# INVESTIGATING HIGH TURNOVER INTENTION AND A DIMINISHED LEVEL OF ORGANISATIONAL COMMITMENT AS ANTECEDENTS OF ACCIDENTS

by
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## DECLARATION

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## ABSTRACT

A study on intention to leave and efficiency that was conducted in the healthcare industry reported that an employee contemplating leaving an organisation cuts corners and compromises quality (Waldman, Kelly, Arora & Smith, 2004). In other words, employees with high intention to leave are more likely to disobey rules and procedures. Swain (2006) further argued that companies must weigh up the untold losses involved with an employee who has little to no loyalty towards an organisation, or no respect for the company's equipment, against recruitment and development costs. It was therefore argued that a combination of high turnover intention and a diminished level of organisational commitment could influence an employee's attitude towards safety procedures and, as a result, lead to an increase in accidents (Graham & Nafukho, 2010).

This study utilised an extensive literature review on work climate, job satisfaction, organisational commitment, turnover intentions and accident rates and a conceptual model of safe driving dynamics in trucking to illustrate the notion that truck drivers with a diminished level of organisational commitment and the intention to leave may experience higher accident rates.

A South African retail group made all their drivers available for the study, i.e. the entire population. The raw data was obtained through self-administered pencil-and-paper questionnaires. A response rate of 50% was achieved.

Using Partial Least Squares analysis, the study found all three mindsets of organisational commitment to predict turnover intention. The practical implications of these findings could assist management in the improvement of an array of work behaviours such as job performance, work attendance and organisational citizenship, and decrease turnover rate.

The study could not find any significant support for the predictive effect of turnover intention on risky driving behaviour. Future researchers, however, are encouraged to develop a model that could assist Human Resource professionals in the understanding, development,

and implementation of interventions to increase organisational commitment, reduce intention to leave, actual turnover, and, consequently, costly truckload accidents.

## OPSOMMING

Die bevindings van ’n studie oor intensies tot bedanking en doeltreffendheid wat in die gesondheidsorg industrie onderneem is, het aangedui dat ’n werknemer wat oorweeg om ’n organisasie te verlaat, die werk afskeep en gehalte in gedrang bring (Waldman, Kelly, Arora & Smith, 2004). Werknemers met sterk intensies tot bedanking is dus meer geneig om riglyne en vasgestelde prosedures te verontagsaam. Verder het Swain (2006) aangevoer dat maatskappye die onberekende verliese verbonde aan ’n werknemer wat geen respek vir die maatskappy se toerusting koester nie, moet opweeg teenoor werwing en ontwikkellingskostes. Daarvolgens is aangevoer dat ’n kombinasie van hoë intensies tot bedanking en ’n verlaagde vlak van organisasieverbondenheid ’n werknemer se houding teenoor veiligheidsprosedures kan beïnvloed en gevolglik tot ’n toename in ongelukke kan lei (Graham & Nafukho, 2010).

Die huidige navorsingstudie het van ’n uitgebreide literatuurstudie met betrekking tot werksklimaat, werkstevredenheid, organisasieverbondenheid en ongeluksyfers, en ’n konseptuele model van veilige bestuursdinamika in vragmotorvervoer, gebruik gemaak om die idee dat vragmotorbestuurders met ’n verminderde vlak van organisasieverbondenheid en die intensie om te bedank ‘n hoër ongeluksyfer kan beleef.

’n Suid-Afrikaanse kleinhandel groep het al hul vragmotorbestuurders (dus die hele populasie) vir die studie beskikbaar gestel. Die roudata is met behulp van self-geadministreerde potlood-en-papier vraelyste verkry. ’n Responskoers van 50% is verkry.

Met die gebruik van parsiële kleinste kwadrate analise, het die studie bevind dat intensies tot bedanking deur al drie ingesteldhede van organisasieverbondenheid voorspel word. Die praktiese implikasies van hierdie bevindinge kan bestuur help om ’n verskeidenheid werksgedrag, soos werkprestasie, werkbywoning en organisatoriese gemeenskapsgedrag, te verbeter en personeel-omsetafname te bewerkstellig.

Die studie het nie daarin geslaag om beduidende ondersteuning vir die voorspellingseffek van intensies tot bedanking op riskante bestuursgedrag te vind nie. Toekomstige navorsers

word egter aangemoedig om ’n model te ontwikkel wat menslike hulpbron-bestuurders sal help met die verstaan, ontwikkeling en implementering van ingrypings wat organisasieverbondenheid verhoog, sodat intensies tot bedanking en personeel-omset verlaag, en daardeur ook duur vragongelukke verminder word.

## ACKNOWLEDGEMENTS

The dissertation is a product of the faith I have in the text: “I can do all this through Him who gives me strength” (Philippians 4:13, New International Version). Few can articulate the gratefulness of being blessed with the love of God. I therefore choose to act on my appreciation and dedicate my work to Him.

The path to the finish line was not straight and smooth, however. I therefore want to thank a few key individuals who guided me back onto the road whenever I strayed. I want to thank my parents, Annerine and Attie, for giving me the opportunity to study towards my dream occupation and believing in me, even when my second-year report card suggested otherwise. Thank you for always lending an ear when I struggled with a theory or motivating me when I needed it most. I know I am blessed with parents who love me unconditionally.

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# CHAPTER 1
# INTRODUCTION, RESEARCH OBJECTIVES, RESEARCH-INITIATING QUESTION AND OVERVIEW OF STUDY

## 1.1. Introduction

Southern African countries are dependent on South Africa as the entry point and departure point for many essential products. These countries are also reliant on South African trucks and truck drivers to distribute the products to the desired locations (Ittmann & King, 2008). On top of these demands, 80% of South Africa's own freight is transported using road services (Naysmith & Rubincam, 2012). The road freight industry is therefore essential to the South African economy and a key factor in contributing to the country's growth.

In spite of current economic uncertainty and a sharp decrease in consumer demand, the road freight industry is still experiencing a shortage of qualified and quality truck drivers (Naysmith & Rubincam, 2012). An article by Parker (2009) stated that regardless of the shrinking economy, the industry requires 15,000 new drivers yearly to fill available vacancies and to keep up with the demands of the road fright economy. However, Parker (2009) found that the industry is losing 3,000 drivers per annum, and specifically is experiencing a skills shortage of code 10 and code 14 drivers. According to Statistics South Africa (2012), the trucking industry lost 18, 000 employees by the fourth quarter of 2012, the third-most contribution to the net loss in employment.

It has come to light that employers are attributing the skills shortage and high turnover to several causes dominated by disciplinary problems such as not following safety protocols, absenteeism and damaging of trucks and third party property (Naysmith & Rubincam, 2012). Parker (2009) stated that accidents involving trucks in South Africa mostly involve head-to-tail collisions at night. This type of accident raises questions regarding visibility, shift work, eyesight, speed and following distances. A study monitoring roads between Johannesburg and Durban that was conducted by Furter (2011) reported 307 trucking accidents on the N3 from January to June 2011. That is a rate of two accidents per day on a single main road in South Africa. Furter (2011) also reported that fatalities on the road are mostly ascribed to

human factors which include falling asleep at the wheel; intoxication of pedestrians or drivers; disobeying traffic lights; turning in front of oncoming traffic; close following distances; and speeding.

The ability of the industry to be sustainably competitive is at risk due to high turnover, skills shortages and the impact these factors have on productivity. This risk should be alarming due to the importance of the industry to our country's economy. As skill shortages are not reduced within the industry, organisations should take the responsibility upon themselves to solve the problem. Established organisations with capital to address the issue can aim to achieve the following goals to minimise the negative impact of skill shortages on the bottom line. First, organisations should address the shortage by continuously training quality truck drivers through learnership programmes. Such programmes will allow for standardisation of driving procedures; certainty of legal licensing; and early exposure to the company's safety procedures. Secondly, organisations should focus on what they can do here and now, as long-term goals take time to realise. The clear answer is to focus on the retention of truck drivers currently employed to prevent further shortages.

A limited number of studies have been conducted on determining factors of retention in the road freight industry (Graham & Nafukho, 2010). However, research focused on a broad spectrum of occupations involving scientists, engineers, psychiatric technicians, transit workers, and management trainees confirmed that organisational commitment is a determining factor that correlates significantly with retention of employees (Gormley, 2005). The studies also reported that the sub-components of organisational commitment strongly relate to turnover intentions (DeConinck & Bachmann, 1994; Perez, 2008).

Meyer and Allen (1991), producing a great deal of research exploring the depth of the concept have been predominantly responsible for the progress in literature on organisational commitment (Ferreira, Basson & Coetzee, 2010). Meyer and Allen (1991) assembled a list of definitions from the literature describing organisational commitment and analysed the similarities and differences thereof. Meyer and Allen (1991) consider the core essence of commitment as follows: "…commitment is a force that binds an individual to a course of action

that is of relevance to a particular target" (p. 301). In other words, commitment is a key motivator in pursuing a goal and realising it effectively.

As research on organisational commitment progressed, Meyer and Allen (1997) argued that organisational commitment can take different forms. They stated that the key differences in the definitions that were analysed were the mindsets of individuals in terms of what organisational commitment meant. These mindsets revealed three distinguishable aspects which were labelled by the authors as: affective commitment, normative commitment, and continuance commitment. The reason for distinguishing among the different forms of organisational commitment was the different implications for action.

The concept of organisational commitment, as defined by Meyer and Allen (1991), has been found to explain significant variance in a number of concepts describing behaviour in the workplace. Studies by Meyer, Stanley, Herscovitch and Topolnytsky (2002) have proven that significant positive relationships exist between the themes of organisational commitment and attendance, job performance, and organisational citizenship behaviour. Meyer *et al*. (2002) also found all three themes to correlate negatively with withdrawal cognition, turnover intention, and actual turnover.

A study conducted in the healthcare industry on intention to leave and efficiency reported:

> …a departing person, cuts corners, compromises quality and safety, risks malpractice claims, or exemplifies any number of adverse traits, behaviours, and attitudes that staff find offensive (Waldman, Kelly, Arora & Smith, 2004, p. 2).

In other words, an employee with a high intention to leave is more likely to disobey rules and procedures. Swain (2006) stated "…aside from the staggering costs of recruiting, screening, orienting and training new personnel, consider the untold losses associated with a workforce that has little or no dedication to an individual company who do not take care of equipment" (p. 3). It can therefore be argued that a combination of high turnover intention and a diminished level of organisational commitment could influence an employee's attitude towards

safety procedures and, as a result, lead to an increase in accidents (Graham & Nafukho, 2010). Truckload drivers who maintain a similar disposition display limited organisational commitment to the organisation and consequently take less initiative in following safe driving practices and increase the probability of being involved in accidents. A model to assist Human Resource professionals in the understanding, development, and implementation of interventions to increase organisational commitment; reduce intention to leave and actual turnover and, consequently, costly truckload accidents, may therefore be helpful.

## 1.2. A model of safe driving dynamics in trucking

A limited amount of research explaining the correlations among organisational commitment, turnover intentions, and accidents is available. Graham and Nafukho (2010) are among the few researchers who have attempted to improve understanding of the interaction of these concepts in the trucking industry. Graham and Nafukho (2010) utilised the Meyer and Allen (1991) model of organisational commitment and modified it to suit the road freight environment. Their model of safe driving dynamics in trucking is depicted in Figure 1.1.

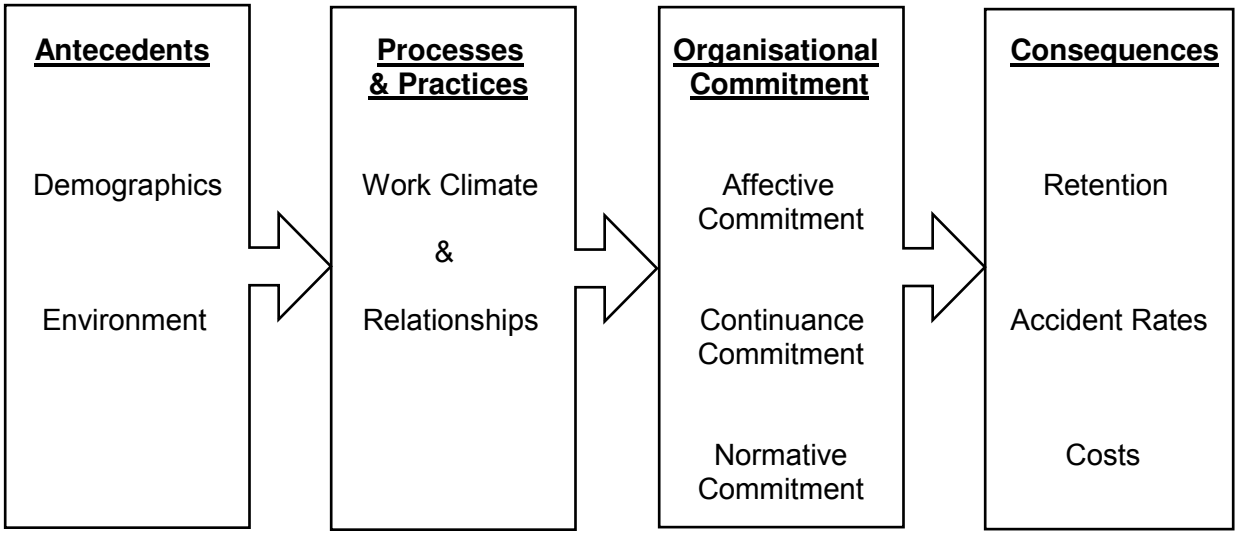



***Figure 1.1*. Model of safe driving dynamics in trucking**

(Graham & Nafukho, 2010, p. 269)

The original model of organisational commitment by Meyer and Allen (1991) explained the interactions among antecedents, correlates, and consequences of commitment. The revised model by Graham and Nafukho (2010) expands the model to better accommodate the inclusion of additional antecedents such as accident rates and residual cost as primary consequence variables. It was the intension of Graham and Nafukho (2010) to create a model that offers a novel viewpoint on safety and to stress the complexity of the concept and its outcomes.

Aside from the work done by Graham and Nafukho (2010), no other study has developed or tested a model explaining the relationships between the antecedents, processes, and practices that result in consequences such as accidents, injuries, property damage, or other costly outcomes that may be linked to intention to leave and organisational commitment. This study therefore attempts to review and test the model proposed by Graham and Nafukho (2010) to build on the understanding of plausible associations among organisational commitment, turnover intentions, and accident rates.

### 1.3. Research-initiating question

After having observed drivers in a single retail organisation, the researcher asked the following question:

Does a lack of commitment towards a task influence the probability of being involved in an accident?

### 1.4. Research objectives

The research-initiating question gave rise to the process of theorising during which the objectives of the study were logically composed. The research objectives are rooted in Graham and Nafukho's (2010) proposed future research.

1. To test the relationships between organisational commitment, intention to leave and truckload accident rates in the road freight industry.

2. To test a structural model which explains the relationships between the concepts and the outcomes proposed.

## 1.5. Significance of the study

The primary factors justifying the need to understand the relationships between organisational commitment, intention to leave and accident rates can be summarised in the following three arguments:

1. The unacceptable high rate of fatalities on South African roads involving trucks

2. The increase in costs that companies must carry due to accidents

3. The urgent need to retain truck drivers due to the high skills shortage.

An extensive literature review guided the evaluation and testing of Graham and Nafukho's (2010) model of safe driving dynamics in trucking in order to contribute to the development of a diagnostic model for future interventions.

## 1.6. Overview of the study

The current chapter has provided an introduction to the study through explaining the origin and development of the idea directing the research. It also introduced the research-initiating question, the research objectives and the significance of the study.

In Chapter 2, a literature review investigates concepts associated with turnover intention and factors related to truck driver safety. The combination of evaluating both turnover intention and road safety literature was required to assist in the development of models explaining accidents as an outcome of factors related to organisational commitment.

Chapter 3 presents an explanation of the research methodology that was chosen. The methodology includes the research design and the development of statistical hypotheses. The sampling method that was selected is motivated and the measuring instruments described.

The chapter concludes with a discussion on data collection and data analysis techniques. Chapter 4 reports on the results obtained and Chapter 5 elaborates on the findings through figures, tables and in-depth discussion. Chapter 6 concludes the study by identifying possible limitations and making recommendations for future research.

# CHAPTER 2
# LITERATURE REVIEW

## 2.1. Introduction

A study on truck accidents by Graham and Nafukho (2010) led to the development of a model that illustrates the conceptualised relationships among work climate, job satisfaction, organisational commitment, turnover intention and accident rates. An in-depth discussion of the Graham and Nafukho (2010) model forms the foundation of this chapter. In addition, theories on truck driver safety, turnover intention, accident proneness, organisational climate, organisational commitment and job satisfaction are discussed.

## 2.2. Defining highway safety and accidents

Highway safety is often defined in terms of outcomes rather than the characteristics that make up the concept itself. Mejza, Barnard, Corsi and Keane (2003), for example, describe road safety as "…the degree of protection from physical risk to life or property present during carrier movements of freight and passengers" (p. 16). According to Elvik (2004), this approach has led to the development of numerous interventions without adequate understanding of the concept and, consequently, bearing little to no fruit. Elvik (2004) further states that, in order to obtain satisfactory outcomes, any research study must be guided by literature and accompanied by conceptual models.

The model most often cited in the literature on highway safety is Jorgensen and Abane's (1999) model for traffic accidents (Dixit, Tyagi, Singh, Gupta & Malik, 2012). Jorgensen and Abane (1999) developed the model to explain highway safety through three components, namely the vehicle, the environment and human behaviour. The following section discusses the factors included in the model and other road safety factors identified from the literature.

### 2.2.1. A model for analysing traffic accidents

The model for analysing traffic accidents by Jorgensen and Abane (1999) was derived from the human ecological model of diseases. Jorgensen and Abane (1999) made hypothetical changes in an attempt to fit the model to suit road safety analysis. The model's three elements are presented in the form of a triangle due to the interacting effects among the concepts, as illustrated in Figure 2.1. An additional factor, termed a system of traffic laws and regulations, was also included by Jorgensen and Abane (1999), as this factor has a direct influence on all three components of the model.

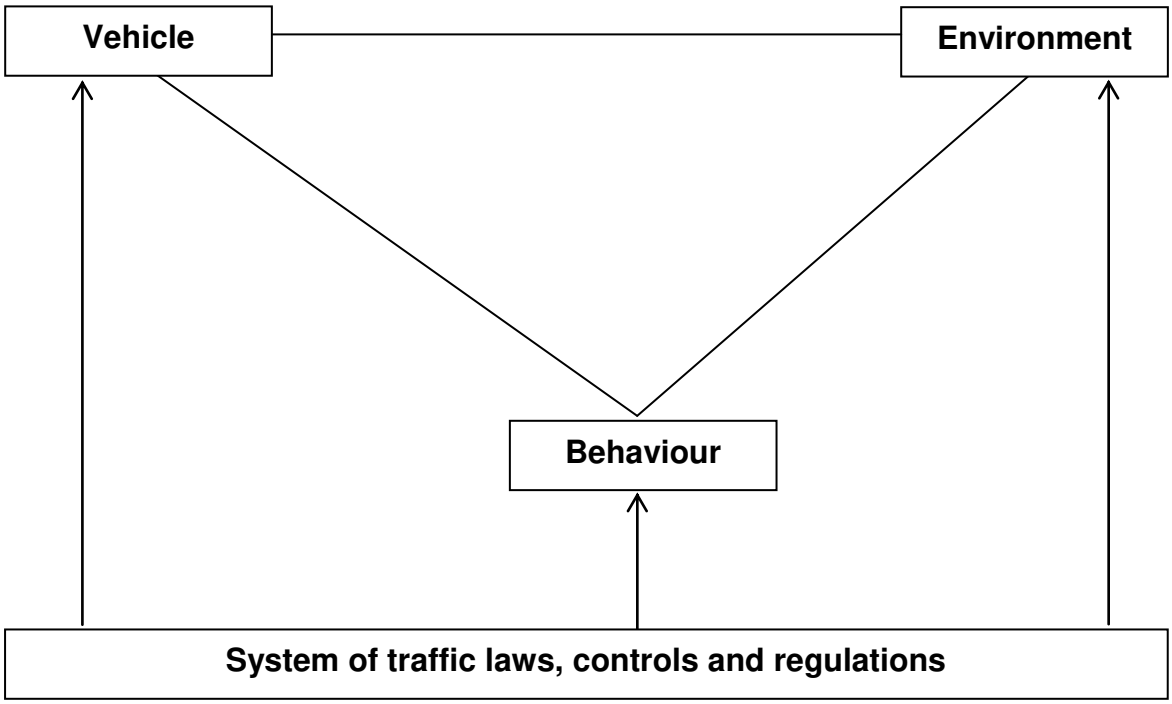



***Figure 2.1.*** **A model for analysing traffic accidents**

(Jorgensen & Abane, 1999)

The reason for selecting this model to explain road safety can be summarised in two points, as identified by Teye-Kwadjo (2011). Firstly, the model assists in identifying key components in understanding the concept of road safety and accidents. Secondly, the model identifies multiple risk factors present on the roads. The model therefore explains accidents as the

result of physical factors in the road system, the vehicle, behavioural factors, and how the factors interrelate with rules and regulations in unique settings. The following section discusses the components of the model and the influence of these factors on accidents.

