

**DEVIANT DRIVING BEHAVIOUR:
AN EPIDEMIOLOGICAL STUDY**

by

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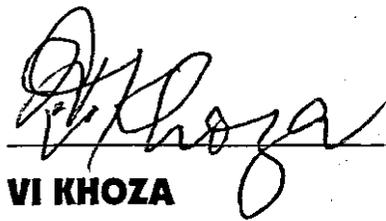
DEDICATION

This work is dedicated to:

- my late mother, Philisiwe (MaMkhwanazi), for her profound faith in education despite great odds;
- my dear wife, Nomthandazo Ntombenhle (MaMthembu), whose patience and encouragement has always been a source of inspiration and has paid dividends;
- my loving son, Sinethemba Godwin (Khozana); and
- all my relatives and “well-wishers” who have always supported me in my academic endeavours.

DECLARATION

I declare that the thesis "Deviant driving behaviour: an epidemiological study" represents my own work both in conception and execution. All the sources that I have used or quoted have been acknowledged by means of complete references.



VI KHOZA

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SUMMARY

This research is based on an epidemiological study of deviant driving behaviour. The data collection phase implemented a self-report survey to capture data on deviant driving behaviour. The study seeks to establish:

- Differences between deviant driving behaviour and respondents' demographic characteristics: gender, race, marital status, occupation, regularity of driving and type of motor vehicle usually driven.
- Relationships between deviant driving behaviour and respondents' age, education, income, duration of passing a formal driving test and the period a motor vehicle has been driven.
- Whether aggressive and anxious drivers do commit traffic offences more regularly than other drivers.
- The differential rating of selected aspects of traffic policing.

Research techniques implemented, include:

- A literature study of deviant driving behaviour, reflecting various theoretical approaches to the referent object.
- A measuring instrument (questionnaire), capturing various theoretical constructs and, as such, makes provision for a checklist of deviant driving behaviour in the form of seven statistical scales.
- Non-probability sampling through which 722 respondents were selected and included in the study.
- Statistical tests of reliability of the measuring instrument and four hypotheses.

Statistical findings indicate the following:

- Significant gender differences in self-reported deviant driving behaviour. Male respondents reported the highest scores of aggression; females reported the highest scores of anxiety in driving activities.
- Deviant driving behaviour differs significantly according to respondents' race and marital status.
- Professional drivers featured predominantly in aggressive and offensive driving behaviour, document offences and the operation of defective vehicles.
- Deviant driving behaviour differs significantly according to respondents' driving experience (regularity of motor vehicle driving and type of vehicle).
- Significant relationships exist between deviant driving behaviour and respondents' age, education, income, duration of passing a formal driving test and the period a vehicle has been driven. Relationships assume both positive and negative directions. The correlation between anxiety and number of years a vehicle has been driven, is not significant.
- Drivers who display signs of aggressive and anxious driving behaviour, do commit traffic offences. Positive relationships exist between aggressive-anxious approaches and informal driver training. Positive correlations exist between traffic (driving) offences, document offences and the operation of defective motor vehicles and aggressive behaviour.
- No significant correlations have been observed between deviant driving behaviour and informal driver training.

- Differential rating of traffic policing according respondents' education, race, occupation, income, etc., is also observed.
- Traffic officers' susceptibility to bribery creates a particular problem for authorities.

The following non-prescriptive recommendations are entertained:

- Enhancement of formal driving tests, driver training and traffic education.
- Disposal of convicted deviant drivers by criminal courts.
- Pedestrian education.
- Surcharge.
- Periodic inspections of motor vehicles.
- Provision for more traffic officer employment.
- Prevention of corruption (bribery) in the traffic situation.
- Establishment of a Road Traffic Infringement Agency.
- Road engineering.
- Future research.

The study succeeded in revealing "hidden" deviant driving behaviour among respondents who reside in the jurisdiction of the uMhlatuze City Council and adjacent areas.

OPSOMMING

Hierdie navorsing is gebaseer op 'n epidemiologiese studie van afwykende bestuursgedrag. Die data insamelingsfase het 'n selfrapporteringsvraelys betreffende afwykende bestuursgedrag ingesluit. Dit poog om:

- Verskille tussen afwykende bestuursgedrag en respondente se demografiese gegewens soos: geslag, ras, huwelikstatus, beroep, gereeldheid van en tipe voertuig bestuur, bloot te lê.
- Verhoudings tussen afwykende bestuursgedrag en respondente se ouderdom, opvoedingspeil, inkomste en duur van die slaag van 'n formele bestuurstoets en die tydperk waarmee 'n motorvoertuig bestuur is, te bepaal.
- Vas te stel of aggressiewe en angstige bestuurders verkeersoortredings wel meer gereeld pleeg as ander bestuurders.
- Differensiele beoordeling van geselekteerde aspekte van verkeerspolisiering moontlik te maak.

Navorsingstegnieke wat gebruik is, sluit in:

- 'n Literatuurstudie wat verskeie teoretiese benaderings oor afwykende bestuursgedrag behels.
- 'n Vraelys wat verskeie teoretiese konstrakte meet en as sodanig voorsiening maak vir 'n opgawe van afwykende bestuursgedrag in die vorm van sewe statistiese skale.
- Nie-waarskynlike steekproefneming waardeur 722 respondente geselekteer en by die ondersoek betrek is.

- Statistiese betroubaarheidstoetse ten opsigte van die meetinstrument, asook vier hipoteses.

Statistiese bevindinge dui op:

- Beduidende geslagsverskille by selfaangemelde afwykende bestuursgedrag. Manlike respondente het die hoogste aggressietelling aangemeld en dames die hoogste angstelling in bestuursaktiwiteite.
- Afwykende bestuursgedrag verskil beduidend volgens ras en huwelikstatus van respondente.
- Professionele bestuurders kom hoofsaaklik voor in aggressiewe en offensiewe bestuursgedrag, dokument oortredings en bestuur van defektiewe voertuie.
- Afwykende bestuursgedrag verskil beduidend volgens respondente se bestuursondervinding (gereeldheid van en tipe voertuig bestuur).
- Beduidende verhoudings is waarneembaar tussen afwykende bestuursgedrag en respondente se ouderdom, opvoedingspeil, inkomste, duur van die slaag van 'n formele bestuurstoets en die typerk van voertuig bestuur. Hierdie verhoudings dui positiewe en negatiewe rigtings aan. Korrelasie tussen angsk en aantal jare van voertuig bestuur, is nie beduidend nie.
- Bestuurders wat tekens toon van aggressiewe en angstige bestuursgedrag, pleeg wel verkeersoortredings. Positiewe verhoudings is waarneembaar tussen aggressiewe en angstige benaderings en informele bestuursopleiding. Positiewe korrelasies is gevind tussen verkeers (bestuurs-) en dokument oortredings en bestuur van defektiewe voertuie en aggressiewe gedrag.

- Geen beduidende korrelasies is waargeneem tussen afwykende bestuursgedrag en informele bestuurdersopleiding nie.
- Differensiele beoordeling van verkeerspolisering ooreenkomstig respondente se opvoedingspeil, ras, beroep, inkomste, ens. is ook waargeneem.
- Verkeersbeamptes se vatbaarheid vir omkoperij skep 'n besondere probleem vir owerhede.

