor work relations. The study seeks to assess UFC truck drivers' attitudes with the intention of effecting a positive attitude towards safety rules (Howe – Dreyer, 2006).

The author recommends driving education be included in school education, so potential drivers are better informed by the time they qualify for a driver's licence. Stricter penalties are also recommended by the author, as a means of building a culture of compliance on South African roads. Another recommendation by Howe – Dreyer (2006) is that learner-driver institutions be independent, to allow for unbiased auditing of such institutions in terms of learner-driver educational requirements. Proactive policing is also recommended by the author, to prevent high numbers of people driving under the influence (Howe – Dreyer, 2006). RTMC presented statistics in the 2011 report as reflected in Figure 2.3

Figure 2.3 Fatalities per category of road users



Source: Adapted from Road Traffic Management Corporation (2011)

Figure 2.3 reflects a very high level of driver fatalities on South African roads. If twenty nine percent of fatalities are caused by drivers, then driver behaviour is

very much an area in question. A strategy document from the South African Department of Transport (DoT) in 2006, suggested driver behaviour is one of the main causes of road accidents, hence the need to explore truck-driver attitude towards road safety. The objective of DoT's strategy document is to reduce road fatalities by fifty percent by 2014. The 2014 targets were set out in the Accelerated Shared Growth Initiative of South Africa (ASGISA). ASGISA is a strategy document for South Africa's development. According to the National Road Strategy Report (2006) and beyond, the following are prioritized national road challenges and response tactics:

1. Poor driver behaviour

- Increased levels of enforcement, including mini-road blocks.
- Speed control through speed camera placements and other activities.
- Patrolling of hazardous roads.
- Improved alcohol testing and prosecutions.
- Improved surveillance through video evidence.
- Improved learner and driver license training.
- Reduction in speed limits in hazardous areas.

Implementation of the first priority above has been largely driven by affordability of various local governments. Rural areas remain behind owing to lack of affordability. Major cities have gone as far as surveillance monitoring, while such technology is nowhere to be seen in rural areas. The effectiveness of the above efforts on driver behaviour remains far below the required levels.

2. Inadequate punishments and follow-up of fines.

- Implementation of the Road Traffic Infringement Agency.
- Administrative Adjudication of Road Traffic Offences Act of 1998.
- Removing most traffic offence punishments from the justice system.
- Ensuring there is a National Contravention Register in operation.
- Introducing demerit points to identify repeat offenders.

- Introducing parity of fines throughout the country (National Department of Transport, 2006).

Progress has been evident in increased fines; however, follow-up remains a challenge. The rate of fine recovery has not been effective, and one cannot be sure a lesson has been learnt if a fine has not been paid. The points“ demerit system has also been delayed to 2012, following the potential negative effect it might have on road transporters. Road transportation remains a critical part of the South African economy.

3. Age of the national fleet.

- Introduction of Periodic Vehicle Testing and more regular testing of public transport vehicles.
- Mini-road blocks and generally increased enforcement.
- Maintenance of standards of vehicles through regulation.
- Improvement in vehicle testing standards at stations.

Progress on the above priority has been evident, with vehicles having to undergo testing if they change owners.

4. Fraud and corruption

- Investigation by the Special Investigation Unit into fraudulent drivers“ licenses.
- Introduction of systems to reduce fraud: micro-dotting of vehicles, best practice models in registration offices.
- Investigation of the potential of Electronic Vehicle Identification and other technology.

Fraud and corruption is one of the key factors promoting poor driver behaviour on South African roads. The objective of the Department of Transport will be to address part of the problem within the department. The study will focus on the roadside corruption and its influence on non-compliance. Punishment goes a

long way to correcting bad behaviour. Because behaviour is influenced by attitude, the study will focus on attitude in relation to road safety compliance.

Some of the behavioural issues listed in the form of offences on the strategy document are:

- Seventeen percent of drivers continue to exceed speed limits.
- Twenty eight percent of drivers go through red traffic signals.
- Seventeen percent of drivers do not use seat belts.
- Fifteen point six percent of professional drivers do not have a valid driving permit.
- Twenty one point three percent of vehicles on the road have defective tyres.

Percentages reflected above partly indicate an attitude of non-compliance. Lack of education may be the reason for people not using seatbelts, because the use of a seatbelt is a life activity. Recommending measures to improve safety compliance of UFC drivers will eventually reduce percentages stated above (National Department of Transport, 2006).

The figures listed by the National Department of Transport (NDoT) are a reflection of behavioural challenges on South African roads. The South African Department of Transport has a strategy in place to deal with the listed challenges, however, these challenges are a reflection of a culture of non – compliance. The change in culture cannot be achieved by the government alone, but by an all-inclusive approach to safety compliance. Businesses need to ensure drivers on the road comply with safety initiatives, through driver incentives that are not counter-compliant, thereby forcing drivers to shortcut safety requirements in order to earn incentives.

The South African government has laid the necessary groundwork to tackling the extent of the problem and putting measures in place to deal with the challenges,

however, the capacity to address the challenges is insufficient. South Africans are creating problems that stretch government resources unnecessarily. One of the biggest challenges facing the South African government is corruption. Corruption is like a cancer that eats through government systems, and runs from enforcement officers to high level officials as disclosed in the 2009 case against the former police commissioner.

Charlton (2009) conducted a study on New Zealand drivers in 2008. The title of the study was, "Driving while conversing: Cell phones that distract and passengers who react". Before quoting from Charlton's study, it must be noted that conversing on the cell phone while driving is against road traffic laws in South Africa. According to Charlton (2009), previous research has shown as little as one hour per month of cell-phone use while driving, increases a driver's accident risk by between four hundred and nine hundred percent. Charlton (2009) cited a study by Redelmier and Tibshirani (1997 – 2001), which found the risk attached to cell-phone conversations while driving, was comparable to having zero point zero eight percent alcohol in the blood system (Charlton, 2009).

Use of cell phones while driving is also a common problem on South African roads. Road traffic officers tend to stop speeding vehicles, without much focus on drivers on cell phones while driving. The possibility of being fined for a cell phone-related offence in South Africa is very slim. Any regulation without proper enforcement controls, will take longer to produce the required results.

The problem researched by Charlton (2009) concerning New Zealand drivers is the same problem facing South Africa. The increase in communication demand has a negative effect in enforcing cell phone policies. Charlton (2009) found drivers' use of cell phones, while driving negatively increases their reaction time, in relation to hazards on the road, including when reacting to traffic lights (Charlton, 2009).

Charlton (2009) cited a wide range of studies which proved the following behavioural problems with cell-phone usage while driving:

- Impaired gap judgment
- Increased traffic violations
- Higher speeds around curves
- Impaired eye scanning
- Reduced rear-view mirror checking
- Impaired vehicle control
- Poor speed management

South Africa has initiated many campaigns to warn drivers against cell-phone use, but the warnings are nullified by the individual's perceived urgency to communicate. The urgency to communicate is weighed against the possibility of being fined for cell-phone usage. As much as the study will not dig deeper into tackling each problem, recommendations will provide an overview of what can be done. According to Charlton (2009), hands-free cell phones have proved as detrimental as hand-held ones. Charlton (2009) cited Matthews et al. (2003) who have proved conversing on the cell phone while driving, interferes with a driver's cognitive processing (Charlton, 2009).

Other studies also proved conversing while driving draws attention from visual inputs, resulting in poor road-risk assessment and reaction thereto. Charlton (2009) embarked on a study to investigate ways in which drivers conversing with passengers were able to avoid the harmful effects of cell phone conversations on driving performance. The findings revealed speeding drivers and drivers talking on cell phones often fail to take any action to reduce their speed as they approach a hazard, resulting in a higher accident exposure rate (Charlton, 2009).

Charlton (2009) cited McCartt and Geary (2004) who said, "Regardless of the wealth of information available about the risks associated with driving while conversing on the cell phone, many drivers continue to engage in the practice

and resist restrictions on their use". What also came out of Charlton (2009) was conversation modulation was an important contributor to safe driving, by drivers conversing with passengers. People conversing with a driver on the cell phone, could not see hazards a driver was exposed to, hence cell phone conversation put a lot of pressure on drivers" cognitive processing. Charlton (2009) found drivers conversing on cell phones did not react to close shaves on the road, and had no recollection of the hazard afterwards. Charlton then inferred these drivers could not detect hazards properly, unless they had a collision (Charlton, 2009).

The expectation is for drivers willingly to comply with driving regulations while not looking out for traffic officers. A positive attitude plays an important role in willing compliance. The study will then look at the extent to which negative attitude influences safety compliance. Research on driver attitude will then be explored in the following paragraph.

2.7 Driver Attitudes

McElroy, Rodriguez, Griffin, Wilson, (1995) from the United States of America, conducted a study on truck-driver attitudes in relation to the time drivers spend on the road and to a particular stage of a driver"s career. Time spent on the road was included because of its centrality to a job or career; and the time represents a trade-off between a driver"s work and home life.

According to McElroy et al. (1995) career stage has been shown to moderate a number of employee attitudes in areas such as job satisfaction, job involvement and organizational commitment. McElroy et al. (1995) also found job-related attitudes to be central to issues of driver turnover and attendance, hence understanding driver behaviour can provide organizations with information relevant to managing drivers" compliance. The study highlighted the growth in demand for drivers, and the need to incorporate women into the mainstream of truck driving (McElroy et al., 1995).

According to McElroy et al. (1995), managing driver attitudes is important, owing to consequences poor management can have for transporters. The consequences range from a compromise of public safety, late deliveries, and damages to reputation, and determination of insurance rates. McElroy et al. (1995) discussed determinants of work-related attitudes, singling out job satisfaction as the primary determinant. Truck driving is not advertised as one of the mainstream careers in South Africa; as a result people take up truck driving as a fall-back option. Lack of success in a person's mainstream career may breed resentment towards the alternative job (McElroy et al., 1995).

The following dependent variables of the study are worth mentioning: job satisfaction, job enlargement, equipment satisfaction, ability to influence management, interest in training, adequacy of benefits, and importance of recognition, supervisor perception and perceived attitude of company towards its employees. Having considered all the variables, the study revealed career stage has a significant impact on driver attitudes, especially those who have been professional drivers for more than ten years. Drivers become more interested in the possibility of job enlargement and training at a later stage of their career (McElroy et al., 1995).

This study will look at responses from different driver age groups, to establish whether a particular age group is worse than another in road safety regulation compliance. If that is the case, more emphasis must be placed on groups with greater attitude challenges.

McElroy (1995) study also revealed time spent on the road affected ninety percent of the drivers who participated in the study, with the ability to influence management coming out as strong determinants. Long-distance drivers showed more negative attitudes as a result of income benefits and advancement opportunities in relation to short-distance drivers. In relation to the driver-career stage vs. time spent on the road, the study revealed time spent on the road has a

lesser impact on driver attitude than a driver's career stage. The study also revealed major factors affecting driver attitude over drivers' career stage are not income related, but factors such as equipment, benefits perceived and advancement opportunities both inside and outside the company, as well as the driver's perception of the company's attitude towards its employees are income-related (McElroy et al., 1995).

Another finding by McElroy et al. (1995) was experienced drivers hold more negative attitudes than new drivers, that more attention is required in areas of great significance in order to manage drivers correctly. Griffin and Rodriguez were cited by McElroy et al. (1995) to be advocating a progressive driver-management system, where companies needed to look at managing senior drivers differently from junior drivers. There are opportunities to effectively manage driver attitudes, by focusing on areas of job enlargement, training, and management influence. Management influence would mean better ways of engaging drivers on issues that affect them (McElroy et al., 1995).

McElroy et al. (1995) study shows attitude does influence general driver behaviour; however, this study will explore details of such influence on compliance in particular (McElroy et al., 1995).

Golias and Karlaftis (2000) conducted a study on European drivers' attitude towards safety. The basis of the paper was that riskier road-user behaviour can be identified and properly targeted using more appropriate road safety campaigns than those used hitherto. The key objective of the paper was to determine relatively homogeneous driver groups, who share attitudes towards safety, in an effort to design and implement more effective safety campaigns. Golias et al. (2000) were of the opinion the challenge of transporters is to convince misbehaving drivers of the need to change their behaviour; hence the paper focuses on addressing the question of driver behaviour towards safety. According to Golias et al. (2000), driving habits such as attitude towards

speeding, reckless driving, use of seatbelts, drinking and driving are some of the key areas that require attention in order to understand driver behaviour (Golias et al., 2000).

The study by Golias et al. (2000) also indicates the element of attitude as an underlying factor in driver behaviour. What remains a question is the extent to which attitude plays a role, and the possibility of positively changing driver behaviour, by changing the attitude. This study will then explore this extent on truck drivers in particular (Golias et al., 2000).

The findings in Golias (2000) suggested speeding and any other reckless driver behaviour are related, which could be a reflection of a driver's risk-taking behaviour. Use of seatbelts and driving under the influence of alcohol also showed a strong relation, and the relation may be attributed to the driver's law-abiding nature. The study also revealed income, age, kilometers driven per annum and driving experience are important factors of driver behaviour (Golias et al., 2000).

Factors highlighted by Golias et al. (2000) suggested a value attached by different drivers' income and nature of work carried out. Where drivers feel undercompensated for the work they do, a negative attitude may arise. Drivers, who value their family time, may develop a negative attitude if engaged in long-distance work. In all the factors highlighted by Golias et al. (2000) attitude becomes a common denominator which affects behaviour on the road (Golias et al., 2000).

The attitude change will ultimately produce risky drivers as identified by Golias et al. (2000). Risky drivers pose a threat to other road users; hence the need to identify what can be done to counter risky behaviour. One of this study's objectives is to minimize the involvement of UFC truck drivers in road accidents, by addressing some of the problems identified (Golias et al., 2000).

Golias et al. (2000) mentioned while drivers tend to think similarly about drunk driving and use of seatbelts, these drivers tend to defer to the use of seatbelts when travelling at high speed. The authors conclude, therefore, drivers consider driving under the influence more of an illegal behaviour than reckless driving. Drivers seem to be more law-abiding as they grow older; drivers over the age of 55 years tend to drive more carefully than younger drivers, and women are more law abiding when comparison is done on the basis of gender (Golias et al., 2000).

The law-abiding nature of drivers over the age of 55 may be good, but this maturity comes late in a driver's career. The minimum age for a dangerous goods driver is 25 years old, and the general expectation is for a driver to mature after 5 years of driving. This study will look at various means of intensifying behaviour modification during the first five years of the driver's employment, so as to ensure a positive attitude by the time he reaches the age of 30 years. Such training focus will benefit the industry should it then receive 30 years of good driver performance.

Golias et al. (2000) concluded safety campaigns directed at changing drivers' behaviour should be directed more at younger male drivers. Young male drivers are the demographic group which can benefit the most in safety campaigns directed towards improving safety behaviour. The study by Golias et al. (2000) fell short of answering the question, "Why do drivers behave in a particular way?" Effectiveness of safety campaigns is subject to the extent to which the campaign addresses behavioural motivators (Golias et al., 2000).

In a study conducted by Ekos Research Associates (2005) on Canadian drivers, the following areas were explored: the overall perception of Canadian drivers on road safety; the extent to which drivers speed and why; knowledge and awareness of potential impacts of speeding and drivers' reaction to support for potential measures aimed at reducing speeding on Canadian roads. The study

revealed that Canadian drivers view speeding as dangerous and associate speeding with road fatalities, nevertheless they continue to speed owing to other underlying speeding motivators (Ekos Research Associates, 2005).

The Ekos Research Associates (2005) report also indicated the majority of drivers are of the view roads are becoming more dangerous, and speeding is the main cause of road fatalities. According to Ekos Research Associates (2005), forty seven percent of the time, accidents are caused by speeding, fourteen percent of the time by driver distractions, while impaired vision contributes to twenty seven percent of the time. Generally Canadians perceive themselves as lesser traffic offenders compared with people in other countries. Canadians believe while technically they might be speeding, they are not driving in a way that endangers other people or themselves. Interestingly, some of the Canadian drivers believe driving 20km/h below the speed limit is as dangerous as driving 20km/h above the speed limit (Ekos Research Associates, 2005).

Perceptions reflected by Canadian drivers are no different from those of South African drivers. Perceptions are also influenced by the attitude towards an object, hence the need to explore in detail the effects of attitude.

Two main reasons were highlighted by Ekos Research Associates (2005), as to why drivers speed: one is drivers believe speed limits are set too low, while some drivers simply enjoy speeding. The authors made reference to risk takers, drivers who intentionally defy authority. The rest are pragmatic speeders - drivers who have supposedly valid reasons for speeding. According to the study, law enforcement is the most effective way to curb speeding in the short term; Ekos researchers have suggested the need to focus on closing the gap between increased speed and the risk associated with it, as well as focusing on trying to change attitudes and behaviour of both risk takers and pragmatics (Ekos Research Associates, 2005).

A regression analysis was conducted on the frequency of speeding as a dependent variable, and reasons for speeding as an independent variable, in order to determine primary predictors of speeding. The results showed seven reasons for speeding are predictors of speeding behaviour:

- A belief speed limits are set too low.
- The fun of driving fast.
- Avoiding late arrival.
- A belief police will not stop one.
- Not knowing the speed limit.
- Time taking priority over speed.