#### *2.2.1.1. Vehicle factors contributing to accidents*

The condition of a vehicle is often responsible for the accident. Specific vehicle factors contributing to accidents include brake failure, tyre bursts and general poor maintenance of the vehicle (De León, 2006; Teye-Kwadjo, 2011). De León (2006) advocates the importance of improving the interior of vehicles to increase the safety of the driver. Examples of improvements include safety belts, airbags and extended visibility through windscreen designs and strategically placed mirrors. The contribution of vehicle factors to accidents is not independent, however, as vehicle factors are also influenced by environmental, behavioural and systemic law factors (Teye-Kwadjo, 2011). For example, the degree to which a country's legislation allows drivers to use worn tyres and the maintenance of public roads all contribute to the total impact vehicle factors will have on accidents.

#### *2.2.1.2. Environmental factors contributing to accidents*

The environmental influences in a specific situation comprise social, economic, physical or psychological factors (Hong, 2005). Environmental factors most studied in the context of road safety are the design of the road, geographic location, season, weather, visibility, time of day and traffic regulations (Jorgensen & Abane, 1999). De León (2006) found that the factors most often responsible for environmentally caused accidents are weather conditions and the design of the road.

Specific weather conditions that negatively influence driver ability are excessive heat, fog, rain and snow. In addition, ice build-up on the roads and puddles forming due to heavy rainfall often result in drivers losing control of their vehicles and crashing into obstacles. Fog conditions decrease visibility and increase the likelihood of head-to-tail collisions. Studies have found a relationship between seasons and accidents, as the majority of fatal accidents occur during the winter (Massie, Campbell & Williams, 1995; Teye-Kwadjo, 2011). This

relationship proves that the environment has to been incorporated in a model explaining the causes of accidents.

Another environmental factor contributing to accidents is the design of the road. Road design adjustments to increase road safety includes separate lanes for pedestrians and cyclists, barriers to prevent vehicles from driving off hills and clear road signs to warn motorists of animals in the area, bridges, sharp bends and rock falls (Hong, 2005). Methods to prevent drivers from falling asleep such as rumble strips have been set up on long straight roads mainly between towns.

Although these measures are put in place to decrease accidents, studies on the rate of accidents on wide roads compared to narrow roads have found that wide roads are more dangerous (De León, 2006). The reason for this finding could be that drivers are more inclined to take risks on roads perceived to be superior. Additionally, De León (2006) reported that drivers are more likely to exceed the speed limit on national roads than on suburban roads. Studies are therefore needed to investigate this to determine a balance between making roads safer and reducing the likelihood of drivers taking risks.

#### *2.2.1.3. Traffic laws, control and regulations*

The implementation and regulation of traffic laws are under the control of an area's municipality and the country's ruling party. These policies stipulate the procedures that are in place to control the systems that ensure safe driving practices (Bezuidenhout, 2011). The systems refer to speed limit controls in the form of speed cameras and traffic officers patrolling designated areas. These controls have been proven to reduce accidents by influencing the behaviour of divers (Jorgensen & Abane, 1999). After numerous studies showed that seatbelts can prevent up to 60% of accident fatalities, it was made compulsory by law in South Africa for all front seat occupants of a vehicle to wear a seatbelt (Allen, Zhu, Sauter, Layde & Hargarten, 2005).

Another form of control governed by traffic laws is road blocks. This method allows police offers to pull over numerous cars to investigate offences against traffic laws, such as driving

without a licence, expired licenses or registration, not making use of seatbelts, or driving under the influence of alcohol.

The promotion of road safety is another method employed to increase road safety. This can be achieved through the media and campaigns such as Arrive Alive, an online campaign aiming to enhance awareness on road safety (Allen *et al.*, 2005).

The enforcement of traffic laws, however, is not effective on South African roads. Bezuidenhout (2011) claims that traffic violations in South African are increasing rapidly. According to Bezuidenhout (2011), offences such as ignoring red lights; not using indicators; passing on blind corners and rises; using the emergency lane or shoulder as an additional lane; and stopping in no-stopping zones are daily incidents. Furthermore, there is also no standardisation of punishment for traffic offences. Fines for seatbelt infringement are determined by the municipality of the area where the incident occurs. Bezuidenhout (2011) concludes that the government must first take responsibility and thereafter take action to better enforce traffic laws in order to decrease accidents.

Organisations in the road freight industry have little control over the degree to which government enforces the law and how roads are designed. Organisations can insure that all aspects of the trucks are safe, however, and reduce the likelihood of brake failure and tyre bursts by frequently conducting general maintenance checks.

#### *2.2.1.4. Behaviour factors contributing to accidents*

Individual differences can be ascribed to the interaction of an individual's disposition with numerous internal and external elements (De León, 2006). De León (2006) explains that people differ due to differences in the characteristics of the population regarding age, sex, education, health and economic status, cultural perceptions, religious views, social norms, individual psychology and individual risk behaviour. These factors all contribute to the development of an individual's perception of any situation that is confronted. Perceptions regarding driving practices and accidents are therefore unique to each individual, as it is moulded by personal development.

Dixit *et al*. (2012) describe the practice of driving as a complex network comprising numerous interacting variables with fluctuating degrees of strength. The literature advocates that inherited factors such as race or sex do not predict driver ability, but the age factor has been found to have a significant relationship with accidents (De León, 2006). Research by Hong (2005) and Teye-Kwadjo (2011) found that the age group younger than twenty is more likely to be involved in an accident than any other age group. Teye-Kwadjo (2011) furthermore reported that the age group younger than twenty is more likely to be involved in accidents associated with speeding and losing control of the vehicle than any other group.

According to Hong (2005), this age group poses a risk factor due to a lack of experience and a higher need for excitement. Age as a behavioural factor associated with accidents is not linear, however, but takes on a u-shape (Massie *et al*., 1995). In other words, when a driver reaches the age of sixty, the ability to drive safely decreases due to physical and medical problems such as sight, reaction times and fatigue. Fatigue is not age specific, however. According to research studies, the driver's fatigue plays a key role in every fourth accident and is more common over weekends and early mornings (Maldonadoa, Mitchella, Taylora & Driver, 2002).

Jorgensen and Abane (1999) proposed dividing driving practices into driving skills and driving styles. The former refers to the driver's knowledge and the training received and the latter reflects the driver's attitude and perception regarding road safety. Organisations use training sessions and debriefing exercises to correct and develop driving skill sets. Having measures in place to ensure that drivers who are employed have valid drivers' licences is also of key importance, as research found that the risk of involvement in an accident is much higher for an unqualified individual than for an experienced driver (De León, 2006). According to Hong (2005), organisations focusing on the development of attitudes are not as common as those offering skills training, although the literature indicates that both components contribute to accident involvement. Accidents occurring due to driving behaviour are ascribed to human error. Examples of accidents occurring due to human error involve errors of judgement, inexperience, incompetence, negligence or rule violations (Dixit *et al*., 2012). According to Teye-Kwadjo (2011), human error is held responsible for 80% of road accidents which are

most often triggered by speeding. It is therefore possible to formulate the first hypothesis, namely:

Hypothesis 1: Risky driving behaviour, as defined by rule violations, will have a significantly positive effect on accident rates.

As 80% of accidents are regarded as due to human error, researchers, in order to explain accidents, have attempted to identify human characteristics that may cause people to have accidents. The idea of accident proneness was proposed, to suggest that some individuals are more inclined to be involved in accidents than others. The path of the concept of accident proneness is discussed below.

## 2.3. The concept of accident proneness

The concept of accident proneness has had academics from a wide spectrum of industries debating the existence of this for decades (Visser, Pijl, Stolk, Neeleman & Rosmalen, 2006). According to Rodgers and Blanchard (1993), the acceptance of the concept has been undermined by poor experimental procedures; the misinterpretation of results; the tendency to blame individuals for accidents; and forceful attempts to find relationships between personality traits and accident proneness, even though numerous studies could not find reliable statistics to support this notion (Burnham, 2011; Froggatt & Smiley, 1964; Visser *et al*., 2006). In order to better understand the persistence of researchers trying to prove the existence of accident proneness, the following section presents a discussion on the origin and development of the concept.

### 2.3.1. The origin of accident proneness

A study during World War I by Greenwood and Woods (as cited in Burnham, 2011) of factory workers of a British ammunition company, found that accidents that occurred were not evenly distributed among the workers. The study also found that most of the accidents could be assigned to a small portion of the workforce.

Greenwood and Woods then attempted to explain this phenomenon by suggesting the concept of unequal initial liability which was later termed accident proneness (Burnham, 2011). Greenwood and Woods (as cited in Rodgers & Blanchard, 1993) conducted studies that compared observed accident distribution with the distribution of accidents occurring by chance alone. The results reported that the distribution of accidents could not be explained by chance alone and led the researchers to conclude that the best explanation for the unequal distribution was unequal initial liability. Greenwood and Woods (as cited in Rodgers & Blanchard, 1993) further concluded: "...so far as our present knowledge goes, it seems that the genesis of multiple accidents under uniform external conditions is an affair of personality" (p. 1). This statement was published in the study without any proof of personality test or any other scientific proof for that matter. This report led the pack in terms of falsifying the concept's potential to represent something it had not yet proved to do.

Two decades after Greenwood and Woods' work was published, Newbold (as cited in Rodgers & Blanchard, 1993) replicated their work on a larger sample consisting of 13 factories. After Newbold (as cited in Froggatt & Smiley, 1964) evaluated the accident records the results also indicated that a small portion of the workforce explained the majority of accidents that occurred. Newbold (as cited in Rodgers & Blanchard, 1993) further stated that this phenomenon indicated the presence of a stable personality characteristic, and she went on to say:

> …it is not possible in a mass examination of this kind to find out how much of this may be due to individual differences in the conditions of work or how much to personal tendency, but there are many indicators that some part, at any rate, is due to personal tendency (p. 2).

Although the author chose her words in phrasing the presence of personality tendencies carefully, many articles cited this study as support to explain the relationship between personality and the concept of accident proneness (Froggatt & Smiley, 1964).

### 2.3.2. Later studies on accident proneness

Farmer and Chambers (as cited in Burnham, 2011, as cited in Visser, 2007) who are often called the fathers of the term accident proneness, used the work of Greenwood and Woods and Newbold to develop a formal theoretical depiction of what an accident prone individual would look like in psychological terms. Visser *et al*. (2006) explained that Farmer and Chambers' work focused on explaining unequal initial liability in terms of personality trait differences between accident prone and accident free individuals. Farmer and Chambers (as cited in Visser *et al*., 2006) selected a battery of personality tests measuring intelligence, perseverance, mechanical aptitude, and perceptual motor skills. Farmer and Chambers (as cited in Visser *et al*., 2006) found differences of statistical significance between accident involved and accident free individuals and concluded their study with the statement: "…accident proneness is no longer a theory but an established fact" (as cited in Rodgers & Blanchard, 1993, p. 2). Farmer and Chambers (as cited in Visser et al., 2006) furthermore stated that accident proneness and psychomotor tests can be used for selection purposes to reduce accident rates in the logistics industry. This statement, however, was never validated by scientific support (Burnham, 2011).

Critics did not accept the findings of Farmer and Chamber's work as the measurements' validities were questioned (Burnham, 2011). A few studies attempted to replicate and tweak the work done by Farmer and Chamber by using different personality assessments, but the results were inconclusive and the interest in the concept within the psychology industry was dimmed out (Burnham, 2011; Froggatt & Smiley, 1964; Visser *et al*., 2006).

Although researchers stepped away from the concept, according to Rodgers and Blanchard (1993), it was still widely accepted in managerial circles. Rodgers and Blanchard (1993) and Burnham (2011) explained that the reason for this acceptance was that management could henceforth blame individuals for mistakes that occurred, instead of sharing the responsibility. As the concept was highly commercialised, available literature on accident proneness was evaluated by Visser *et al*. (2006) and in several other studies in an attempt to better educate management of the concept's implications (Cresswell & Froggatt, 1962; Froggatt & Smiley, 1964; Rodgers & Blanchard, 1993). As summarised by Rodgers and Blanchard (1993), these

studies all found the literature to be untrustworthy due to poor experimental procedures; illogical reasoning; the misinterpretation of results; not understanding scientific methods; and the forceful attempt to find relationships between personality traits and accident proneness.

The cycle of misinterpreting results and reporting these findings as factual inhibited the development of the concept and fuelled false ideas. An example is the proclaimed availability of assessments to measure accident proneness (Visser *et al*., 2006). No assessment can yet be used to distinguish accident-free individuals from accident-prone individuals due to inadequate literature and insufficient scientific support. Wagenaar and Groeneweg (as cited in Rodgers & Blanchard, 1993, p. 21) stated: "…psychologists are talking moonshine if they claim that accident prone people can be removed through psychological testing". Despite these warnings, the belief that assessment batteries can be used to eliminate accident prone individuals still prevails (Van Ass, 2001).

Over the last forty years, twenty studies focused on the relationship between personality traits and accident proneness; however, none of the studies could explain significant relationships between personality traits and accident proneness (Rodgers & Blanchard, 1993).

### 2.3.3. A contemporary viewpoint

As explained above, the literature review did not find any reliable studies that could prove a relationship between accident proneness and personality traits. The researcher, however, maintains the standpoint of Rodgers and Blanchard (1993), which is that the lack of proof does not mean that a combination of personality traits and many other environmental factors could not, in part, explain the occurrence of accidents. One must accept, though, that the usefulness of personality traits in predicting accident proneness is limited.

As per Af Wahlberg and Dorn (2009), research findings on accident proneness that have been scientifically evaluated can be summarised in two key assumptions. Firstly, there are accident repeaters and they are observable. Secondly, repeaters appear in small groups, but comprise an ever changing group. In other words, accident repeaters do not provide a stable representation of the phenomenon within an individual. This would mean that the elimination

of the accident repeater will not reduce the accident rate. One can therefore conclude that accident proneness is not a stable trait.

During the development of British industrial sociology, the Tavistock Institute of Human Relations conducted studies on the causes of accidents in the early post-war period (Nicholas, 1994). The institute published two key articles by Hill and Trist (as cited in Van der Westhuizen, 2006) claiming that a relationship exists between industrial accidents and absenteeism. The articles were later combined and renamed Industrial accidents, sickness, and other absences (Nichols, 1994). Hill and Trist's (1962) work proposed that an accident was a form of a range of withdrawal behaviours that manifests in a social process.

Hill and Trist (as cited in Van der Westhuizen, 2006) believed that accidents were the result of interacting effects by two key factors. The first factor is the opportunity for an accident to occur, which refers to the risk that is connected to a specific job. The second factor denotes the tendency of employees to take the opportunity, in other words, to be involved in the accident.

Hill and Trist (1962) explained that they evaluated the safety procedures in place at specific organisations. They (1962) noticed that organisations often attempted to block the opportunity for accidents and to reduce the propensity of employees to take the opportunity. The methods utilised by the organisations included shielding the machinery and educating the employees through training (Nichols, 1994). Hill and Trist (1962) did not agree with these remedies, however, as they believed that only a small degree of success could be achieved through such methods. Hill and Trist (as cited in Nichols, 1994, p. 389) quoted the following to support their assumptions:

> …people carrying special responsibility or accident prevention has acquired intuitively the knowledge that accidents are in fact often motivated by unconscious trends in the individual or may be indirect consequences of tensions between groups.

In other words, an individual making an accident will not be discouraged by blocking mechanics, as the motivation lies within the individual's subconscious thoughts.

Van der Westhuizen (2006) explained that Hill and Trist built their work on two key principles. The first principle was the belief that unconscious thoughts played an important part in having accidents. The second belief was that the workplace must be conceptualised as a socio-technical system. Throughout Hill and Trist's (1962) work, the authors emphasised the importance of incorporating the social factor. They argued that, in order to understand accidents, the employee must be evaluated within the context of occupational adjustments in an organisation.

Hill and Trist (as cited in Nicholas, 1994, p. 390) defined accidents as "…means of withdrawal from the work situation through which the individual may take up the role of absentee in a way acceptable to both himself and his employing organisation". Hill and Trist (as cited in Van der Westhuizen, 2006) regard absenteeism as one of many ways withdrawal behaviour can manifest itself. The social process of subconsciously withdrawing oneself could thus result in the occurrence of accidents.

As reported by Nicholas, (1994) Hill and Trist's work on accidents did not incorporate any theories of accident proneness. Hill and Trist (1962) stated that the concept of accident proneness cannot yet be understood in a statistical manner and that the inclusion of the concept in their studies would force them to accept many doubtful assumptions. Additionally, Hill and Trist (1962) believed that studies attempting to determine individual differences between accident prone and accident free individuals held little value as the measurements used for these studies were not valid or reliable and could therefore not be used for selection or intervention purposes. Hill and Trist (as cited in Nicholas, 1994, p. 389) further argued that:

> …such tests took no account that the behaviour and reactions of individuals cannot be adequately interpreted by reference to themselves alone. Account must be taken also of their relation to a cultural as well as to a physical environment, which, in the case of a place of work, is a highly organised structure, both technically and socially.

In other words, accidents are dynamic events influenced by the individual's personal development and the work environment. The same individual involved in accidents at work might not be involved in any accidents at home, confirming that the concept does not refer to a stable trait. It is therefore concluded that accident repeaters do not provide a stable representation of the phenomenon within an individual. Hill and Trist (1962) did prove that some individuals meet with more accidents than others. The reason for this phenomenon was not explained by a stable trait, however, but rather as due to group norms and lack of compliance. It is therefore concluded that accident repeaters are those individuals exhibiting withdrawal behaviours. It could thus be argued that employees exhibiting such behaviour have little commitment towards their job and, by extension, to the company. The psychological contract has been broken and the employee's sense of duty to follow rules and regulations has collapsed.

Accidents in the workplace could therefore be explained as an outcome of the interacting effect between commitment and withdrawal behaviours. Leading from this, the following sections are dedicated to the evaluation and understanding of factors associated with commitment and withdrawal behaviour. The concepts that are discussed are organisational climate, job satisfaction, organisational commitment and turnover intention.

## 2.4. Organisational climate

Organisational climate and organisational culture have similar sets of characteristics explaining perceptions and beliefs of members of an organisation (Wallace, 2004). Although climate is related to culture, it is a distinct concept (Kuenzi, 2008; Wallace, 2004). According to Castro and Martins (2010), factors of climate, as represented in Table 2.1, are measured with relative precision, whereas factors of culture, as described in Table 2.2, are difficult to express and therefore difficult to measure.

**Table 2.1**

**Dimensions of organisational climate**

| Dimension | Description |
|---|---|
| **Trust** | Refers to the trust between all employees of the organisation. |
| **Training and development** | Refers to training initiatives received, satisfaction with the initiatives and availability of training plans, and awareness of mentoring and coaching programmes, promotion criteria and opportunities. |
| **Transformation and diversity** | Refers to equal treatment and management of employees. Refers to understanding, acceptance and support of the transformation strategy and initiatives. |
| **Job satisfaction** | Refers to the degree to which employees feel positive about their future and work. |
| **Leadership** | Refers to ability of managers to manage and lead employees, how they behave and treat employees and the knowledge they have. |
| **Employee wellness** | Refers to the support given to employees to balance work and family life and the pace of the work and level of stress. |
| **Communication** | Refers to communication issues in the company, the manager's ability to listen to the staff, share information, and sort out misunderstandings. |
| **Performance management** | Refers to receipt of information and feedback about the employee's job, responsibilities, and goals. Refers to satisfaction with job evaluation and recognition received. |
| **Remuneration and reward** | Refers to fairness of salary package in relation to the market and in comparison with similar jobs in the organisation. |
| **Teamwork** | Refers to belonging and fit in the team and organisation. Refers to team dynamics and decision making. |
| **Work environment** | Refers to quality of equipment and technology, physical work and the environment. |

(Castro & Martins, 2010, p. 3)

**Table 2.2**

***Dimensions of organisational culture***

| Dimension | Description |
|---|---|
| **Values:** | Values are revealed in a company's vision and mission. Employees utilise these values to evaluate their actions. |
| **Beliefs:** | Beliefs reflect an employee's knowledge of the way the company works and the likely consequences of his/her actions. |
| **Myths:** | Myths are the stories or traditions that are continued within the company and convey what is right or wrong to new employees. |
| **Traditions:** | Traditions are recurrent momentous events such as festivities and special awards that highlight what is held in high regard. |
| **Norms:** | Norms are informal rules of the company concerning procedures such as communication processes, work habits, dress codes, work hours and implicit codes of interpersonal behaviour. |

(Kennedy Group Executive Strategies, n.d., p. 4)

### 2.4.1. Molar and facet-specific climate research

According to Béland and Dedobbeleer (2011), the concept of climate can be measured at group level and individual level. Béland and Dedobbeleer (2011) state that the measurement of climate at the individual level, also known as psychological climate, focuses on the perceptions and beliefs of the individual. James, Hater, Gent and Bruni (as cited in Wallace, 2004) define psychological climate as "…the individual's cognitive representations of relatively proximal situational conditions, expressed in terms that reflect psychologically meaningful interpretations of the situation" (p. 29). According to Béland and Dedobbeleer (2011) determining climate at group level, also referred to as organisational climate, focuses on the

general assumptions and perceptions of the group members unified by a shared leader or due to operational requirements.

Examining organisational climate by gathering information on the unit's perceptions and understanding of expectable behaviour is termed a molar approach (Kuenzi, 2008). According to Neal, Gri and Hart (2000), modern-day research favours a facet-specific approach to explaining climate. Facet-specific climate research focuses on a single aspect of organisational climate. In the context of road freight, facet-specific climate research focuses on a safety climate. Zohar (2003) claims that safety climate "…relates to shared perceptions with regard to safety policies, procedures, and practices" (p. 125). In other words, safety climate measures are similar to that of organisational climate in terms of focusing on the group's perceptions and belief on policies and practices but dissimilar as the emphasis is on safety alone.