Die volgende nie-voorskriftelike aanbevelings is gedoen ten opsigte van:

- Verbetering van formele bestuurderstoetse, bestuurdersopleiding en verkeersopvoeding.
- Beskikking oor veroordeelde afwykende bestuurders in straffhowe.
- Voetganger-opleiding.
- Oorladingsheffing.
- Periodieke inspeksie van voertuie.
- Voorsiening van addisionele verkeersbeamptes.
- Voorkoming van korrupsie (omkoperij) in die verkeersituasie.
- Stigting van 'n Padverkeersoortredingagentskap.
- Verkeersingenieurswerk.
- Toekomstige navorsing.

IQQQA

Lolu cwaningo lugxile ekucubunguleni ngokwanda kwezindlela zokushayela eziphambene nenqubo yomthetho wokushayela. Esigabeni sokuqoqwa kolwazi kulandelwe indlela yokusabalalisa amaphepha anemibuzo lapho ababuziwe bebefaka khona ulwazi ngokushayela okuphambene nenqubo yomthetho wokushayela.

Lolu cwaningo luzama ukuthola:

- Umehluko phakathi kokushayela okuphambene nenqubo yomthetho womgwaqo kanye nabashayeli abebebuziwe kucutshungulwa ezobulili, ubuhlanga, izikhundla emsebenzini, ukujwayela ukushayela kanye nohlobo lwemoto oluvame ukushayelwa.
- Ubudlelwane phakathi kokushayela okuphambene nenqubo yomthetho wezomgwaqo uma kuqhathaniswa neminyaka yobudala yabashayeli, izinga lemfundo, iholo, ubude besikhathi sokuphumelela izivivinyo zokuhlolola ukushayela kanye nesikhathi selokhu kwaqalwa ukushayela imoto.
- Ukuthi ingabe abashayeli abashayela ngesankahlu kanye nabashayela ngokwesaba bawenza ngokuthexaxa yini amacala omgwaqo kunabanye abashayeli.
- Amazinga ehlukene emikhakheni ekhethekile yezokuqapha emgwaqweni.

Amasu okuqhuba ucwaningo asetshenzisiwe ahlanganisisa:

- Ulwazi olushicilelwe ngokushayela okuphambene nenqubo yomthetho wezomngwaqo kuvezwa obala imihlahlandlela ehlukehlukene yisihloko socwaningo.
- Isilinganiso sokukala esesihlanganisa imihlahlandlela enhlobonhlobo, ephinde yenze nohlaka lwezinto okumele zihlolwe ekushayeleni okuphambene nenqubo yomthetho wezomngwaqo olubekwe lwaba sesimeni zezinhla zezibalo eziyisikhombisa
- Isampula elinika uwonkewonke ithuba lokuba yingxenye yocwaningo.
- Kulolu cwano kwakhethwa abashayeli abawu 722 ababazonikeza ngezimpindulo.
- Ukusebenzisa izibalo eziseqophelweni eliphezulu ukuhlola ukuthembeka kwemibuzo kanye nemihlahlandlela emine yalolucwaningo.

Izibalo zokutholwe ucwaningo, phakathi kokunye, zikhombisa lokhu okulandelayo:

- Umehluko obalulekile phakathi kwabesilisa nabesifazane ekushayeleni okuphambene nemithetho elawula ezomngwaqo, iningi labesilisa yilona okutholakala ukuthi lishayela ngesankahlu.
- Abesifazane bona kwabikwa isibalo esiphezulu sokushayela ngokwesaba.
- Ukuthi kunomehluko obalulekile wokushayela okuphambene nomthetho ngokobuhlanga nangokwesimo sezomshado.
- Iningi labashayeli abaziphilisa ngokushayela likhombisa indlela yokushayela enesankahlu, ukungawuthobeli umthetho olawula ezomngwaqo, amacala aphantelene nezincwadi zokushayela kanye nokusebenzisa izimoto ezingekho esimeni.

- Ukushayela okuphambene nomthetho wezomgwaqo ukukhombisa umehluko obalulekile uma kubhekwa isipiliyoni kubashayeli (ukujwayela ukushayela kanye nohlobo lwemoto).
- Kunobudlelwane obubalulekile obutholakala phakathi kwabashayeli abashayela ngokuphambene nomthetho wokushayela uma kuqhathaniswa ubudala, izinga lemfundo, iholo, isikhathi abaphumelela ngaso izivivinyo zokushayela kanye nesikhathi imoto yaqala ukushayelwa. Lobubudlelwano bukhomba ukushona phezulu nokushona phansi. Ubudlelwano phakathi kokwesaba kanye neminyaka imoto ishayelwa, akusemqoka
- Abashayeli abakhombisa ukushayela ngesankahlu nangokwesaba bayayephula imithetho elawula ezokushayela. Kunobudlelwane obushona phezulu phakathi kokushayela ngesankahlu nangokwesaba kanye nokuqeqeshelwa ukushayela ngasese. Kunobudlelwane obushona phezulu phakathi kokushayela ngesankahlu kanye nokungayithobeli imithetho elawula ezokushayela.
- Ukungabibikho kobudlelwane obubalulekile phakathi kokungayithobeli imithetho yomgwaqo kanye nokuqeqeshelwa ukushayela ngasese.
- Ukuqapha kwezomgwaqo kutholakale kubalulekile ukuhlelwa ngokwamazinga emfundo, ubuhlanga, izikhundla, iholo, njalonzalo.
- Ukugwazelwa kwamaphoyisa omgwaqo iyona nkinga ehluphayo ebhekene neziphathi mandla ezibhekele ezomgwaqo.

Izincomo ezngaphoqeletwe:

- Ukwengeza izivivinyo zokushayela ezihlelekile, ukuqeqeshwa kwabashayeli kanye nokufundiswa ngezomgwaqo.
- Ukuthathwa kwezinqumo ngabashayeli abasuke belahlwe amacala aphantsi nezokushayela.
- Ukufundiswa kwabahamba ngezinyawo.
- Ukwengezwa kwenhlawulo.
- Ukuhlolwa kwezimoto izikhathi ngezikhathi.
- Ukudalwa kwamathuba omsebenzi amaningi emaphoyiseni ezomgwaqo.
- Ukuvimbela inkohlakalo (efana nokugwazisa emigwaqeni).
- Ukubunjwa kwamagatsha azobhekela ukwepholwa kwemithetho yomgwaqo.
- Ukuhlelwa kwemigwaqo.
- Kwenziwe ucwaningo esikhathini esizayo.

Ucwaningo luphumelele ukuveza obala indlela yokuziphatha engekho emthethweni kubashayeli, kulabo ucwaningo olukwazile ukufaka imibuzo labo abahlala endaweni engaphansi koMkhandlu- Dolobha waseMhlathuze nasezindaweni ezakhelene nawo.

CHAPTER 1

GENERAL ORIENTATION

1.1 INTRODUCTION

Deviant driving behaviour is a mass phenomenon which adversely affects members of society and therefore warrants an epidemiological study (MacMillan 1975:17; Parry 1968:12; Khoza 1993).

Deviant driving behaviour remains an indisputable fact of life for many if not most members of the community. From the time a human being first shouldered a burden and collided on a narrow tail with another human being, deviant driving has occurred (Hand, Sherman & Cavannagh 1980:1). The training of wild animals and their subsequent training as beasts of burden brought about an increase in deviant driving. The development of the wheel and, hence, transportation, motor vehicles over the years contributed to the growth of deviant driving behaviour.