The authors noted speed limits being set too low and the fun of driving fast are the most common predictors (Ekos Research Associates, 2005).

In conclusion, the authors affirmed the above statements saying Canadian drivers speed because they believe speed limits are set too low. The findings suggest speeding is more of a conscious decision than any other violation, hence the need to focus safety initiatives on changing beliefs and behaviour. The study indicates creating awareness for speed limits will not address the problem of risk takers (Ekos Research Associates, 2005).

In a study conducted by Clarke, Ward, Bartle and Truman (2005), on behalf of the London Department of Transport in the UK, traffic accidents while at work were the single greatest cause of employment-related fatality. UK truck drivers in particular seemed to be victims of fatigue and vehicle defects, while pedestrians or road workers cited aggression by vehicle drivers, which appeared to be an assertion of right over pedestrians on the road. An interesting finding in Clarke et al. (2005) was the admission by drivers to taking long journeys after a full day of driving at work. The UK drivers also admitted to conversing on cell phones and eating while driving (Clarke et al., 2005).

The factors presented by Clarke et al. (2005) indicate more than the lack of awareness of road rules, lack of compliance is an element of attitude. Drivers break the rules in full awareness (Clarke et al., 2005).

The study by Clarke et al. (2005) on UK drivers showed working drivers have higher levels of risk taking than other drivers on the road. In a study conducted by Guppy and Guppy (1995), working drivers viewed being on time for an appointment as more important than the risk factor of speeding. The importance of time was confirmed by Dimmer and Parker (1999) in what they referred to as the „under pressure” factor. Clarke et al. (2005) cited Gregersen (1999) improvements in safety, shown in most effective interventions occurred as a result of improving drivers’ risk awareness (Clarke et al., 2005).

The challenge of self- risk assessment remains a fundamental challenge for truck driver management. Even though drivers are exposed to the same training material, the extent to which they associate risk with an activity differs from driver to driver. The level of risk may be determined by the driver’s background. The question of individual risk assessment goes back to the objectives of this study and driver’s attitude towards safety compliance. Unless a driver can clearly identify with a risk involved in lack of compliance, the driver is not likely to comply.

2.8 Behavioural Safety Management

Du Plessis and Associates (2008) wrote an article titled, „A New Approach to Workplace Safety – Beyond Behavioural Based Safety” (BBS). The article affirms a positive contribution made by behavioural-based safety approach to improved safety at workplace, however, Du Plessis et al. (2008) felt the BBS approach does not address the root cause of driver behavioural problems, but focuses on the symptoms. According to Boyce (2005) as cited by Du Plessis et al. (2008), behavioural-based safety is concerned with human behaviour and safe

performance through proactive approaches to increase safety in the workplace (Du Plessis et al., 2008).

Du Plessis et al. (2008) are of the opinion every person brings his or her capabilities and behavioural baggage to work, and unless the behavioural motivators have been identified and removed, such an employee will continue to be a source of unsafe acts. Du Plessis et al. (2008) advocated a new concept called Motivational Based Safety (MBS). According to Du Plessis et al. (2008), the MBS concept is aimed at equipping the employee to make correct decisions and to take the appropriate actions required to prevent incidents. MBS allows the employee to act appropriately in the absence of incidents. The MBS is slightly different from the BBS which works on policies and procedures, which must be followed if things go wrong (Du Plessis et al., 2008).

The concept of MBS starts in the facilitation of the process of understanding between supervisors and their workforce in terms of their frame of reference. The process is designed to reduce miscommunication and mistrust between the two parties. Du Plessis et al. (2008) said, “attempting to change an organization, or management style without changing habits and behavioural patterns of individuals, is analogous to attempting to improve one’s golf game before developing the muscles that make better strokes possible” (Du Plessis et al., 2008).

Du Plessis et al. (2008) criticized the BBS approach, saying it focuses only on documented safety behaviour, while the MBS aims to empower the individual to make the right choices in situations where documented behaviour doesn’t exist. According to Du Plessis et al. (2008), any programme aimed exclusively at improving safety will come short of its expectations; such a system is nothing more than an employee-driven continuous improvement process (Du Plessis et al., 2008).

Du Plessis et al. (2008) went on to stress the importance of positive feedback and other consequences as a means of shaping performance. “Properly designed and used, performance feedback will produce learning, and positive performance changes – often dramatically,” Du Plessis et al. (2008). The BBS has been criticized for focusing on behaviour. According to Du Plessis et al. (2008), behaviour is only a manifestation of an individual’s self-esteem and attitude, making behaviour more of a symptom than a root cause. “Attitude is more important than intelligence” (Du Plessis et al., 2008). Individual levels of self-actualization and learning readiness should become a priority if companies are to be effective in implementing the MBS system. In order to achieve the desired MBS results, a researcher must first identify current levels of self-actualization, training out negative behaviours, training in positive motivators, and reinforcing through individualized recognition (Du Plessis et al., 2008).

According to Du Plessis et al. (2008) workplace behaviour is driven by group attitude or organizational culture, which is the sum total of motivational drivers and attitudes of individuals who make up a group. Du Plessis et al. (2008) also speak of unwritten ground rules, adopted from Australian author Steve Simpson. Unwritten ground rules are ways in which people do things, over and above company procedures; according to Du Plessis et al. (2008) unwritten ground rules are not always in line with company procedures. The authors then suggest unwritten ground rules be clearly identified and understood, with the objective of creating a desired set of unwritten ground rules (Du Plessis et al., 2008).

Murray and Whiteing (1995) conducted a study on how organizations can reduce vehicle accidents. According to Murray et al. (1995) the attitude the insurance company will sort the problem out, is no longer working. Insurance rates are affected by the risk associated with the clients, hence the need for a more proactive approach to accident reduction. According to Murray et al. (1995), “the part of the vehicle that causes most accidents is the nut that holds the steering

wheel”, given ninety five percent of road accidents are caused by the human factor (Murray et al., 1995).

The paper by Murray et al. (1995) refers to a CCSM methodology to accident reduction. CCSM stands for:

- **Cost analysis**
- **Cause analysis**
- **System and Solution for accident reduction**
- **Monitoring**

Murray et al. (1995) suggest an accident-reduction programme based on the following items:

1. Driver age policy, (more than half of road accidents in the UK involve drivers between the ages of 17 and 21).
2. Vehicle speeding policy, (evidence suggests Germany has been able to reduce road accidents by fifty five percent through traffic calming and speed reduction).
3. Defensive driver training, (which teaches unselfish driving, constantly anticipating and remaining alert to all potential hazards).
4. Substance abuse by drivers, (in 1992, 600 UK drivers were involved in alcohol-related road accidents).
5. A systematic recruitment strategy, (to allow for data analysis and trend analysis of driver behaviour).
6. Personality and safe driver tests, (Shaw and Sichel were cited by Murray to have conducted a South African study on bus drivers, concluding lack of domestic and emotional stability were identified as accident-related personal problems).
7. Implementing driver incentives for good safety records, (a small number of drivers are responsible for the majority of accidents).
8. Improving vehicle specifications and maintenance plans.
9. Setting up accident league tables.

10. Review of driving speeds and resting hours.

11. Working with insurers on driver training.

12. Accident mapping and analysis.

According to Murray et al. (1995) a good behaviour management programme should encompass all the items listed above, and if all elements are properly managed, should produce the desired results (Murray et al., 1995).

Another study was conducted by Monash University (1991) on Australian drivers" and the objectives were as follows:

- To collect information about driving behaviours and safety-related attitudes.
- To compare behaviours and attitudes of drivers who had been involved in road accidents with those who had not been involved.
- To provide information about how to communicate effectively with target groups (Monash University, 1991).

Monash University (1991) produced the following findings:

- That drivers who had been involved in road accidents had poor skills in dealing with fatigue.
- That drivers involved in accidents were not effectively checking the trucks for defects.
- That these drivers tended to share similar attitudes on speed and attitude with other road users.
- That kilometre-driven incentives contribute to drivers" being involved in road accidents.
- That twenty five percent of drivers who participated in research took tablets to stay awake.
- That forty percent of drivers drink after working hours.

The above information allowed the authors to arrive at the following conclusions:

- Inexperienced drivers are more likely to be involved in road accidents compared with experienced drivers.
- Fifty percent of drivers use seatbelts at least ninety percent of the time.
- Most drivers are not planning to change jobs, at least in the next five years.
- Drivers feel tighter delivery schedules, loading delays and traffic congestion are key contributors to road accidents.

In an attempt to effectively manage driver behaviour, information technology has been employed by a wide range of companies (Monash University, 1991).

2.9 Behavioural management through Information Technology

Vanderschuren (2008) wrote a paper on, “safety improvements through intelligent transport systems: a South African case study based on microscopic simulation modeling”. The paper was aimed at improving road-safety compliance in South Africa. The paper focused on safety consequences of road traffic crashes, injuries, fatalities and whether negative consequences do effect positive change in driver behaviour. Vanderschuren (2008) suggested South Africa should focus on performance indicators such as risk exposure, speed and the wearing of personal protection in the process of improving driver compliance. Performance indicators mentioned by Vanderschuren (2008) are manifestations of bad behaviour; hence the need to address drivers about bad behaviour (Vanderschuren, 2008).

The author went on to quote an international road freight report of 2006, stating South Africa has the highest number of people killed on the road per 100 000 people in the world. The statistics on the road freight report indicated the caliber of drivers found on South African roads is unacceptable, given South Africa has a superior road infrastructure and design. Vanderschuren (2008) also quoted

Botha and de Walt, (2006) stating other external factors such as economic growth, population growth, migration and active vehicle fleet to be influential in the growth of fatalities on South African roads (Vanderschuren, 2008).

All the issues raised by Vanderschuren (2008) are of great concern, but do not address the question of why people do not comply with safety initiatives, in light of all the economic and population growth challenges (Vanderschuren, 2008).

Vanderschuren (2008), did confirm most accidents are triggered by human error, and suggested three ways to reduce human error, namely: quality of drivers, knowledge of road users and engineering techniques. Vanderschuren (2008) said companies need to ensure quality driving is subscribed to and only the best of drivers are put on the road. The government should assist in improving the knowledge of road users and employing engineering techniques to compensate for human limitations.

Other researchers use the term human factor to refer to human error. The two phrases refer to the involvement of a person in a road accident. In support of engineering techniques to compensate for human errors, Vanderschuren (2008) makes reference to a study on Intelligent Transport Systems (ITS) conducted by Mkhize and Thomas (2005) at Ethekewini Metro in South Africa. According to Vanderschuren (2008), the use of Intelligent Transport Systems reduced speeding by forty five percent in the Ethekewini metropolitan area (Vanderschuren, 2008).

The choice of technology to be used in dealing with behavioural issues needs to be carefully analysed, because speed cameras in particular have come short of effectively improving speed compliance on South African roads. Drivers tend to slow down when approaching speeding camera locations, continuing to speed afterwards.

The latest technology employed by the South African Department of Transport uses average speed between two points to measure the speed of a vehicle. Vehicles found to have travelled at an average speed higher than the allowable speed limit, are issued with a fine, however, the South African government still has the challenge of recovering fines from traffic offenders. In some cases traffic offenders are expected to pay fines in areas where a traffic offence was committed, making the payment process difficult for motorists who do not reside in the area where the offence was committed.

The difficulty of paying fines and the challenge for the South African government to recover the fines also reinforces lack of road safety compliance by South African drivers. According to the PIARC (2004) report as cited by Mkhize et al. (2005), the following technology systems have been effective in producing the desired result in road safety compliance: adaptive speed control, collision detection and avoidance, enhanced vehicle systems and cooperative vehicle highway systems (Mkhize et al., 2005).

Vanderschuren (2008) identified wide behavioural differences between South African drivers and UK drivers. Behaviour of South African drivers is less uniform compared with UK drivers, making the UK study on intelligent transport systems less applicable to South Africa. Another critical point raised by Vanderschuren (2008) was the lack of pilot project funding by the South African government, and the limited potential to model safety implications.

Vanderschuren (2008) went on to conclude there is a potential to improve road safety by implementing intelligent transport system measures in developed countries, based on the study conducted on South African roads (Vanderschuren, 2008).

2.10 Summary

The literature reviewed has clearly demonstrated what other researchers have focused on. The literature has also discussed theories and illustrated models developed. Previous researchers have focused on consequence management, hence the need to further explore driver attitudes towards safety compliance and various means of reducing truck-related accidents on South African roads. Literature review reflects a high level of non-compliance, not only in South Africa, but all over the world. Statistics from RTMC indicate road accidents are unacceptably high in South Africa, and more needs to be done to address compliance issues on the roads. The following chapter will explore research techniques and instruments that can be employed in this study. Scientific techniques will also be applied to ensure credibility

CHAPTER THREE

Research Methodology

3.1 Introduction

The previous chapter provided an overview of available literature in the area of driver behaviour, attitude and a general view of driver behaviour on South African roads. The literature reviewed showed truck drivers have internalized values and beliefs that motivate the way they behave on the road. This chapter will describe the methodology of research adopted for this study. A simple administrative approach was used, that allows for effective participation and response of participants. This chapter will provide more detail in terms of how the study will be conducted, and the nature of analysis to be employed. This chapter will also detail the means of data collection, construction of the research instrument, as well as techniques for analysis of the data collected.

3.2 Aim of the Study

This study is aimed at exploring the impact of negative attitudes towards safety compliance, on Unitrans Fuel and Chemical (UFC) drivers in the KwaZulu-Natal region.

3.3 Participants and Location of the Study

The study was conducted on UFC drivers at the Durban Clairwood depot. UFC has transport operations around sub-Saharan Africa, however, there are three main depots strategically located in the country; one in Durban, one in Johannesburg, and one in Cape Town. The Durban Clairwood depot is one of these three depots, all the depots operating similarly.

As a road transport business, Unitrans drivers are the heart of the Unitrans Fuel and Chemical business. The attitude of non-compliance is evident both within and outside of UFC; hence the need to explore driver attitude and the impact of this on safety compliance. Internal audits continue to reveal certain procedures

such as vehicle pre-trip checks are not carried out correctly, and the South African Department of Transport has statistics to prove the extent of non-compliance on the roads.

3.4 Research Approach

Business research can be classified into three categories, namely exploratory research, descriptive research and causal research. Zikmund (2000) described the three types of business research as follows:

- 3.3.1 Exploratory research: a study conducted to initially clarify and define the nature of a problem. In the case of this study, exploratory research will seek to establish whether attitude has an influence on lack of safety compliance by drivers.
- 3.3.2 Causal research: a study conducted to identify cause and effect relationships amongst variables, where the research problem has already been identified. In this study, the approach could be used to identify the cause and effect factors of attitude and behaviour in a case where the relationship between attitude and behaviour has been established, but clarity is required as to which factor causes the other.
- 3.3.3 Descriptive research: as a study designed to describe characteristics of a population or a phenomenon. According to Zikmund (2000), descriptive research is mostly used to find reasons for employee behaviour, which is in line with this study (Zikmund, 2000:50).

Hair, Babin, Money and Samouel (2003), state descriptive cross-sectional studies are appropriate in exploring attitudes and behaviour. According to Hair et al. (2003), contrary to cross-functional studies, longitudinal studies are more appropriate for trending and collection of data over time. This study is a once-off and has no objective of analysing the population over a period of time (Hair et al., 2003:61).

According to Bryman and Bell (2007), a cross-sectional design entails the collection of data on more than one case, at a single point in time, in order to gain quantifiable data in connection with two or more variables, which are then examined to detect patterns of association. In the study undertaken, the word „case“ from Bryman and Bell’s definition will refer to truck drivers; variability between drivers will be analysed. This study will be both quantitative and cross-sectional in nature (Bryman & Bell, 2007:55).

In terms of time, also referred to in the definition of cross-functionality by Bryman and Bell (2007), the expectation is participants will answer all the questions at a single session, unlike an experimental research where answers may be extracted at various stages of the experiment. The data will then be coded in order to create a benchmark for quantifying responses. The purpose of this design is to allow for clear analysis of variability between the different elements of the research instrument (Bryman & Bell, 2007:55).

According to Bryman and Bell (2007), quantitative research may be construed as a research strategy that emphasizes quantification in the collection and analysis of data. Quantitative techniques entail a deductive approach to the relationship between theory and research, in which the accent is placed on the testing of a theory. The quantitative approach incorporates the practices and norms of the natural scientific model in general; and of positivism in particular. The quantitative approach also embodies the view of social reality as an external, objective reality (Bryman & Bell, 2007:28).

The researcher is of the opinion the objectives of this study will be better achieved using quantitative techniques. According to Bryman and Bell (2007), measurement is central to quantitative research, making quantitative techniques most appropriate for this study. The preoccupation of quantitative research with measurement is based on the following premises:

- Metrics allows for a better description of differences between people, in relation to particular characteristics.
- Metrics provides a consistent device for making such distinctions. Consistency is the ability of the research instrument to produce consistent results irrespective of time or administrator.
- Metrics provides the basis for precise estimates of the degree of the relationship between concepts (Bryman & Bell, 2007:158).