According to Wallace (2004) and Zohar (2003), there are two key components to understanding safety climate. Zohar explains the components by stating:

> …high safety climate relates to supportive policies concerning safety and health, though such a climate may be strong or weak, depending on the extent of agreement among employees in their respective organizations or subunits (p. 125).

In other words, an organisation must not only focus on the development of safety policies but also on ensuring the acceptance of the programmes by all members of the unit. A study by Michael, Guo, Wiedenbeck and Ray (as cited in Mahmood, Isa, Mustafa, Aziz & Salleh, 2010) claimed that safety procedures alone do not significantly predict safety outcomes. In other words, focusing on a safety procedure such as safety communication is not enough to ensure safety outcomes. Management must also focus on safety climate, i.e. gaining the acceptance of procedures by all members of the unit. It can therefore be argued that perception of a safety climate will only develop once the members of the organisation have accepted and internalised the programmes. Once a safety climate is achieved, social norms develop and

the employees enforce the safety procedures in place among themselves. The following hypothesis can therefore be formulated:

Hypothesis 2: Safety climate will have a significantly negative effect on risky driving behaviour.

### 2.4.2. Safety climate and leadership

Michael *et al*. (as cited in Mahmood *et al*., 2010) found that leader-member exchange was the strongest predictor of safety-related events. Griffiths (as cited in Wallace, 2004, p. 33) states that "…safety in industry is above all a responsibility of management, and unless understood other measures will not be successful in abolishing accidents and injuries." In other words, management is responsible for the creation of a safety climate.

Researchers agree that individuals who accept and internalise safety procedures will be less likely to be involved in accidents (Masia & Pienaar, 2011). However, this would only be true in a vacuum. An organisation that emphasises productivity above all else will find itself in conflict with safety procedures. This phenomenon was first addressed by Zohar (2003) who argued that competing goals will result in either one or both goals being neglected. Hence, using a facet-specific approach to safety climate does not add value to organisations attempting to understand safety. Masia and Pienaar (2011) therefore proposed that safety climate and productivity climate should be evaluated collectively to understand the interaction of competing goals.

Both safety climate and production climate can be imposed on members of the organisation through policies, procedures and role models portraying prioritised behaviour, such as quantity over quality, or speed over causation and safety procedures (Béland & Dedobbeleer, 2011). Béland and Dedobbeleer (2011) found that safety climate and production climate advocate conflicting goals. In other words, organisations that lead with a strong safety climate would focus on prevention whereas an organisation leading with a strong production climate would focus on advancement. It is therefore argued that these concepts relate negatively to one another.

Research on leadership styles and safety climate by Masia and Pienaar (2011) found transformational leadership to correlate positively with safety climate and laissez-faire leadership to correlate negatively with safety climates. Although more studies are needed to prove the relationship between leadership and climate, the logical arguments above support the inclusion of leadership factors in understanding safety climate.

Safety climate is only one of many aspects determining job satisfaction. The following section therefore is devoted to job satisfaction to illuminate the importance thereof in understanding accidents.

## 2.5. Job satisfaction

The majority of the literature studies on job satisfaction have been dedicated to the development of a conceptual and operational definition (Sarker, Crossman & Chinmeteepituck, as cited in Buitendach & Rothmann, 2009). Green (2000) explained that the task of developing a universally accepted definition for job satisfaction is not a difficult, but rather an impossible task.

Hoppock (as cited in Drenth, 2009) defines job satisfaction as "…any combination of psychological, physiological, and environmental circumstances that causes a person truthfully to say, I am satisfied with my job" (p. 19). Locke's (1976) definition of job satisfaction reads "…a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (p. 1300). In other words, job satisfaction is a positive emotion towards one's job.

Lok, Wang, Westwood and Crawford (2011) claimed that, although most of the literature on job satisfaction utilised a molar approach, some researchers did use facet-specific type research where specific facets of job satisfaction were studied individually. Examples of job satisfaction facets are depicted in Table 2.3.

**Table 2.3**

***Facets of job satisfaction***

| Facet | Description |
|---|---|
| **Pay** | Satisfaction with pay and pay raises |
| **Promotion** | Satisfaction with promotion opportunities |
| **Supervision** | Satisfaction with person's immediate supervision |
| **Fringe benefits** | Satisfaction with monetary and non-monetary fringe benefits |
| **Contingent rewards** | Satisfaction with recognition and rewards for good work |
| **Operating procedures** | Satisfaction with operating policies and procedures |
| **Co-workers** | Satisfaction with co-workers |
| **Nature of work** | Satisfaction with type of work done |
| **Communication** | Satisfaction with communication within the organisation |

(Spector, 1997)

Shore and Martin (1989) reported on a prominent facet-specific study conducted by Price and Muller to develop a model focusing on working conditions. Price and Muller (as cited in Shore & Martin, 1989) claimed that employees valued certain working conditions more than others. The authors argued that, if organisations focused on achieving the specific valued working conditions, employees' satisfaction and commitment would rise and intention to leave would decrease.

Studies using the molar approach evaluated general or overall job satisfaction by clarifying the concept as a general satisfaction with one's job. Buitendach and Rothmann (2009) stated that general job satisfaction also refers to an individual's attitude towards the job. In other words, an individual who has a positive attitude towards his or her job will score high on job satisfaction, whereas as an individual with a negative attitude towards the job will score low on job satisfaction.

Another theory of job satisfaction often found in the literature advocates that general job satisfaction refers to an employee's emotional state regarding a job calculated by the

difference between actual and desired outcomes (Anis, Rehman, Khan & Humayoun, 2011). In other words, job satisfaction is the degree to which an employee's wants and needs in terms of his/her job are satisfied (Gormley, 2005). This is supported by Buitendach and Rothmann (2009) stating that "…job satisfaction can be described as an affective or emotional reaction to the job, resulting from the incumbent's comparison of actual outcomes with the required outcomes" (p. 1).

According to Al-Hussami (2008), job satisfaction is not determined by the characteristics of the job only, but also by the employee's expectations of the job's elements such as salary, autonomy, communication, and organisational commitment. The evaluation of the difference between desired and actual outcomes is thus unique, as each individual's desires are built upon their own needs, values and experiences.

Renowned researchers in the field of psychology, namely Maslow and Herzberg (as cited in Martin & Roodt, 2008) advocated the importance of addressing employees' needs because this could predict behaviour in the organisation. Maslow (as cited in Martin & Roodt, 2008) proposed a hierarchy of needs arranged from lower- to higher-order needs. According to Maher (2002) lower-order needs within a modern day organisational context refers to extrinsic needs such as compensation and working conditions, whereas higher-order needs are classified as intrinsic rewards. Examples of such needs within an organisation include recognition and autonomy. Herzberg (as cited in Maher, 2002) proposed the two-factor theory of job satisfaction, arguing that job dissatisfaction was not the direct opposite of job satisfaction, but that the two concepts were unrelated and separate phenomena. According to Burton (2012) and Hyun (2009), Herzberg categorised all the activities directly involved with the context of the job, i.e. all extrinsic factors, and termed it hygiene factors. The intrinsic factors were termed motivators, which involved environmental factors.

Martin and Roodt (2008) reported that research studies by Locke (1976) concentrated on the different dimensions of the concept of job satisfaction. Locke (1976) identified work pay, promotions, recognition, benefits, working conditions, supervision, co-workers, company, and management as elements of job satisfaction. Locke (1976) also discovered that the elements mentioned above can be grouped into two distinctive dimensions termed intrinsic satisfaction

and extrinsic satisfaction. Martin and Roodt (2008) explained that factors not directly involved with the tasks of the job, i.e. remuneration, working conditions and colleagues, were termed extrinsic satisfaction, whereas factors that form part of the job's tasks, such as variety, stimulation and autonomy, make up intrinsic satisfaction. A definition by Weiss, Dawis, England and Lofquist (as cited in Martin & Roodt, 2008, p. 24) clarifies the difference between intrinsic and extrinsic:

> …intrinsic satisfaction was derived from performing the work and consequently experiencing feelings of accomplishment, self-actualisation and identity with the task. Extrinsic satisfaction was derived from the rewards bestowed upon an individual by peers, supervisors or the organisation, and can take the form of recognition, compensation and advancement.

It can therefore be concluded that job satisfaction involves a personal calculation and the optimum balance of intrinsic and extrinsic satisfaction is unique to each employee. This argument is also valid for organisational commitment, more specifically affective commitment, as it is determined by the degree to which the employee's values and needs coincide with the organisation's vision and mission.

## 2.6. Organisational commitment

Bateman and Strasser (1984) defined organisational commitment as "…multidimensional in nature, involving an employee's loyalty to the organisation, willingness to exert effort on behalf of the organisation, degree of goal and value congruency with the organisation, and desire to maintain membership" (p. 95). Rashid, Sambasivan and Johari (2003) define organisational commitment as a critical variable that reveals the relationship between the organisation and its employees. The definitions by Bateman and Strasser (1984) and Rashid *et al*. (2003) explain the significance of understanding organisational commitment, as these reveal the reasons why employees come to work every day. Having this type of information could assist in predicting employees' performance levels and dedication to their work. Research by Porter, Steers, Mowday and Boulian (as cited in Wright & Kehoe, 2007) states

that organisations benefit from employees who possess the quality of organisational commitment, due to those individuals being less likely to be absent, and having a tendency to stay with a company. On can therefore argue that identifying individuals who score low on organisational commitment and intervening could increase retention and performance levels.

Meyer and Allen (1997) have been predominant in the progress in literature on organisational commitment, having produced a great deal of research exploring the depth of the concept (Ferreira *et al*., 2010). Meyer and Allen (1997) introduced the argument that organisational commitment can take on different forms and that the key differences refer to the mindsets of individuals in terms of what organisational commitment means. Meyer and Allen (1997) stated that the reason for distinguishing among the different forms of organisational commitment was that they contained different implications for actions and that these mindsets revealed three distinguishable aspects, namely affective connection to the organisation, obligation to stay, and perceived cost of parting. To differentiate among the three mindsets, Meyer and Allen (1997) developed the three-component model of organisational commitment and label the themes: affective commitment, normative commitment, and continuance commitment.

Affective commitment can be defined as a positive affection toward an organisation, revealed in a desire to see the organisation succeed and being proud to be associated with the group (Addae & Parboteeah, 2008; Cohen, 2003). Workers who are affectively committed to the organisation will most likely carry on working for it because they want to do so. Affective commitment development entails appreciation of the organisation and internalisation of organisational philosophy and standards (Meyer & Allen, 1997). In other words, employees who are devoted to an organisation at an emotional level, typically remain with the organisation since their values are in agreement with the values and goals of their employer.

The second element of the model is called continuance commitment. This element refers to the employee's knowledge of the costs involved in leaving the organisation (Addae & Parboteeah, 2008; Meyer & Allen, 1997). Meyer and Allen (1997) believe that the individual who considers the expenses and threats linked to leaving the organisation has a calculative mindset. Individuals whose most important tie to the organisation is based on continuance commitment continue because they need to. Thus, individuals who reveal continuance

commitment remain with a particular organisation because of the capital gain they receive as an outcome of the time worked in the organisation, and not because they wish to remain. This is different from affective commitment, where employees stay with an organisation because they want to.

The final element of commitment is termed normative commitment. It is defined by Meyer and Allen (1997) as a sense of responsibility to persist in employment with a particular organisation. Meyer and Allen (1997) describe this mindset of commitment as a perceived obligation to remain with a particular organisation, regardless of how much status development or fulfilment the organisation supplies to the employee over the years, as it feels like the right thing to do.

Meyer and Herscovitch (2001) believed that there was a need for expansion of the three-component model of organisational commitment because it did not incorporate the changes that came with the modern-day workplace. Meyer and Herscovitch (2001) expanded on the three-component model and developed another model of workplace commitment. For the purposes of this study, the expanded version of the three-component model of organisational commitment will be applied. This model has undergone critical inspection and has received empirical support (Meyer & Herscovitch, 2001; Ferreira *et al.*, 2010). Figure 2.2 illustrates a summary of the relationships between the three commitment components, antecedents and consequence variables in the expanded model.

On the left-hand side of Figure 2.2, categories of variables found to be involved in the development of affective, continuance, and normative commitment are identified. On the right-hand side, variables found to be consequences of commitment are identified. A significant validation for the development of the Three-Component Model was the findings that, even though all three forms of organisational commitment are negatively related to turnover, the components relate differently to measures of other behaviours of work (Ferreira *et al.*, 2010).

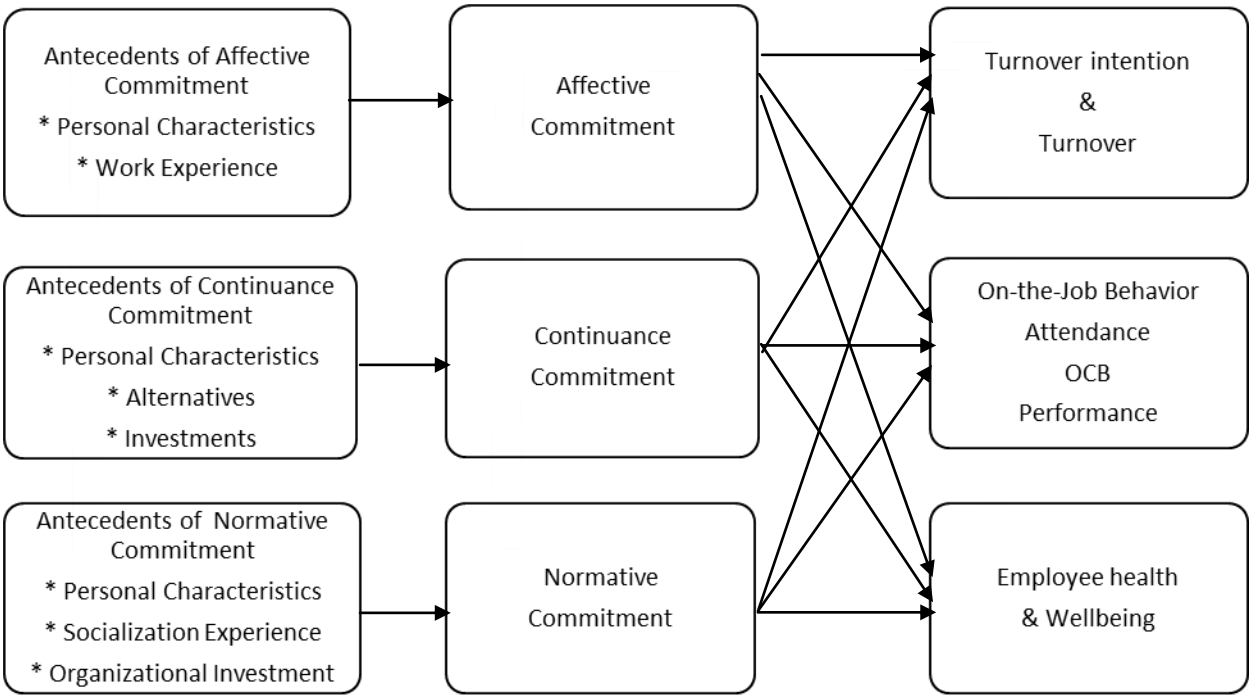



***Figure 2.2.*** **A three-component model of *organisational commitment***

(Meyer & Herscovitch, 2001)

## 2.7. The concept of turnover intentions

Employee turnover is defined as the movement of employees across the labour market; between organisations and positions; and between the state of employment and unemployment (Ongori, 2007). A concentrated definition focusing on a single organisation suggested by Price (2001) defines turnover as the movement of an employee over the membership boundaries of an organisation. Chikwe (2009) and Cho, Woods, Jang and Erdem (2006) argue, however, that the definition of turnover is twofold as it refers to the replacement of an employee who left the organisation with a newly-hired employee. In other words, turnover is only completed once a replacement to fill the open vacancy is successfully recruited.

A degree of employee turnover is beneficial to an organisation as new talent provides novel perspectives and skills. However, when turnover cost exceeds the beneficial value of new employees, organisational effectiveness declines. Cascio (as cited in Perez, 2008) developed a table of significant factors attributed to the losses associated with high turnover, as depicted

in Table 2.4. Cascio (as cited in Perez, 2008) explained that one needs to calculate the sum of separation cost, replacement cost and training cost to determine actual employee turnover expenses.

Turnover rate is different from turnover as the one describes a statistical calculation and the other a type of withdrawal behaviour. The turnover rate can be measure and quantified by dividing the number of employees leaving the organisation over a specific period by the average number of employees employed in that same period, multiplied by a hundred (Price, 2001). This method is not used often as it does not distinguish between individuals that leave voluntarily and those employees who are asked to leave (Msomi, 2010). The reason for this distinction being of importance concerns the relationship between turnover and organisational factors such as job satisfaction and organisational commitment (Suzuki, Crum & Pautsch, 2009).

The concept of turnover intention is often used in organisational development research as it is an antecedent to turnover and numerous findings supports the strong significant relationship between turnover intention and actual turnover (Martin & Roodt, 2008). Turnover intention is not as overt as actual turnover. Sousa-Poza and Henneberger (2002) define turnover intention as "…the (subjective) probability that an individual will change his or her job within a certain time period" (p. 1). The term intention implies interest in a specific behaviour and not action (Perez, 2008). However, Sousa-Poza and Henneberger's (2002) research has proven that in increase in turnover intention results in a significant increase in actual turnover.

### 2.7.1. Organisational factors influencing intention to leave

According to Perez (2008), intention to leave an organisation is influenced by a cluster of organisational factors. Organisational influences include job stressors, organisational culture, management relationships, and support systems. All of these factors contribute to the decision process of terminating one's services with an organisation.

**Table 2.4.**

***Factors contributing to losses associated with high turnover***

| Categories | Subcategories |
|---|---|
| **Separation Cost** | The costs incurred for exit interviews |
| | Administrative functions related to termination |
| | Separation/severance pay |
| **Replacement Cost** | Advertising position availability in various media |
| | Entrance interviews |
| | Holding decision-making meetings |
| **Training Cost** | Norms of conduct and performance |
| | Disseminating relevant information for organisational socialisation |
| | Participation in on-the-job training activities |

(Cascio, as cited in Perez, 2008, p. 16)

As advocated by Dhar and Bhagat (2008), a critical organisational factor to be included in the understanding of turnover intention is job stressors. Dhar and Bhagat (2008) argue that job stressors reduce an individual's job satisfaction levels, causing organisational commitment to decrease and establishing thoughts of intention to leave, which ultimately results in actual turnover. Examples of job stressors included in the authors' study are role ambiguity, role-conflict, work overload, and work-family conflict.

Another organisational factor influencing turnover intention can be explained by Maslow's hierarchy of needs, specifically focusing on the concept of social needs (as cited in Martin & Roodt, 2008). As the working man spends most of his day at work he often relies on supervisors, subordinates, and colleagues to satisfy a degree of social needs. A type of social need often pursued by the working man is social support. Research has found that there is a strong negative relationship between social support and intention to leave (Sousa-Poza & Henneberger, 2002).

### 2.7.2. The relationships between organisational commitment and safety climate, job satisfaction and turnover intention

Masia and Pienaar (2011) found that organisational commitment has been proven to have a positive relationship with safety compliance. Research by Clarke (2010) also found a strong positive correlation between organisational commitment and compliance with the organisations' rules, policies and procedures. Masia and Pienaar (2011) furthermore, found a correlation between all three mindsets of organisational commitment and organisational safety climate.

It is therefore argued that employees scoring high on affective and normative organisational commitment and low on continuance organisational commitment will also display high commitment levels towards safety procedures and will therefore be less likely to be involved in accidents. The following hypotheses can therefore be postulated:

Hypothesis 3: There will be a significantly positive relationship between safety climate and affective organisational commitment.

Hypothesis 4: There will be a significantly positive relationship between safety climate and normative organisational commitment.

Hypothesis 5: There will be a significantly negative relationship between safety climate and continuance organisational commitment.

Numerous studies have found significant relationships between organisational commitment and job satisfaction (Anis *et al*., 2011; Lok *et al*., 2011; Martin & Roodt, 2008; Shore & Martin, 1989). These findings support the statement by Lane, Esser, Holte and McCusker (2010) that job satisfaction plays a key role in the decision process of finding the right job, as well as in an employee's intent to stay within that position or company. In other words, employees scoring high on job satisfaction made the decision to stay within a position because their desired outcomes were met. These employees are therefore more likely to score high on organisation commitment factors.

Anis *et al*. (2011) studied the three-component model of organisational commitment and job satisfaction and found significant correlation between job satisfaction and all three mindsets of organisational commitment. Irving, Coleman and Cooper (1997) found positive correlations between job satisfaction and affective and normative commitment, but a weak negative correlation with continuance commitment. Anis *et al*. (2011) also distinguished between intrinsic and extrinsic satisfaction and found affective organisational commitment to have the greatest impact on both intrinsic and extrinsic satisfaction.

One can therefore argue that employees scoring high on affective commitment are devoted to the organisation at an emotional level, as their values are in agreement with the values and goals of the organisation, and will consequently score high on job satisfaction, as their values and goals are of main concern to the organisation. The following hypotheses can therefore be formulated:

Hypothesis 6: There will be a significantly positive relationship between job satisfaction and normative organisational commitment.

Hypothesis 7: There will be a significantly relationship between job satisfaction and continuance organisational commitment.