Traffic police statistics and traffic victimisation surveys both reveal that deviant driving behaviour has continued to escalate (Hand *et al.* 1980:2-3). The majority of individuals expect society to help alleviate the problem of deviant driving behaviour.

While the motor vehicle remains any country's principle means of transportation, deviant driving behaviour ranks one of the most serious threats to public survival in general and traffic safety in particular. Deviant driving behaviour is probably the largest single factor leading to the commission of traffic offences (Khoza 1993:102-104). Early detection of deviant driving is very significant and should, as such, aim at dealing with the overindulgent deviant driver. It is for this reason that society has established the criminal

(traffic) justice system (Khoza 1993:221). Traffic justice is equivalent to the judicature which involves the handling of the traffic offender (deviant driver) by the state or government. The main purpose of judicature is the maintenance of social order in the community through control of the crime problem in general and through control of deviant driving behaviour in particular.

It is essential to address the possible lack of understanding of deviant driving behaviour as a contributory factor to numerous traffic offences, road accidents and subsequent loss of human life. The specific problem addressed in this study revolves around a lack of understanding of the various dynamics. There appears to be no simple answer to deviant driving behaviour. It should be noted that deviant driving will never be eradicated, but attempts should be made to control its frequency and possible escalation. The use of certain tactics may bring attention to deviant driving behaviour, but eventually it is the motor vehicle driver who needs to take positive steps by being careful and observant of traffic laws. A study into deviant driving behaviour will enable researchers to recognise that deviant driving behaviour needs to be addressed in a systematic way. It is often difficult, if not impossible, to immediately and unilaterally eliminate deviant driving behaviour. It is, therefore, essential for researchers to prioritise programmes directed at corrective action. It may be appropriate to define specific problem areas, determine realistic levels of expectation and identify those areas that can be improved using available resources. This can be accomplished through detailed empirical investigation into deviant driving behaviour. It is through empirical research that efforts are more fruitfully directed because it supplies the necessary information on deviant driving behaviour to traffic law enforcement, traffic engineering and traffic education programmes. The human element is a crucial factor in the effective control of deviant driving behaviour. Intelligent, effective and efficient enforcement of well-devised traffic laws and regulations with swiftness, certainty and consistency, can and will offer hope and promise of solutions to the deviant driving problem.

1.2 RATIONALE FOR THE STUDY

The rationale or motivation for the study is as follows:

- (a) The researcher has recently undertaken research into the penalisation of traffic offenders in the magisterial district of Lower Umfolozi. It appears from the literature that no research into deviant driving behaviour had been undertaken in South Africa, and specifically not for the driving population of uMhlatuze municipality and adjacent areas namely Mtunzini, KwaMbonambi and Mtubatuba. The researcher, therefore, has a personal and academic interest in the subject and wishes to highlight its theoretical and practical relevance.
- (b) The subject of deviant driving behaviour has held an enduring fascination for learners of traffic justice, gripping their interest for several reasons. Some people plan a career in traffic law enforcement and intend to expand their base of practical knowledge. Others feel a special affinity for the subject of deviant driving based on personal experience or inclination. A third group is drawn into deviant driving behaviour patterns because it is different, offering the promise of excitement, etc. These reasons prompted the researcher to undertake a study of deviant driving behaviour.
- (c) Safety and discipline on roads are unlikely to prevail only by reliance on traffic law and its enforcement; some essential change in the public attitude is required. It may be that the prevalence of deviant driving is, as Sutherland and Cressey (1955:89) have suggested of

crime in general, due to the fact "that the law has been extended much more rapidly than the general mores, and when the law is not supported by the general mores it is relatively important and is violated frequently". If this is the case, the public would understandably find neither difficulty nor shame in identifying with even serious deviant drivers.

1.3 **VALUE OF THE STUDY**

This study should provide information that would be useful to the traffic officer who wishes to self-evaluate his or her own motives for enforcing traffic laws. The greatest value of the study from a broad perspective may be that it should identify relationships and areas where further research appears worthwhile.

1.4 **AIMS OF THE STUDY**

The aims of the study are as follows:

- (a) To establish differences, if any, between deviant driving behaviour and the following characteristics: gender, race, marital status, type of employment, regularity of driving and type of motor vehicles. This aim is linked with hypothesis 1 (see Chapter 4).
- (b) To establish relationships, if any, between deviant driving behaviour and respondents' age, income, educational qualifications, duration of passing a driving test and years vehicle driven. A linkage exists between this aim and hypothesis 2 (see Chapter 5).
- (c) To find out whether or not drivers displaying aggressive and anxious driving behaviour do commit traffic offences. This aim is linked with

hypothesis 3 (see Chapter 6).

- (d) To find out whether differences, if any, exist in the rating of selected aspects relating to traffic policing by the respondents. A linkage exists between this aim and hypothesis 4 (see Chapter 7).

1.5 **APPROACH TO THE STUDY**

The global view of the researcher when he or she studies a social phenomenon such as deviant driving behaviour, is known as the scientific approach (Mouton 1996:31; Thomas 2001:887). Criminal justice research is fundamentally a rational activity from which scientific explanations that are obtained must make sense. Approach therefore presupposes a given attitude to the epidemiological study of deviant driving behaviour. Young (1966:85) maintains that an approach further implies a certain orientation to or attitude towards. Reference is hereby made to attitudes such as objectivity, critical outlook, dedication, perseverance, wealth of imagination and ingenuity (Mouton 1996:16).

Van der Walt, Cronjé, Smit and Van der Westhuizen (1977:163) opine: "The correct scientific attitude is so important that it fulfils a decisive role in the use of the methods and techniques". Attitude should reflect an intense desire to know, a fruitful imagination and the love of empirical investigation.

Scientific attitude refers to the capacity to ask important questions and the formulation of fruitful hypotheses. Maxfield and Babbie (1998:19-20) point out that deductive and inductive reasoning are the two logical systems that are important for social research. These concepts constitute part of the methodical thinking processes. It should be noted that they are not methods in themselves (Hagan 2000:23-24). These systems of reasoning directs the researcher in his or her scientific practice both theoretically and

practically. The approach followed here by the researcher is positivistic (naturalistic). This implies the approach is founded or based on observable facts (Vold 1958:7).

1.5.1 **Deductive Approach**

Deductive reasoning proceeds from the general to the particular by applying a theory to a particular case (Vito, Latessa & Wilson 1988:4-5; Maxfield & Babbie 1998:19-20).

It is worth noting that the deductive approach is an old system of reasoning, but the rise of inductive reasoning contracted the general postulates that represented the anchoring points of many deductive systems (Babbie 1990:11; Fitzgerald & Cox 1987:9).

1.5.2 **Inductive Approach**

Induction begins with observations (based upon the data collected) and the researcher then develops generalisations to explain the differences or relationships observed. The inductive approach, therefore, develops theory on the basis of research observations. This means that in induction the conclusion proceeds from the particular to the general (Van der Walt *et al.* 1977:165; Vito *et al.* 1988:4-5; Maxfield & Babbie 1998:20). It has been observed by Babbie (1990:3) that in practice research involves both deductive and inductive reasoning since the researcher shifts endlessly forth and back between theory and observation (Thomas 2001:887-896).