3.5 Sampling

According to Zikmund (2000), sampling techniques may be classified into two main categories - probability and non-probability sampling. Probability sampling refers to techniques where every member of the target population will have a non-zero probability of being selected as part of a sample. Non-probability sampling refers to techniques where the probability of any member of the target population being selected as part of a sample is unknown (Zikmund, 2000:350).

According to Bryman and Bell (2007), “the importance of probability sampling in a social survey research is that it makes it possible to make inferences from the information about a random sample to the population from which it is selected”. The authors went on to say, findings derived from a sample may be generalized to the population from which the sample was drawn (Bryman & Bell 2007:192).

With some of UFC drivers on long-distance business, the use of probability techniques was a challenge. Convenient sampling, which forms part of non-probability techniques, was used. The application of convenient sampling contributed to a quicker turnaround of the research instrument than would probability sampling have done. Drivers were approached about the study while arriving at the depot for duty, or after completing a particular trip, since all truck keys are stored and managed at the main gate by security personnel. The researcher positioned himself at the main gate, where all drivers had to report

before or after a particular trip. Any driver, irrespective of the nature of his operation, was approached and an explanation of the purpose of the survey was provided. The drivers were given the option to complete the questionnaire on the spot or to complete it in their own time.

The use of probability techniques has some advantages where the target population is large and divided according to categories. In this study, the target population may only differ in age group, while remaining in the same category of employee. According to Bryman and Bell (2007), non-probability techniques such as quota sampling are more appropriate for qualitative research, while snowball sampling may comprise research ethics for getting the same message to all participants (Bryman and Bell, 2007:200).

3.4.5 Administration of the Questionnaire

The questionnaires were administered by the researcher, in various areas where drivers were identified to have some time on their hands.

- At the company's main gate, where drivers collect truck keys before going on a trip, or where they return truck keys after a trip.
- While drivers were waiting to fill up with diesel at the Clairwood depot after a trip.
- While drivers were waiting at the canteen for a defective truck to be repaired.

In light of disadvantages of Self-Completion Questionnaires (SCQ), reported by Bryman and Bell (2007), the following counter-measures were implemented by the researcher:

Table 3.1 Measures to address self-completion questionnaires

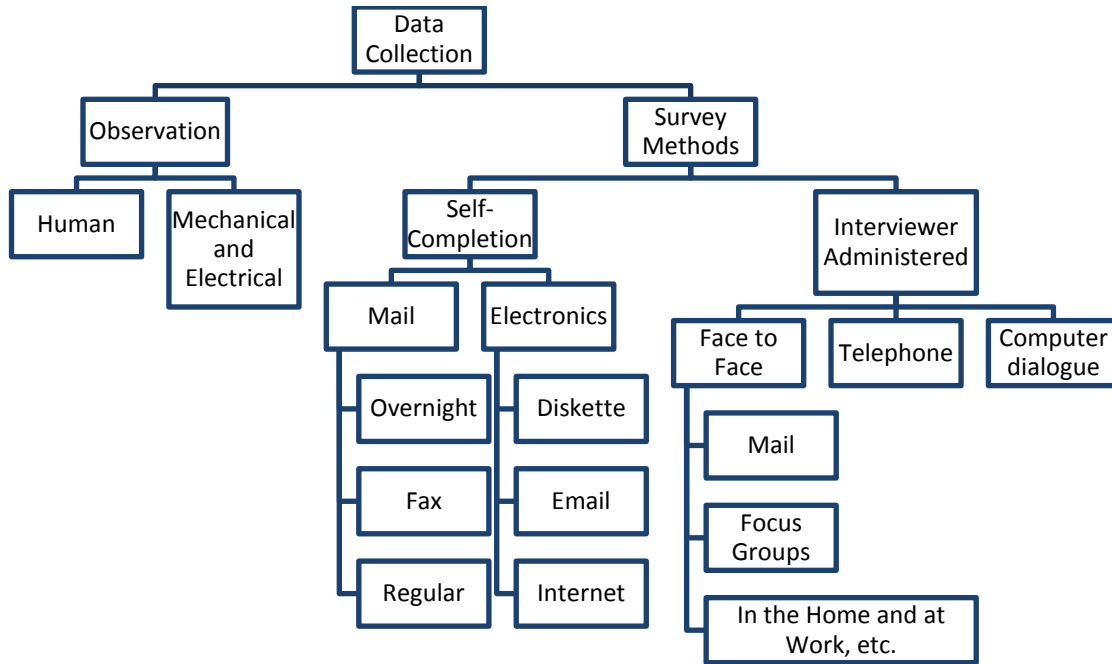
Disadvantages of SCQs	Counter-measure to be used by the researcher
- nobody to help the respondent in case of difficulty	- questionnaires were explained to respondents, and an option provided to complete the questionnaire in presence of researcher
- too many questions, salient to respondents	- questions are simple and short
- respondent do not want to write too much	- a Likert scale was used, where respondents could simply circle the relevant response
- reading the whole questionnaire before answering.	- the researcher assisted in completion of the questionnaire where required.
- not knowing who answered the questionnaire.	- the researcher works in the depot where the sample was drawn.
- questionnaire too long	- the questionnaire had 31 questions.
- researcher not aware of the environment	- the researcher works in the same region as the respondents.
- questionnaire not appropriate for other respondents.	- the questionnaire is applicable to all drivers, and was explained in isiZulu where required.
- incomplete questionnaires handed in	- questionnaires were checked before being accepted.
- lower response rate	- drivers going on longer trips were used as a last option.

Source: Adapted from Bryman and Bell (2007:242)

3.6 Data Collection

Hair et al. (2003), illustrated data collection methods as reflected Figure 3.1.

Figure 3.1 Data Collection Approaches



Source: Adapted from Hair, Babin, Money, Samouel (2003).

Figure 3.1 illustrates an abundance of methods that may be employed in data collection. A wider range of issues had been considered in selecting an appropriate data-collection method for this study. Some of the issues considered included the level of driver education, insufficient time for driver to sit and complete a questionnaire or interview, and number of documents a driver uses as part of his daily duties. Industry norm for a driver's level of education used to be grade 10, since changed to grade 12 (Hair et al., 2003).

Observation methods of data collection are inappropriate for this study, because the study focused on the invisible elements of human behaviour.

Data were collected using a self-completion questionnaire. Statistical analysis was carried out to assess the extent to which attitude-related questions relate to behaviour questions. In line with research terminology, questions on the

questionnaire are referred to as variables, and the questionnaire as a research instrument. This study sought to understand the issues of attitude amongst Unitrans Fuel and Chemical drivers, assessing the extent to which attitude influences non-compliance at the KwaZulu-Natal region of Unitrans Fuel and Chemical (Hair et al. 2003:125).

3.7 Development of the Instrument

The research instrument in the study undertaken refers to the self-completion questionnaire. According to Zikmund (2000), questionnaires need to be relevant and accurate. The accuracy of a questionnaire refers to reliability and validity of information collected, while relevance refers to the necessity of information collected. In line with a quantitative approach to the study, fixed alternative questions were used, rather than open-ended questions. Respondents were given a standard set of possible answers to choose from, which allows for better coding of data. Open-ended questions are more suited for exploratory research (Zikmund, 2000:309).

In the process of developing the research instrument, the following guidelines were adapted from Hair et al. (2003):

- that research questions be in line with research objectives.
- that the language used be understandable to the target population.
- that the questions be short and simple.
- that the questions be relevant for the sampling approach.
- that the research concept be clearly and easily understood by respondents.
- that the instrument can be completed in the absence of the researcher.

(Hair et al., 2000:185).

The instrument was divided into two sections, with the first four questions designed to provide a basic profile of the respondents. The profile questions consisted of gender, age, truck-driving experience and race. A detailed profile

including items such as level of education, family responsibility, and resident geographic location was intentionally avoided, allowing the research instrument to be user friendly. Based on the researcher's knowledge of the target population, the majority of experienced truck drivers do not have a matric certificate; level of education is not something drivers wish to discuss. Most South African truck drivers have taken up driving as a fall-back career, in light of financial challenges.

The rest of the variables (questions) are designed to assess the respondents' attitudes towards safety initiatives, management and the company in general. Most variables were in the form of statements, where the respondent is expected to express the extent to which he agreed or disagreed with the statement. The questionnaire was adapted from a driver-behaviour questionnaire. DBQ was designed specifically to assess and measure driver behaviour and attitudes (Ozkan et al., 2006).

According to Zikmund (2000), measurement techniques of attitude can either be in ranking or rating format. Rating is the most common method used for business research on attitude. A wide range of attitude rating scales are available; the following were listed by Zikmund (2000).

- Simple attitude scaling
- Category scaling
- Summated rating: The Likert Scale
- Semantic differential
- Numerical scales

The Likert scale has been chosen for its ease of construction and application. The Likert scale is mostly commonly used for this type of study, and is user-friendly for the target population (Zikmund, 2000:291).

Pretesting and Validation

Pre-testing was conducted at the beginning of the survey. The first five questionnaires were administered by the researcher, and detailed explanations provided to respondents. The objective of this first interaction was to obtain feedback in terms of the ease of questionnaire completion by respondents, and the extent to which the researcher's guidance was necessary.

Ideally, questionnaires should be completed on the spot, in order to reduce turnaround time, to minimize mistakes and to make use of interpretation where necessary. It is important a research questionnaire be checked for reliability and validity before a survey is undertaken. Bryman and Bell, (2007) explained reliability as the consistency of an instrument to measure the required concept (Bryman and Bell, 2007:162).

3.8 Analysis of the Data

According to Hair et al. (2003), data collected may be analysed using either descriptive or inferential statistics. Inferential statistics are used to draw conclusions about a population from a sample, while descriptive statistics describe and characterize a sample being examined. Statistical techniques are further grouped into parametric and non-parametric statistics. The research instrument applied a Likert scale, which falls under metric scales. The measurement tool employed by the research instrument requires the use of non-parametric statistics. According to Hair et al. (2003), metric scales are appropriate for quantitative research (Hair et al. 2003:252).

3.8.1 Distribution measurement

The distribution of data values was analysed using the mean, median and mode. A mean was used to show the averages in terms of respondents, which could be either the average age or experience group. A median on the other hand was used to reflect a midpoint of respondents, and the mode was used to show the centre of respondents, minus effect values.

3.8.2 Dispersion measurement

Dispersion of data will be measured using a calculation of standard deviation, in order to check the number of variations around the mean. The variances will allow for analysis of contrasting patterns in comparable data. Range is another measure of dispersion; however this will not be used owing to its tendency to be affected by data values (Bryman and Bell, 2007:359).

Data were analysed both individually (univariate analysis), and simultaneously (bivariate analysis). The following non-parametric techniques were applied:

- Tabulation – to reflect the number of responses in different categories, in relation to a particular variable. The number of respondents was expressed in the form of a percentage of the total responses. Based on the frequency tables, relationships between categories will be explored.
- Cross-tabulation – was applied in order to compare attitudes between different age groups. Comparison will also be drawn between junior and more experienced drivers within Unitrans.
- Contingency tables – was used to carry out simultaneous analysis of relationships and patterns of association between variables.
- Chi – square - this test was applied to the contingency table, for the purpose of checking confidence levels with regard to stated relationships. According to Pallant (2007), the chi-square test compares observed frequencies or proportions of cases that occur in each of the categories, with the values that would be expected if there were no association between the two variables being observed (Pallant, 2007:214).
- Spearman's rho (ρ) – according to Bryman and Bell (2007), this particular technique is designed for analysis of ordinary variables (Bryman and Bell, 2007:357).

3.9 Summary

This chapter provided an insight into the types of statistical techniques this study applied in the analysis of data. The design of the study was discussed, with reference to how data were collected and analysed. Available techniques for data analysis were explored, and reasons for the researcher's choice of particular quantitative techniques were provided. Key areas of the chapter include construction of the measuring instrument, reliability and validity of the instrument, and measurement of variability between groups.

The next chapter will present results of data analysed, based on statistics mentioned in this chapter. The following chapter will include a detailed discussion of data presented. Discussion will be undertaken in Chapter Four of the research.

CHAPTER FOUR

Presentation and Discussion of Results

4.1 Introduction

This chapter will present results of data analysis collected using a Likert Scale. Data presented will be discussed, so as to provide meaning and context to this study. Descriptive statistics have been applied, as mentioned in Chapter Three, with data analysed and compared between individual variables and different categories of variables. Because the Likert Scale instrument was used to collect data, only bar charts have been used to illustrate some of the statistics presented. The presentation of data will clearly reflect the extent to which the objectives of the study have been achieved.

4.2 Instrument Reliability Test

Table 4.1 Instrument Reliability Test

Cronbach's Alpha	No of items
0.536	31

Table 4.1 reflects the reliability or internal consistency of a Likert scale, using the Cronbach's Alpha technique. According to Pallant (2007), the Cronbach's alpha coefficient of a reliable scale should be above 0.7. Pallant also stated the Cronbach's alpha value is sensitive to the number of items in a scale, and can drop to about 0.5 for scales with fewer items (Pallant, 2007:95). The researcher is satisfied with Cronbach's alpha value of 0.536, in light of the number of items (31) on the scale. The Likert scale is a scale commonly used to measure attitudes in business research.

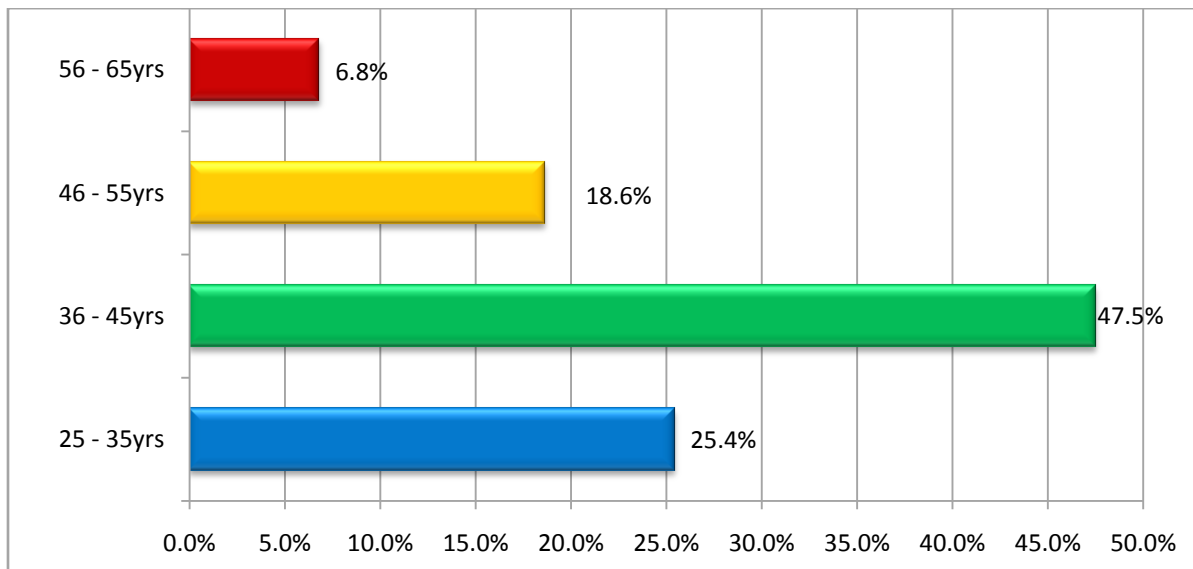
4.3 Categories of Respondents

Table 4.2 Respondents by Gender (Q.1)

	Frequency	%
Male	59	100

Table 4.2 indicates only males participated in the study. The gender of respondents is no reflection on Unitrans Fuel and Chemical's position on female truck drivers. The nature of UFC business carried out in the Clairwood Depot has proved difficult for female drivers to pursue, owing to time spent away from home and general risk exposure to the male-dominated environment in truck stops around South Africa.

Figure 4.1 Respondents by age groups (Q.2)



Age profiles reflected on Figure 4.1 can safely be inferred as profiles of Unitrans Fuels and Chemical's (KZN) operation. The age categories in Figure 4.1 reflect the minimum age until retirement age. UFC has taken a strategic position to build a pool of drivers with more years to give to the organization. Twenty eight percent of the sample has an average of 20 years to work before retirement, and

the smallest group is the one closest to retirement. Owing to the demanding nature of long-distance driving, drivers tend to take early retirement, hence the six point eight percent of senior drivers reflected in Figure 4.1.