Hypothesis 8: There will be a significantly negative relationship between job satisfaction and affective organisational commitment.

Welman and Basson (1995) state that job satisfaction is a significant predictor of employee retention, as employees develop attitudes towards facets of job satisfaction such as work, pay, promotion, co-workers, company policies, supervisors and customers. Wong, Wong, Hui and Law (2001) argued that a lack of job satisfaction and organisational commitment in an entity would escalate the turnover intention of the workforce. Welman and Basson (1995) also argue that job satisfaction is a predictor of turnover intention and turnover intention is the best predictor of actual turnover. According to Lok *et al*. (2011) the primary facets of job satisfaction that influence intention to leave are remuneration; management support; a climate cultivating lack of respect for each other; and motivation.

A number of studies have therefore advocated the importance of including job satisfaction and organisational commitment as components of turnover models (Anis *et al*., 2011; Welman & Basson, 1995; Wong *et al*., 2001). The components' worth is due to numerous meta-analyses consistently finding significant negative relationships between organisational commitment and turnover, and job satisfaction and turnover intention (Anis *et al*., 2011; Lok *et al*., 2011; Martin & Roodt, 2008; Shore & Martin, 1989). When organisational commitment is high, turnover intention will be low, and the greater job satisfaction gets, the smaller the probability becomes of employees leaving the organisation.

The majority of studies evaluating the relationships between job satisfaction, organisational commitment, and turnover intention found the relationship between organisational commitment and turnover intention to be stronger than the relationship between job satisfaction and turnover intention (Shore & Martin, 1989). Lok *et al*. (2011), however, argue that the relationships are of equal strength as the differences are not significant enough to prove otherwise. According to Anis et al. (2011), the argument whether job satisfaction or organisational commitment best predicts turnover intention has not yet been resolved successfully.

Numerous studies have identified the significantly negative relationships between the three organisational commitment subscales and turnover intention. Research by Johnson, Chang and Yang (2010) revealed negative correlations linking turnover and the three commitment scales. Affective commitment correlated strongest, trailed by normative and continuance commitment. Johnson *et al*. (2010) also found withdrawal cognitions to correlate significantly with affective commitment, trailed by normative and continuance commitment. Meyer *et al*. (2002) found significant negative relationships between all three commitment mindsets and turnover and a study on public service employees by Maertz, Griffeth, Campbell and Allen (2007) found significant negative relationships between affective and normative commitment and actual turnover. Given the above, the following hypotheses are formulated:

Hypothesis 9: There will be a significantly negative relationship between affective organisational commitment and turnover intention.

Hypothesis 10: There will be a significantly negative relationship between normative organisational commitment and turnover intention.

Hypothesis 11: There will be a significantly negative relationship between continuance organisational commitment and turnover intention.

These hypotheses can be used to argue that organisational commitment has an impact on employees' intention to leave, no matter the commitment mindset. One can therefore argue that a diminished level of organisational commitment could affect a driver's intention to leave and negatively affect the employee's attitude towards the organisation and/or focus while operating a truck and increase the likelihood of an accident.

Msomi (2010) found that dissatisfied employees allow themselves time to contemplate the cost of parting with their current employee. Empirical studies evaluating determining factors of turnover intentions by Sousa-Poza and Henneberger (2002) found that intensions to leave the organisation were associated with negative events that occurred in the preceding three-week period. In other words, not all employees with turnover intentions will leave their occupations, as the effect of negative events is temporary. One could therefore offer the argument that, if a driver's job satisfaction is negatively affected by a specific event, the individual's organisational commitment will be negatively affected, and intention to leave will be higher during the three weeks that follow.

A study in the health care industry by Waldman *et al*. (2004) found that "…a departing person, cuts corners, compromises quality and safety, risks malpractice claims, or exemplifies any number of adverse traits, behaviours, and attitudes that staff find offensive" (p. 2). In conclusion, a driver's turnover intention due to a negative event that occurred in the past three weeks could demonstrate indifference to safety policies, co-workers, equipment, and other company property, thereby increasing the probability of involvement in an accident. It is thus hypothesised that:

Hypothesis 12: Turnover intention will have a significantly positive effect on risky driving behaviour.

## 2.8. Conceptual model

A conceptual model can be described as a visual representation of a set of relationships between factors that are theorised to affect each other or lead to a target condition. The twelve hypotheses theorised above are mapped on a conceptual model to summarise the researcher's argument, i.e. a combination of high turnover intention and a diminished level of organisational commitment could influence an employee's attitude towards safety procedures and, as a result, lead to an increase in accidents. The conceptual model is depicted in Figure 2.3.

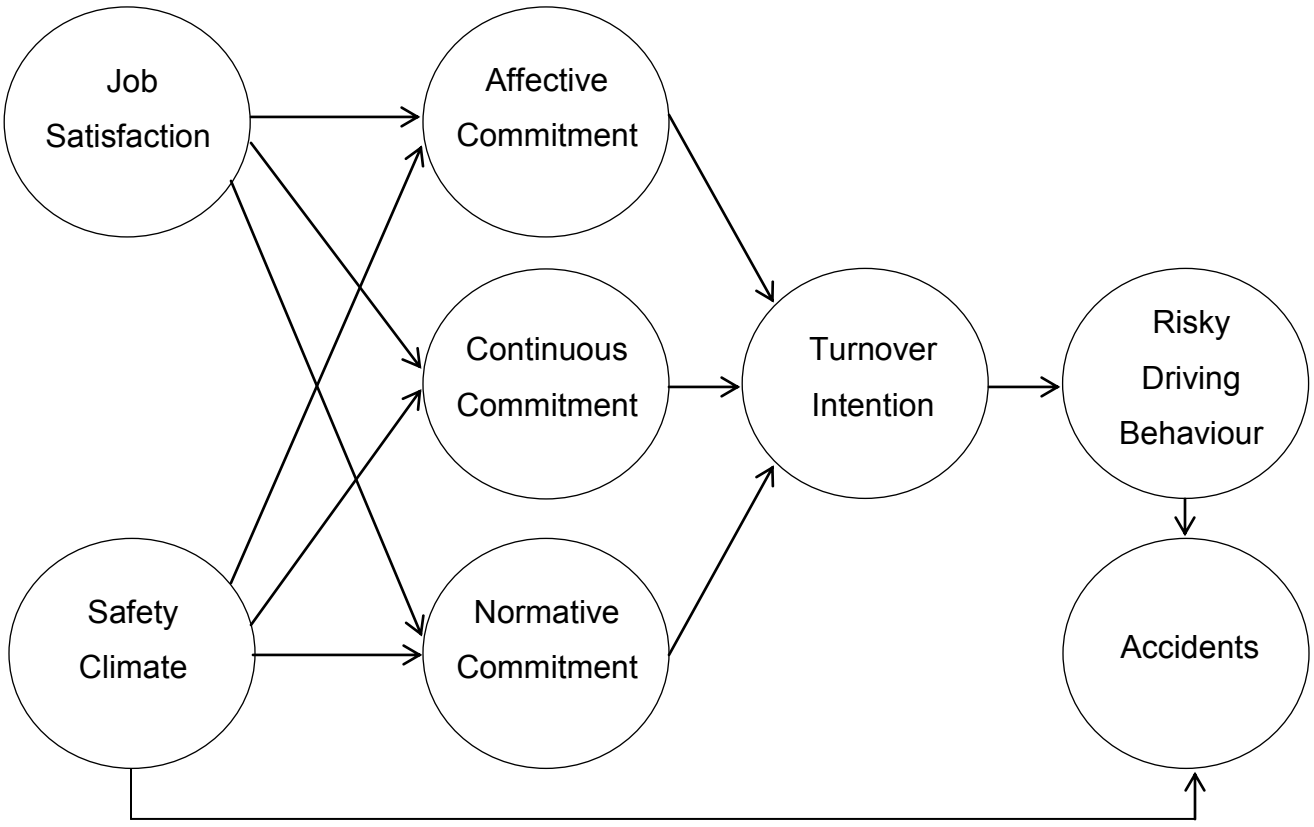



***Figure 2.3.*** **Conceptual model**

## 2.9. Summary: Chapter 2

Chapter 2 comprised of an in-depth discussion of all the concepts included in Graham and Nafukho's (2010) model of safe driving dynamics in trucking and additional concepts often associated with truck driver safety; factors related to turnover intention; and the concept of accident proneness. The literature review assisted in clarifying each concept's role in the development of a conceptual model explaining truck driver accidents. The conceptual model summarising the theorised paths is depicted in Figure 2.3. The following chapter addresses the research methodology selected to guide the research process in the development and testing of the hypothesised conceptual model.

# CHAPTER 3
# RESEARCH METHODOLOGY

## 3.1. Introduction

This chapter describes the research methodology chosen to empirically evaluate the relationships hypothesised in Chapter 2. The aim of this chapter is to present the appropriate research design to explore the research-initiating question, which was: Does a lack of commitment towards a task influence the probability of meeting with an accident?

The following substantive research hypotheses were formulated on the basis of a conceptual model that was developed from theorising the relevance of latent variables logically related to the question that initiated the research. The overarching substantive hypothesis can be further dissected into twelve direct effect substantive hypotheses:

Hypothesis 1: Risky driving behaviour ($\eta_5$) has a significantly positive linear effect on accident rates ($\eta_6$).

Hypothesis 2: Safety climate ($\xi_2$) will have a significantly negative linear effect on risky driving behaviour ($\eta_5$).

Hypothesis 3: Safety climate ($\xi_2$) will have a significantly positive linear effect on affective organisational commitment ($\eta_1$).

Hypothesis 4: Safety climate ($\xi_2$) will have a significantly positive linear effect on normative organisational commitment ($\eta_3$).

Hypothesis 5: Safety climate ($\xi_2$) will have a significantly negative linear effect on continuance commitment ($\eta_2$).

Hypothesis 6: Job satisfaction ($\xi_1$) will have a significantly positive linear effect on normative organisational commitment ($\eta_3$).

Hypothesis 7: Job satisfaction ($\xi_1$) will have a significantly negative linear effect on continuance organisational commitment ($\eta_2$).

Hypothesis 8: Job satisfaction ($\xi_1$) will have a significantly negative linear effect on affective organisational commitment ($\eta_1$).

Hypothesis 9: Affective commitment ($\eta_1$) will have a significantly negative linear effect on turnover intention ($\eta_4$).

Hypothesis 10: Normative commitment ($\eta_3$) will have a significantly negative linear effect on turnover intention ($\eta_4$).

Hypothesis 11: Continuance commitment ($\eta_2$) will have a significantly negative linear effect on turnover intention ($\eta_4$).

Hypothesis 12: Turnover intention ($\eta_4$) has a significantly positive linear effect on risky driving behaviour ($\eta_5$).

## 3.2. Research methodology

The aim of this study is to serve the epistemic imperative by developing a model through theorising and empirical analysis of the hypothesised predictions. As the quest for truth is mostly dependent on the methodology used to obtain the answers, this study increased the likelihood of arriving at rational judgements through the use of objective methodology and techniques (Babbie & Mouton, 2001). It is not expected of audiences to accept the findings of this study at face value, as accuracy can only be attained if the methodology is open to the evaluation and scrutiny of the scientific community (Babbie & Mouton, 2001); therefore a comprehensive description of the research methodology follows to ensure that the epistemic ideal of science is served.

### 3.2.1. Research design

A strategy that will deliver exact empirical evidence is needed to evaluate the hypotheses theorised in Chapter 2. This strategy is known as the research design and it determines the confidence in the empirical evidence to be used in arguments regarding the hypothesis (De Goede, 2007). Johnson (2001) describes the research design as a blueprint for conducting the research that enables maximum control over factors that could harm the validity of the study. For the purpose of this study an ex post facto correlational design was used. Correlation research is utilised to determine the nature and strength of relationships between variables (Morgan, 2008). This type of research design was chosen due to the conceptual

model as illustrated in Figure 2.3. The conceptual model's design required that the ex post facto correlational design be analysed through structural equation modelling (SEM).

The study did not apply random assignment or experimental manipulation of the independent variables as the independent and dependent variables were only observed to determine the extent to which they co-varied. The key problem in non-experimental research is the possibility of observing a spurious relationship between a dependent and independent variable (Johnson, 2001). A spurious relationship is the result of one or more third variable resulting in a non-casual relationship. However, Gravetter and Forzano (2003) claimed that an advantage of correlational studies is high external validity, as variables are not manipulated, controlled or interfered with when examined.

#### *3.2.1.1. Statistical hypotheses*

The overarching substantive hypothesis of this study is that the structural model, as depicted in Figure 3.1, provides a valid argument of the significant role organisational commitment plays in accidents.

In order to test whether the structural model provides an exact explanation of reality, the overarching substantive hypothesis was translated into the following exact fit null hypothesis:

H0 exact fit: RMSEA = 0
Ha exact fit: RMSEA > 0

This test is very restricted due to the fact that the model is only an estimate of reality and, therefore, rarely fits the population exactly. Consequently, an additional test has to be conducted to determine whether the structural model provides an approximated explanation of reality. The overarching substantive hypothesis then translates into the following close fit null hypothesis:

H0 close fit: RMSEA = 0.05
Ha close fit: RMSEA > 0.05

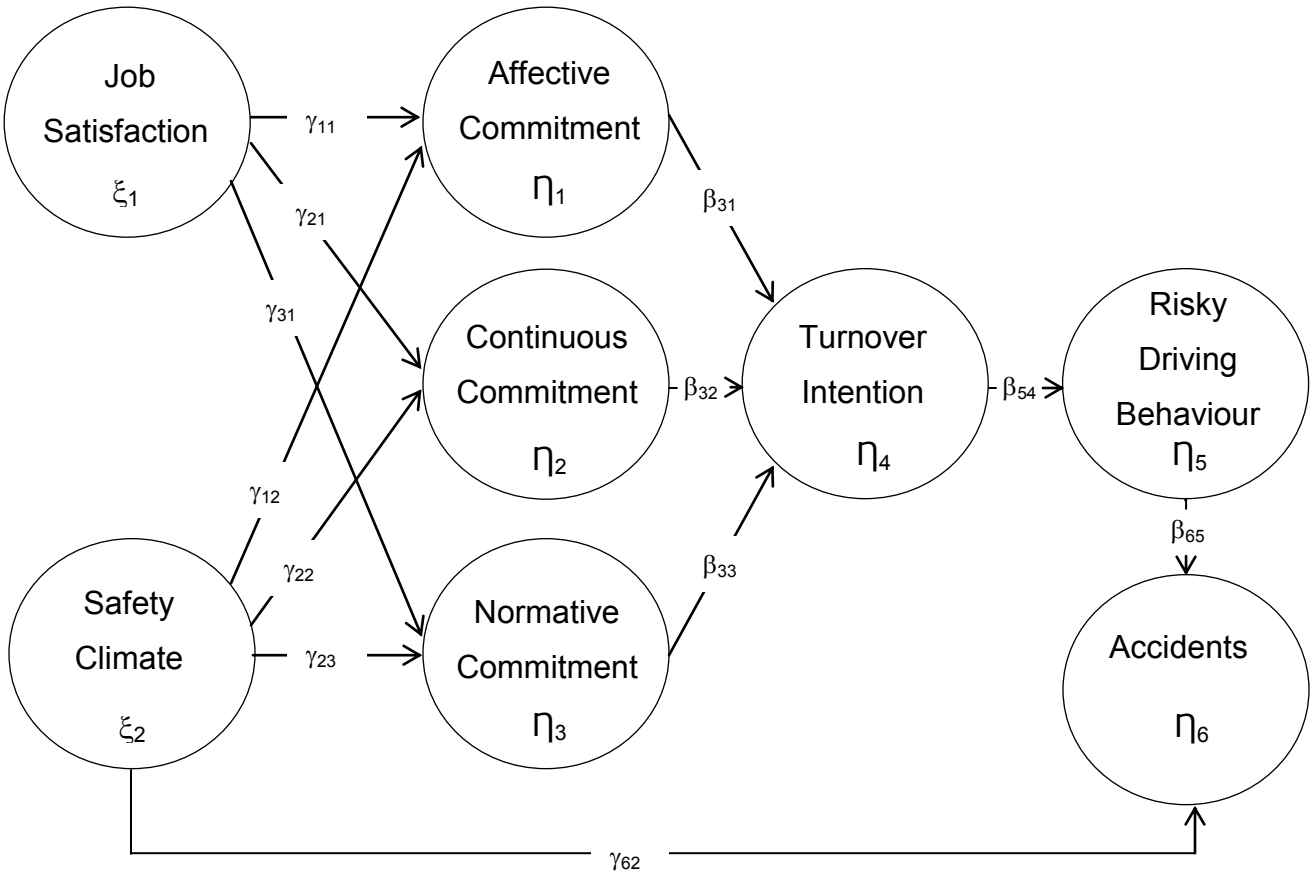



***Figure 3.1.*** **Structural model**

The overarching substantive hypothesis was dissected into twelve specific substantive research hypotheses translated into twelve specific path coefficients, as presented below.

Hypothesis 1:

Risky driving behaviour ($\eta_5$) will have a significantly positive linear effect on accident rates ($\eta_6$).

$H_{01}$: $\beta_{65} = 0$

$H_{a1}$: $\beta_{65} > 0$

Hypothesis 2:

Safety climate ($\xi_2$) will have a significantly negative linear effect on risky driving behaviour ($\eta_5$).

$H_{02}$: $\gamma_{52} = 0$

$H_{a2}$: $\gamma_{52} < 0$

Hypothesis 3:

Safety climate ($\xi_2$) will have a significantly positive linear effect on affective organisational commitment ($\eta_1$).

$H_{03}$: $\gamma_{12} = 0$

$H_{a3}$: $\gamma_{12} > 0$

Hypothesis 4:

Safety climate ($\xi_2$) will have a significantly positive linear effect on normative organisational commitment ($\eta_3$).

$H_{04}$: $\gamma_{32} = 0$

$H_{a4}$ $\gamma_{32} > 0$

Hypothesis 5:

Safety climate ($\xi_2$) will have a significantly negative linear effect on continuance commitment ($\eta_2$).

$H_{05}$: $\gamma_{22} = 0$

$H_{a5}$: $\gamma_{22} < 0$

Hypothesis 6:

Job satisfaction ($\xi_1$) will have a significantly positive linear effect on affective organisational commitment ($\eta_1$).

$H_{06}$: $\gamma_{11} = 0$

$H_{a6}$: $\gamma_{11} > 0$

Hypothesis 7:

Job satisfaction ($\xi_1$) will have a significantly positive linear effect on normative organisational commitment ($\eta_3$).

$H_{07}$: $\gamma_{31} = 0$

$H_{a7}$: $\gamma_{31} > 0$

Hypothesis 8:

Job satisfaction ($\xi_1$) will have a significantly negative linear effect on continuance organisational commitment ($\eta_2$).

$H_{08}$: $\gamma_{21} = 0$

$H_{a8}$: $\gamma_{21} < 0$

Hypothesis 9:

Affective commitment ($\eta_1$) will have a significantly negative linear effect on turnover intention ($\eta_4$).

$H_{09}$: $\beta_{41} = 0$

$H_{a9}$: $\beta_{41} < 0$

Hypothesis 10:

Normative commitment ($\eta_3$) will have a significantly negative linear effect on turnover intention ($\eta_4$).

$H_{010}$: $\beta_{43} = 0$

$H_{a10}$: $\beta_{43} < 0$

Hypothesis 11:

Continuance commitment ($\eta_2$) will have a significantly negative linear effect on turnover intention ($\eta_4$).

$H_{011}$: $\beta_{42} = 0$

$H_{a11}$: $\beta_{42} < 0$

Hypothesis 12:

Turnover intention ($\eta_4$) will have a significantly positive linear effect on risky driving behaviour ($\eta_5$).

$H_{012}$: $\beta_{54} = 0$

$H_{a12}$: $\beta_{54} > 0$

### 3.3. Alterations to the structural model

This study was undertaken in an attempt to review and test the model proposed by Graham and Nafukho (2010) and thereby build on the understanding of plausible associations among organisational commitment, turnover intentions, and accident rates. The extension of the model to include job satisfaction and safety climate were however not included in the analysis, due to resource restraints. The restraints refer specifically to time limitations as the participating organisation only offered a certain amount of hours to be used for research purposes. The researcher argued that it would take a full year to gather enough data on accidents to make valid judgments and therefore excluded the designated constructs.

In addition, the scope of the questionnaires had to be limited as the participating company would only allow employees to be away from their duties for a maximum of 45 minutes. It was therefore decided to exclude the concepts of safety climate, job satisfaction and accidents. It was also decided to use risky driving behaviour as the altered outcome variable, as the literature study discussed above found sufficient support for the predicting power of risky driving behaviour regarding accidents.

The researcher, however, believes that the exclusion of the concepts did not erode the fundamental value of the core argument towards understanding the interaction between organisational commitment and accidents. The altered model is illustrated in Figure 3.2 and is followed by the altered statistical hypothesis.