Thomas (2001) identifies four types of inductive approaches applied in criminal justice research and these are described briefly below.

1.5.2.1 ***Generalising induction***

This implies that after all cases have been investigated and a generalisation is made. Generalising induction is often used to make the particular sample findings applicable to the general population (Van der Walt *et al.* 1977:166).

1.5.2.2 ***Mathematical induction***

Generalisations are made from the total population (the universe). This total population is any group within the society and is therefore for purposes of the particular research defined as a totality. Sampling is not done. It should be noted that mathematical induction is not realistic induction because reasoning proceeds from all cases to all cases.

1.5.2.3 ***Analogical induction***

Analogical induction is used to substantiate a theory. Analogy means similarity or agreement in difference. The researcher has used analogical inductive reasoning (see Chapter 3) in an attempt to explain the theories of deviant driving behaviour within the context of the theories of the deviant behaviour in general.

1.5.2.4 ***Hypothesis-verifying induction or inductive-empirical approach***

The most important characteristics of an inductive-empirical approach are the presence of a hypothesis (Hagan 2000:24). The hypothesis assumes a form of theoretical proposition which, if confirmed by research, obtains the status of scientific premise or law.

The present study has adopted the hypothesis-verifying induction. For this purpose, the researcher has formulated hypotheses (see paragraph 1.6) which must be verified through specific procedure. From empirically sampled respondents who should be conceived as the driving population, generalisations are made in respect of deviant driving behaviour.

1.6 HYPOTHESES

A hypothesis is a statement about the nature of things (Vito *et al.* 1988:61). This implies that a hypothesis is a logical and empirical argument to the fact that a causal relationship exists between two variables. Bailey (1987:42) maintains that a hypothesis demonstrates that changes in the values of one variable are caused and therefore explained by changes in the values of a second variable. Hypotheses become necessary, referring specifically to self-report surveys, to enable directed explanations of deviant driving behaviour.

Research on deviant driving behaviour is therefore based on testing hypotheses. A hypothesis consists of two hypotheses: the null hypothesis (H_0) and the research hypothesis (H_1) (Hy, Feig & Regoli 1983:5; Thomas 2001). Research or alternative hypotheses state what the researcher expects to find. Research therefore intends to confirm the research hypotheses. The null hypothesis is a hypothesis of nothingness or contradiction of the research hypothesis. It should, however, be kept in mind that it is the null hypothesis which is actually tested (Vito *et al.* 1988:24; Hy *et al.* 1983:5; Maxfield & Babbie 1998:60-61; Mouton 1996:108; Thomas 2001).

Formulation of testable hypotheses directs research into deviant driving behaviour along meaningful paths. Hypotheses are an example of organised research and the refusal to accept statements without empirical accountability. Research without a hypothesis would become unfocussed and might result in aimless empirical rambling (Mouton 1996:81).

The following hypotheses have been formulated for the present study:

Hypothesis 1 (see chapter 4)

H₀: Deviant driving behaviour does not differ when grouped according to:

- gender;
- race;
- marital status;
- type of employment/occupation;
- regularity of driving; and
- type of motor vehicle.

H₁: Deviant driving behaviour differs when grouped according to:

- gender;
- race;
- marital status;
- type of employment/occupation;
- regularity of driving; and
- type of motor vehicle.

Hypothesis 2 (see Chapter 5)

H₀: There is no relationship between deviant driving behaviour and respondents':

- age;
- education;
- income;
- duration of passing a driving test; and
- years motor vehicle driven.

H₁: There is a relationship between deviant driving behaviour and respondents':

- age;
- education;
- income;
- duration of passing a driving test; and
- years motor vehicle driven.

Hypothesis 3 (see Chapter 6)

H₀: Respondents displaying aggressive and anxious driving behaviour are not inclined to commit traffic offences.

H₁: Respondents displaying aggressive and anxious driving behaviour are more inclined to commit traffic offences.

Hypothesis 4 (see Chapter 7)

H₀: Respondents do not rate selected aspects relating to traffic policing differently.

H₁: Respondents rate selected aspects relating to traffic policing differently.

1.7 DELIMITATION OF THE STUDY

Criminal justice research cannot proceed without a proper delineation (Khoza 1993:11). There are three important aspects to be kept in mind when undertaking criminal justice research. Firstly, in undertaking a criminal justice research project the researcher should deal with the central field of study of criminology, i.e., the phenomenon crime. The

prime consideration in this study centres around the phenomenon deviant driving. Secondly, the field of research can be delimited in respect of time; and thirdly, it can be delimited in respect of space.

Delimitation of a study can also be done in accordance with:

- aims and interests of the research;
- amount of relevant available material;
- complexity of theoretical assumptions formulated regarding the study; and
- previous valid research in the field having direct bearing on the study under consideration (Mouton 1996).

The delimitation of the present study has been influenced by various considerations such as previous studies on deviant driving undertaken in other countries; availability of sources of data, time and space; interests with regard to deviant driving behaviour; and the various theoretical assumptions regarding deviant driving behaviour. It should also be noted that delimitation implies the narrowing of the field of research and reduces the sample to be worked with.

The research has decided to implement three types of delimitation: geographical/spatial/territorial, qualitative and quantitative.

1.7.1 Geographical (Spatial) Delimitation

Research is confined to a particular area, zone or region. Sampling from a wide area might not be practical in terms of the various considerations such as time, finance and space.

Three factors have influenced spatial delimitation of the present study, namely political, administrative and finance. KwaZulu-Natal Department of Local Government and Administration is divided into various municipalities. The present study is restricted to the uMhlatuze Municipality situated within the magisterial districts of Lower Umfolozi and Richards Bay. It should be noted that uMhlatuze municipality is further subdivided into various towns/suburbs – each with its own manager. Further, the present study will be undertaken in areas adjacent to uMhlatuze Municipality namely Mtunzini, KwaMbonambi and Mtubatuba (see Annexure B which contains a geographical map, showing the location of the sampling area).

1.7.2 **Quantitative Delimitation**

Quantitative delimitation in this research means that the research group is limited numerically to a particular universe or representative sample (Mouton 1996). The present study involves respondents sampled from respondents residing within uMhlatuze municipality's jurisdiction and adjacent areas (for a discussion of sampling, see Chapter 2, paragraph 2.5.4).

1.7.3 **Qualitative Delimitation**

Qualitative delimitation refers to the nominal reduction of the research group (Van der Westhuizen 1977:39). This implies the research group is delineated in accordance with certain characteristics or qualities which are present or absent in each respondent. Characteristics such as age, gender, race, education, etc., are usually the major refining criteria but any other human characteristic or social distinction could also be used, for example, socio-economic status, income, occupation, etc., (see Annexure A).

1.8 DEFINITION OF CONCEPTS

It is essential that concepts be clearly defined in order to eliminate possible distortions. Distortions may be eliminated if specific requirements are met. According to Van der Westhuizen (1977:22-23), definitions must:

- (a) be true;
- (b) be unambiguous;
- (c) contain no superfluities and should not beg the question;
- (d) contain no contradictions;
- (e) be positive;
- (f) be adequate; and
- (g) be clearly formulated.

To appreciate and understand research on deviant driving behaviour, it is necessary to share a common understanding of the basic concepts. The information presented herein is a composite of those concepts found in diverse literature.