Figure 4.2 Respondents by driving experience groups (Q.4)

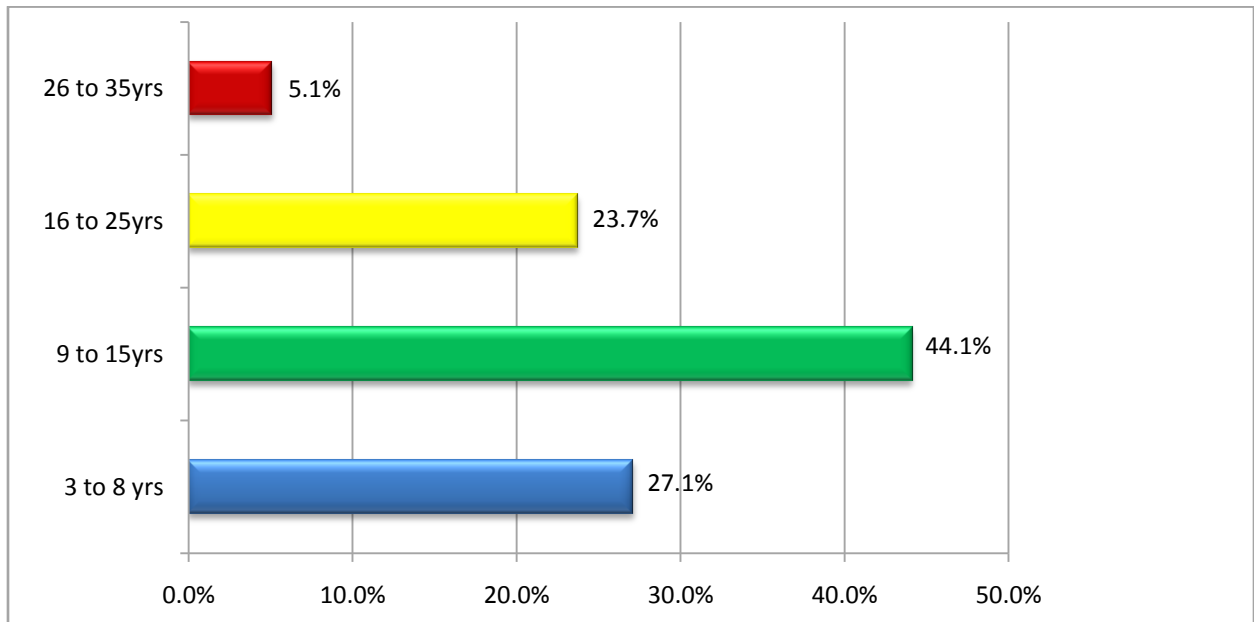
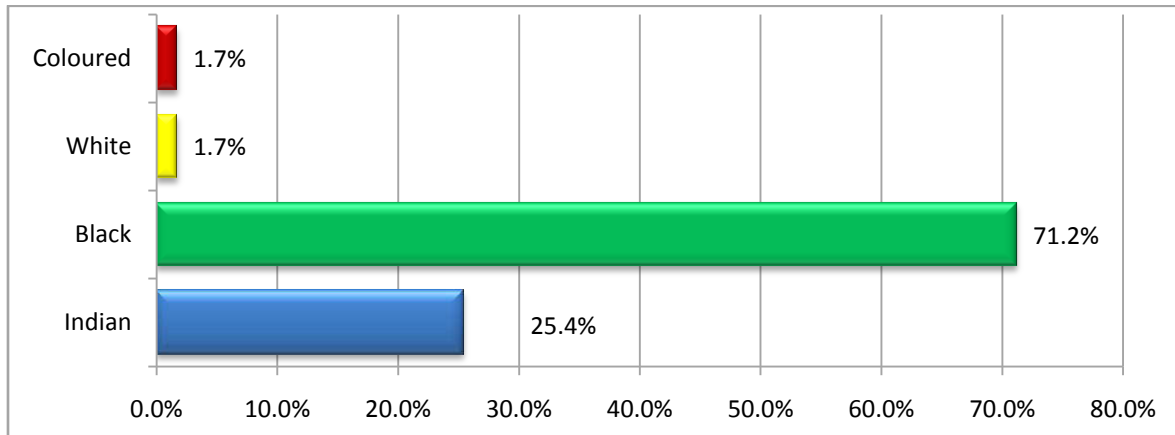


Figure 4.2 reflects driving experience within the sample. The driving experience reflected is closely related to the age groups. The majority of drivers reflected in the sample have more than 9 years experience of driving, a critical component in the life of a transport business such as UFC. The driving experience reflected in Figure 4.2 includes experience outside UFC. UFC transports dangerous goods - drivers are expected to be familiar with ordinary truck-tractor combinations before handling tankers containing dangerous goods. The category has been created to explore attitude differences amongst both less, and more experienced drivers.

Figure 4.3 Respondents by race (Q.4)



The race profiles in Figure 4.3 reflect the KwaZulu-Natal population of Unitrans Fuel and Chemical drivers. The researcher can also state the race profiles are a reflection of drivers available within the KwaZulu-Natal province. The relevance of the racial category is to explore attitude differences between different race groups. Later in the chapter, details of analysis will be presented in the form of cross tabulation.

4.4 Univariate Attitude Tabulations

Figure 4.4 Importance of Road safety initiatives (Q.5)

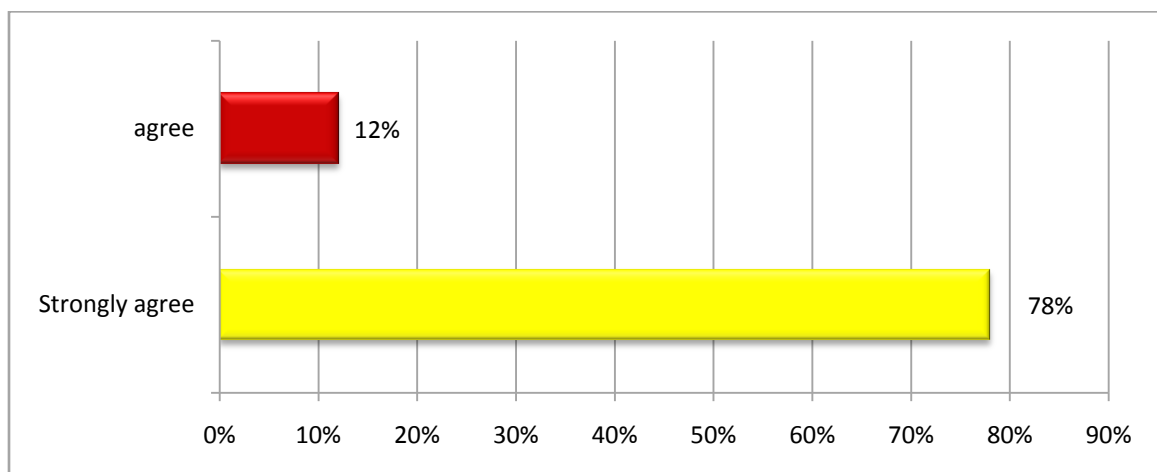


Figure 4.4 shows ninety eight percent of drivers agree road safety initiatives are important. None of the sampled drivers are of the view road safety initiatives are not important. Contrary to the positive belief in Figure 4.4, further results of analysis will reveal some drivers will not heed the call of road safety initiatives. If drivers believe road safety initiatives are important, but they still do not follow procedures, then a negative attitude towards an action required is the stumbling block.

Figure 4.5 Respondents by benefits from Road Safety Initiatives (Q.6)

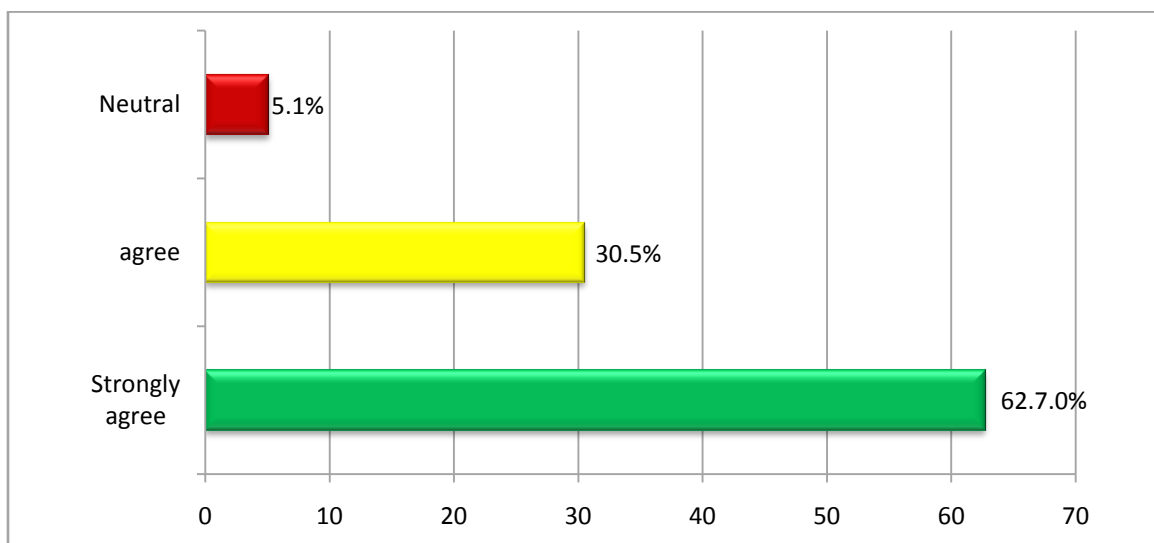


Figure 4.5 shows ninety three percent of drivers have benefited from road safety initiatives. However, levels of non-compliance remain high. An area of concern is the five point one percent of respondents that feel road safety initiatives have not added any value to their lives. Such respondents will completely ignore a campaign because of lack of value attached to safety initiatives in general. Besides the five point one percent of respondents in question, the balance of respondents do find value in road safety initiatives; whether respondents do comply remains a question to be addressed on the section with cross-tabulations.

Figure 4.6 Respondents by effectiveness of road safety initiatives (Q.7)

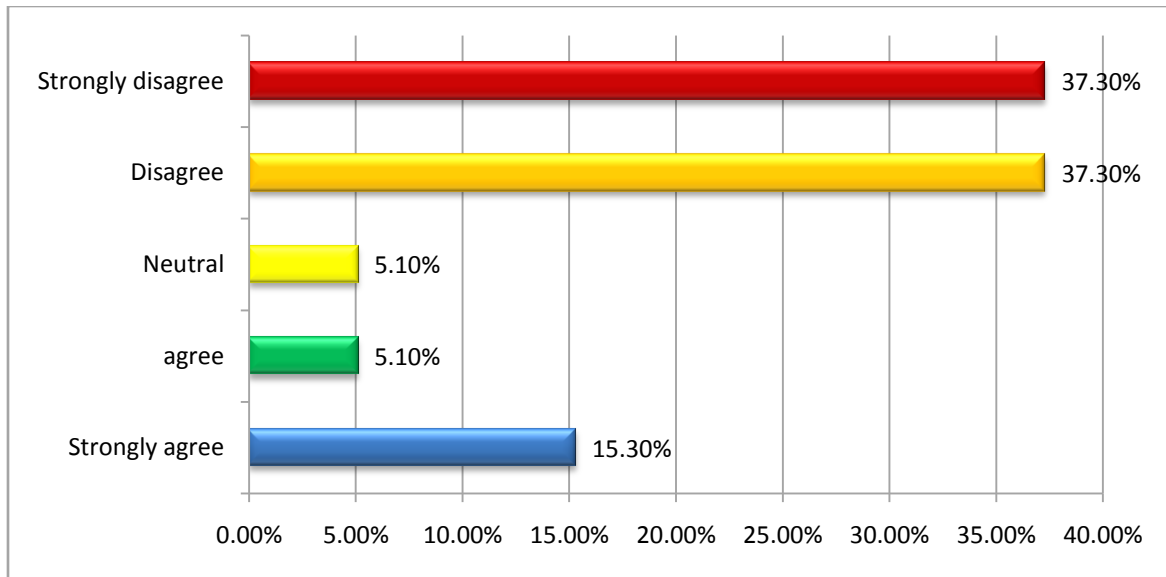


Figure 4.6 shows twenty point four percent of respondents strongly agree and agree with the statement, which is a very high percentage of respondents with a negative attitude towards road safety initiatives. The attitude towards road safety is the reason why drivers ignore most traffic regulations. The researcher is of the view the attitude displayed by respondents as shown in Figure 4.6 reflects lack of understanding of the concept of safety in general. Level of education may have an impact on the conceptual understanding of respondents, and negative attitude could be a contributing factor to road accidents.

Figure 4.7 Respondents by perception to safety interventions (Q.8)

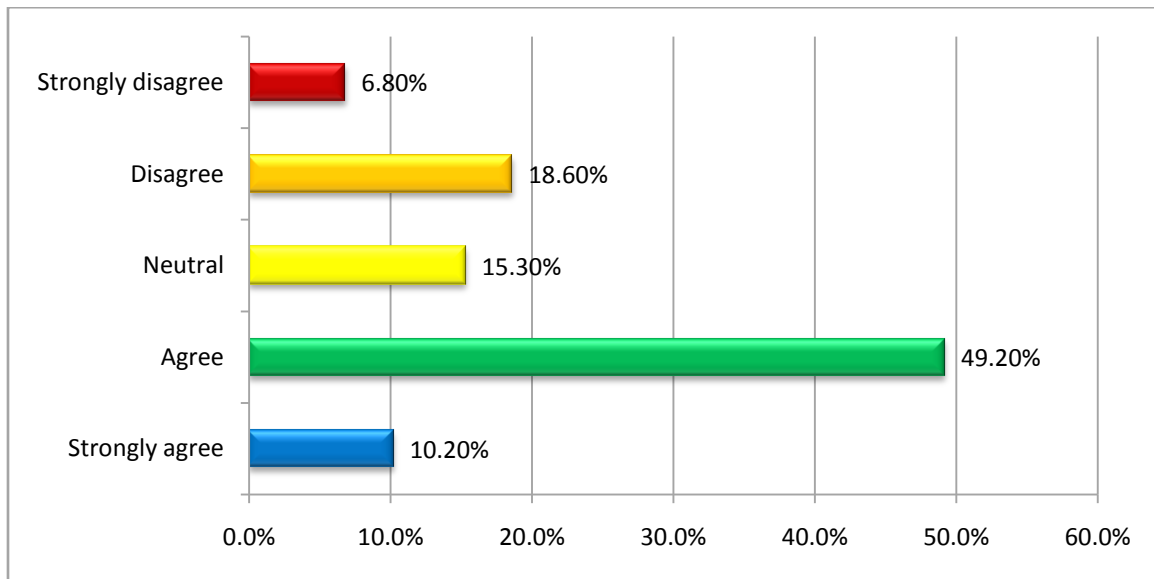
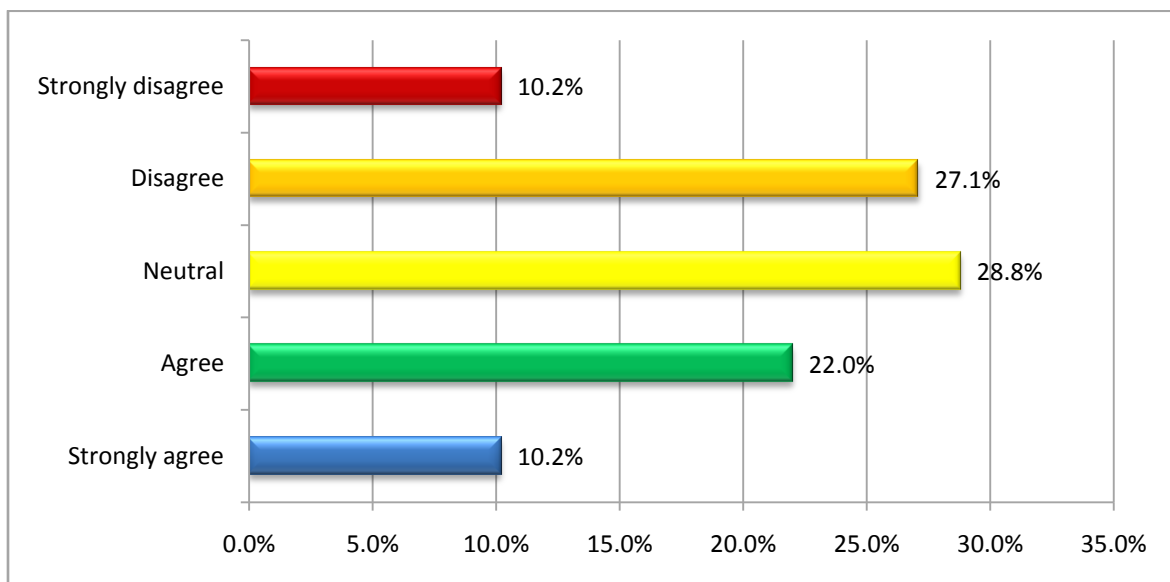


Figure 4.7 indicates forty nine point two percent of respondents feel not all safety initiatives are safe, meaning drivers question safety initiatives and decide whether or not to comply. Responses as shown in Figure 4.7 indicate almost forty one percent of respondents are not convinced safety initiatives are achieving the desired outcomes.