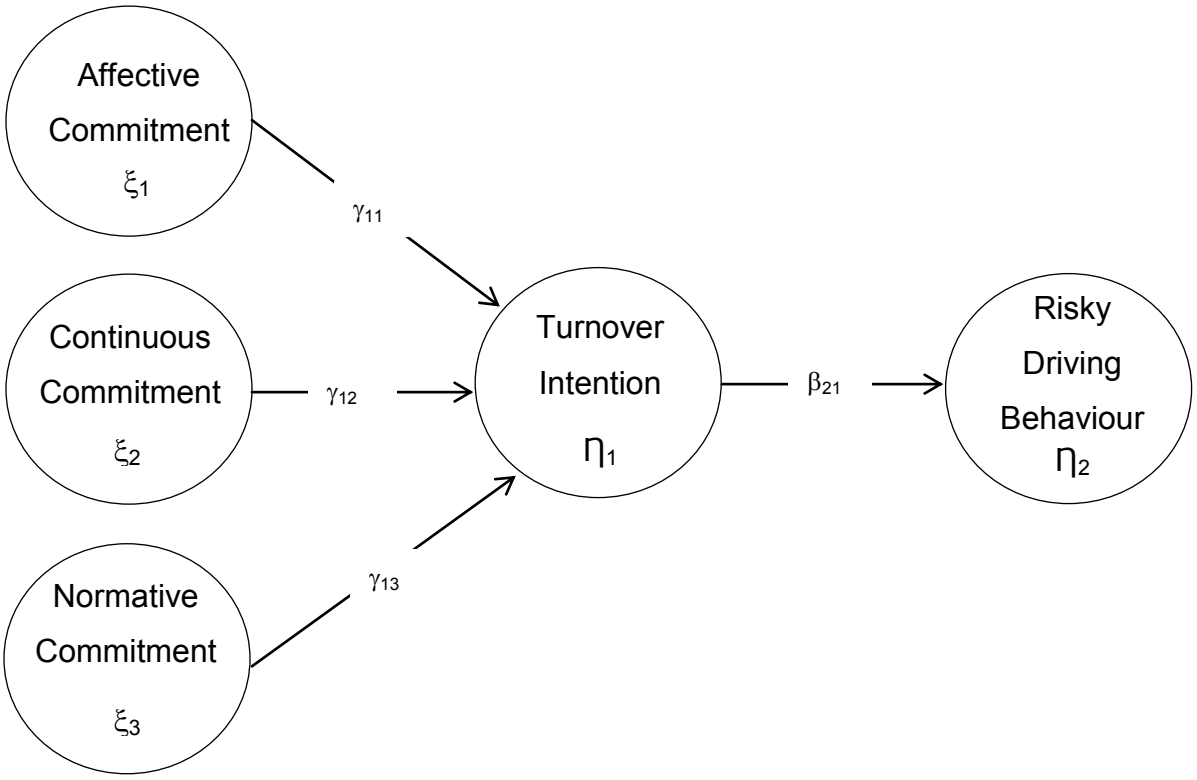



***Figure 3.2.*** **Altered structural model**

The altered structural model consists of three exogenous variables which cannot be experimentally manipulated and two endogenous variables with a casual relationship between these endogenous variables. In addition to the overall goodness-of-fit hypotheses, the following specific path coefficient hypotheses were formulated.

Hypothesis 1:

Affective commitment ($\xi_1$) will have a significantly negative linear effect on turnover intention ($\eta_1$).

$H_{01}$: $\gamma_{11} = 0$

$H_{a1}$: $\gamma_{11} < 0$

Hypothesis 2:

Normative commitment ($\xi_3$) will have a significantly negative linear effect on turnover intention ($\eta_1$).

$H_{02}$: $\gamma_{13} = 0$

$H_{a2}$: $\gamma_{13} < 0$

Hypothesis 3:

Continuance commitment ($\xi_2$) will have a significantly negative linear effect on turnover intention ($\eta_1$).

$H_{03}$: $\gamma_{12} = 0$

$H_{a3}$: $\gamma_{12} < 0$

Hypothesis 4:

Turnover intention ($\eta_1$) will have a significantly positive linear effect on risky driving behaviour ($\eta_2$).

$H_{04}$: $\beta_{21} = 0$

$H_{a4}$: $\beta_{21} > 0$

#### *3.3.1.1. Structural equation modelling (SEM)*

Latent variables are phenomena of theoretical interest which cannot be directly observed and have to be assessed by manifest measures which are observable (De Goede, 2007). In this context, a measurement model is used for the mapping of measures onto theoretical constructs and a structural model is used for indicating the causal and correlational relations between the theoretical variables. The proposed structural model can be expressed as a set of structural equations representing the research hypothesis that will be evaluated. The following equations represent the altered structural model depicted in Figure 3.2.

- $\eta_1 = \gamma_{11}\xi_1 + \gamma_{12}\xi_2 + \gamma_{13}\xi_3 + \zeta_1$
- $\eta_2 = \beta_{21}\eta_1 + \zeta_2$

More specifically, the hypothesised casual relationship can be expressed in a matrix as depicted in Figure 3.3.

$$\begin{pmatrix} \eta_1 \\ \eta_2 \end{pmatrix} = \begin{pmatrix} 0 & 0 \\ \beta_{12} & 0 \end{pmatrix} \begin{pmatrix} \eta_1 \\ \eta_2 \end{pmatrix} + \begin{pmatrix} \gamma_{11} & \gamma_{12} & \gamma_{31} \\ 0 & 0 & 0 \end{pmatrix} \begin{pmatrix} \xi_1 \\ \xi_2 \\ \xi_3 \end{pmatrix} + \begin{pmatrix} \zeta_1 \\ \zeta_2 \end{pmatrix}$$

***Figure 3.3.*** **Matrix equation of structural model**

## 3.4. Method

Methods refer to the techniques used to collect, analyse and interpret the raw data (Lor, 2012). Self-administered survey research was selected to acquire the raw data for this study. Surveys are generally developed and utilised to measure or describe variables (Wallace Foundation, 2009). For the purpose of this study, however, it was utilised to determine the nature and strength of relationships between specific variables. The advantages and disadvantages of self-administered survey research are shown in Table 3.1.

The advantages and disadvantages of survey research were carefully evaluated before the decision was made to utilise this method. The cost involved, efficiency and autonomy dictated the decision to utilise the self-administered survey technique. The greatest concern for the researcher in utilising this method is the possibility of respondent error. There is potential for respondents to misunderstand questions due to language barriers and cultural differences. Respondents may answer questions without fully comprehending what is asked and the researcher will only be able to determine the extent of the respondent error once the data analysis is under way. This possible hazard was evaluated in the pilot study.

**Table 3.1**

***Advantages and disadvantages of self-administered surveys***

| ***Advantages of Self-Administered Surveys*** | |
|---|---|
| Cost: | It is less expensive than interviews as it does not involve the cost of hiring, training, and employing skilled interviewers. |
| Efficiency: | Surveys can be distributed in large numbers all at once, and involve less administrative time. |
| Anonymity: | There is no possibility of interviewer bias. |
| No interviewer error: | The respondent is assured of anonymity and privacy, and will thus be more inclined to provide an honest response. |
| ***Disadvantages of Self-Administered Surveys*** | |
| Bias | Respondents may be the individuals who feel very strongly about your topic only. An unrepresented sample may thus be obtained. |
| Respondent error: | There is more potential for respondents to misunderstand questions. Respondents may answer without really understanding the question. |
| Incomplete surveys: | The rate of incomplete and incorrectly filled-out surveys is high for self-administered surveys. |
| Low response rates: | In general, response rates for self-administered surveys are lower than they are for interviews, although this can vary, depending on how invested potential respondents are in the topic and whether incentives are being offered. |

(Wallace Foundation, 2009, p. 3)

## 3.5. Sampling

In social research, the researcher must select observations that will allow for generalisation to people and events not observed (Babbie, 2010). This frequently involves sampling a selection of people to observe. Sometimes researchers can and should select probability samples using precise statistical techniques, but at other times non-probability techniques are more appropriate. As stated by Babbie (2010), knowing when to use which sampling method essentially means understanding the logic of sampling.

Non-probability sampling techniques include relying on available subjects, judgemental sampling, snowball sampling, and quota sampling. Babbie (2010) and Greemstein (2001) describe non-probability sampling techniques as follows.

- Relying on available subjects is sometimes called convenience or haphazard sampling. This is an extremely risky sampling method as this method does not permit any control over the representativeness of the sample. Great care must be taken not to generalise from studies using convenience sampling.

- Judgemental sampling is based on knowledge of the population, its elements, and the purpose of the study. This type of sampling is more often used for pre-test purposes.

- Snowball sampling, also considered accidental sampling, is a method whereby each person who is interviewed may be asked to suggest additional people for interviewing. This method is often used when it is difficult to locate members of the population.

- Quota sampling refers to the selection of sample units on the basis of population characteristics, so that the total sample will have the same distribution of characteristics assumed to exist in the population being studied.

Each of these techniques has its uses, but none of them ensures that the resulting sample will be representative of the population being sampled.

Babbie (2010) stated that probability sampling methods provide an excellent way of selecting representative samples from large, known populations and that these methods counter the problem of conscious and unconscious sampling bias by giving each element in the population a known probability of selection. Probability sampling remains the most effective method for the selection of study elements for two reasons, it avoids researcher bias in element selection, and it permits estimates of sampling error (Greemstein, 2001). However, Babbie (2010) has stated that it must be noted that the most carefully selected sample will never provide a perfect representation of the population from which it was selected, as there will always be some degree of sampling error.

According to Babbie (2010), a degree of certainty can be achieved by predicting the distribution of samples with respect to the target parameter. This method will make it possible to estimate the degree of sampling error expected in a given sample. The expected error in a sample is expressed in terms of confidence levels and confidence intervals. Babbie (2010) makes it very clear that, because probability sampling always carries a risk of error, the researcher must inform readers of any errors that might make results misleading.

Several probability-sampling designs are available to researchers, as described by Babbie (2010) and Greemstein (2001).

- Simple random sampling is logically the most fundamental technique in probability sampling, but it is seldom used in practice.

- Systematic sampling involves the selection of every $k^{th}$ member from a sampling frame. This method is more practical than simple random sampling.

- Stratification, the process of grouping the members of a population into relatively homogeneous strata before sampling, improves the representativeness of a sample by reducing the degree of sampling error.

- Multistage cluster sampling is a relatively complex sampling technique that is frequently used when a list of all the members of a population does not exist. Typically, researchers must balance the number of clusters and size of each cluster to achieve a given sample size. Probability proportionate to size is a special, efficient method for multistage cluster sampling. If the members of a population have unequal probabilities of selection into the sample, researchers must assign weights to the different observations made, in order to provide a representative picture of the total population. The weight assigned to a particular sample member should be the inverse of its probability of selection.

Convenience sampling was utilised for the purpose of this study, as a retail company made their resources available to the study and the research-initiating question was formulated after observing the same group's drivers. Although it is an extremely risky sampling method, great care was taken not to generalise the results from this study to other organisations, but rather to advocate it as a pre-test for future research.

### 3.6. Measuring instruments

The choice of measuring instruments was based on the following criteria recommended by Koustelios and Bagiatis (as cited in Pietersen, 2005):

1. The instrument should be useful in examining a wide variety of employees focusing on cultural difference.
2. The verbal content of the items in the instrument should be of grade 10 standard to insure that all participants understand the questions accurately (especially those who use English as a second language).
3. The instrument should be valid and reliable.

Two measuring instruments were selected to obtain the data. The instrument selected to measure organisational commitment was developed by Meyer, Allen and Smith (1993). The second instrument was a turnover intention scale developed by Martin and Roodt (2008).

The questionnaires were only made available in English. This could be seen as a limitation to the study as none of the drivers' first language was English. It was decided to pursue the data collection process in English, however, as the retail group conducts its business in English. Furthermore, a requirement for the position of driver is the ability to read and write English of grade 11 standard. The questionnaires utilised in this research study are available under Appendix B.

### 3.6.1. Organisational commitment

The three subscales of organisational commitment, namely affective commitment, normative commitment and continuance commitment was measured by the revised 18-item TCM Employee Commitment Survey designed by Meyer, Allen and Smith (1993). The participants responded to statements such as "I really feel as if this organisation's problems are my own" (affective commitment scale), "It would be very hard for me to leave my organisation right now, even if I wanted to" (continuance commitment scale), and "I owe a great deal to my organisation" (normative commitment scale). The respondents indicated their answers by circling a value on a seven-point Likert-type scale ranging from strongly disagree to strongly agree. Extensive research studies evaluating the measuring instrument found satisfactory reliability figures. Roodt (2004) reported a reliable Cronbach Alpha of .914 and Meyer *et al*. (1993) reported internal consistency reliability figures for affective commitment (0.82), normative commitment (0.83) and continuance commitment (0.74).

### 3.6.2. Turnover intentions

Roodt's (2004) turnover intention questionnaire was selected to measure the concept of turnover intentions. The instrument consists of 15 items that were measured on a five-point intensity response scale anchored at extreme poles. The extreme poles were "never", anchored at 1, and "always", anchored at 5. A Cronbach Alpha of .895 was obtained in a study by Martin (2007) indicating a satisfactory reliability figure. The decision to use this measure was based on the lack of formally validated turnover intention scales that represent turnover cognitions and the lack of measures with an adequate number of items (Martin & Roodt, 2008).

### 3.6.3. Driver rating

As accidents are the most expensive outcome of road use, accident rates over a specific time frame provide the most common method of quantifying road safety (Graham & Nafukho, 2010). However, accident rates were not used in this study due to time constraints, as previously discussed. A tracking system's results were utilised instead to determine driving performance. The system is called MiX Telematics and measures a) over speeding; b) harsh braking; c) over revving; and d) economic driving, termed green band. All the results are reflected in percentages and the average of the four measures are used to determine whether the employee qualifies for an incentive called driver rating. Incentives are allocated monthly to all drivers achieving a driver rating equal to or higher than 95%.

Over speeding is a clear indication of disobedience, as a light and sound goes off when the truck exceeds the speed limit. Harsh braking also is an accurate measure of disobedience as it is associated with not following safe driving distances. The last two measures, namely over revving, and economic driving are more inclined to measure the quality of the driver's ability. One can argue, however, that all these measures can be used to determine whether a driver is following rules and safety regulations. It is therefore argued that the reason drivers lose out on incentive bonuses are not due to unclear rules and regulations, but rather a decision not to comply with the rules and procedures.

## 3.7. Administration of the questionnaires

The Human Resources officers in each branch were responsible for the administration of the questionnaires. All the officers studied psychometrics during their tertiary education and understood the procedures involved in dealing with questionnaires.

As explained in the literature review, a window period of three weeks exists before the effect of a negative incident wears off. The reason for introducing the window period was to capture all negative events that occurred in a specific period. According to Sousa-Poza and Henneberger (2002), the effects of a negative event wear off in three weeks. It was therefore argued that, if an employee would be exposed to a negative event on the first day of data

collection, the effects of this event would be captured in the questionnaires before the three-week period was over. If we extended the data collection period to four weeks, the effects of negative events that occurred in the first week would not be reflected in the questionnaires completed in the fourth week. It was therefore decided to administer all applications in a three-week period so as to capture all negative events that occurred within the test period.

## 3.8. Data collection

The raw data was obtained through self-administered pencil-and-paper questionnaires. The questionnaires selected for this study resulted in sound validity and reliability statistics in previous studies and matched benchmark in terms of education and language standards required by the position of the job. The questionnaires were therefore used as designed by the authors. The following section discusses the pilot study and the actual data collection process.

### 3.8.1. Pilot study

The administration of the questionnaires was conducted in English. As the researcher was aware of the limitation language could impose on the understanding and answering of the questionnaires, five general workers at the same retail company who used English as a third language were asked to voluntarily assist in the pilot study to determine the response time; clarity of instructions; and comprehension of the questions. The general feedback from the pilot study was satisfactory. Some culture metaphors, specifically concepts of negative emotions, had to be re-worded, however, to increase comprehension. The second change needed was the extension of response time due to the participants taking longer to read through the instructions and questions. Thus the response time was changed from 20 minutes to 35 minutes.

### 3.8.2. Data collection of the main study

As the retail group made all their drivers available to the study, i.e. the entire population; the working definition that was developed for the population was: “All drivers on the permanent

payroll on the selected day of data collection." The population was located between the six branches distributed between Cape Town, Centurion, Durban, Bloemfontein, Port Elizabeth, and Polokwane. The Human Resources officers in each branch were responsible for the administration of the questionnaires. A document explaining how the officers in the branches should administer the questionnaires was compiled and mailed in advance to allow the administrators to familiarise themselves with the questionnaires and the procedures involved. This was done to ensure the protection of the participants' rights and to standardise the procedure of the data collection process. A copy of the document is available as Appendix C.

All the permanent drivers were invited to participate in the research study. A letter inviting them to participate in the study was given to the drivers with their payslips at the end of August. The letter explained the purpose of the study and guaranteed that no risk was involved.

On the day of participation, the drivers who were willing to participate were also asked to complete a consent form which provided the researcher with the necessary permission to use the information captured through the questionnaires. The consent form is available as Appendix A.

### 3.9. Missing values

The presence of missing values must be addressed before the data can be analysed. The manner in which missing values are addressed is dependent on the nature of the data and the number of missing values (Smuts, 2011). The methods that were considered to determine the appropriate manner in which missing values would be addressed included like-wise deletion, pair-wise deletion, imputation by matching, multiple imputations and full information maximum likelihood.

As described by Smuts (2011), like-wise deletion entails the deletion of the entire case where missing values are present for any variable, whereas pair-wise deletion only deletes cases for analysis on variables where missing values are present. Imputation by matching ascribes value to missing values from other cases with related observed values on a matching set of

variables, whereas, with multiple imputations, missing values are replaced with the average of the values assigned in each of the data sets (Theron, 2011). Smuts (2011) explains that full information maximum likelihood uses the expectation-maximisation algorithm to calculate a case-wise probability function by using observed variables and, as with multiple imputations, full information maximum likelihood also assumes that missing values are assigned at random and that observed values follow a multivariate normal distribution.

The researcher decided to use multiple imputation, whereby the missing values were replaced with the average of the values assigned in each of the data sets. The rows with too few entries to calculate the multiple imputation values were deleted.

## 3.10. Data analysis

Before the analysis of the raw data could commence, specific items were first reversed as they were phrased negatively in the questionnaires. The data analysis was conducted with the aim of serving the research objectives; both covariance and component-based analysis were therefore evaluated before selecting the fitting analysis with reference to the nature of the data.

### 3.10.1. Covariance based analysis

The following section discusses the evaluation of raw data involved in covariance-based analysis in terms of structural equation modelling using LISREL and SPSS as the software packages of choice. The analysis includes item analysis, dimensionality analysis, structural equation modelling, and the assessment of the measurement and structural models.

#### *3.10.1.1. Item analysis*

Item analysis is a method that is commonly utilised to determine and exclude items from the measure that jeopardises the internal consistency of the subscale in query (De Goede, 2007). Item analysis consequently contributes to the validity and reliability of a test and can be built

into the tests in advance, therefore refining tests through the selection, substitution, or revision of items (Henning, Theron & Spangenberg, 2004).

#### *3.10.1.2. Exploratory and confirmatory factor analysis*

According to Roux (2010), factor analysing is utilised to determine two specific objectives. Firstly, it is employed to determine underlying relationships among numerous items and, secondly, it is used to determine whether the information from the items can be summarised or condensed into fewer items without harming explained variance. Two specific types of factor analysis, namely exploratory and confirmatory factor analysis, are discussed below.

Although exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are similar in the sense that both techniques are utilised to explain shared variance, the methods are conceptually and statistically unique (Theron, 2011). This distinction can be made by evaluating the methods' objectives.

The main objective of EFA is to determine the factors that are present on the basis of data and to maximise the variance explained by the factors involved (Roux, 2010). This method does not require the researcher to theorise or develop any hypotheses to determine the quantity of factors that will emerge from the analysis. In other words, the hypotheses are not incorporated in the analysis and will therefore not affect the results of the analysis. On the other hand, Roux (2010) explains that CFA requires predetermination and hypotheses guided by theory. The method needs the researcher to determine the number of factors, whether or not these factors are correlated, and which items load onto and reflect which factors. CFA therefore explicitly constrain certain loadings to zero, whereas EFA sets all parameters free (Theron, 2011).

CFA analysis was employed for the purpose of this study, as the items for the measurements had been statistically proven to be satisfactory on similar samples. The researcher was therefore confident in predicting the number of factors that would emerge and which items would reflect onto each factor.

#### *3.10.1.3. Assessing the overall goodness-of-fit*

When evaluating a model, it is vital to investigate the statistical power related to the testing of that model (De Goede, 2007). Statistical power can be defined as the possibility of rejecting the null hypothesis, given that it is false (Theron, 2011). Two types of power estimates are conducted. Firstly, an estimation of the power associated with a test of exact fit is made. The exact fit refers to the testing of the null hypothesis concerning the model fitting entirely in the population. This test is very restricted, due to the fact that the models are only estimates of reality and, therefore, rarely fit the population exactly.

Secondly, the power related to a test of close fit is estimated. In this, test, the null hypothesis proposes that the model shows a close but imprecise fit in the population. This hypothesis takes the error of approximation into consideration, and is therefore more realistic (De Goede, 2007). Both the test of exact fit and the test of close fit utilised the RMSEA statistic. If a model fits perfectly in the population, the error attributable to approximation is set at 0 and the following null hypothesis is formulated and tested:

Measurement Model Exact Fit:

$H_0$ exact fit: RMSEA = 0
$H_a$ exact fit: RMSEA > 0

If a model accomplishes close fit in the population, the error attributable to approximation will be set equal to or less than .05, which indicates good fit. For a reasonable fit, the error attributable to approximation will be greater than .05 and smaller than .08 (Theron, 2011). The following null hypothesis are formulated and tested:

Measurement Model Close Fit:

$H_0$ close fit: RMSEA $\leq$ 0.05
$H_a$ close fit: RMSEA > 0.05

The LISREL default estimation method when fitting a measurement or structural model when analysing the covariance matrix is maximum likelihood (Theron, 2011). Maximum likelihood requires that the independent variables follow a normal distribution. Even small departures from multivariate normality can lead to large differences in the chi-square statistics, such that the overall chi-square fit statistic for the model as a whole is biased toward a Type 1 error (rejecting a model which should not be rejected). The composite indicator variables are treated as continuous variables. The univariate and multivariate normality of the composite indicator variables are evaluated accordingly. If multivariate normality is not met, an additional method needs to be utilised to estimate the model parameters (De Goede, 2007). This method is referred to as Robust Maximum Likelihood (RML) estimation. This method is used to determine the absolute fit of the measurement model.