Futrell and Roberson (1988:122) maintain that there are three kinds of definitions:

- nominal definition, which is assigned to a term for the purpose of research;
- operational definition, which indicates how the concept will be measured or implemented by the researcher; and
- real definition, which is a statement of the essential nature or attributes of some entity.

The following definitions are by no means complete or intended to meet the requirements of the present study. For purposes of this study, operational definitions

have been developed for a number of terms.

1.8.1 **Deviant Driving**

Deviance appears to be a relative concept. What appears to be deviant in the communities from which the present sample was drawn, may necessarily not be deviant in other communities. Simmons (1969:4) opines:

“There is nothing inherently deviant in any human act; something is deviant only because some people have been successful in labelling it so. The labelling is a local matter that changes from place to place and even from time to time in the same place. To understand deviance we have to understand its environmental context ...”

Behaviour may be socially approved, tolerated, or disapproved and those social judgements provide the criteria by which we determine what is conforming or deviant. Deviance refers to the deviation from the normal accepted standards of society. For instance, the definition of deviant driving is based on the observation of the operation of traffic law enforcement. This implies that deviant driving means any behaviour which is challenged by the criminal (traffic) justice system and condemned because of its violation of traffic laws and regulations.

The understanding of deviant driving is based on certain perspectives.

1.8.1.1 ***Perspectives on deviant driving behaviour***

Attempts to explain deviant driving behaviour may be described in terms of two interrelated problems, namely accounting for group and structural variations in rates of deviant driving and describing and explaining the

process by which individuals come to commit traffic offences. It is thus essential to give a description of the various perspectives in order to understand the concept "deviant driving".

(a) The deviant (driver) is "sick"

This view implies that the explanations of why some drivers of motor vehicles fail to be "decent drivers" indicates the predominant perspective of individual pathology. Pathology is invoked to explain some drivers of a particular group deviate while others do not.

(b) The deviant (driver) is a "boatrocker"

This perspective implies that deviant (driving) behaviour interferes with the orderly running of society. What is going on in the mind of the deviant driver is not taken into account. It is thus inappropriate to view the deviant driver as a sick person. This view is upheld by those charged with traffic law enforcement. The "boatrocking" perspective is also implied in some psychological definitions of "normal", "adjusted" and "mature" personality. It is therefore appropriate to consider a healthy and well-integrated driver as the one who voluntarily complies with traffic laws and regulations.

This perspective has some merits. For example, one may ask, deviance from what? The answer to this question lies in examining deviant driving in general, any place and any time. It also provides a framework for looking at stresses and mechanisms of control within a society. For instance,

looking at the issue of traffic policing indicates efforts aimed at controlling deviant driving. This perspective is superior to the individual deviant driver pathology-perspective because it explicitly considers the surrounding social environment as well as the individual and therefore leads researchers to examine their complex differences and relationships.

It should be noted that this perspective has serious shortcomings. Closer inspection reveals the heavy bias in favour of the status quo. This is evident in its support for the prevailing ideology and vested interests of the society. According to Simmons (1969:17) the boatrocking perspective of deviance is conservative because it claims that continuance of the existing social order is in the best interest of the society. The enforcement of boatrocker perspective on deviant driving might favour those who would lose by change and might discriminate against those who might gain from it.

Traffic officers operate on the basis of the boatrocker perspective because they are expected to enforce traffic laws and regulations, otherwise their work is called into question. Simmons (1969:18) opines:

“Since these officials usually have more work than they can possibly do, they tend to develop a sort of callous attitude – if you don’t rock the boat, we don’t much care what you

do”.

- (c) Deviance (deviant driving) is the gross violation of someone’s moral standards. Everyone is outraged by deviant driving behaviour. Because of the deep moralistic underpinnings involved, those who violate traffic laws are usually condemned fervently. Deviant driving arouse the whole “bag” of negative reaction which ultimately leads to the penalisation of traffic offenders (Khoza 1993:219-226).

Deviant driving thus becomes a depravity (Simmons 1969:19). This depravity perspective is the one held by most law-abiding members of the community. In short, the commission of three categories of traffic offences (driving, document and vehicle defects) is the manifestation of deviant driving behaviour (Khoza 1993:Chapter 3).

- (d) Deviant driving is statistically rare behaviour in society. It is likely that most people can be struck by deviant driving behaviour. This implies a rejection of anything unusual. In this perspective normal becomes simply that which is statistically “average” which forms the basis of most psychological explanations of deviant driving behaviour.

- (e) The deviant driver is a hero

This perspective is a counterpart to the sick, boatrocking and depraved images of the deviant driver and it

demonstrates the complexity of human reactions. It should be noted that this perspective is exceptionally strong among the disaffected persons who are at loggerheads with traffic officers and therefore sympathetic toward deviant drivers. Simmons (1969:22) opines:

“No matter how law-abiding we are, most of us harbour a streak of lawlessness and rebellion within us.”

From this sympathetic point of view the deviant driver appears sensitive and courageous.

- (f) The deviant driver is a human being
There exists the perspective of the deviant driver as simply a human being like other people except, that he or she has violated traffic laws and regulations. It also sometimes arises in suburbs, towns and cities and more stable neighbourhoods where people come to know the local drivers so well that they are seen first as human beings and only secondarily as deviant drivers.

1.8.2 **Epidemiology**

The concept “epidemiology” is usually associated with public health studies relating to the extent, nature, distribution, and characteristics of various forms of physical illness, for instance, the epidemiology of tuberculosis concerns facts about the number of tuberculosis persons in the population and their social characteristics. Gibbons and Jones (1975:31) state that epidemiological data are

necessary to explain deviant driving behaviour, for a clear and detailed picture of the phenomenon to be studied is basic to causal inquiry.

Peak and Glensor (1996:407) maintain that

“... modern epidemiology, [is] the branch of medicine concerned with curbing the spread of disease. Epidemiology provides a valuable lesson for policing [including traffic control]. Handling incidents will always be part of police work, just as treating the sick and injured will always be part of medicine ... Epidemiology collects data from many incidents and looks for similarities that might indicate a common problem. Then, by dealing with this problem, better treatments [symbolic control] are found and many other incidents are prevented ... As with medicine, the [traffic police and authorities] cannot make long-term improvements in public safety unless they begin to investigate underlying conditions of problems.”

In the present study epidemiology is defined as the collection of data or facts about the phenomenon of deviant driving. It might be stated that, referring specifically to the epidemiology of deviant driving, no one really knows how many deviant drivers do inhabit in towns and suburbs under the jurisdiction of uMhlathuze City Council and adjacent areas.

1.8.3 **Traffic Offence**

The violation of road traffic legislation is known as a traffic offence/traffic violation/traffic crime (Louw, Van Heerden & Smit 1978:86).

Odendaal (1968:28) gives the following definition:

“n Verkeersoortreding is 'n handeling of versuim van 'n persoon waardeur of iemand anders se lewe in gevaar gestel kan word ten gevolge van die onveilige bestuur van 'n voertuig of waardeur onoordeelkundige onbedagsame of ongemagtigde optrede sy eie lewe op 'n openbare pad in gevaar kan stel of optrede wat andersins antisosiaal van aard of in stryd is met openbare padverkeersvoorsorgmaatreëls; die optrede kan opsetlik of onopsetlik geskied maar, wat ook al die geval, die gevolge kan ewe ernstig wees.”