Figure 4.8 Respondents by perception car drivers causing accidents (Q.9)



The question on Figure 4.8 was intended to assess the extent to which truck drivers shift the blame for road accidents to small-vehicle drivers. The bar chart reflects a fair distribution of opinions by respondents, with most respondents being neutral on the question. Those who remain neutral could be of the opinion accidents can be caused by either party. An opinion one category of driver is the cause of truck-related accidents may be biased. The relevance of the question is drivers, who believe truck drivers in general are not contributing to road accidents, may have a negative attitude towards small-vehicle drivers. According to Figure 4.8, thirty point two percent of respondents believe truck drivers are not to blame for truck-related accidents.

Figure 4.9 Respondents in relation to road traffic rules saving lives (Q.10)

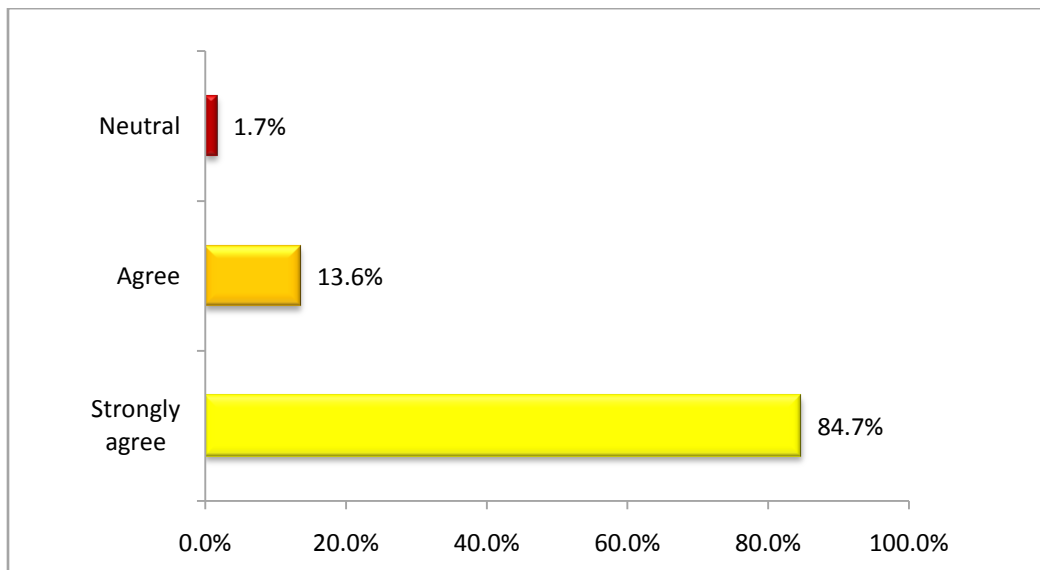
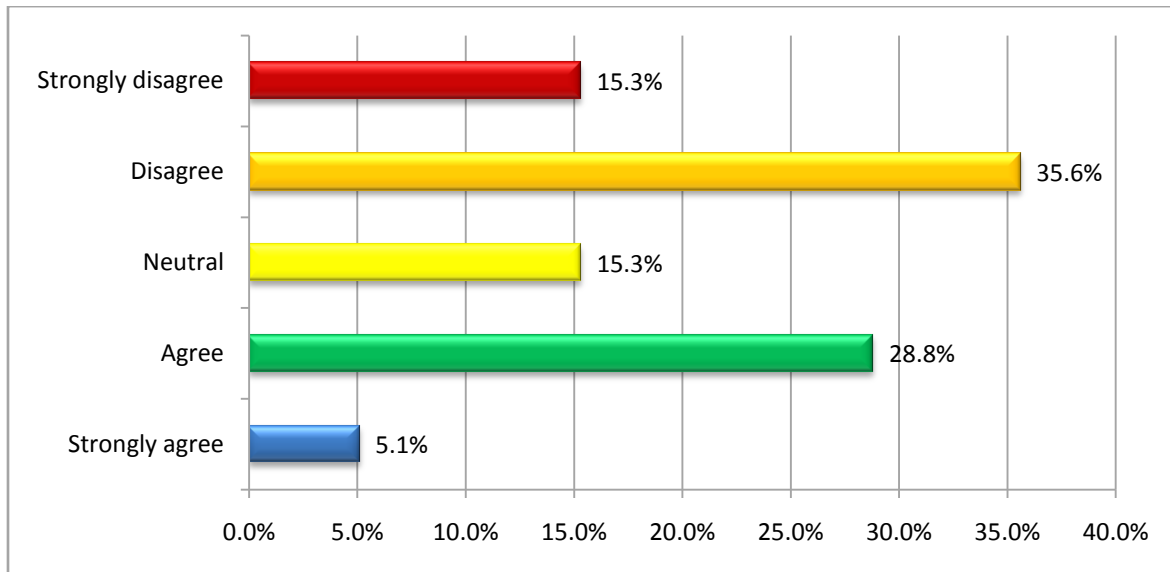


Figure 4.9 shows respondents agree with potential benefits of following safety rules.

Figure 4.10 Respondents in relation to correctness of road traffic rules (Q.11)



The combination of respondents who agree and strongly agree with the statement amounts to seventy nine point eight percent. Perceptions reflected by the views of seventy nine point eight percent of respondents as shown in figure 4.10 are an indication of continuous non-compliance.

Figure 4.11 Respondents in relation to necessity of safety procedures (Q.12)

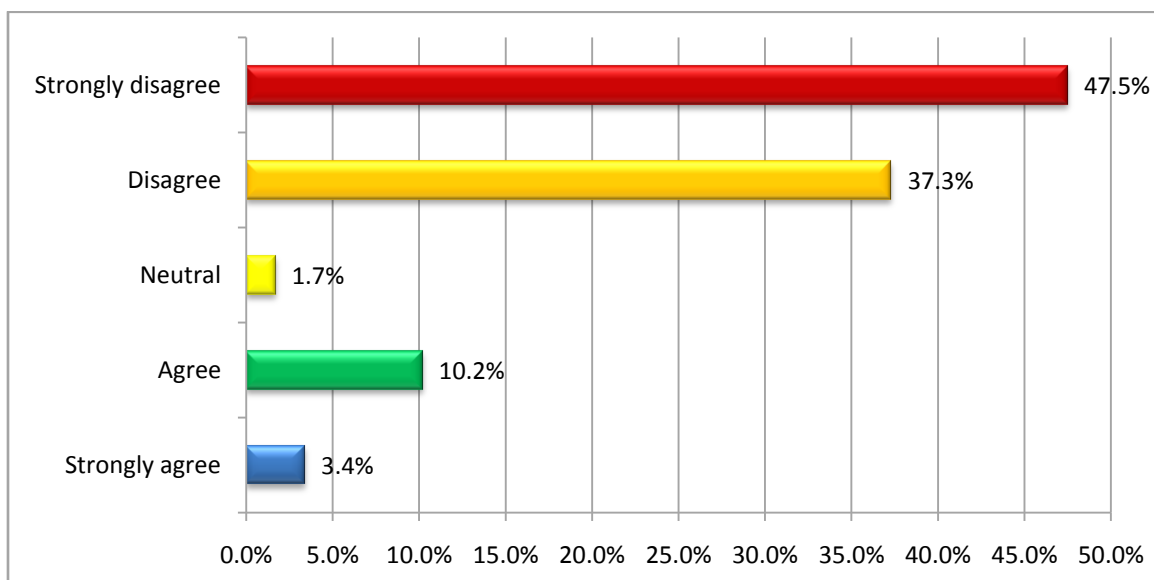
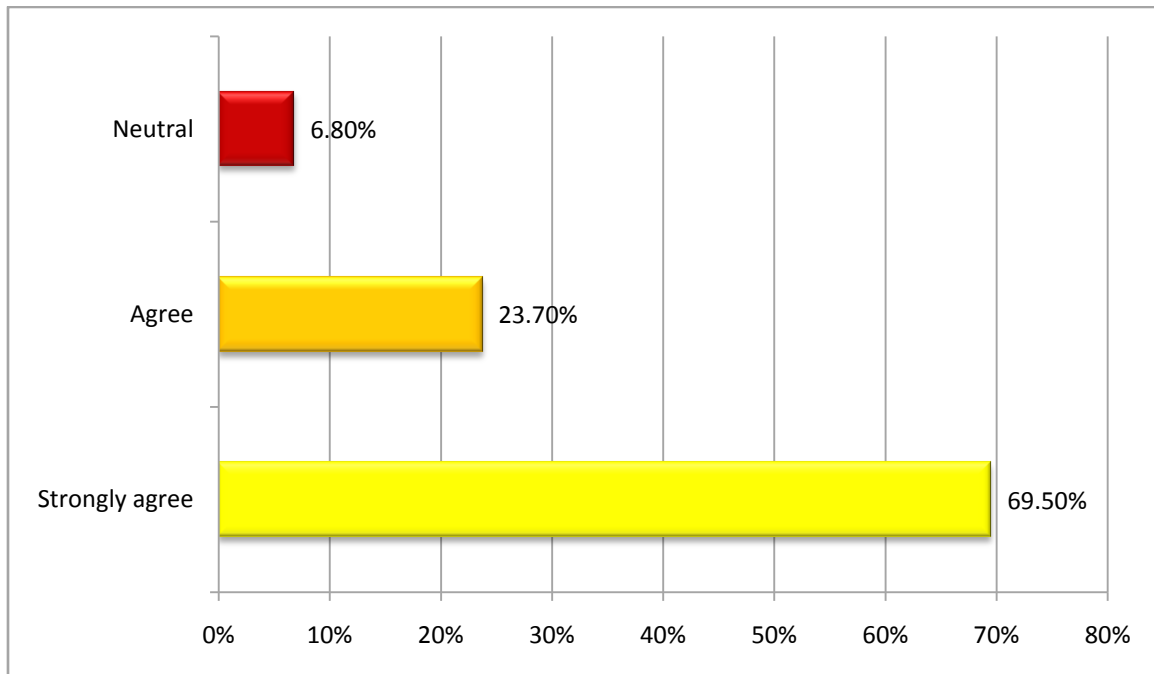


Figure 4.11 was intended to explore attitudes of respondents towards safety procedures; the majority of respondents agree with the need for safety procedures. However, thirteen point eight percent believe otherwise and are possibly a source of non-compliance.

Figure 4.12 Respondents in relation to the use of seat belts (Q.13)



The interesting fact about responses as shown in figure 4.12 is six point eight percent of respondents are not convinced seatbelt use is necessary. While using a seatbelt is a legal requirement, UFC has an independent policy of enforcing compliance with regard to using a seatbelt. Having respondents who are not convinced of the need to comply with the use of a seatbelt, is a clear indication of negative attitude.

Figure 4.13 Respondents in relation to supervisors having truck driving experience (Q.14)

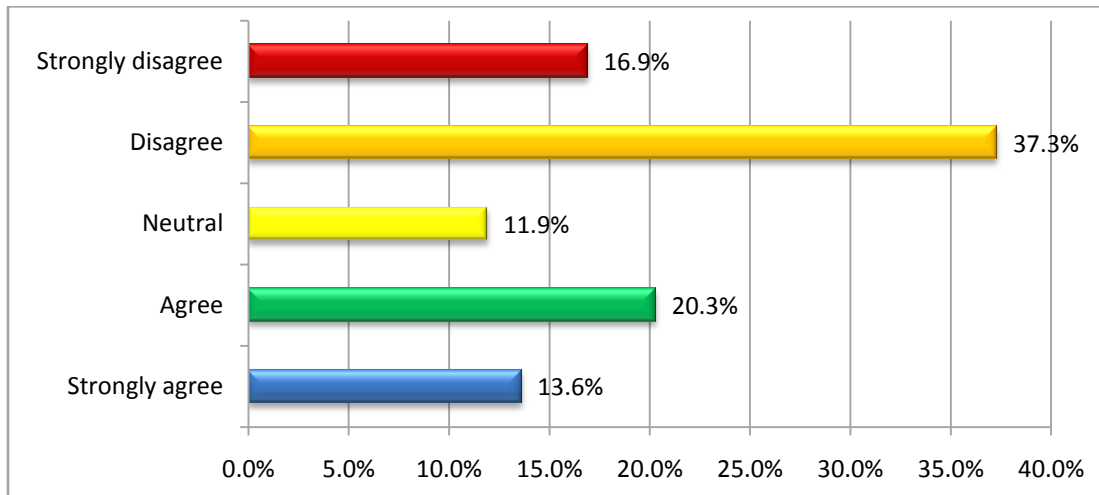
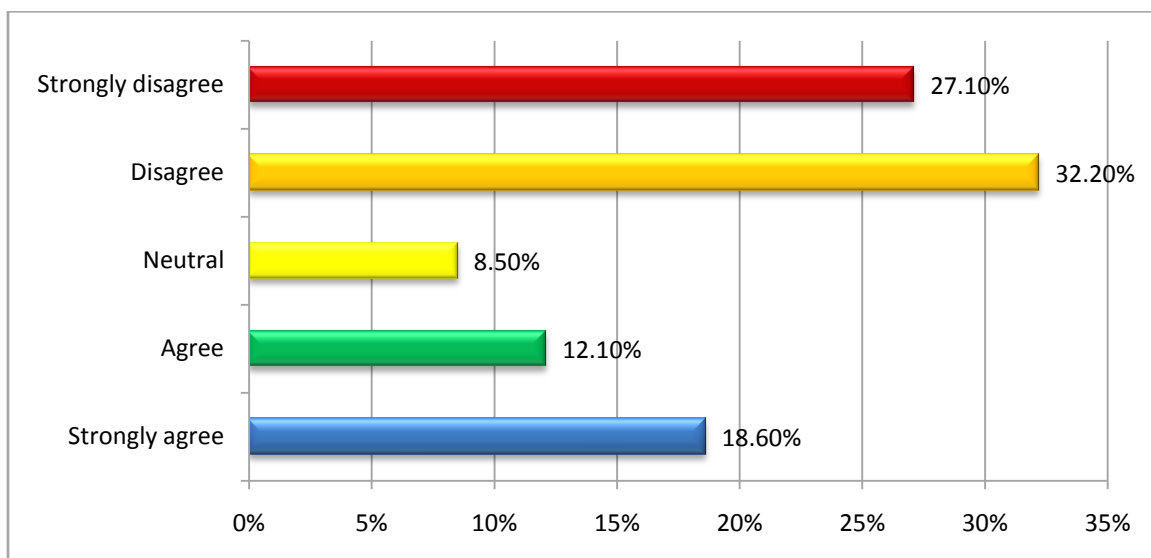


Figure 4.13 shows an even distribution of the views of respondents on the competence of supervisors. A negative attitude towards taking instructions from a person who has not been a truck driver, can impact on the extent to which a driver will follow instructions. The majority of supervisors have not been truck drivers, and responses from Figure 4.13 indicate drivers may not be complying with instructions issued.

Figure 4.14 Respondents' involvement in road accidents (Q.15)



The bar chart in Figure 4.14 can be collapsed to reflect two types of respondents: respondents who have been involved in accidents and respondents who have not been involved in accidents. The neutral respondents have either been involved in accidents or they have not carefully considered the question.

Table 4.3 Respondents in relation to people’s role in causing accidents (Q.16)

Accidents are caused by people

	Frequency	Percentage	Valid Percentage	Cumulative Per cent
Valid Strongly agree	27	45.8	45.8	45.8
Agree	24	40.7	40.7	86.4
Neutral	4	6.8	6.8	93.2
Disagree	3	5.1	5.1	98.3
Strongly disagree	1	1.7	1.7	100.0
Total	59	100.0	100.0	

Table 4.3 reflects most respondents agree people play a major role in causing accidents. Six point eight percent of respondents disagree with the statement, which could mean they believe accidents are not preventable. Respondents with the view accidents are not preventable may not be applying the necessary effort to prevent accidents.

Table 4.4 Respondents in relation to the role of small vehicle drivers in causing accidents (Q.17)

Other road users do not understand how trucks operate

	Frequency	%	Valid %	Cumulative Per cent
Valid Strongly agree	34	57.6	57.6	57.6
Agree	23	39.0	39.0	96.6
Neutral	1	1.7	1.7	98.3
Disagree	1	1.7	1.7	100.0
Total	59	100.0	100.0	

Ninety eight percent of respondents as shown in Table 4.4 are of the opinion other road users don’t understand how trucks operate, which may affect the

respondents' attitudes towards other road users. The perception indicated on the above statement reflects a blame-shifting tendency by respondents, and a justification for failing to comply with defensive driving techniques.

Table 4.5 Respondents in relation to complying with safety rules (Q.18)

I follow safety rules all the time

	Frequency	%	Valid %	Cumulative %
Valid Strongly agree	35	59.3	59.3	59.3
Agree	15	25.4	25.4	84.7
Neutral	7	11.9	11.9	96.6
Disagree	1	1.7	1.7	98.3
Strongly disagree	1	1.7	1.7	100.0
Total	59	100.0	100.0	

Table 4.5 shows a majority of respondents follow safety rules all the time, while eleven point nine percent remains neutral and three point four percent admit to not following the rules all the time. Because safety procedures are compulsory, having neutral and other respondents who admit to non-compliance is of concern.