#### *3.10.1.4. Interpretation of the measurement model fit an parameter estimates*

The measurement model fit will be discussed on the basis of a full array of indices provided by the LISREL output, as recommended by Diamantopoulos and Siguaw (2000). The magnitude and distribution of the standardised residuals and the magnitude of modification indices calculated for $\Lambda x$, $\Theta\varepsilon$ and $\Theta_\delta$ will also be evaluated. The evaluation of the matrices serve the sole purpose of reviewing the model fit.

#### *3.10.1.5. Interpretation of the structural model fit and parameter estimates*

The structural model fit is discussed on the basis of the full array of indices provided by the LISREL output. Further consideration is given to the magnitude and distribution of the standardised residuals and the magnitude of modification indices calculated for $\Gamma$, B and $\Psi$. The evaluation objective of the matrices is to comment on the model fit. In addition, the evaluation of $\Gamma$ and B is utilised to explore the possibility of modification of the current structural model. Henning, Theron and Spangenberg (2004, p. 34) warn against four issues that must be considered when evaluating the structural model:

1. The first point to consider is the significance of the parameter estimates representing the paths hypothesised between the latent variables.

2. The second matter is the consistency of the signs of the parameter estimates and the hypothesised nature of the relationships between the latent variables.
3. Magnitude of the parameter estimates indicating the strength of the hypothesised relationships forms the third point mentioned.
4. The last issue to consider is the proportion of variance in each endogenous latent variable that is explained by the latent variables linked to it in terms of the hypothesised structural model.

The four issues mentioned above will be taken into consideration when the structural model is evaluated.

### 3.10.2. Component-based analysis

The following section presents the evaluation of the raw data involved in component based analysis in terms of structural equation modelling using STATISTICA and SmartsPLS as the software packages of choice (Garson, 2012). The evaluation comprised item analysis; confirmatory factor analysis; goodness of fit inquiry; correlation investigation; measurement and structural model evaluation; standard multiple regression; and structural equation modelling though PLS analysis.

#### *3.10.2.1. Item analysis*

As explained earlier, item analysis is a method utilised to determine and exclude items that jeopardise the internal consistency of the subscale in query from the measure. The standard utilised to determine a satisfactory alpha (α) was set at > .70, as recommended by Nunnally and Bernstein (1994).

#### *3.10.2.2. Confirmatory analysis*

As argued before, CFA analysis was employed on all the variables subscales as the items employed for the measurements had been statistically proven to be satisfactory on similar

samples. The researcher was therefore confident in predicting the number of factors that would emerge and which items would reflect onto each factor.

The variance extracted and construct reliability for each dimension were also calculated. The cut-off value for variance extracted was set at > .50. A variance extracted value less than the cut-off value indicates that the item is being explained by measurement error and not by the underlying dimension. Construct validity represents reliability and internal consistency between the items of each measurement. The cut-off value for construct validity was set at > .70.

#### *3.10.2.3. Assessing the overall goodness-of-fit*

The model fit is also assessed through the examination of additional goodness-of-fit (GOF) measures. A summary of the statistics is depicted in Table 3.2.

**Table 3.2**

***Summary of goodness-of-fit indices***

| | |
|---|---|
| **Absolute fit measures** | |
| Minimum fit function of chi-square | A non-significant result indicated model fit |
| Normal theory-weighted least square chi-square | A non-significant result indicate model fit |
| Root mean square error of approximation (RMSEA) | Values between 0.08 or below indicate acceptable fit<br>Values below 0.05 indicate good fit<br>Values below 0.01 indicate outstanding fit |
| Standardised root mean residual (RMR) | Lower values indicate better fit, with values below .05 indicating good fit |
| Goodness-of-fit index (GFI) | Higher values indicate better fit, with values > .9 indicating good fit |
| Adjusted goodness-of-fit index (AGFI) | Higher values indicate better fit, with values> .9 indicating good fit |
| **Incremental fit measures** | |
| Non-normed fit index (NNFI) | Higher values indicate better fit, with values > .9 indicating good fit |
| Comparative fit index (CFI) | Values closer to 1 indicate better fit, with values > .9 indicating good fit |

(Janse van Noordwyk, as cited in Robyn, 2012, p. 70)

For the purpose of this study, the following goodness-of-fit indices were considered to determine goodness of fit; root mean square error of approximation (RMSEA), goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI).

#### *3.10.2.4. Measurement and structural models*

Partial Least Squares (PLS) path modelling determines the reliability of measurement and structural models. As per Chin (as cited in Robyn, 2012) the analysis process of PLS path modelling can be classified into two steps as depicted in Figure 3.4. The first step involves the assessment of the outer model and the second step consists of the analysis of the inner model. The first step of the process emphasises the importance of analysing the structural model, once the measurement model analysis provides satisfactory reliability and validity figures.

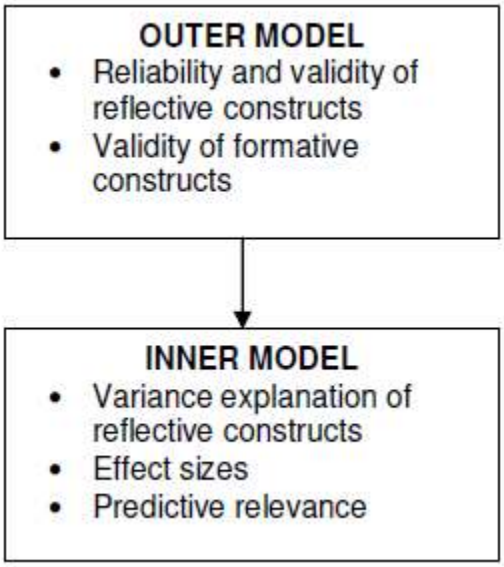



***Figure 3.4.*** **A two-step process of PLS *path modelling assessment***

(Chin, as cited in Robyn, 2012, p. 70)

The reason for this is explained by Theron (2011). Latent variables are phenomena of theoretical interest which cannot be observed directly and have to be assessed by manifest measures that are observable. In this context, a measurement model is used for the mapping

of measures onto theoretical constructs and a structural model indicates the causal and correlational links between the theoretical variables. The reason for drawing a distinction between the measurement model and the structural model is that proper specification of the measurement model is necessary before meaning can be assigned to the analysis of the structural model. The measurement analysis will reveal the measurement model's reliability and validity according to specific criteria associated with formative and reflective outer models. The inner model should only be evaluated once the measurement model analysis provides satisfactory reliability and validity figures of the latent variable .

#### *3.10.2.5. Correlation analysis*

The principle underlining a correlation can be defined as a change in one variable which consequently predicts a change in another variable (Roux, 2010). Simple linear correlation is most often utilised to measure the degree to which two variables vary, or to calculate the intensity of the association between two variables (Robyn, 2012). The parameter being measure is termed p (rho) and is projected by the correlation coefficient r.

The correlation coefficient can range between -1 and 1. The strength of the correlation increase as r approaches the absolute value of 1. A value of 0 therefore indicates that there is no correlation between the variables. A standardised measurement of the strength of variable associations is the Pearson product-moment correlation coefficient. The strength of the associations among the variables is specified using Cohen's index of practical significance, as depicted in Table 3.3.

**Table 3.3**

***Interpretation of the magnitude of significant r***

| Correlation | Negative | Positive |
|---|---|---|
| Small | –0.3 to –0.1 | 0.1 to 0.3 |
| Medium | –0.5 to –0.3 | 0.3 to 0.5 |
| Large | –1.0 to –0.5 | 0.5 to 1.0 |

(Cohen, as cited in Robyn, 2012, p. 71)

#### *3.10.2.6. Regression analysis*

Multiple regression is a technique used to explore relationships between and predictions regarding dependant and independent variables (Theron, 2011). This technique allows the researcher to discover the predictive power of each variable without it being influenced by any of the other independent variables (Roux, 2010). Standard multiple regression can therefore be utilised to determine the equation of independent variables predicting dependant variables. The key advantage of this method is the ability of the researcher to determine the effects of each variable independently.

#### *3.10.2.7. Partial Least Squares modelling*

Partial Least Squares modelling (PLS) in structural equation modelling (SEM) is a causal modelling approach aimed at maximising the explained variance of the dependent latent variables (Hair, Ringle & Sarstedt, 2011). Hair *et al*. (2011) explain that this is different to the covariance-based approach in SEM which attempts to reproduce the theoretical covariance matrix, with disregard for explained variance. Instead of utilising the model to explain the covariance between all the indicators, PLS in SEM offers parameter estimates that exploit the explained variance of the dependent variables (Roux, 2010). PLS in SEM thus supports prediction-oriented objectives (Robyn, 2012). The method's flexibility due to limited assumptions in terms of model and data specifications and its moderately high statistical power allows for the application of PLS in SEM (Hair *et al*., 2011).

The nature of the research design and the data collected will unveil the appropriate research approach. Circumstances where the preference falls upon the utilisation of PLS in SEM can be summarised in two key situations; the first being when the assumptions are not met with using a covariance based approach in SEM and the second when the objective of the study is of a predictive nature (Roux, 2010).

## 3.11. Summary: Chapter 3

This chapter has assessed the research methodology chosen for the empirical evaluation of the relationships hypothesised in Chapter 2. The aim of this chapter was to present the appropriate research design for serving the empirical objectives. The research design reveals the study's position on metatheory, methodology and methods. In addition, an in-depth discussion has been presented of the sample population; selected measurement instruments; data collection process; and different approaches to data analysis. The decision on the data analysis method was determined after the data had been assessed. Chapter 4 presents a discussion on the decision process, the analysis of the data and the testing of the hypotheses.

# CHAPTER 4
# PRESENTATION OF RESEARCH RESULTS

## 4.1. Introduction

In Chapter 2, a structural model that explained the implication of a diminishing level of organisational commitment as an antecedent of turnover intention and risky driving behaviour as an outcome variable was hypothesised by means of theorising and the evaluation of available literature. The research methodology selected to test the hypothesised structural model was discussed in Chapter 3. This chapter discusses the analysis methods selected and reports on the statistics regarding the composition of the sample; the psychometric properties of the measuring instruments; reliability coefficients; and the results obtained through structural modelling.

## 4.2. Statistics of sample composition

The raw data from the pencil-and-paper questionnaires were captured onto an Excel spreadsheet. The driver rating values were exported into the same Excel spreadsheet, where the VLOOKUP function was utilised to link the staff number from the questionnaire response to the staff number of the driver rating report. This study achieved a response rate of approximately 50%. Even though 27 responses had to be deleted as the staff number could not be linked to the driver rating report, 322 responses could be used successfully.

The summary of the results is depicted in Table 4.1. The population comprised 640 drivers employed by the retail group. The distribution of the drivers was not equal amongst the branches, but was in accordance with the operational requirements. Only Port Elizabeth obtained a 50% response rate. Three other branches, namely Cape Town, Centurion and Durban, came close at a 47%, 49% and 48% response rate, respectively. The two smallest branches, namely Bloemfontein and Polokwane, did not achieve a good response rate statistic at only 10% and 25% respectively. A summary focusing on gender, age, ethnicity and education of the composition of the sample is shown in Table 4.2.

**Table 4.1**

***Response rate per branch***

| Branches | Bloem | CT | Cent | Dur | PE | Pol |
|---|---|---|---|---|---|---|
| **Respondents** | **3** | **70** | **154** | **71** | **21** | **3** |
| **Total Drivers** | **29** | **148** | **314** | **750** | **42** | **12** |
| **Representations** | **10.3%** | **47.3%** | **49%** | **47.3%** | **50%** | **25%** |

*Bloem = Bloemfontein* *CT = Cape Town* *PE = Port Elizabeth*

*Cent = Centurion* *Dur = Durban* *Pol = Polokwane*

The demographic profile statistics found the sample's gender distribution to be skew, with 99% of the sample being males. Only one female participated in this study. The age evaluation concluded that 39% of the sample was between 20 and 29 years old. This age group formed the largest group within in the sample. The second prevailing group was aged between 30 and 39 and represented 33% of the sample. These findings indicate that almost half of the population was younger than 40 years old. The representation percentages of the age groups 40 to 49 and 50 to 59 were 13% and 14%, respectively. Only 1% of the sample was over 60 years old.

The researcher argued that it was necessary to report on the ethnicity of the sample to determine whether the sample's composition was a truthful representation of the population. The ethnic composition of the sample concluded approximately 95% African representation. The distribution of Coloured, White and Indian drivers comprised of 3%, 1% and 1% respectively. These statistics are representative of the population as the variances between the sample and ethnic composition of the population for Africans, Coloureds, Whites and Indians is no more than 2% The concept of education was measured by means of the national education system. The education level of the employees was determined on three levels, namely grades 10 to 12. The statistics indicated that approximately 52% of the sample had passed grade 12. The second largest group, representing 36% of the sample, had achieved the grade 11 level. The rest of the sample only managed to achieve grade 10 during their school careers.

**Table 4.2**

***Demographic profile of respondents***

| Branches | | Bloemfontein | Cape Town | Centurion | Durban | Port Elizabeth | Polokwane | Sample | |
|---|---|---|---|---|---|---|---|---|---|
| **Variables** | **Categories** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **%** |
| Gender (n = 323) | Male | 3 | 55 | 154 | 86 | 21 | 3 | 322 | 99,7% |
| | Female | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0,3% |
| Age (n = 323) | 20 | 1 | 21 | 51 | 46 | 7 | 0 | 126 | 39,0% |
| | 30 | 2 | 29 | 43 | 25 | 7 | 0 | 106 | 32,8% |
| | 40 | 0 | 3 | 27 | 7 | 3 | 2 | 42 | 13,0% |
| | 50 | 0 | 2 | 30 | 8 | 4 | 1 | 45 | 13,9% |
| | 60 | 0 | 0 | 3 | 1 | 0 | 0 | 4 | 1,2% |
| Ethnic Group (n = 323) | African | 3 | 47 | 150 | 84 | 21 | 3 | 308 | 95,4% |
| | Coloured | 0 | 7 | 2 | 0 | 0 | 0 | 9 | 2,8% |
| | Indian | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0,6% |
| | White | 0 | 1 | 2 | 1 | 0 | 0 | 4 | 1,2% |
| Qualification (n = 323) | Grade 10 | 1 | 2 | 26 | 3 | 2 | 2 | 36 | 11,1% |
| | Grade 11 | 2 | 22 | 52 | 34 | 6 | 1 | 117 | 36,2% |
| | Grade 12 | 0 | 31 | 76 | 49 | 13 | 0 | 169 | 52,3% |

## 4.3. Psychometric properties of the measurement instruments

The psychometric properties of each measuring instrument utilised in the study are discussed below. STATISTICA version 11, an analytic software package developed by StatSoft, was utilised to evaluate the subscale inter-item correlations (Garson, 2012).

### 4.3.1. Organisational commitment questionnaire

The organisational commitment questionnaire developed by Meyer *et al*. (1993) comprises three subscales, namely affective, continuance and normative commitment. Each subscale's psychometric properties are discussed below.

#### *4.3.1.1. Affective commitment scale*

The affective commitment scale comprised six items. Three of the items were reversed scores. A Cronbach Alpha of .87 was attained on the affective commitment subscale. The standard utilised to determine a satisfactory alpha (α) was set at > .70, as recommended by Nunnally and Bernstein (1994). The effective commitment scale thus achieved a satisfactory alpha. The scale's reliability statistics are summarised in Table 4.3.

**Table 4.3**

***Affective commitment scale: reliability statistics***

| Cronbach's Alpha | Standardised Alpha | N of Items |
|---|---|---|
| .87 | .87 | 6 |

The evaluation of the items statistics did not raise any problem items. It was also concluded that the alpha could not be increased by deletion of an item. The summary of the item-total statistics is summarised in Table 4.4.

**Table 4.4**

***Affective commitment scale: item-total statistics***

| Item | Item Total Correlation | Alpha if Deleted |
|---|---|---|
| affective 1 | .606209 | .861579 |
| affective 2 | .685614 | .847561 |
| affective 3 (reserved) | .784087 | .828175 |
| affective 3 (reserved) | .581475 | .865955 |
| affective 3 (reserved) | .763901 | .832722 |
| affective 6 | .645197 | .855655 |

#### *4.3.1.2. Continuance commitment scale*

The continuance commitment scale also comprised six items. None of the items had reversed scores. A Cronbach Alpha of .78 was attained, which was deemed satisfactory. The scale's reliability statistics are summarised in Table 4.5.

**Table 4.5**

***Continuance commitment scale: reliability statistics***

| Cronbach's Alpha | Standardised Alpha | N of Items |
|---|---|---|
| .78 | .78 | 6 |

The evaluation of the item-total statistics raised two problem items. Two items (continuance 1 and 5) raised concerns as the items produced a low item-total correlation. Furthermore, the deletion of item continuance 5 would increase the alpha for the continuance commitment subscale. The summary of the item-total statistics is presented in Table 4.6.

**Table 4.6**

***Continuance commitment scale: item-total statistics***

| Item | Item Total Correlation | Alpha if Deleted |
|---|---|---|
| **continuance 1** | **.372318** | **.777295** |
| **continuance 2** | **.600919** | **.727084** |
| **continuance 3** | **.635976** | **.713638** |
| **continuance 4** | **.675357** | **.704439** |
| **continuance 5** | **.292933** | **.803975** |
| **continuance 6** | **.610320** | **.721187** |

#### *4.3.1.3. Normative commitment scale*

The normative commitment scale also comprised six items. None of the items had reversed scores. A Cronbach Alpha of .76 was attained, which was reasoned satisfactory. The scale's reliability statistics are summarised in Table 4.7.

**Table 4.7**

***Normative commitment scale: reliability statistics***

| Cronbach's Alpha | Standardised Alpha | N of Items |
|---|---|---|
| **.76** | **.76** | **6** |

The evaluation of the item-total statistics raised one problem item. The item (normative 1) raised concerns as the item produced a low item-total correlation. Furthermore, the deletion of item normative 1 would increase the alpha for the continuance commitment subscale. The summary of the item-total statistics is presented in Table 4.8.

**Table 4.8**

***Normative commitment scale: item-total statistics***

| Item | Item Total Correlation | Alpha if Deleted |
|---|---|---|
| **normative 1** | **.140804** | **.814469** |
| **normative 2** | **.560950** | **.708393** |
| **normative 3** | **.615839** | **.693184** |
| **normative 4** | **.625041** | **.699870** |
| **normative 5** | **.536025** | **.716002** |
| **normative 6** | **.598310** | **.697088** |

### 4.3.2. Turnover intentions questionnaire

The turnover intention scale comprised 15 items. Out of the 15 items, four were reversed scores. The scale obtained a Cronbach Alpha of .86 and was deemed satisfactory. The scale's reliability statistics are summarised in Table 4.9.

**Table 4.9**

***Turnover intentions scale: reliability statistics***

| Cronbach's Alpha | Standardised Alpha | N of Items |
|---|---|---|
| **.86** | **.86** | **15** |

The evaluation of the item statistics raised three problem items. The three items (turnover intention 8, 10 and 14) raised concerns as the items produced low item-total correlations. It was also concluded that the alpha could be increased by the deletion of all three items. The summary of the item-total statistics is presented in Table 4.10.

**Table 4.10**

***Turnover intentions scale: item-total statistics***

| Item | Item Total Correlation | Alpha if Deleted |
|---|---|---|
| **turnover intention 1** | **.629745** | **.840631** |
| **turnover intention 2** | **.656319** | **.839049** |
| **turnover intention 3 (reversed)** | **.654643** | **.840038** |
| **turnover intention 4** | **.632595** | **.840666** |
| **turnover intention 5** | **.477337** | **.849047** |
| **turnover intention 6** | **.735580** | **.833791** |
| **turnover intention 7** | **.613418** | **.841695** |
| **turnover intention 8 (reversed)** | **.260820** | **.857998** |
| **turnover intention 9** | **.399978** | **.853387** |
| **turnover intention 10** | **-.027588** | **.875582** |
| **turnover intention 11 (reversed)** | **.528644** | **.846285** |
| **turnover intention 12** | **.552799** | **.845236** |
| **turnover intention 13** | **.557464** | **.844737** |
| **turnover intention 14 (reversed)** | **.074634** | **.870283** |
| **turnover intention 15** | **.710383** | **.835864** |

### 4.3.3. Driver rating measure

The risky driving behaviour concept was treated as a single indicator variable. The utilisation of the covariance-based approach to structural equation modelling was therefore not possible. As a result, the researcher shifted the analysis to only employ a component-based approach called Partial Least Squares (PLS) analysis.

## 4.4. PLS path modelling

The bootstrapping method was utilised to determine whether the item weights were significant. The analysis found all items weights to be significant, except for one, namely turnover intention 10. The results are summarised in Table 4.11.