In the present study traffic offences are also viewed as manifestations of deviant driving behaviour.

1.8.4 **Deviant Driver**

The concept “deviant driving” has been defined in paragraph 1.8.1. It is clear from this definition that deviant driving refers to the violation of road traffic legislation. The driver is a person who drives or is in actual physical control of a motor vehicle (Clark 1982:17). A deviant driver is therefore a person who violates road traffic legislation.

1.8.5 **Motor Vehicle**

Motor vehicle means any self-propelled vehicle and also refers to a device designed or adapted principally to travel on wheels. It is clear from this definition that a motor vehicle is a device by which any person or property may be propelled, moved or drawn upon a public road (South Africa 1996:Section 1, subsection 47).

1.8.6 **Public Road**

A public road can be defined as a road, street or any other place (thoroughfare) commonly used by the public. The concept "road" refers to a track or way prepared for passengers, pedestrians, motor vehicles, etc. An operational definition of a street is that it refers to a road in a town, city, village or suburb with houses or buildings at the sides (South Africa 1996:Section 1, subsection 60).

1.8.7 **Traffic Officer**

Traffic officer means a person appointed in terms of section 3(a) of the National Road Traffic Act, Act No. 29 of 1996 to be in charge of traffic law enforcement. Police officers are also responsible for traffic law enforcement.

1.8.8 **Traffic Law Enforcement**

Little (1970:28) opines:

"The term 'enforcement' usually refers to the intensity of police surveillance of traffic and techniques used, rather than to the detailed character of the regulations or to the strictness with which they are interpreted".

This implies that traffic law enforcement means the action by which order is maintained in the traffic situation to ensure the safety of all road users. Consequently traffic order requires efficient, regulative and predictable action in a given traffic situation (Hand *et al.* 1980:155).

1.8.9 Traffic

To eliminate any possible distortion with regard to this concept, the researcher will rather implement an operational definition of general movement of pedestrians (people), motor vehicles and ridden animals in the streets or on public roads. One person may constitute a traffic (Clark 1982:17; Smit & Potgieter 1982:1).

1.9 CHAPTER DIVISION

In chapter one, a general orientation to the study is provided with reference to aspects such as research rationale, aims, hypotheses, problem of delimitation, scientific approach, etc.

Chapter two is an exposition of research methodology and design as well as procedures implemented in this study.

Chapter three relates to the detailed theoretical explanations of deviant driving behaviour.

Chapter four analyses the driving population (respondents) in accordance with demographic characteristics highlighting differences (if any) with deviant driving behaviour.

Chapter five deals with correlational analysis of deviant driving behaviour in accordance with certain demographic characteristics.

Chapter six concentrates on aggressive and anxious approaches to driving.

Chapter seven throws light on various aspects of traffic policing.

Chapter eight outlines the most important findings and discussion thereof, conclusions and recommendations.

1.10 **SUMMARY**

Deviant driving is a mass phenomenon which adversely affects the members of the community and therefore warrants an epidemiological study, i.e., the collection of data/facts about it. The rationale for the study resides in the fact that it is the first of its kind undertaken in the uMhlathuze municipality jurisdiction and adjacent areas. It is therefore essential to obtain knowledge and insight into deviant driving behaviour. This study should provide user-friendly information that would be useful to traffic law enforcement officers. This research aims at establishing differences or relationship between respondents' characteristics and deviant driving behaviour. Deductive and inductive reasoning are the two logical systems that are important for social research. The present study has adopted the empirical-inductive approach, also known as hypothesis-verifying induction. Research cannot proceed without proper delimitation. The following are important types of delimitation as applied in this study:

- spatial;
- qualitative; and
- quantitative.

It is essential to define concepts in order to appreciate and understand issues pertaining to deviant driving behaviour. In order to eliminate possible distortions that may exist, it became necessary for the researcher to define certain concepts operationally. The division of chapters (organisation of the study) in respect of this research is also outlined in this chapter.

CHAPTER 2

RESEARCH METHODOLOGY AND DESIGN

2.1 INTRODUCTION

It is particularly important to recognise that data on deviant driving behaviour and research methodology are inextricably interdependent. It is for this reason that the research methodology to be adopted for the present study should always recognise the nature of the data which will be amassed in the desired resolution of deviant driving. Research methodology merely refers to an operational framework with which the facts are placed so that their meaning may be seen more clearly (Leedy 1985:91; Thomas 2001:887-892). The research process is divided into various related stages which include the choice of a research topic; definition of concepts; research methodology and design; collection of data; processing, analysis and interpretation of data; and reporting on the study (Mouton 1996:17; Fitzgerald & Cox 1987:39; Hany 2001:708-710; Maxfield & Babbie 1998:3-90).

In chapter 1, an exposition of delimitation and definition of concepts was presented. The objective of this chapter is to outline research methodology and the design of the study. This will include a presentation of research methods, techniques and procedures implemented in the study.

2.2 RESEARCH METHODOLOGY

Research methodology requires skills and sophistication merely to determine the kinds of results that the researcher wants to examine. Research methodology concentrates on the researcher's ultimate goals and the general plan formulated by the researcher in order

to achieve the goals. Research methodology is concerned with the study of methods and logic of science; the rules of organised research and the norm by which procedures and techniques are selected and emphasised; the setting of guidelines for empirical-scientific research; and the course of action of the researcher (Van der Walt, Cronje & Smit 1982:160). According to Huysamen (1994:163) research methodology comes into play at various overlapping and integrated stages, namely the creation and development of techniques and strategies to collect data; the development of methods to investigate and improve the psychometric properties such as reliability and validity of data obtained by means of these techniques; and the statistical analysis of such data.

The setting and improvement of standards are one of the principal objectives of research methodology. The objectives of research methodology can be summarized as follows:

- (a) the reduction of human error;
- (b) the study of existing research procedures and of set standards, and attempts to question and improve them. This further implies not only the evaluation of the existing research procedures within criminal justice, but also the setting of standards by which the procedures can be tested;
- (c) it constitutes an aid by which suitable standards, procedures and techniques can be selected; and
- (d) it facilitates the researcher's task in conceptualisation, sampling, analysis, systematisation of empirical findings and report-writing (Huysamen 1994:37-43; Maxfield & Babbie 1998:83-90).

The value of research methodology lies in the analysis of the elements on which the

philosophy of criminal justice can be based. As such, any thought pertaining to research methodology is future-orientated, which implies that what is presently established can be used in the future. Knowledge of research methodology is important for the researcher because it –

- gives meaning to criminal justice research;
- develops in the researcher the ability to think and question critically, creating the opportunity to judge, seek and contribute;
- intensifies in the researcher the quality of self-examination and tolerance;
- offers the researcher the opportunity to explain what he or she is doing, why he or she is doing it and whether the procedures being followed will provide an answer to what he or she is doing; and
- sets analytical standards (Van der Walt *et al.* 1982:161; Harry 2001:715).

Binder and Geis (1983:4) opine:

“Because of the seemingly limitless possibilities for self-deception displayed by human beings, an elaborate set of procedures has evolved over the years to make the research endeavour as immune to human failings as possible.”

Research methodology thus aims at the reduction of human errors. Common human errors reduced through research methodology are as follows:

(a) Errors of observation

Human beings not only fail to observe important features in any given scene but often invent and make false observations of facts

surrounding the event in question (Maxfield & Babbie 1998:8-9; Binder & Geis 1983:4).