Table 4.6 Respondents in relation to the difficulty of driving a truck (Q.19)

Driving a truck is difficult

	Frequency	%	Valid %	Cumulative %
Valid Strongly agree	16	27.1	27.1	27.1
Agree	17	28.8	28.8	55.9
Neutral	8	13.6	13.6	69.5
Disagree	14	23.7	23.7	93.2
Strongly disagree	4	6.8	6.8	100.0
Total	59	100.0	100.0	

The responses on Table 4.6 were intended to be considered when exploring the views of respondents who believe driving is difficult and they would therefore expect other road users to be accommodating of truck drivers. An interesting

area of Table 4.6 is the twenty three point seven percent who disagree and six point eight percent who strongly disagree with the statement.

Table 4.7 Respondents in relation to job satisfaction (Q.20)

I love driving a truck

		Frequency	%	Valid %	Cumulative %
Valid	Strongly agree	33	55.9	55.9	55.9
	Agree	20	33.9	33.9	89.8
	Neutral	4	6.8	6.8	96.6
	Disagree	1	1.7	1.7	98.3
	Strongly disagree	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

The majority of respondents love the job of driving, with only six point eight percent being neutral. Neutral respondents may be classified as unhappy with the job, but not willing to express this view. An assumption is respondents who are happy in their job are more likely to comply with safety requirements.

Table 4.8 Respondents in relation to availability of work in South Africa (Q.21)

There are sufficient driving jobs in South Africa

		Frequency	%	Valid %	Cumulative %
Valid	Strongly agree	7	11.9	11.9	11.9
	Agree	20	33.9	33.9	45.8
	Neutral	12	20.3	20.3	66.1
	Disagree	14	23.7	23.7	89.8
	Strongly disagree	6	10.2	10.2	100.0
	Total	59	100.0	100.0	

Respondents are evenly spread on the point of driving jobs available in South Africa. The assumption of Table 4.8 is respondents who believe there is enough work in South Africa may contribute towards their having a negative attitude towards their current job.

Table 4.9 Respondents' relationship with their supervisor (Q.22)

I like my supervisor

		Frequency	%	%	Cumulative %
Valid	Strongly agree	21	35.6	35.6	35.6
	Agree	20	33.9	33.9	69.5
	Neutral	15	25.4	25.4	94.9
	Disagree	2	3.4	3.4	98.3
	Strongly disagree	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

Table 4.9 shows sixty nine point five percent of respondents have a good relationship with their supervisors. However, twenty five point four percent of respondents remain neutral on this point. Both neutral and disagreeing respondents may be classified as having a negative attitude towards their supervisors.

Table 4.10 Respondents in relation to job appreciation (Q.23)

I respect my job

		Frequency	%	Valid %	Cumulative %
Valid	Strongly agree	43	72.9	72.9	72.9
	Agree	15	25.4	25.4	98.3
	Disagree	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

Table 4.10 indicates almost all the respondents appreciate their jobs. People who appreciate their jobs are more likely to comply with job requirements.

Table 4.11 Respondents in relation to UFC taking care of drivers. (Q.24)

My company cares about me

	Frequency	%	Valid %	Cumulative %
Valid Strongly agree	13	22.0	22.0	22.0
Agree	20	33.9	33.9	55.9
Neutral	18	30.5	30.5	86.4
Disagree	7	11.9	11.9	98.3
Strongly disagree	1	1.7	1.7	100.0
Total	59	100.0	100.0	

More than forty percent of respondent have reservations as to whether the company looks after them as individuals. Allocating three million rand of equipment to a driver, who believes the company does not care about him, may impact negatively on his handling of such equipment. In relation to this study, the thirty point five percent of neutral respondents and thirteen point six percent of disagreeing respondents are more likely to breach safety requirements.

Table 4.12 Respondents in relation to management being understanding (Q.25)

Management understands my problems

	Frequency	%	Valid %	Cumulative %
Valid Strongly agree	7	11.9	11.9	11.9
Agree	18	30.5	30.5	42.4
Neutral	17	28.8	28.8	71.2
Disagree	15	25.4	25.4	96.6
Strongly disagree	2	3.4	3.4	100.0
Total	59	100.0	100.0	

More than fifty percent of respondents in Table 4.12 are not confident UFC management is caring enough. Such a response may also be interpreted as fifty percent of respondents having a negative attitude towards management in general. Negative attitude towards management may translate to lack of compliance with company safety requirements.

Table 4.13 Respondents in relation to avoidance of accidents (Q.26)

Accidents can be avoided

	Frequency	%	Valid %	Cumulative %
Valid Strongly agree	33	55.9	55.9	55.9
Agree	23	39.0	39.0	94.9
Neutral	2	3.4	3.4	98.3
Disagree	1	1.7	1.7	100.0
Total	59	100.0	100.0	

Ninety one point five percent of respondents in Table 4.13 do agree accidents can be avoided. However, three point four percent of respondents are neutral on the statement. A perception an accident cannot be avoided may lead to negative attitudes on safety initiatives designed to prevent accidents.

Table 4.14 Respondents in relation to customers being understanding (Q.27)

Customers do not understand the difficulty of driving a truck

	Frequency	%	Valid %	Cumulative %
Valid Strongly agree	26	44.1	44.1	44.1
Agree	25	42.4	42.4	86.4
Neutral	3	5.1	5.1	91.5
Disagree	4	6.8	6.8	98.3
Strongly disagree	1	1.7	1.7	100.0
Total	59	100.0	100.0	

The „agree“ responses on Table 4.14 indicate eighty six point five percent of respondents feel customers are not accommodating of challenges drivers face on the road. Feeling customers don’t understand may lead to breaches of other safety procedures, with a view to trying to meet customer needs. Such a perception about customers may create a negative attitude towards customers.

Table 4.15 Respondents in relation to work pressure (Q.28)

Management sometimes puts me under pressure

	Frequency	%	Valid %	Cumulative %
Valid Strongly agree	15	25.4	25.4	25.4
Agree	31	52.5	52.5	78.0
Neutral	7	11.9	11.9	89.8
Disagree	5	8.5	8.5	98.3
Strongly disagree	1	1.7	1.7	100.0
Total	59	100.0	100.0	

Table 4.15 above shows seventy seven point nine percent of respondents who agree and strongly agree feel they are being put under pressure. A perception of working under pressure may interfere with a driver's concentration on the job, resulting in a driver's skipping safety procedures.

Table 4.16 Respondents in relation to following safety procedures (Q.29)

Sometimes I skip some safety procedures

	Frequency	%	Valid %	Cumulative Per cent
Valid Strongly agree	1	1.7	1.7	1.7
Agree	20	33.9	33.9	35.6
Neutral	5	8.5	8.5	44.1
Disagree	19	32.2	32.2	76.3
Strongly disagree	14	23.7	23.7	100.0
Total	59	100.0	100.0	

The majority of respondents in Table 4.16 above do comply with safety procedures most of the time; while thirty five point six percent of respondents clearly state they sometimes skip safety procedures. Thirty five point six percent is a very high percentage of respondents who do not comply with safety procedures. Not complying with safety procedures is a negative-attitude-fed behaviour.

Table 4.17 Respondents in relation to safety in general (Q.30)

I do not understand safety

		Frequency	%	Valid %	Cumulative %
Valid	Strongly agree	4	6.8	6.8	6.8
	Agree	1	1.7	1.7	8.5
	Neutral	2	3.4	3.4	11.9
	Disagree	27	45.8	45.8	57.6
	Strongly disagree	25	42.4	42.4	100.0
	Total	59	100.0	100.0	

The question in Table 4.17 is negative, and the six point eight percent of respondents that strongly agreed have their own perception of what safety should be.

Table 4.18 Respondents in relation to happiness on the job

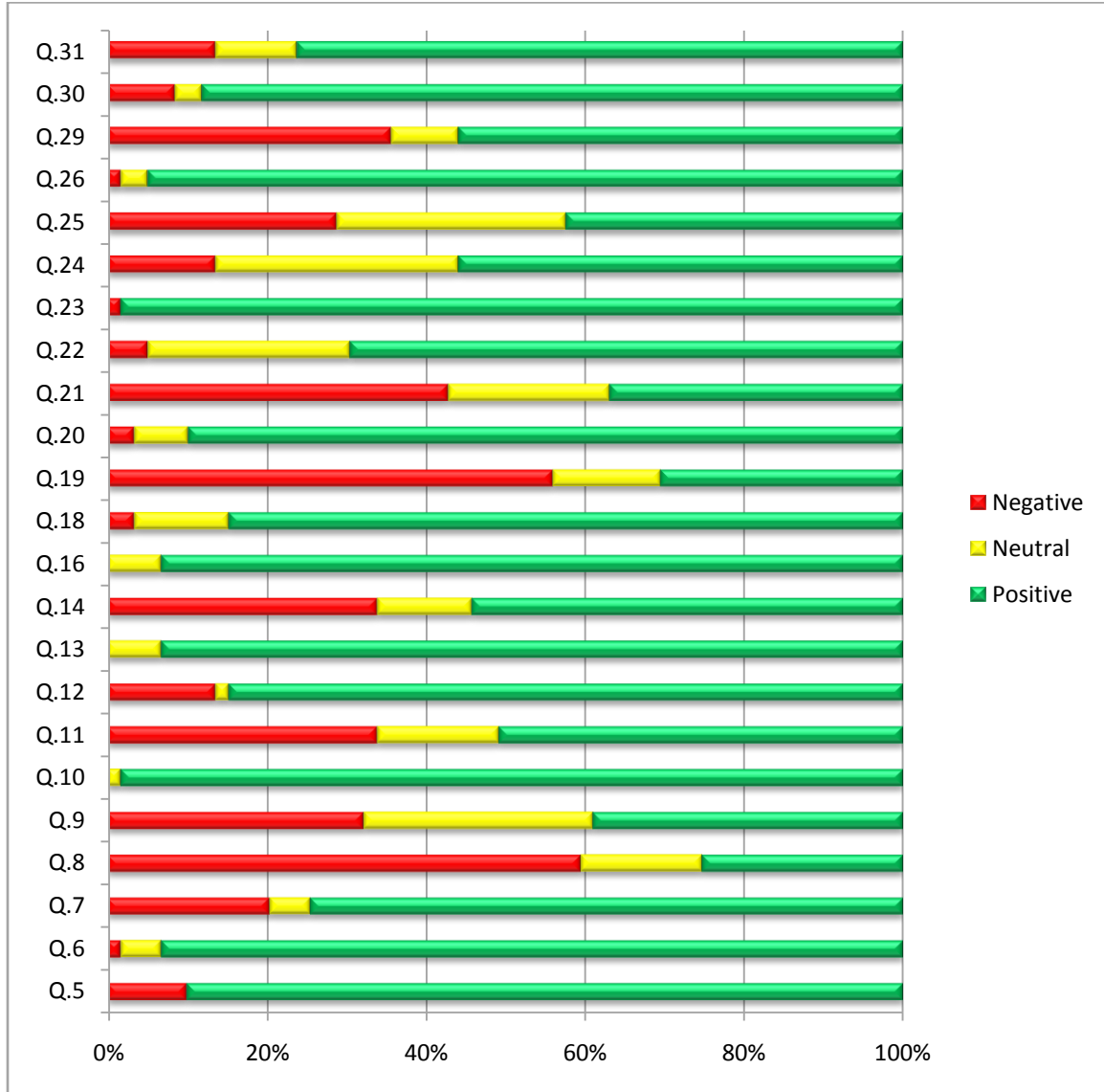
I am not happy in my job

		Frequency	%	Valid %	Cumulative %
Valid	Strongly agree	4	6.8	6.9	6.9
	Agree	4	6.8	6.9	13.8
	Neutral	6	10.2	10.3	24.1
	Disagree	21	35.6	36.2	60.3
	Strongly disagree	23	39.0	39.7	100.0
	Total	58	98.3	100.0	
Missing	System	1	1.7		
Total		59	100.0		

Table 4.18 shows thirteen point six percent of respondents, who agree or strongly agree with the statement, are not happy driving a truck. Lack of happiness in the job may influence whether or not to comply with safety requirements.

Summary of attitude-based questions

Figure 4.15 Respondents by attitude



The red portion of bars on Figure 4.15 reflects what may be interpreted as negative attitude towards items on each question. The yellow portion reflects neutral responses, which in most cases will indicate negative attitudes. Some respondents may be uncomfortable stating a negative view, and would settle for a neutral response. The summary reflects an average twenty percent negative attitude from respondents.

4.5 Cross-Tabulations

Table 4.19 Cross-Tabulation between age and use of seatbelt

Cramer's V – 0.235 Approx. Sig. – 0.377		It is safe to use a seat belt			Total
		Strongly Agree	Agree	Neutral	
Age groups	25 -35yrs	19%	6.9%	0	25.9%
	36 – 45yrs	29.3%	12.1%	6.9%	48.3%
	46 – 55yrs	17.2%	1.7%	0	19%
	56 – 65yrs	5.2%	1.7%	0	6.9%
	Total	70.7%	22.4%	6.9%	100%

According to Table 4.19 all the respondent age groups agreed on the safety of using a seat belt. The relevance of the cross-tabulation was to establish whether any of the age groups hold a different view from another age group of respondents. Most Chi-square tests cannot be useful for the study, owing to violation of test requirements. According to Pallant (2007), one of the assumptions of a chi-square is a minimum cell frequency of 5.

Table 4.20 Cross-Tabulation between driving experience and perception of supervisor competence

Cramer's V .310 Approx. Sig. .15		If you have not been a driver, you cannot tell me how to do my job.					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
Truck driving experience	3-8yrs	1.7%	1.7%	0	16.9%	6.8%	27.1%
	9-15yrs	8.5%	11.9%	6.8%	11.9%	5.1%	44.1%
	16-25yrs	3.4%	3.4%	5.1%	8.5%	3.4%	23.7%
	26-35yrs	0	3.4%	0	0	1.7%	5.1%
	Total	13.6%	20.3%	11.9%	37.3%	16.9%	100%

Table 4.20 show that the 9 to 15 years experience group has a higher percentage of respondents who believe supervisors should have truck-driving experience to be competent. The 9 to 15 years experience group is more likely to have a negative attitude towards supervisor and safety instructions issued by the supervisors.

Table 4.21 Test for independence of variables in Table 4.20

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.997 ^a	12	.150
Likelihood Ratio	19.492	12	.077
Linear-by-Linear Association	2.270	1	.132
No of Valid Cases	59		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .36.

Results of Table 4.21 cannot be used, owing to a violation of cell frequency requirements. All chi-square tests for the following cross tabulation have violated the test requirements of cell frequencies, and will not be shown. Cramer's V will be used to report the extent of correlation.

Table 4.22 Measure of association for variables in Table 4.20

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.537	.150
	Cramer's V	.310	.150
No of Valid Cases		59	

- a. Not assuming the null hypothesis.
- b. Using the asymptotic standard error assuming the null hypothesis.

The Cramer's V of 0.310 on Table 4.22 above, shows the extent of association of variables compared in Table 4.20. However, the association is insignificant and indicated by a value of .150. According to Pallant (2007), a significant test requires a Sig. Value of .05 or lower.

Table 4.23 Cross-Tabulation between driving experience and perception of effectiveness of road safety initiatives.

Cramer's V .334 Approx.Sig. .073		Road safety initiatives reduce accidents					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
Truck driving experience	3-8yrs	3.4%	5.1%	3.4%	6.8%	8.5%	27.1%
	9-15yrs	5.1%	0	0	18.6%	20.3%	44.1%
	16-25yrs	3.4%	0	1.7%	10.2%	8.5%	23.7%
	26-35yrs	3.4%	0	0	1.7%	0	5.1%
	Total	15.3%	5.1%	5.1%	37.3%	37.3%	100%

Table 4.19 shows respondents with 9 to 15 years experience in comparison with other groups, are more in disagreement with the thinking, road safety initiatives reduce accidents. The outcomes on Table 4.1 mean the 9 to 15 years experience group will hold more negative attitude towards road safety initiatives than will those in other age groups However, the difference between levels of experience is not very significant at .073. According to the Cramer's V, a significant association has been identified.

Table 4.24 Cross-Tabulation between compliance with traffic rules and perception of supervisor competence

Cramer's V - .334 Approx.Sig. -.107		If you have not been a driver, you cannot tell me how to do my job.					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
Complying with road traffic rules	Strongly agree	13.6%	20.3%	10.2%	23.7%	16.9%	84.7%
	Agree	0	0	1.7%	11.9%	0	13.6%
	Neutral	0	0	0	1.7%	0	1.7%
	Total	13.6%	20.3%	11.9%	37.3%	16.9%	100%

Table 4.24 shows most respondents with a positive attitude towards supervisors tend to comply with safety rules. Although a large extent of association has been identified between variables, the results are statistically insignificant.