**Table 4.11**

***Outer loadings***

| Item | outer loading | bootstrap mean | 95 % lower | 95 % upper | |
|---|---|---|---|---|---|
| Driver Rating | 1 | 1 | 1 | 1 | significant |
| affective 1 | 0.74 | 0.74 | 0.68 | 0.8 | significant |
| affective 2 | 0.78 | 0.78 | 0.7 | 0.85 | significant |
| affective 3 (reversed) | 0.87 | 0.87 | 0.83 | 0.9 | significant |
| affective 4 (reversed) | 0.67 | 0.67 | 0.55 | 0.77 | significant |
| affective 5 (reversed) | 0.84 | 0.84 | 0.8 | 0.88 | significant |
| affective 6 | 0.77 | 0.77 | 0.71 | 0.83 | significant |
| continuance 1 | 0.47 | 0.47 | 0.33 | 0.59 | significant |
| continuance 2 | 0.77 | 0.77 | 0.72 | 0.82 | significant |
| continuance 3 | 0.83 | 0.83 | 0.79 | 0.87 | significant |
| continuance 4 | 0.82 | 0.82 | 0.76 | 0.87 | significant |
| continuance 5 | 0.34 | 0.34 | 0.18 | 0.48 | significant |
| continuance 6 | 0.78 | 0.78 | 0.72 | 0.83 | significant |
| normative 1 | 0.19 | 0.18 | 0.01 | 0.33 | significant |
| normative 2 | 0.76 | 0.76 | 0.68 | 0.81 | significant |
| normative 3 | 0.8 | 0.8 | 0.74 | 0.84 | significant |
| normative 4 | 0.81 | 0.81 | 0.77 | 0.85 | significant |
| normative 5 | 0.7 | 0.7 | 0.62 | 0.77 | significant |
| normative 6 | 0.71 | 0.71 | 0.63 | 0.77 | significant |
| turnover intention 1 | 0.72 | 0.72 | 0.65 | 0.78 | significant |
| turnover intention 10 | 0.69 | 0.69 | 0.61 | 0.75 | not significant |
| turnover intention 11 (reversed) | 0.54 | 0.54 | 0.44 | 0.63 | significant |
| turnover intention 12 | 0.8 | 0.8 | 0.76 | 0.84 | significant |
| turnover intention 13 | 0.7 | 0.7 | 0.63 | 0.76 | significant |
| turnover intention 14 (reversed) | 0.33 | 0.33 | 0.2 | 0.46 | significant |
| turnover intention 15 | 0.46 | 0.46 | 0.36 | 0.54 | significant |
| turnover intention 2 | -0.03 | -0.02 | -0.16 | 0.11 | significant |
| turnover intention 3 (reversed) | 0.63 | 0.63 | 0.55 | 0.71 | significant |
| turnover intention 4 | 0.61 | 0.61 | 0.53 | 0.69 | significant |
| turnover intention 5 | 0.63 | 0.62 | 0.53 | 0.71 | significant |
| turnover intention 6 | 0.16 | 0.16 | 0.03 | 0.29 | significant |
| turnover intention 7 | 0.79 | 0.79 | 0.73 | 0.83 | significant |
| turnover intention 8 (reversed) | 0.74 | 0.74 | 0.68 | 0.8 | significant |
| turnover intention 9 | 0.75 | 0.75 | 0.69 | 0.8 | significant |

The structural model was evaluated by means of the Partial Least Squares (PLS) approach also referred to as the soft modelling approach. Due to the architecture of the structural model, the data obtained, and the predictive nature of this study, a PLS modelling analysis was conducted on the structural model.

### 4.4.1. Reliability

An AVE value of > .5 and a composite reliability value of > .7 were utilised as the standard for the PLS path analysis. The AVE values for three of the measurement scales were flagged as possibly problematic, as depicted in Table 4.12.

The continuance and normative commitment subscales are just below the cut-off value and imply that a greater amount of variance in the items is explained by measurement error and not by the underlying dimension. The turnover intention scale produced a very low AVE score.

**Table 4.12**

***Path model summary***

| | AVE | Composite Reliability | R Square |
|---|---|---|---|
| **Affective** | **.6141** | **.9046** | **0** |
| **Continuance** | **.4863** | **.84** | **0** |
| **Normative** | **.485** | **.8362** | **0** |
| **Risky Driving Behaviour** | **1** | **1** | **.0004** |
| **Turnover Intention** | **.3781** | **.8865** | **.5746** |

### 4.4.2. Evaluating the structural model

The structural model was evaluated using the $R^2$ values and path coefficients. The $R^2$ value is depicted in Table 4.12 and the path coefficients are presented in Table 4.13. The $R^2$ value of risky driving behaviour was flagged as problematic, due to the low variance explained value. Bootstrapping was also utilised to determine which paths between the variables were significant. All paths between the variables were found to be significant, except for the turnover intention to risky driving behaviour path. The results are summarised in Table 4.13.

**Table 4.13**

***Path coefficients***

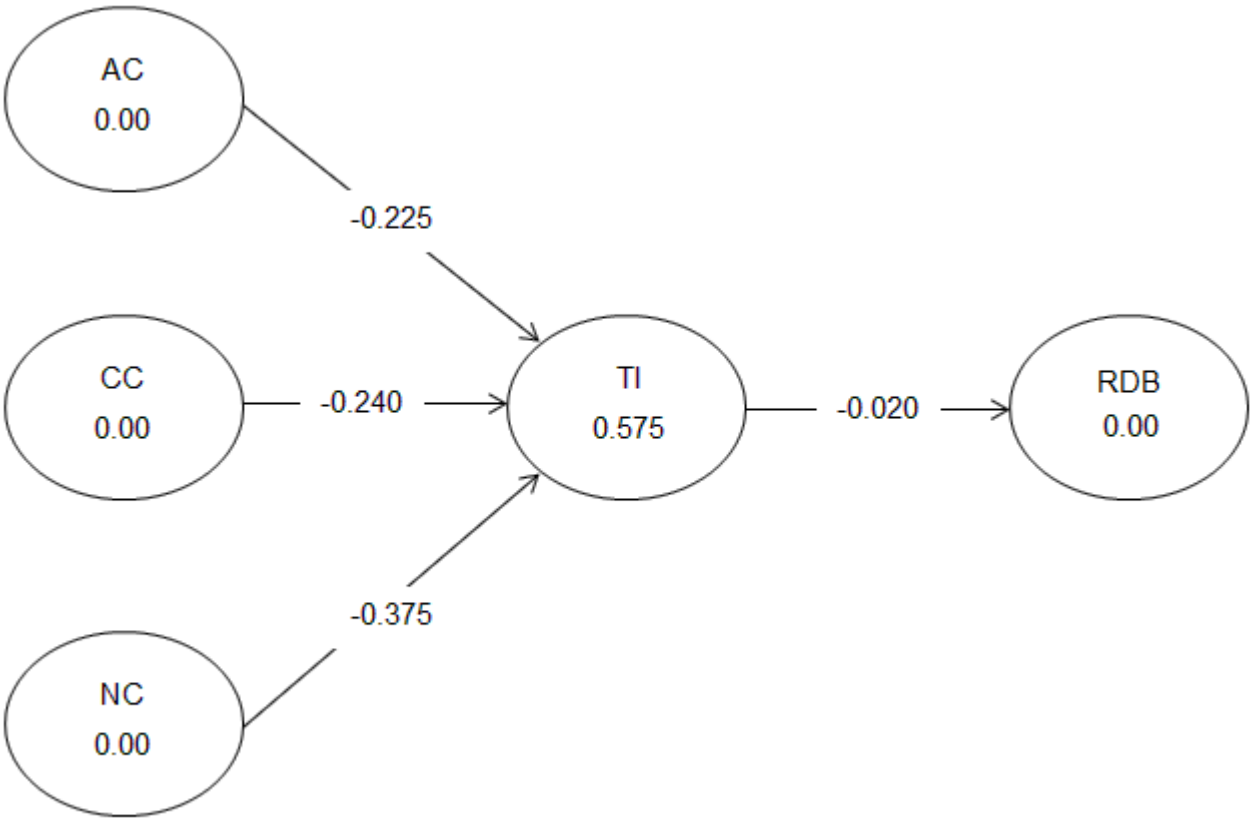
| Path | path coefficient | bootstrap mean | 95% lower | 95% upper | |
|---|---|---|---|---|---|
| **AC to TI** | **-.22** | **-.23** | **-.34** | **-.11** | **significant** |
| **CC to TI** | **-.24** | **-.24** | **-.38** | **-.1** | **significant** |
| **NC to TI** | **-.38** | **-.37** | **-.49** | **-.26** | **significant** |
| **TI to RDB** | **-.02** | **-.03** | **-.15** | **.08** | **not significant** |

*AC = Affective Commitment* *CC = Continuous* *NC = Normative Commitment*

*TI = Turnover Intention* *RDB = Risky Driving Behaviour*

The overarching substantive hypothesis was dissected into four detailed specific substantive research hypotheses translated into four specific path coefficients through PLS path modelling, as presented in Figure 4.1.

The results indicate that affective, continuance and normative commitment explain 57.5% of variance in turnover intention. Figure 4.1 indicates that all the paths are significant, except for the path between turnover intention and risky driving behaviour.




AC = Affective Commitment CC = Continuous Commitment NC = Normative Commitment
TI = Turnover Intention RDB = Risky Driving Behaviour

***Figure 4.1.*** **PLS path model**

## 4.5. Summary: Chapter 4

This chapter has presented a discussion of the analysis methods selected and has reported the results obtained through tables and explanations. The concept of risky driving behaviour was treated as a single indicator variable and thus required a component-based approach to the analysis of the data. Through Partial Least Squares analysis, two observations was made from the model, namely a) all three mindsets of organisational commitment are predictors of turnover intention and b) the data do not support the path between turnover intention and risky driving behaviour. The implications of the results are discussed in the following chapter, with specific focus on significant findings.

# CHAPTER 5
# DISCUSSION OF RESEARCH RESULTS

## 5.1. Introduction

This chapter elaborates on the research findings reported in Chapter 4. The discussions will focus mainly on the significant findings.

## 5.2. Statistics: composition of the sample

The sample comprised drivers permanently employed by the retail group at six national branches. The dispersal of the sample in terms of the geographical area is consistent with the degree of business activities and traffic in the regions. It can be argued that the degree of business activities in each geographical area is represented by the number of drivers employed in that location. It was the objective of the researcher to gather a representative sample of the national group's employees. The aim was therefore to obtain a 50% representation at each branch. This was achieved for four of the six branches. The two smallest branches did not achieve their targets. The researcher was informed that it was due to management not allowing drivers time off to complete the questionnaires, as the branches were under pressure to increase their productivity figures. The fatigue management training programme was also neglected in these two branches, for the same reason.

The sample's gender distribution was skew, with 99.7% of the sample being males. This, however, was not a concern as the driver position is dominated by men in the retail group. Female drivers have a representation of only 0.7% in the organisation.

The age evaluation concluded that 39% of the sample is between 20 and 29 years old. The age statistic is of great importance as the literature review revealed that the age group 20 to 29 is more likely to be involved in accidents (Hong, 2005). Individuals between 20 and 29 are also more likely to resign, as generation Y individuals have multiple jobs before retirement (Robyn, 2012). Only 15.1% of the sample was over 50 years old. This age group is less likely to seek other employment due to being more focused on retirement, which is at 60 years old

for the retail group. The young age average can be explained as a result of the organisation's implementation of a learnership programme to feed the shortage of drivers. The age requirement for the learnership position ranges from 22 to 32 years old. The learnership programme has filled a large percentage of open vacancies and few external drivers have been employed since the programme was implemented in 2010.

The ethnic composition of the sample concluded a 95.4% African representation. The Coloured, White and Indian distributions were 2.8%, 1.2% and 0.7% respectively. The literature states that ethnicity has had no impact on driver ability as it is predicted by skill and attitude, which does not correlate with a group's race (De León, 2006).

The education of the employees was determined on three levels, namely grades 10 to 12. The current employment requirement for the driver position is at grade 11 level. This requirement was implemented in the last number of years, therefore certain respondents have only attained grade 10. This was not of concern to the researcher as the survey questionnaires required a minimum grade 10 education.

## 5.3. Psychometric properties of the measurement instruments

The psychometric properties of each measurement instrument utilised in the study are be discussed below. STATISTICA version 11, an analytics software package developed by StatSoft, was utilised to evaluate the subscale inter-item correlations (Garson, 2012). Item analysis was conducted to determine and exclude items that jeopardise the internal consistency of the sub-scale in query from the measure. The following section reports on the results obtained with reference to each subscale and item.

Before the evaluation of the measurement instrument commenced, specific items (affective 3, 4, 5 and turnover intention 3, 8, 11 and 14) were first reversed as these items had been phrased negatively in the questionnaires.

### 5.3.1. Organisational commitment questionnaire

The organisational commitment questionnaire developed by Meyer *et al*. (1993) comprise three subscales, namely affective, continuance and normative commitment. Each subscale's psychometric properties are discussed below.

A satisfactory Cronbach's Alpha of 0.87 was attained on the affective commitment subscale and none of the item statistics raised any problem items. It was therefore concluded that the scale presented satisfactory internal consistency and no items were therefore deleted.

An acceptable Cronbach Alpha of 0.78 was attained on the continuance commitment subscale. The evaluation of the item-total statistics did raise two problem items, however, namely items continuance 1 and 5. Both items produced a low item-total correlation and the deletion of item continuance 5 would increase the alpha for the subscale.

An adequate Cronbach Alpha of 0.76 was attained on the normative commitment subscale. One of the item-total statistics was flagged, as item normative 1 produced a low item-total correlation and the deletion of it would increase the alpha for the continuance commitment subscale.

As only two items (continuance 5 and normative 1) out of the 18 items that make up the organisational commitment scale reported low item-total correlations, no remedial steps were taken.

### 5.3.2. Turnover intentions questionnaire

The turnover intention scale obtained a satisfactory Cronbach Alpha of .86. Three items (turnover intention 8, 10 and 14) raised concerns, as the items produced low item-total correlations and, if deleted, would increase the alpha. No remedial steps were taken, however, as it was only three of the 15 items that make up the turnover intention scale that reported low item-total correlations.

### 5.3.3. Driver rating measure

A tracking system's results was utilised to determine driving performance and, consequently, the degree to which the driver follows safety rules and procedures. The selected tracking system, MiX Telematics, is used to track the performance of all drivers across all six branches of the retail group.

The tracking system is programmed to measure four distinct driving behaviours, namely a) over speeding, b) harsh braking, c) over revving, and d) economic driving. All the results are reflected in percentages and the unweighted average of the four measures determines whether the driver qualifies for a monetary incentive. The average determining the monetary incentive is termed driver rating.

It was argued that two of the measures, namely over speeding and harsh braking, could be clear indications of disobedience. This argument was built on the presence of sound and light indicators informing the driver when the speed limit is exceeded and harsh braking being a result of not following safe driving distances. The two remaining measures were argued to be less sensitive to measuring risky driving behaviours. The decision to proceed with all four indicators was due to the drivers receiving debriefing sessions after each trip. It was thus reasoned that the cause of drivers losing out on incentive bonuses was not due to unclear instructions and regulations, but rather a decision not to comply with the rules and procedures in place.

Therefore the intention was to measure the concept of risky driving behaviour by using the driver rating scale comprising the four items over speeding, harsh braking, over revving, and green band. The retail group providing the information could, however, only present the average measure, i.e. driver rating, due to time constraints on their part. The risky driving behaviour concept was thus treated as a single indicator variable. The utilisation of the covariance-based approach to SEM was therefore not possible and the researcher, as a result, shifted the analysis to only employing a component-based approach called Partial Least Squares analysis.

## 5.4. PLS path modelling

PLS path modelling is utilised to determine the reliability of the measurement and structural models. The analysis involves the assessment of the hypothesised path coefficients in two separate stages. First, the outer model is evaluated to determine whether the model produces satisfactory reliability. The second stage focuses on the inner model and is concerned with analysis determining the explained variance of the constructs; the strength of the relationships among the concepts; and the predictive relevance thereof.

PLS does not assume that the data is normally distributed, which implies that parametric significance tests used in regression analyses cannot be applied to test whether coefficients such as outer weights and loadings are significant. Instead, PLS-SEM relies on a nonparametric bootstrap procedure to test coefficients for their significance.

In bootstrapping, a large number of subsamples is drawn from the original sample, with replacement. Replacement means that each time an observation is drawn at random from the sampling population, it is returned to the sampling population before the next observation is drawn. Therefore, an observation for a certain subsample can be selected more than once, or may not be selected at all for another subsample. The number of bootstrap samples should be high, but must be at least equal to the number of valid observations in the dataset.

Factor analysis was not conducted as part of the analysis. The main objective of factor analysis is to determine the factors that are present based on the data and to maximise the variance explained by the factors involved. This, however, cannot be achieved due to the driver rating being a single indicator variable. Bootstrapping was utilised as an alternative to factor analysis to determine whether the item weights were significant. The analysis found all items weights to be significant, except for one item, namely turnover intention 10.

The structural model was evaluated by means of the Partial Least Squares (PLS) approach which is also referred to as the soft modelling approach. This approach is often utilised for exploration and prediction investigations. In addition, many studies attempting to avoid sample size issues utilise PLS as a first choice analysis. Due to the architecture of the

structural model; the data obtained; and the predictive nature of this study, a PLS modelling analysis was conducted on the structural model. This yielded the following results.

### 5.4.1. Reliability

The AVE results for three of the measurement scales were deemed problematic. The continuance and normative commitment subscale values were just below the cut-off value. This result indicates that a greater amount of variance in the items was explained by measurement error and not by the underlying dimension. The turnover intention scale produced the lowest AVE score.

All the measurement scales, including the problematic scales, did achieve a composite reliability score greater than the cut-off value. On basis of their high composite reliability, both of the flagged commitment subscales and the turnover intention scale were therefore argued to have adequate convergent validity.

### 5.4.2. Evaluating the structural model

Bootstrapping was also utilised to determine which paths between the variables were significant. This method is often utilised when the data fails to meet the assumption of multivariate normality. The method builds the platform for statistical inferences to be made as it provides confident intervals for all parameter estimates. The technique offers an estimate of the shape, spread and bias of the sampling distribution of a specific statistic. In other words, the bootstrapping technique treats the observed sample as if it represents the population (Roux, 2010). All paths between the variables were found to be significant, except for the turnover intention to risky driving behaviour path.

The three paths between the organisational commitment's subcomponents (affective, normative and continuous) and turnover intention were found to be significant. This was expected, as countless studies have identified the significantly negative relationships between the three organisational commitment subscales and turnover intention (Meyer *et al.*, 2002; Maertz *et al.*, 2007; Johnson *et al.*, 2010). These findings can be used to argue that

organisational commitment has an impact on an employee's intention to leave, no matter what their commitment mindset is.

The study could not find support for the fourth hypothesis. The limitations of the study (see p. 91) should however be taken into consideration before any inferences are made.

## 5.5. Summary: Chapter 5

The methods of analysis that were selected have been discussed in this chapter and the results obtained through diagrams and in-depth explanations have been reported. The concept of risky driving behaviour was treated as a single indicator variable and thus required a component-based approach to the analysis of the data. Through Partial Least Squares analysis, two observations from the model were made, namely a) all three mindsets of organisational commitment are predictors of turnover intention and b) the data do not support the path between turnover intention and risky driving behaviour. The final chapter comprises a discussion of the implications of the results, with specific focus on the significant findings, and concludes the study by identifying possibly limitations and making recommendations for future research.

# CHAPTER 6
# IMPLICATIONS, LIMITATIONS, RECOMMENDATIONS AND CONCLUSIONS

## 6.1. Introduction

Chapter 1 provided an introduction to the study through explaining the origin and development of the research idea. It also provided an explanation of the rationale for the study, the research objectives, and the research-initiating question. It was argued that a combination of high turnover intention and a diminished level of organisational commitment may possibly influence an employee's attitude towards safety procedures and, as a result, lead to an increase in accidents.

Chapter 2 comprised a literature review investigating concepts associated with turnover intention and factors related to truck driver safety. The literature review assisted in clarifying the role of each concept in the development process of a conceptual model explaining truck driver accidents.

In Chapter 3, the research methodology followed to empirically evaluate the relationships hypothesised in Chapter 2 was discussed. The aim was to present the appropriate research design to serve the empirical objectives. The decision on the data analysis methods was determined after the data was evaluated, which is discussed in the succeeding chapter.

Chapter 4 reported on the results that were obtained and discussed the decision to utilise a component-based approach to the analysis was introduced. The chapter further identified two observations from the structural model, namely a) all three mind-sets of organisational commitment are predictors of turnover intention and b) the data do not support the path between turnover intention and risky driving behaviour. Chapter 5 has presented a discussion on the results reported in Chapter 4, focussing mainly on the significant findings.

This final chapter discusses the relevance of the research, identifies possibly limitations, provides recommendations for future research and delivers a conclusion.

## 6.2 Relevance of organisational commitment

The focus point of modern-day organisations has shifted from manufacturing to service delivery, technology and attracting the knowledgeable worker (Drucker, 1999). Factors such as recessions and globalisation have forced organisations to discover methods which outsmart the opposition in order to stay sustainably competitive. According to Drucker (1999), it can be accomplished through the knowledgeable worker. Peters (1993) stated that modern-day organisations are developing a preference for brains over brawn. This phenomenon is also visible in the participating retail group. When the participating organisation first started employing code 14 drivers, the requirements only focused on the applicants ability to handle the truck; whereas the current requirements are broader and at a much higher level. Applicants are now evaluated on practical skills and intellectual abilities. The reason for this change was due to certain responsibilities of junior management being given to the drivers. An example of the shifting responsibilities is the completion of trip sheets, which requires the capability to read and write. This process allows the drivers more responsibility and enhances the productivity of the logistic department.