(b) Selective observation

A notable fact is that different people observing the same event or phenomenon will observe different things according to their interests. It is thus a human error to observe those things that the researcher wants to observe rather than a true picture. Research methodology helps prevent selective observation through implementation of sampling. Research methodology demands that an adequate number of observations be selected (Maxfield & Babbie 1998:10; Binder & Geis 1983:5).

(c) Errors of interpretation

The researcher's personal biases, preferences, fears and inclinations determine not only what the researcher observes but how he or she will interpret what he or she has observed. Research methodology therefore seeks to reduce errors of interpretation of what has been observed and lack of consciousness of alternative explanations for the relationship between phenomena (Maxfield & Babbie 1998:10; Binder & Geis 1983:5).

(d) Incorrect (false) generalisations

A source of false generalisations can be ascribed to the material which form the basis of conclusions. Incorrect generalisations may involve an inability to think and reason logically and may involve a tendency to come to conclusions that are desired rather than those dictated by available information (Maxfield & Babbie 1998:9).

(e) Dependence on authority

Most of our beliefs about deviant driving behaviour are based on statements by persons / researchers consider to be authorities. The outcome is that we tend to accept such views as correct (Binder & Geis 1983:6). It should be noted that dependence on authority can be avoided through a well-conceived research methodology.

(f) Inappropriate use of evidence

Data on deviant driving behaviour may be based upon accurate observation and may seem as appropriate evidence to support certain decisions, yet actually may misrepresent the phenomena of interest. Research methodology therefore helps eliminate inappropriate use of evidence and guides the researcher in making correct interpretation and evaluation of data (Binder & Geis 1983:7).

2.3 **RESEARCH METHODS**

Research involves the application of a variety of standardised research methods and techniques in the pursuit of knowledge and insight into deviant driving behaviour. Precisely because the researcher aims to generate knowledge, the researcher is committed to the use of research methods, techniques and procedures that increase the likelihood of knowledge and insight and the application thereof for purposes of prediction and control. The term "method" will be used to refer to a higher level of research means (Mouton 1996:36). The researcher will specifically use the concept "research methods" to refer to the means required to execute a certain stage in the research process. Accordingly, the classification includes definition of concepts (theoretical and operational); sampling techniques (probability and non-probability); data collection techniques (literature study, questionnaires, etc.); and data analysis techniques.

It should be noted that the distinction between “methods” and “techniques” is hence one of degree and scope. This implies that “methods” include classes of techniques, skills and instruments.

The objective of research into deviant driving behaviour is based on the assumption that deviant driving behaviour is orderly and have discoverable causes. To discover the diverse circumstances surrounding deviant driving behaviour, a formal intensive and systematic application of research methods is a prerequisite. The objective of implementing research methods in the present study is to describe, explain, predict and control the phenomenon of deviant driving. It has been observed that criminal justice research authorities have diverse views about research methods that can be implemented in criminal justice research. Mouton (1996:35) refers to qualitative and quantitative research methods. Futrell and Roberson (1988:91-116) identify historical, descriptive, analytical and experimental methods. According to Fitzgerald and Cox (1987:44-64) research methods include descriptive, explanatory and exploratory approaches. Van der Walt *et al.* (1982:169-176) identify three research methods open to criminal justice research, namely the method of case analysis, the method of mass observation and the analytical method. These three methods are considered for the present study.

2.3.1 The Method of Case Analysis

Case analysis is an extremely important method used in criminal justice research if the research regards the phenomenon, like deviant driving, as an individual-human phenomenon. The concept of “case” in this study refers to an individual deviant driver (the respondent). The reasoning here is that the assumption on which case analysis rests, is that deviant driving is an individual-human phenomenon and the individual deviant driver should thus be the point of departure.

In social research in general, a "case" need not be an individual human being. A community may be taken as a "case", whereupon a comprehensive description of its particular components may be studied with the objective of learning about its religious, political, racial and historical make up (Babbie 1990:32-33).

The case analysis method in criminal justice research has a goal of demonstrating the structural or functional factors responsible for its existence; the determination of its relation to other factors; gaining new knowledge about a "case" testing of the validity of existing hypotheses (Van der Walt *et al.* 1982:170). To attain any of these goals the researcher uses certain case analysis techniques such as the questionnaire, interview, documentary studies and perception studies.

2.3.2 **The Method of Mass Observation**

The method of mass observation is also known as the statistical method and can be used when the researcher regards the phenomenon, like deviant driving, as a mass phenomenon. The implication is that deviant driving is an epidemiological phenomenon which can be analysed and explained with the aid of statistics.

The value of statistics in criminal justice research is the following:

- they enable the researcher to describe the trends of deviant driving;
- they enable the researcher to undertake comparative studies; and
- they enable researchers to predict and control deviant driving; thus providing legislators with facts for policy formulations and provide the criminal justice system with a base to upgrade their delivery of services.

The method of mass observation is also particularistic and involves research design, description of collected data and making of decisions based upon collected data (Futrell & Roberson 1988:151; Mouton 1996:161-162).

2.3.3 **The Analytical Method**

The analytical method is used when the researcher regards deviant driving as a combination of individual-human and social factors (Van der Walt *et al.* 1982:174-175). The methods of case analysis and mass observation lose their status under the analytical method, thus resulting in a synthesis of the two perspectives and therefore becoming techniques of the analytical method. Futrell and Roberson (1988:105) maintain that whilst the method of mass observation is used to explain and apply the findings, in the analytical method inferences about the driving population are made from the analysed samples. Leedy (1985:173) opines:

“The analytical survey study takes data that are essentially quantitative in nature and analyses these data by means of appropriate statistical tools. The purpose is to probe those data by means of statistics so that we may infer certain meanings which lie hidden within the data...”

In the analytical survey we are concerned primarily with problems of estimation and the testing of statistically based hypotheses. Futrell and Roberson (1988:106) highlight the following functions of statistics in the analytical method:

- determining how closely or distantly certain characteristics of data are related;
- determining the diversity of data;

- determination of the centre of data being measured; and
- determining the degree to which facts may have occurred by mere chance or if there is a probability of it being influenced by some other force.

Four general functions of the analytical method could be distinguished (Van der Westhuizen 1982:3-4):

- (a) Goal-attainment function
The analytical method is goal-directed and through the use of relevant techniques it provides for descriptive, explanatory and applicative investigations.
- (b) Adaptive function
The analytical method is geared to the various objectives of research. This will enable the researcher to lay down meaningful relationship between fact and theory.
- (c) Integrative (synthetic) function
The analytical method is non-particularistic in nature. It confers neutrality on the researcher and enables him or her to study deviant driving on both individual-human and group level.
- (d) Pattern maintenance function
The analytical method respects recognised methodological principles and yet leave room for innovations, technical refinement and advancement.

In the present study deviant driving behaviour is recognised as an individual-human phenomenon (case analysis) where respondents' particulars of gender, age, race, education, occupation, marital status and income have an important role to play. Further, deviant driving behaviour is viewed as mass phenomenon (mass observation) which can be measured and explained through descriptive statistics. The combination of the two perspectives necessitates that deviant driving be described, explained, predicted and controlled.

Descriptive and inferential statistics will be used within the context of the analytical method.