Table 4.25 Cross-tabulation between driving experience and perception of supervisor competence

Cramer's V .296 Approx.Sig. .253		It is safe to use a seatbelt			
		Strongly Agree	Agree	Neutral	Total
I have been involved in road accident	Strongly agree	15.5%	0	3.4%	19%
	Agree	6.9%	5.2%	0	12.1%
	Neutral	5.2%	1.7%	1.7%	8.6%
	Disagree	22.4%	10.3%	0	32.8%
	Strongly disagree	20.7%	5.2%	1.7%	27.6%
	Total	70.7%	22.4%	6.9%	100%

Table 4.25 shows most respondents who have been involved in road accidents strongly agree with the use of a seat belt. A great extent of association has been identified amongst variables. As much as the results have no statistical significance, the phrase, "experience is the best teacher" may support the test results.

Table 4.26 Cross-tabulation between accidents caused by car drivers and perception of supervisor competence

Cramer's V .285 Approx.Sig. .276		If you have not been a driver, you cannot tell me how to do my job					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
Most truck accidents are caused by car drivers	Strongly agree	3.4%	5.2%	0	0	1.7%	10.3%
	Agree	1.7%	5.2%	3.4%	6.9%	5.2%	22.4%
	Neutral	1.7%	3.4%	5.2%	17.2%	1.7%	29.3%
	Disagree	3.4%	3.4%	1.7%	13.8%	5.2%	27.6%
	Strongly disagree	1.7%	3.4%	1.7%	0	3.4%	10.3%
	Total	12.1%	20.7%	12.1%	37.9%	17.2%	100%

Table 4.26 was designed to test association between respondents who shift the blame for accidents to car drivers, and respondents with negative attitude towards supervisors. A great extent of association has been identified; even though the results are not significant.

Table 4.27 Cross-tabulation between following safety rules and relationship with supervisor

		I like my supervisor					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
I follow safety rules all the time	Strongly agree	33.9%	15.3%	6.8%	1.7%	1.7%	59.3%
	Agree	0	16.9%	8.5%	0	0	25.4%
	Neutral	1.7%	1.7%	8.5%	0	0	11.9%
	Disagree	0	0	1.7%	0	0	1.7%
	Strongly disagree	0	0	0	1.7%	0	1.7%
	Total	35.6%	33.9%	25.4%	3.4%	1.7%	100%

The test results shown on Table 4.27 are statistically significant, with a very high extent of association. The results mean respondents with a good supervisor relationship are more likely to follow safety requirements. According to results in Table 4.27, managing good driver and supervisor relationships becomes critical for safety compliance.

Table 4.28 Cross-Tabulation between caring from the company and perception on supervisor competence

		If you have not been a driver, you cannot tell me how to do my job.					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
My company cares about me	Strongly agree	3.4%	3.4%	0	5.1%	10.2%	22%
	Agree	3.4%	10.2%	6.8%	8.5%	5.1%	33.9%
	Neutral	3.4%	6.8%	1.7%	16.9%	1.7%	30.5%
	Disagree	3.4%	0	1.7%	6.8%	0	11.9%
	Strongly disagree	0	0	1.7%	0	0	1.7%
	Total	13.6%	20.3%	11.9%	37.3%	16.9%	100%

The results of Table 4.28 are statistically significant, and while there is a significant extent of association between respondents who are neutral of the courtesy of UFC, respondents do not necessarily have a negative attitude towards supervisors.

Table 4.29 Cross-tabulation between work pressure and skipping safety procedures

		Sometimes I skip safety procedures					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
Management puts me under pressure sometimes	Strongly agree	0	13.6%	1.7%	3.4%	6.8%	25.4%
	Agree	1.7%	16.9%	3.4%	22%	8.5%	52.5%
	Neutral	0	1.7%	1.7%	5.1%	3.4%	11.9%
	Disagree	0	1.7%	0	1.7%	5.1%	8.5%
	Strongly disagree	0	0	1.7%	0	0	1.7%
	Total	1.7%	33.9%	8.5%	32.2%	23.7%	100%

A high level of association has also been identified between variables on Table 4.29. The results mean respondents, who feel they are working under pressure, are also likely to skip safety procedures. In relation to this study, putting more pressure on the driver will result in a negative attitude towards safety requirements.

Table 4.30 Cross-tabulation between job satisfaction and company support

		My company cares about me					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
I am not happy about my job	Strongly agree	1.7%	1.7%	3.4%	0	0	6.9%
	Agree	0	1.7%	1.7%	3.4%	0	6.9%
	Neutral	0	3.4%	5.2%	0	1.7%	10.3%
	Disagree	6.9%	15.5%	10.3%	3.4%	0	36.2%
	Strongly disagree	13.8%	12.1%	10.3%	3.4%	0	39.7%
	Total	22.4%	34.5%	31%	10.3%	1.7%	100%

The results shown in Table 4.30 above indicate respondents, who believe UFC is a caring organization, are also happy in the job. Happier respondents are more likely to comply with company requirements, including safety policies. A high level of association has been identified, while the results are statistically insignificant.

Table 4.31 Cross-tabulation between accident involvement and following safety rules

		I follow safety rules all the time					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
I have been involved in a road accident	Strongly agree	13.8%	3.4%	1.7%	0	0	19%
	Agree	5.2%	3.4%	1.7%	1.7%	0	12.1%
	Neutral	1.7%	5.2%	1.7%	0	0	8.6%
	Disagree	15.5%	12.1%	3.4%	0	1.7%	32.8%
	Strongly disagree	24.1%	1.7%	1.7%	0	0	27.6%
	Total	60.3%	25.9%	10.3%	1.7%	1.7%	100%

A high level of association between variables compared on Table 4.31 has been identified, the test results remaining insignificant. Table 4.31 shows respondents, who follow safety rules all the time, have not been involved in accidents. This is probably owing to their taking care when driving.

Table 4.32 Cross-tabulation between supervisor relationship and skipping safety procedures

		Sometimes I skip safety procedures					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
I like my supervisor	Strongly agree	0	11.9%	0	8.5%	15.3%	35.6%
	Agree	0	8.5%	1.7%	18.6%	5.1%	33.9%
	Neutral	1.7%	11.9%	5.1%	5.1%	1.7%	25.4%
	Disagree	0	1.7%	1.7%	0	0	3.4%
	Strongly disagree	0	0	0	0	1.7%	1.7%
	Total	1.7%	33.9%	8.5%	32.2%	23.7%	100%

A high level of association has been identified between respondents who have a good relationship with a supervisor and respondents who do not skip safety procedures. The results of Table 4.32 above are statistically significant. Managing driver and supervisor relations may lead to a positive attitude towards safety compliance.

Table 4.33 Cross-tabulation between the difficulty of driving a truck and blaming car drivers for truck-related accidents

Cramer's V - .339 Approx.Sig. -.040		Most truck accidents are caused by car drivers					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
Driving a truck is difficult	Strongly agree	3.4%	8.6%	1.7%	10.3%	1.7%	25.9%
	Agree	0	8.6%	13.8%	5.2%	1.7%	29.3%
	Neutral	1.7%	1.7%	8.6%	1.7%	0	13.8%
	Disagree	3.4%	3.4%	3.4%	8.6%	5.2%	24.1%
	Strongly disagree	1.7%	0	1.7%	1.7%	1.7%	6.9%
	Total	10.3%	22.4%	29.3%	27.6%	10.3%	100%

The results presented in Table 4.33 above are statistically significant, with a high level of association. As much as most respondents believe driving a truck is a difficult task, respondents do not hold the same view on car drivers" being the main cause of truck- related accidents.

Table 4.34 Cross-Tabulation between blaming traffic rules and complying with safety rules

		I follow safety rules all the time					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
Some road traffic rules are wrong	Strongly agree	3.4%	0	1.7%	0	0	5.1%
	Agree	23.7%	3.4%	1.7%	0	0	28.8%
	Neutral	3.4%	5.1%	5.1%	0	1.7%	15.3%
	Disagree	16.9%	15.3%	1.7%	1.7%	0	35.6%
	Strongly disagree	11.9%	1.7%	1.7%	0	0	15.3%
	Total	59.3%	25.4%	11.9%	1.7%	1.7%	100%

A high level of association has also been identified on Table 4.34 above. The majority of respondents agree or strongly agree to following safety rules. However, the results indicate respondents do not share the same view on whether some traffic rules are misguided. Only thirty three point nine percent of respondents agree or strongly agree some safety traffic rules are misguided. The results on Table 4.34 are not statistically significant.

Table 4.35 Cross-tabulation between the need for safety rules and perception on supervisor competence

		Sometimes I skip safety procedures					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	
Management puts me under pressure sometimes	Strongly agree	0	13.6%	1.7%	3.4%	6.8%	25.4%
	Agree	1.7%	16.9%	3.4%	22%	8.5%	52.5%
	Neutral	0	1.7%	1.7%	5.1%	3.4%	11.9%
	Disagree	0	1.7%	0	1.7%	5.1%	8.5%
	Strongly disagree	0	0	1.7%	0	0	1.7%
	Total	1.7%	33.9%	8.5%	32.2%	23.7%	100%

The majority of respondents on Table 4.35 agree or strongly agree to working under pressure. However, no clear indication can be established if respondents working under pressure tend to skip safety rules. The results on Table 4.35 are not statistically significant.

4.6 Correlations

According to Zikmund (2000), a simple correlation coefficient is a statistical measure of the covariance or association between two variables. The coefficient will indicate both the magnitude and direction of relation (Zikmund, 2000:511). Tables below will indicate correlation coefficient between variables. Bryman and Bell (2007) said a correlation coefficient provides information about the likelihood the coefficient will be found in a population from which the sample was taken (Bryman and Bell, 2007:370).

Lack of statistical significance therefore means a sample correlation coefficient may not exist in the population from which the sample was taken.

Table 4.36 Correlation between age groups of respondents and the use of seatbelt

			Correlations	
			Age	It is safe to wear a seat belt
Spearman's rho	Age	Correlation Coefficient	1.000	-.089
		Sig. (2-tailed)	.	.508
		N	58	58
	It is safe to wear a seat belt	Correlation Coefficient	-.089	1.000
		Sig. (2-tailed)	.508	.
		N	58	59

Table 4.36 above shows a statistically insignificant and negative correlation coefficient of -0.089, which is also weak. The results indicate a fifty point eight percent chance a correlation coefficient of -0.89 may be found in the general population of UFC drivers.

Table 4.37 Correlation between respondent's driving experience and attitude towards a supervisor.

Correlations

			Truck driving experience	If you have not been a driver you cannot tell me how to do my job
Spearman's rho	Truck driving experience	Correlation Coefficient	1.000	-.215
		Sig. (2-tailed)	.	.101
		N	59	59
	If you have not been a driver you cannot tell me how to do my job	Correlation Coefficient	-.215	1.000
		Sig. (2-tailed)	.101	.
		N	59	59

Table 4.37 reflects a statistically insignificant correlation coefficient of -0.215, meaning there is ten point one percent chance a respondent's attitude towards a supervisor is not related to the respondent's driving experience. A wide range of issues can affect a respondent's attitude, and such issues may arise at a later stage in a driving career.

Table 4.38 Correlation between respondents' driving experience and attitude towards road safety initiatives.

Correlations

			Truck driving experience	Road safety initiatives do not reduce accidents
Spearman's rho	Truck driving experience	Correlation Coefficient	1.000	-.010
		Sig. (2-tailed)	.	.943
		N	59	59
	Road safety initiatives do not reduce accidents	Correlation Coefficient	-.010	1.000
		Sig. (2-tailed)	.943	.
		N	59	59

Table 4.38 above reflects a statistically insignificant correlation coefficient of -0.10. According to the results, there is a ninety four point three percent chance respondents' attitudes to road safety initiatives is not related to respondents' driving experience.

Table 4.39 Correlation between respondents' attitude towards supervisors and respondents' attitude towards road traffic rules

Correlations			Complying with road traffic rules can save one's life	If you have not been a driver you cannot tell me how to do my job
Spearman's rho	Complying with road traffic rules can save one's life	Correlation Coefficient	1.000	.178
		Sig. (2-tailed)	.	.177
		N	59	59
	If you have not been a driver you cannot tell me how to do my job	Correlation Coefficient	.178	1.000
		Sig. (2-tailed)	.177	.
		N	59	59

The coefficient correlation on Table 4.39 is statistically insignificant (0.178) and the correlation between respondents' attitudes towards supervisors and road traffic rules is very weak. According to the results, there is a seventeen point seven percent chance a respondent's attitude towards a supervisor is related to the respondent's attitude towards road traffic rules.

Table 4.40 Correlation between respondents' involvement in road accidents and the use of seatbelt.

Correlations			I have been involved in an accident	It is safe to wear a seat belt
Spearman's rho	I have been involved in an accident	Correlation Coefficient	1.000	-.029
		Sig. (2-tailed)	.	.830
		N	58	58
	It is safe to wear a seat belt	Correlation Coefficient	-.029	1.000
		Sig. (2-tailed)	.830	.
		N	58	59

The correlation coefficient on Table 4.40 is statistically insignificant, and the relationship between variables is weak. The results indicate an eighty three percent chance a respondent's attitude towards a safety belt is not related to being involved in a road accident.

Table 4.41 Correlation between blame shifting attitude and attitude towards a supervisor

			Correlations	
			Most truck accidents are caused by car drivers	If you have not been a driver you cannot tell me how to do my job
Spearman's rho	Most truck accidents are caused by car drivers	Correlation Coefficient	1.000	.125
		Sig. (2-tailed)	.	.349
		N	58	58
	If you have not been a driver you cannot tell me how to do my job	Correlation Coefficient	.125	1.000
		Sig. (2-tailed)	.349	.
		N	58	59

The correlation coefficient on Table 4.41 is statistically insignificant and weak at 0.125. Lack of statistical significance of the results indicates lack of confidence with the results. According to Table 4.41, respondents' attitude towards car drivers is not related to respondents' attitude towards supervisors.

Table 4.42 Correlation between respondents' attitude towards a supervisor and following safety rules.

			Correlations	
			I follow safety rules all the time	I like my supervisor
Spearman's rho	I follow safety rules all the time	Correlation Coefficient	1.000	.520**
		Sig. (2-tailed)	.	.000
		N	59	59
	I like my supervisor	Correlation Coefficient	.520**	1.000
		Sig. (2-tailed)	.000	.
		N	59	59

** . Correlation is significant at the 0.01 level (2-tailed).

The results of Table 4.42 indicate a significant correlation between respondents' attitude towards a supervisor and following safety rules all the time. There is a strong positive correlation between driver supervisor relationship and complying with safety rules.

Table 4.43 Correlation between respondent’s attitude towards the company and towards supervisors.

			My company cares about me	If you have not been a driver you cannot tell me how to do my job
Spearman's rho	My company cares about me	Correlation Coefficient	1.000	-.165
		Sig. (2-tailed)	.	.212
		N	59	59
	If you have not been a driver you cannot tell me how to do my job	Correlation Coefficient	-.165	1.000
		Sig. (2-tailed)	.212	.
		N	59	59

The correlation coefficient on Table 4.43 is weak and statistically insignificant (-0.165). The results indicate a twenty one point two percent chance respondents’ attitude towards the company is not related to respondents’ attitude towards supervisors.

Table 4.44 Correlation between working under pressure and skipping safety procedures

			Management puts me under pressure sometimes	Sometimes I skip some safety procedures
Spearman's rho	Management puts me under pressure sometimes	Correlation Coefficient	1.000	.210
		Sig. (2-tailed)	.	.111
		N	59	59
	Sometimes I skip some safety procedures	Correlation Coefficient	.210	1.000
		Sig. (2-tailed)	.111	.
		N	59	59

The correlation coefficient of 0.210 on Table 4.44 above is statistically insignificant. The results indicate an eleven point one percent chance respondents’ perception of working under pressure is related to compliance or lack of compliance with safety procedures.

Table 4.45 Correlation between respondents' perception of courtesy of the company and respondents' happiness in the job.

Correlations			I am not happy in my job	My company cares about me
Spearman's rho	I am not happy in my job	Correlation Coefficient	1.000	-.260 *
		Sig. (2-tailed)	.	.049
		N	58	58
	My company cares about me	Correlation Coefficient	-.260 *	1.000
		Sig. (2-tailed)	.049	.
		N	58	59

*. Correlation is significant at the 0.05 level (2-tailed).

The correlation coefficient of -0.260 on Table 4.45 has a statistically significance of 0.049. The results indicate a four point nine percent chance respondents' happiness in the job is not related to respondents' perception of company courtesy.

Table 4.46 Correlation between respondents' involvement in a road accident and following safety rules

Correlations			I have been involved in an accident	I follow safety rules all the time
Spearman's rho	I have been involved in an accident	Correlation Coefficient	1.000	-.181
		Sig. (2-tailed)	.	.174
		N	58	58
	I follow safety rules all the time	Correlation Coefficient	-.181	1.000
		Sig. (2-tailed)	.174	.
		N	58	59

The correlation coefficient of -0.181 in Table 4.46 above is statistically insignificant. The results indicate a seventeen point four percent chance respondents' attitude towards safety rules is not related to respondent's involvement in road accidents. For the results to be significant, the value must be less than five percent.