The concept of organisational commitment was first utilised to assist human resources in the management of hierarchical organisational structures (Döckel, 2003). This type of organisational structure is not as popular in modern-day businesses. The relevance of organisational commitment is not depleted, though, as it is still utilised to increase productivity in different types of organisational structures. According to Drucker (1999), due to the employment of the knowledgeable worker, organisations are not relying as much on formal rules and regulations, but rather on organisational commitment that will guide acceptable behaviours and enhance personal productivity levels.

Meyer and Allen (1997) have argued that organisational commitment will still be relevant for decades due to the continuing existence of organisations. Meyer and Allen (1997) further state that, even though the modern-day organisation is becoming leaner, people will still form the core of any organisation. Döckel (2003) argues that organisational commitment is still relevant in the twenty-first century, as employees low on organisational commitment still divert their commitment to other activities, such as withdrawal behaviours. This statement is

supported by the findings of this study as significant predictive relationships were establish between low organisational commitment and turnover intention. It is for this reason that the concept of organisational commitment is still relevant in the modern-day workplace.

In view of high driver turnover, the skills shortage, and the impact that these factors have on productivity, this study encourages all transport industries to evaluate the policies in place, or develop policies if none exist, to develop commitment within the organisation.

### 6.2.1. Development of organisational commitment

Meyer and Allen (1997) have proposed the argument that organisational commitment can take on different forms and that the key differences refer to the mindsets of individuals in terms of what organisational commitment means. Meyer and Allen (1997) stated that the reason for distinguishing among the different forms of organisational commitment was that they contained different implications for actions and these mindsets revealed three distinguishable aspects, namely affective connection to the organisation, obligation to stay, and perceived cost of parting.

Affective commitment can be defined as a positive affection toward an organisation, revealed in a desire to see the organisation succeed and being proud to be associated with the group (Cohen, 2003). The second mindset is continuance commitment. This element refers to the employee's knowledge of the costs involved in leaving the organisation (Meyer & Allen, 1997). The final mindset of commitment is termed normative commitment and is defined by Meyer and Allen (1997) as a sense of responsibility to persist in employment with a particular organisation.

Meyer and Herscovitch (2001) state that a distinction must be made between the three mindsets of organisational commitment when attempting to develop a workforces' organisational commitment. Meyer and Herscovitch (2001) recommend that any attempt made to develop organisational commitment must be rooted in one of the three mindsets.

In the following section, the discussion centres on the development of affective, normative and continuance commitment.

### 6.2.2 The development of affective, normative and continuance commitment

Meyer and Herscovitch (2001) proposed the following two ideas to enhance the mindset of desire (affective commitment). Firstly, management must involve the employee in decision making with reference to their department. Secondly, a culture of acknowledging value-added work must be adopted. Meyer and Allen (1997) suggested the adoption of a more universal appeal, such as fostering an environment where employees are supported and treated fairly. It must be noted that affective commitment cannot be achieved through monetary incentives, as the mindset of desire develops on the basis of psychologically rewarding experiences (Meyer & Allen, 1997)

Organisations in the road freight industry can enhance drivers' affective commitment by informing the employee of future business plans and problems that the industry has to face, such as petrol price increases. By sharing the news, the employee will feel part of the organisation, as they come to share in the achievements and the struggles of the organisation.

Meyer and Herscovitch (2001) stated that:

> ...the mindset of perceived cost (continuance commitment) develops when an individual recognises that he or she stands to lose investments, and/or perceives that there are no alternatives other than to pursue a course of action of relevance to a particular target (p. 316).

This type of commitment develops due to any life event increasing the cost involved in parting from the organisation and is dependent on external factors. The study therefore does not discuss any recommendations for the development of continuance commitment.

The development of normative commitment takes place during the first few weeks of employment. Wiener (1982) explained that normative commitment is established on the basis of stresses a newcomer experiences during the induction and socialising process. This type of commitment is strongly rooted in the social contract which is also established during the first few weeks of employment. Meyer, Allen and Topolnytsky (1998), however, argue that the development of normative commitment is determined by the degree to which the employee feels in debt to the organisation. The arguments are summarised by Meyer and Herscovitch (2001) in stating that "…the mindset of obligation (normative commitment) develops as a result of the internalisation of norms through socialisation, the receipt of benefits that induces a need to reciprocate, and/or acceptance of the terms of a psychological contract" (p. 316).

Organisations in the road freight industry can enhance a driver's normative commitment by ensuring clarity regarding the social contract from the first day of employment. Secondly, the induction programme must be developed to inform the driver of the employer's expectations. The induction programme should also allow for socialisation. This can be achieved by matching the new employee with a driver of the same age and/or background who will guide the process of on-the-job training

The development of normative and affective commitment is of great relevance to organisations as it will not only enhance work behaviours such as job performance, work attendance and organisational citizenship, but also decrease turnover rate.

### 6.3. Limitations of the study

This section provides a discussion of the limitations experienced during the study and makes recommendations for future research.

During the study, time limitations were experienced on the part of the researcher and a restriction of availability on the part of the participating organisation. Firstly, the researcher could not use accident rates as a measurement because it would have required a full year of data gathering to make valid judgments. Secondly, the participating organisation only allowed the participants to be away from their duties for 45 minutes. These limitations forced the

researcher to exclude three concepts from the conceptual model. Future studies of this nature should include an investigation of safety climate, job satisfaction and accidents to add to the understanding of the interrelationship between intention to leave and accident rates.

The questionnaires were only made available in English. This may have been a limitation to the study as none of the drivers used English as a first language. Future researchers should explore the possibility of translating the questionnaires into the participants' first language to eliminate respondent error. In addition, the utilisation of self-administered questionnaires could have increased the possibility of respondent errors. There was potential for respondents to misunderstand questions due to language barriers and cultural differences. Respondents may have answered questions without fully comprehending what was asked. Future researchers should evaluate other methods of gathering large amounts of data without risking the quality thereof.

The study utilised convenience sampling as the retail company made their resources available for research and the research-initiating question was formulated after observing the drivers of this company. As this is an extremely risky sampling method, generalisation of the results cannot be applicable beyond the organisation. This study reports all findings on the basis of a pre-test.

Aside from the work done by Graham and Nafukho (2012), no other study has developed or tested a model explaining the relationships between organisational commitment, intention to leave and accident rates. The lack of information on the interaction effects between these concepts could be explained by the sensitivity of the matter; organisations are reluctant to release information on accident rates and the cause thereof.

A crucial limitation to this study was discovered after the analysis of the data. The retail group providing the information only presented the averages of the driver rating measure per employee. Further investigation with the assistance of the retail group a month after the analysis, led to the discovery that one of the driver rating items could have skewed the results, as most employees had been given a score of 100%. The researcher believes that this limitation must be taken into consideration by all future research studies aimed at

determining the predictive effects of organisational commitment and turnover intention on accident rates.

## 6.4. Future research

The limitations of the study as discussed above presents a case for continuing to search for knowledge regarding the predictive nature of turnover intention with regard to accident rates. The recommendation is that future research should replicate this study and dissect the driver rating data into four items. A pre-test is recommended to determine whether turnover intention could explain unique variance in accident rates. Following the pre-test, a representative sample of South Africa's truckload drivers could be tested to determine whether the model can be generalised.

## 6.5. Conclusion

This study has added to the literature on truck driver safety by focusing on the effects of organisational commitment on turnover intention and accidents in the workplace. It was concluded that all three mindsets of organisational commitment predict turnover intention. The practical implication of these findings can assist management in enhancing an array of work behaviours such as job performance, work attendance and organisational citizenship, and also reduce turnover rate.

No significant support for the predictive effect of turnover intention on risky driving behaviour could be found through the study, but future research to develop a model that could assist Human Resource professionals in the understanding, development, and implementation of interventions to increase organisational commitment, reduce intention to leave, improve actual turnover, and consequently costly truckload accidents, is encouraged.

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# APPENDICES

## Appendix A: Informed consent form

UNIVERSITEIT•STELLENBOSCH•UNIVERSITY
jou kennisvennoot • your knowledge partner

**STELLENBOSCH UNIVERSITY**

**CONSENT TO PARTICIPATE IN RESEARCH**

---

You are asked to complete a questionnaire to assist in data collection for a study conducted by Ms E Burger, M.Com (Psych) student at the University of Stellenbosch (under the supervision of Mr G. G. Cillié). The results obtained will contribute to the completion of a Master of Commerce degree in Industrial Psychology. The results of this study will contribute to the completion of the thesis component of this postgraduate programme. You were selected due to being a permanent driver at the retail group.

### 1. PURPOSE OF THE STUDY

This study stems from the argument that a combination of high turnover intention and a diminished level of organisational commitment could influence an employee's attitude towards safety procedures and, as a result, lead to an increase in accidents. Truckload drivers upholding such a disposition could experience limited organisational commitment to an organisation and consequently take less initiative to follow safe driving practices. This study therefore attempts to review and test the model of safe driving dynamics in trucking to build on the understanding of plausible associations among organisational commitment, turnover intentions, and accident rates.

## 2. PROCEDURES

If you are willing to assist Ms Burger, please read the following information. You will be asked to complete a pencil-and-paper questionnaire. You have an hour to complete the questionnaire although it is designed to be completed within 30 minutes. The questionnaire consists of three sections measuring your commitment towards the organisation, personality characteristics, and your intention to stay with the organisation. You will be provided with this questionnaire in a safe and controlled environment arranged by your human resources officer. She will also be the administrator of the assessment. Once you have completed the pencil-and-paper questionnaire, you will be asked to drop the answer sheet into a sealed box. If you have any questions during the assessment you may ask the human resource officer on duty.

## 3. POTENTIAL RISKS AND DISCOMFORTS

Please be assured that you are under no risk by participating in this study. Your results will not be made available to any employee at the retail company except Ms Burger. Your answer sheet will only be used for academic purposes. Also note that you are not forced to answer any question you do not want to.

## 4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

By participating you are part of a study that could assist organisations in minimising accidents in the workplace. The goal of this study is to provide the information needed to design primary interventions to reduce drivers' involvement in accidents.

## 5. PAYMENT FOR PARTICIPATION

Please note that you will not receive any monetary compensation for volunteering to participate in this study. You will however be contributing to research that attempts to save lives in the long run.

## 6. CONFIDENTIALITY

Any information obtained by the questioners that could identify you will remain confidential. The study is permitted by a contract between Ms Burger, the retail group, and the University of Stellenbosch to protect the identity of all participants. Only the researcher, Ms Burger, will have access to your responses. No staff numbers, names or any measure of identifying you will be made available in the study. All staff numbers will be replaced with aliases. Only once aliases are assigned will the results be given to the retail group. The company will therefore not be able to identify or link you to any results.

## 7. IDENTIFICATION OF INVESTIGATORS

*Please raise any concerns you might have with:*
Ms Burger |Email: 15437299@sun.ac.za |Cell: 084 347 4450
G.G. Cillié: |Email: ggc@sun.ac.za

## 8. SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE

I_____ (Staff Number) hereby declare that I have read the enclosed material and that I asked the administrator to explain any section I did not understand.

**Please make a tick (✓) next to one of the following declarations:**

I declare voluntary consent to participate in this study by completing a questionnaire. ☐

I **do not** declare voluntary consent to participate in this study by completing a questionnaire. ☐

.....

## Appendix B: Survey questionnaires

- *Section A: Biographical information*

Your biographical information in this study is very important, and is required for statistical purposes only. This information, as well as all your responses, will not be revealed to any person other than the researcher. You are requested to mark with a cross (X) next to the information that best describes you.

| Variable | Category | X |
|---|---|---|
| Gender: | Male | |
| | Female | |

| | | |
|---|---|---|
| Age: | 20 – 29 | |
| | 30 – 39 | |
| | 40 – 49 | |
| | 50 – 59 | |
| | 60 + | |

| | | |
|---|---|---|
| Ethnic group: | African | |
| | Coloured | |
| | Indian | |
| | White | |

| | | |
|---|---|---|
| Education | Grade 10 | |
| | Grade 11 | |
| | Grade 12 | |

……..END OF SECTION A…….

- *Section B: Organisational commitment questionnaire*

Listed below is a series of statements that represent feelings that individuals might have about the company or organisation for which they work. With respect to your own feelings about the particular organisation for which you are working now, please indicate the degree of your agreement or disagreement with each statement by circling a number from 1 to 7 using the scale below.

1 = strongly disagree
2 = disagree
3 = slightly disagree
4= undecided
5 = slightly agree
6 = agree
7 = strongly agree

| AFFECTIVE COMMITMENT SCALE | | | | |
|---|---|---|---|---|
| 1 | I would be very happy to spend the rest of my career with this organisation. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 2 | I really feel as if this organisation's problems are my own. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 3 | I do not feel a strong sense of "belonging" to my organisation. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 4 | I do not feel "emotionally attached" to this organization. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 5 | I do not feel like "part of the family" at my organisation. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 6 | This organisation has a great deal of personal meaning for me. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |

| CONTINUANCE COMMITMENT SCALE | | | | |
|---|---|---|---|---|
| 1 | Right now, staying with my organisation is a matter of necessity as much as desire. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 2 | It would be very hard for me to leave my organisation right now, even if I wanted to. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 3 | Too much of my life would be disrupted if I decided I wanted to leave my organisation now. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 4 | I feel that I have too few options to consider leaving this organisation. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 5 | If I had not already put so much of myself into this organisation, I might consider working elsewhere. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 6 | One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |

| NORMATIVE COMMITMENT SCALE | | | | |
|---|---|---|---|---|
| 1 | I do not feel any obligation to remain with my current employer. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 2 | Even if it were to my advantage, I do not feel it would be right to leave my organisation now. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 3 | I would feel guilty if I left my organisation now. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |

| | | | | |
|---|---|---|---|---|
| 4 | This organisation deserves my loyalty. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 5 | I would not leave my organisation right now because I have a sense of obligation to the people in it. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |
| 6 | I owe a great deal to my organisation. | Disagree | 1-------2-------3-------4-------5-------6-------7 | Agree |

……..END OF SECTION B…….

- *Section C: Turnover intentions questionnaire*

The following section aims to ascertain the extent to which you intend to stay at the organisation. Please read each question and indicate your response using the scale provided for each question:

During the past 9 months…..

| | | | | |
|---|---|---|---|---|
| 1. | How often have you considered leaving your job? | Never | 1-------2-------3-------4-------5 | Always |
| 2. | How frequently do you scan newspapers in search of alternative job opportunities? | Never | 1-------2-------3-------4-------5 | All the time |
| 3. | To what extent is your current job satisfying your personal needs? | Not Happy | 1-------2-------3-------4-------5 | Very Happy |
| 4. | How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals? | Never | 1-------2-------3-------4-------5 | Always |
| 5. | How often are your personal values at work compromised? | Never | 1-------2-------3-------4-------5 | Always |
| 6. | How often do dream about getting another job that will better suit your personal needs? | Never | 1-------2-------3-------4-------5 | Always |
| 7. | How likely are you to accept another job at the same compensation level should it be offered to you? | Never | 1-------2-------3-------4-------5 | Always |

| | | | | |
|---|---|---|---|---|
| 8. | How often do you look forward to another day at work? | Never | 1-------2-------3-------4-------5 | Always |
| 9. | How often do you think about starting your own business? | Never | 1-------2-------3-------4-------5 | Always |
| 10. | To what extent do responsibilities prevent you from quitting your job? | Not the reason at all | 1-------2-------3-------4-------5 | The biggest reason |
| 11. | To what extent do the benefits associated with your current job prevent you from quitting your job? | Better at other places | 1-------2-------3-------4-------5 | Better at current employer |
| 12. | How frequently are you emotionally agitated when arriving home after work? | Never | 1-------2-------3-------4-------5 | All of the time |
| 13. | To what extent does your current job have a negative effect on your personal well-being? | Not at all | 1-------2-------3-------4-------5 | Very much |
| 14. | To what extent does the “fear of the unknown”, prevent you from quitting? | Not at all | 1-------2-------3-------4-------5 | Very much |
| 15. | How frequently do you scan the internet in search of alternative job opportunities? | Never | 1-------2-------3-------4-------5 | All of the time |

……..END OF SECTION C…….

**Appendix C: Guidelines for the use of psychometric tests**

# GUIDELINES FOR THE USE OF PSYCHOMETRIC TESTS

Organisational Commitment Questionnaire

Turnover Intentions Questionnaire

**Compiled by Miss Elke Burger**
**August 2013**

# 1. GUIDELINES FOR THE USE OF ASSESSMENT INSTRUMENTS

## 1.1. Objectives of the guidelines

Tests are structured and standardised assessment procedures which enable a psychologist to measure aspects of a client's functioning. The standardised administration allows comparison of that client with others who have completed the same assessment procedure. These guidelines offer guidance and best practice suggestions to support administrators to uphold high ethical and professional standards when using psychometric tests.

## 1.2. Use of psychometrics in research

Researchers using tests should maintain the same standard of ethical practice as psychologists working in other specialist areas. Informed consent should include communicating the purpose of the research, how the individual respondent's data will be used and stored, whether or not there is provision for being given individual feedback or a report on the outcome of the research, and who is responsible for the research.

## 1.3. Safe and ethical use of psychometric assessment procedures

Testing should occur in a structured and controlled environment. It is not appropriate to give the client the test to take away to complete elsewhere. Assessment instruments should also be protected from unauthorised access to preserve copyright restraints and to avoid misuse of the tests. The contents of tests should be safeguarded.

## 1.4. To uphold the highest standards of accuracy and fairness when administering tests

The psychometric assessment will be of most value if the client is motivated to do their best, is interested and engaged, and the relationship with the assessing psychologist

enables openness. This will be promoted by the client understanding the purpose of the assessment and perceiving the assessor as professional in their conduct.

A professional approach in this context would require the administrator to be respectful, friendly and seek to put the client at ease, but also to be perceived as neutral and unbiased. The administrator should not be overly familiar or negative. If a client is observed to be anxious, distrustful, or unmotivated, this should be noted as a constraint on performance which can then be taken into account in the interpretation.

### 1.5. Informed consent

Psychologists must gain informed consent from a client before proceeding with a psychometric assessment. This means informing the client of the purpose of the assessment, how the information may be used and who may have access to those results. Extra care may need to be taken with those with language barriers or intellectual disability to ensure that the client understands what is involved. Any constraints to confidentiality should be explained at this time.

### 1.6. Third party observer

Standardised administration of tests means an administrator should not allow a third party observer to be present when administering tests.

### 1.7. Confidential storage of test data

Psychometric test data should be stored in a secure and confidential manner. The test data should not be accessible to those who are not trained to interpret the data and should be viewed only by those who have consent from the client to access such data.

## 2. BEFORE STARTING WITH THE QUESTIONNAIRE

Put the candidates at ease by giving them information about yourself, the purpose of the questionnaire, the timetable for the day, how the results will be used and who will have access to them. Please ensure that you have switched off your mobile phone. The instructions marked in bold below should be read out meticulously and the same script should be followed each time the questionnaire is administered to one or more candidates.

Say: **"From now on, please do not talk amongst yourselves, but ask me if anything is not clear. Please ensure that any mobile telephones or other potential distractions are switched off completely. We shall be doing the Questionnaire which has a 60-minute time limit; however you should aim to complete all questions in 30 minutes. During the test I shall come to you if you raise your hand to answer any questions you might have. I will not be checking your responses as it is confidential information. I will shortly hand out the questionnaires, but before I do I would like to make a couple of general points.**

- **When completing the answer sheet, it is important to give a clear indication of your answer.**
- **If you want to change an answer, do not rub out your original, but cross it out clearly and mark your alternative.**
- **Ensure that there is no doubt about which is your preferred answer. Are there any questions about what I have said so far?***"*

Check for understanding of the instructions so far, and then say: **"Good. I will now give out the questionnaires."**

| Warning: It is most important that answer sheets do not go astray. They should be counted out at the beginning of the test and counted in again at the end. |
|---|

## 3. DISTRIBUTE THE QUESTIONNAIRES

After you have handed all test takers a questionnaire, say: **"Please read the first two pages carefully and complete the declaration on page 3 if you wish to proceed with the questionnaire. Take plenty of time to make sure that you understand what is expected of you. When we have been through the instructions, please ask any questions that you may have. Then, wait to be given the instruction to start. Please make sure that you have recorded your staff number and any other details requested on the questionnaire."**

Make sure that everyone is comfortable with the instructions and knows what they are required to do. When everyone is ready, say: "**Please turn over and start. Once you have finished, please put your pencil down and wait quietly until everyone else has finished."** Always look around the room for anyone with a question. Once all the candidates have indicated that they have completed the questionnaire, ask them to drop their questionnaires in a sealed box as you walk past all their desks. Make sure you have all the questionnaires back. Then say: **"Thank you for completing the questionnaire. You may report to your supervisor."**

Lastly, please record any event, which might have influenced the candidates' ability to answer the questionnaire and mail it to elke.burger02@gmail.com.

If you have any questions, please contact me at:

*Tel:* *074 347 4450*

*Email:* *elke.burger02@gmail.co.za*

Thank you for offering your time to assist with this study.

Yours faithfully

(Miss) Elke Burger