Table 4.47 Correlation between respondents' attitude towards a supervisor and attitude towards safety procedures

Correlations			I like my supervisor	Sometimes I skip some safety procedures
Spearman's rho	I like my supervisor	Correlation Coefficient	1.000	-.291 *
		Sig. (2-tailed)	.	.026
		N	59	59
	Sometimes I skip some safety procedures	Correlation Coefficient	-.291 *	1.000
		Sig. (2-tailed)	.026	.
		N	59	59

*. Correlation is significant at the 0.05 level (2-tailed).

The correlation coefficient of -0.291 reflected on Table 4.47 above is statistically significant. The results show a two point six percent chance respondents' attitude towards a supervisor is not related to skipping safety procedures.

Table 4.48 Correlation between respondents' perception of driving a truck and respondents' attitude towards car drivers

Correlations			Driving a truck is difficult	Most trucks accidents are caused by car drivers
Spearman's rho	Driving a truck is difficult	Correlation Coefficient	1.000	.121
		Sig. (2-tailed)	.	.366
		N	59	58
	Most trucks accidents are caused by car drivers	Correlation Coefficient	.121	1.000
		Sig. (2-tailed)	.366	.
		N	58	58

Table 4.48 shows a statistically insignificant correlation coefficient of 0.0121. The correlation coefficient is also weak, and suggests a thirty six point six percent chance respondents' perception of driving a truck is related to respondents' attitude towards car drivers.

Table 4.49 Correlation between respondent’s perception of road traffic rules and compliance to safety rules in general.

Correlations

			Some road traffic rules are wrong	I follow safety rules all the time
Spearman's rho	Some road traffic rules are wrong	Correlation Coefficient	1.000	.059
		Sig. (2-tailed)	.	.655
		N	59	59
	I follow safety rules all the time	Correlation Coefficient	.059	1.000
		Sig. (2-tailed)	.655	.
		N	59	59

Table 4.49 has a statistically insignificant correlation coefficient of 0.059. The results reflect a weak correlation between respondents’ attitude towards road traffic rules and complying with safety rules all the time. Lack of statistical significance suggests one cannot be confident a relationship may be established between the two variables in Table 4.49 in the population (UFC drivers).

Table 4.50 Correlation between respondent’s attitude towards safety procedures and respondent’s attitude towards supervisors

Correlations

			I can do my job without all the company safety procedures	If you have not been a driver you cannot tell me how to do my job
Spearman's rho	I can do my job without all the company safety procedures	Correlation Coefficient	1.000	-.055
		Sig. (2-tailed)	.	.677
		N	59	59
	If you have not been a driver you cannot tell me how to do my job	Correlation Coefficient	-.055	1.000
		Sig. (2-tailed)	.677	.
		N	59	59

The correlation coefficient in Table 4.50 above has no statistical significance. A weak and negative correlation was observed between respondents’ attitude towards safety procedures, and respondent’s attitude towards supervisors. Where relationships exist between the two variables in Table 4.51, a positive

influence in one variable may lead to a positive influence of the other variable. In case of Table 4.50, allowing the respondent to understand the role of supervisor, and understanding a supervisor does not have to acquire truck-driving experience, may lead to respondents" developing positive attitudes towards safety procedures.

4.7 Conclusion

A wide range of non-parametric techniques have been used to analyse data collected from respondents. Most tests carried out in Chapter four could not conclusively establish relationships between groups of respondents or attitudes of respondents. The following chapter will list conclusion and recommendations, in terms of the impact of negative attitude towards safety compliance.

CHAPTER FIVE

Recommendations and Conclusions

5.1 Introduction

Following a discussion of results and analysis undertaken in chapter four, this chapter will provide conclusions on the extent to which data collected has provided answers to research questions. This chapter will also provide recommendations for UFC to deal with the challenge of driver non-compliance. Limitations of the study will be listed, with recommendations on how the limitations may be addressed. The chapter will also look at how UFC and the industry at large may benefit from this study.

5.2 Results in relation to objectives of the study

According to results presented in Chapter four, negative attitude does have an impact on safety compliance by UFC drivers in KZN. Figure 4.15 illustrates a summary of respondents' attitudes towards a wide range of safety-related variables. Negative attitude is reflected in red, and a certain level of negative attitude was identified in almost all the variables. Neutral questions with no bearing on attitude were not summarized as part of Figure 4.15.

Another indication negative attitude has an impact on safety compliance is reflected in Figure 4.6 where twenty point four percent of respondents agreed and strongly agreed to a statement road safety initiatives do not reduce accidents. Where respondents hold such beliefs towards road safety initiatives, South African campaigns such as Arrive Alive have limited impact on reduction of road accidents. In the case of Figure 4.6, the negative attitude of respondents may render a campaign ineffective.

According to Figure 4.10, thirty three point nine percent of respondents agree and strongly agree some road traffic rules are wrong. A driving assessment test

is based on road traffic rules; for some respondents to say some traffic rules are misguided is clearly a negative attitude problem. Table 4.16 shows thirty five point six percent of respondents admit to not following safety rules all the time. In an industry of dangerous goods transportation, where omission of safety steps has claimed people's lives, one can only attribute such non-compliance to negative attitude. Some of the underlying perceptions of drivers with a negative attitude are safety rules are not necessary, and drivers can do the job without safety procedures. .

5.3 Benefits of research undertaken

The research undertaken has clearly addressed some of the questions UFC needed to address with regard to poor levels of safety compliance by some drivers. The study will afford UFC an opportunity to refocus behavioural modification programmes, and to place more emphasis on attitude change. Data collected may assist UFC in devising better recruitment systems to ensure drivers maintain a positive attitude in general. The business sector within the road transportation industry will find information useful in addressing some behavioural challenges related to truck drivers.

As much as data analysis carried out in Chapter 4 could not provide a strong statistical significance, challenges that most respondents face are similar, which in turn affects attitude. Percentage indications between respondents will be more or less the same. The results of data collected suggest lack of compliance by respondents is a conscious decision, rather than lack of understanding or knowledge. The data collected will benefit future researchers in refining research related to truck-driver behaviour, because data collected from UFC drivers may be used as secondary data for further research. More benefits may come in the form of data collected being used for comparison purposes with similar future studies.

The information generated from data analysis will be used to refocus driver training material and safety campaigns. The outcomes of better campaign and attitude-focused training will save people's lives on the road. Both UFC drivers and the South African population at large will benefit from the answers provided by the study. UFC subscribes to ISO standards, and the need to continually improve safety applies. The information provided in this study will be used to improve systems to the benefit of both driver and the company.

5.4 Recommendations

The problem facing UFC and other road transporters is to ensure compliance of truck drivers with safety rules and procedures. Many safety campaigns initiated at company level and national level are not as effective as expected. Effectiveness of safety initiatives, with the objective of reducing road accidents remains critical to the South African government in general, and to UFC in particular. Road accidents are amongst the leading causes of death in South Africa and other developing countries. Driver behaviour has been identified as one of the obvious causes of road accidents, and companies are highly challenged to change such behaviours.

The researcher hereby recommends UFC implement psychometric assessments as part of the recruitment process. The psychometric assessment must be in the form of a questionnaire to assess attitude of potential drivers towards a safety-driven operation such as the one at UFC. By implementing psychometric assessments, the company will minimize the percentage of drivers with difficulty in accepting training and complying with training requirements. UFC has a training academy, where drivers spend a week in a classroom to undergo safety training.

UFC must also look at implementing visual training more than theoretical training. One of the commonly-known facts of the South African trucking industry is most

drivers take up driving owing to lack of employment opportunities in the field of their choice. That professional drivers take up driving as an alternative, means drivers need motivation to learn to appreciate and see value in the driving job. Another level of motivation is required for drivers to learn to take pride in driving as a career. Visual training will assist drivers to see the implications of non-compliance and to identify with how a good driver executes the duties allocated for the day. Visual training must be given in the form of locally-produced UFC videos, or story-telling by senior drivers who have survived an unfortunate situation on the road.

UFC Clairwood depot currently employs the services of an occupational wellness organization. UFC must consider incorporating services of a social worker, as part of the staff wellness package provided by the current supplier. Requesting an extension of service from the current supplier will not be as costly as sourcing another supplier to address driver social challenges. According to Table 4.12, twenty eight point eight percent of drivers are of the opinion management does not understand their problems. Giving drivers an opportunity to share social challenges with social services at work will alleviate the drivers' stress levels and change negative perceptions about management.

A need to reinforce positive behaviour is also recommended. Recognition of positive behaviour will allow drivers to identify a positive attitude. The concept of attitude remains a subtle subject amongst drivers and junior management. To bring the concept of attitude to the surface and to share common understanding within the organization, good performers need to be clearly visible and accessible. Recognizing good performance especially amongst inexperienced drivers may improve levels of positive attitude and focus drivers on organizational objectives. One of the techniques of recognizing good performance is to give top performers an opportunity to address other drivers on how to achieve desired results.

UFC must increase driver involvement in solution-seeking processes. Imposing ideas of changing driver attitude, without driver participation is not effective. Involving drivers in solution development instills a sense of ownership of the solution and a positive attitude to implementation. In the case where new ideas are coming from management, drivers tend to act as observers of whether the idea will work or not. Drivers are expected to execute most safety initiatives, but lack of involvement in the development process, resulting in insufficient „buy in“ from drivers becomes one of the stumbling blocks.

Professional driving needs to be included and marketed in schools as a career. Including professional driving as part of a school curriculum, this will ensure that learners are informed well in advance about the profession and can make informed choices.

5.5 Limitations of the study

The researcher works for the UFC KZN region and holds a middle-management position. Having self-administered the questionnaire, one cannot rule out the effect of the researcher on respondents. The decision to apply self-administration was intended to ensure participants clearly understood the objectives of the study, and participated willingly. However, completion of the questionnaire was undertaken by respondents themselves. Owing to challenges of recovering questionnaires from respondents, convenient sampling technique was applied. Only KZN-based drivers were selected to participate in the study. Long-distance drivers often travel as far as Zambia and DRC; this made it awkward to timeously recover questionnaires.

The majority of drivers in the Clairwood depot are Africans, with only standard nine or matric as the highest level of education. A high percentage of respondents chose a neutral response to the questionnaire, which indicated a researcher effect on respondents.

Lack of South African research material in the field of driver behaviour led to excessive use of literature from other countries. Environmental factors as discussed in foreign literature are different from those encountered by the South African Road Transport Industry. Some of the factors influencing the local industry are due to the nature of operations, technology development, remuneration structures and social conditions of respondents. Inferring statistics from another country was a challenge in light of industry factors stated in this paragraph.

Other limitations include the psychological nature of the study, and the fact attitude is one element of an equation that influences behaviour. The study of attitude requires a better understanding of psychological concepts, on which the road transport industry has not been focusing.

5.6 Recommendations to overcome limitations

To prevent research bias caused by self-administration of the questionnaire, commissioning another organization to carry out a similar study at UFC may produce better responses with fewer neutral respondents.

A similar study may be conducted independently of academic institution time frames, allowing for a better selection of a representative sample and lack of stress over questionnaire recovery time. The sample size and sampling technique were highly influenced by institutional time frames, and the courses being semester based.

Future research may also be conducted using respondents' first language such as isiZulu for African respondents. Using respondents' first language will ensure respondents are comfortable and they fully understand all questions.

To address the area of insufficient local research into the field of driver behaviour, companies can come together and form industry-specific research bodies. Areas of interest may be submitted by companies within the industry, and resources made available for students who wish to research areas of interest to the industry or to a particular company. In the case where a student wishes to explore an area of specific interest to an organization, funding research will be more readily available.

5.7 Summary

This study set out to explore the impact of negative attitudes on safety compliance by UFC drivers in Clairwood KZN. The study has achieved the objectives set out at the beginning. The study also pointed out attitude does have a significant impact on safety compliance. As outlined in Chapter One, truck drivers continue to ignore safety initiatives and road traffic regulations. More time and financial resources must be allocated to put systems in place and to implement programmes geared to improving safety compliance at UFC. The challenge remains to maintain the effectiveness of these programmes, and the ability to help all drivers to buy into the safety culture.

Literature relating to driver behaviour has been reviewed in Chapter Two, and data collected was analysed and discussed in Chapter Four. Chapter Five has clearly pointed out key areas of improvement on which UFC must focus. Findings of the study clearly show attitude change is at the centre of driver training. Specific training interventions were highlighted to ensure that UFC has specific actionable recommendations. The amount of work required to improve driver attitude cannot be over-emphasised, and involvement of drivers in seeking and developing compliance solutions, will go a long way to addressing challenges currently faced by the organization.

The researcher is of the opinion data collected will provide a mirror of feedback to UFC, assisting the organization to fine-tune areas of priority. Implementation of recommendations will also assist in improving levels of compliance amongst drivers. More emphasis needs to be placed on the well-being and suitability of drivers on the road. UFC's business and the economy of South Africa are heavily reliant on road transportation. However, not much focus has been directed at ensuring driver standards are improved on South African roads. Both government departments and businesses in road transportation have been focusing on penalising drivers for breaking the rules, without addressing the causes of rule-breaking behaviour.

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**The impact of negative attitude towards safety compliance at Unitrans Fuel
Chemical KwaZulu-Natal**

The purpose of this survey is to solicit information from dangerous goods truck drivers regarding their attitude towards safety rules and other safety initiatives. The information and ratings you provide us will go a long way in helping us identify the extent to which negative attitude impacts on safety compliance. The questionnaire should only take 15-20 minutes to complete. In this questionnaire, you are asked to indicate the extent to which you agree or disagree with the statements. Work as rapidly as you can. If you wish to make a comment please write it at the end of this document. Make sure not to skip any questions. Thank you for participating!

Research Questionnaire

Please answer by circling an alphabet letter that corresponds with your choice.

Example: Cheap.....A

Fair.....B

Expensive.....C

Personal Profile

1. Gender: MaleM Female.....F

2. Age: 25 to 35.....A

36 to 45.....B

46 to 55.....C

56 to 65.....D

3. Truck driving experience: 3 to 8yrs.....A

9 to 15.....B

16 to 25.....C

26 to 35.....D

4. Race: Black.....A

White.....B

Coloured.....C

Indian.....D

Please answer the following questions by **circling** the alphabet letters that closely express the extent to which you agree or disagree with the statement. *Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly Disagree (SD)*

5. Road safety initiatives are important.

SA.....A.....N.....D.....SD

6. I have benefited from road safety initiatives.

SA.....A.....N.....D.....SD

7. Road safety initiatives do not reduce accidents.

SA.....A.....N.....D.....SD

8. Not all safety interventions are safe.

SA.....A.....N.....D.....SD

9. Most truck accidents are caused by car drivers.

SA.....A.....N.....D.....SD

10. Complying with road traffic rules can save somebody's life.

SA.....A.....N.....D.....SD

11. Some road traffic rules are wrong.

SA.....A.....N.....D.....SD

12. I can do my job without all these safety ideas.

SA.....A.....N.....D.....SD

13. It is safe to wear a seatbelt.

SA.....A.....N.....D.....SD

14. Office staff do not understand the challenges on the road.

SA.....A.....N.....D.....SD

15. I have been involved in an accident.

SA.....A.....N.....D.....SD

16. Accidents are caused by people.

SA.....A.....N.....D.....SD

17. Other road users do not understand how trucks operate.

SA.....A.....N.....D.....SD

18. I follow safety rules all the time.
SA.....A.....N.....D.....SD
19. Driving a truck is difficult.
SA.....A.....N.....D.....SD
20. I love driving a truck.
SA.....A.....N.....D.....SD
21. There are enough driving jobs out there.
SA.....A.....N.....D.....SD
22. I like my supervisor.
SA.....A.....N.....D.....SD
23. I respect my job.
SA.....A.....N.....D.....SD
24. My company cares about me.
SA.....A.....N.....D.....SD
25. Management understand my problems.
SA.....A.....N.....D.....SD
26. Accidents can be avoided.
SA.....A.....N.....D.....SD
27. Customers do not understand the difficulty of driving a truck.
SA.....A.....N.....D.....SD
28. Management puts me under pressure sometimes.
SA.....A.....N.....D.....SD
29. Sometimes I skip other safety procedures.
SA.....A.....N.....D.....SD
30. I don't understand safety.
SA.....A.....N.....D.....SD
31. I am not happy about my job.
SA.....A.....N.....D.....SD

Source: Adapted from Okzan, Lajunen, Summala (2006)

Comment:.....
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End of the Questionnaire

Thank you for taking the time to complete the questionnaire.

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22 SEPTEMBER 2009

Mr. Mduduzi Mzwandile Olive Sondezi (207525951)
Graduate School of Business
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Dear Mr. Sondezi

ETHICAL CLEARANCE APPROVAL NUMBER: HSS/0564/09M

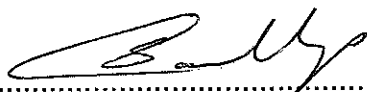
I wish to inform you that your application for ethical clearance has received full approval for the following project:

“The impact of negative attitude towards safety compliance in Unitrans Fuel and Chemical”.

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



**PROFESSOR STEVEN COLLINGS (CHAIR)
HUMANITIES & SOCIAL SCIENCES ETHICS COMMITTEE**

cc. Supervisor (Prof W. Akande)
cc. Ms. C. Haddon