2.4 **RESEARCH TECHNIQUES**

In paragraph 2.2 it has been noted that, among the methods of criminal justice research, the analytical method is the method through which the problems of delimitation, measurement and goal achievement can be solved. This can be achieved through the implementation of various techniques of research. Research techniques are different from research methods. Research techniques are aids (tools) developed by the researcher to enable him or her to observe a phenomenon that cannot be satisfactorily observed by senses alone (Mouton 1996:36; Thomas 2001). Techniques are used as means to realise the goals of a particular method. Research techniques must be evaluated in terms of how well they perform the duty for which they have been constructed. This implies that techniques must be both reliable and valid (Harry 2001:715).

Authorities in criminal justice research divide research techniques into survey techniques and non-survey techniques. Survey research techniques include sampling, interviews and questionnaires; and non-survey research techniques are document studies, observations and experiments (Maxfield & Babbie 1998:243-247; Vito *et al.* 1988:135; Mouton 1996:36). It should be noted that the present study is not confined to this idea and

research techniques are implemented supplementary and jointly. The following review relates to the research techniques employed in the present study.

2.4.1 **Document Study Technique**

Document study technique is also known as the literature study technique. Literature includes all types of documented material that may be found in libraries or other places. Documents include articles from journals, reports, biographies, autobiographies, books, diaries, and unpublished materials. It is thus essential to understand the purpose of investigating literature related to deviant driving behaviour. Leedy (1985:69) opines:

“Its function derives from a fundamental position among researchers that the more one knows about the peripheral investigations germane to one’s own study, the more knowledgeable one can approach the problems inherent to one’s own area of investigation.”

The primary purpose of literature review is to assist the researcher in undertaking a study on deviant driving behaviour (Thomas 2001:891; Mouton 1996:119-200). Leedy (1985:69) maintains that the review of literature provides the researcher with the following benefits:

- (a) Literature assists the researcher to assess his efforts by contrasting them with related efforts done by other researchers.
- (b) Literature provides the researcher with new ideas and approaches.

- (c) Literature helps the researcher to see his or her own study in associational and historical perspective and in relation to earlier and more primitive attacks to the same problem.
- (d) Literature introduces to the researcher significant research personalities of whose research efforts the researcher may have had no knowledge.
- (e) The advantages and disadvantages of sources of data are revealed through literature review.
- (f) The methods and techniques of handling problematic situations are revealed through the review of literature.
- (g) Literature can reveal similar studies to the researcher's study and it can show how identical situations were dealt with.

The document study technique can be divided into primary and secondary documents. Primary sources consist of data obtained from direct observations. The data are collected personally and is direct/first hand information by the author of the document. Data from secondary sources is second-hand and indirect. The information is taken and compiled from original sources.

2.4.2 **Sampling Techniques**

Sampling refers to selecting some part of the (driving) population. When information concerning a large group of motor vehicle drivers is required, it becomes impossible to collect data from the entire driving population. It,

therefore, becomes necessary for the researcher to plan, select and implement sampling techniques. A sample is a selection of units from the total population or universe that the researcher desires to study. If the sample is large enough and scientifically selected, it theoretically represents the population from which it is drawn. The key concept in sampling is representativeness (Mouton 1996:136; Maxfield & Babbie 1998:204; Hy *et al.* 1983:89; Harry 2001:715).

A sample is representative of the population from which it is selected if the aggregate characteristics of the sample closely resemble those same aggregate characteristics in the population.

Hy *et al.* (1983:89) state that there are two main objectives of sampling:

- (a) Sampling procedures increase the reliability and the validity of information generated from the sampled data.
- (b) Sampling allows the researcher to make inferences about the population based on a sample drawn from that population.

Confidence can be placed in the reliability and the validity of the findings of the sampled data if sampling has been conducted according to scientific procedures. The benefit is that other researchers can replicate the findings (reliability). Adherence to such procedures also insures that the sample is representative of the population (validity).

In the present study, sampling techniques were implemented for the following reasons:

- (a) Administering questionnaires to all respondents from uMhlathuze City Council's jurisdiction and adjacent areas would require a large component of field workers.
- (b) Sampling enabled the researcher to avoid lengthy and unmanageable data.
- (c) Through sampling the researcher avoided managerial requirements such as supervision, record-keeping and financial administration.
- (d) By selecting a sample a greater response rate and greater co-operation had been achieved than it would have been in an entire driving population survey.

The choice of a sampling technique requires the researcher to be able to make confident generalisations. Basically, there are two types of sampling techniques:

- probability sampling: where every member of the population is given an equal chance for selection; and
- non-probability sampling: where every member of the population is not given an equal chance of being selected (Maxfield & Babbie 1998:210-228; Mouton 1996:136-140; Huysamen 1994:37-47; Vito *et al.* 1988:124-128; Hy *et al.* 1983:91-96).

2.4.2.1 ***Probability sampling***

Probability sampling allows the researcher to specify the probability that any

given case in the population will be included in the sample. The major advantage of probability sampling is that it is the only set of procedures that allow the researcher to calculate the chance of making an error in generalising from the sample to the population. The disadvantage is that such rigorous procedures are expensive and time-consuming. There are distinct types of probability sampling designs: simple random sampling; systematic sampling; stratified sampling and cluster sampling (Maxfield & Babbie 1998:218-221; Mouton 1996:110; Vito *et al.* 1988:125; Huysamen 1994:39-41).

Probability sampling, therefore, is regarded as the illogical sampling technique for the present study.

2.4.2.2 ***Non-probability sampling***

Non-probability sampling techniques are implemented for situations in which sampling would be prohibitively expensive and when precise representativeness is not necessary. It is less expensive and can be carried out on the spur of the moment (Bailey 1987:92). Non-probability sampling is non-random and is useful in pilot surveys. Its obvious disadvantage is that no representativeness can be claimed. The common types of non-probability samples are accidental samples, quota samples, purposive or judgmental samples, snowball samples and convenient samples (Maxfield & Babbie 1998:225-228; Huysamen 1994:43-44; Vito *et al.* 1988:127-128; Hy *et al.* 1983:91-92).

2.4.2.2.1 ***Convenience sampling***

A convenient sample is one in which the units of analysis are selected on the basis of immediate availability rather than on the degree of representativeness.

The major problem with convenience sampling is that it is biased in an unascertainable way. There is no basis for generalising to a larger population.

2.4.2.2.2 ***Quota sampling***

Quota sampling involves a form of non-probability stratified sampling in which cases are selected according to characteristics proportionate to the population under study.

2.4.2.2.3 ***Accidental sampling***

The researcher interviews whoever comes along. This technique is frequently employed by newspaper and television reporters. It is sometimes known as the "person on the street" technique. This results in unscientific and biased sample.

2.4.2.2.4 ***Snowball sampling***

Snowball sampling begins by identifying a single or small number of subjects and then asks that subject to identify others like him who might be willing to participate in a study. Snowball techniques maybe necessary when the target population is difficult to locate or even identify.

2.4.2.2.5 ***Purposive or judgmental sampling***

It may be appropriate to select a sample on the basis of the researcher's knowledge of the population, its elements, and the nature of research aims: in short, based on researcher's judgment as to what kind of sample would suit the purpose of the study. When a sample is selected by means of a

purposive sample, it is assumed to be representative of the population from which it is drawn. It should be noted that representativeness of the sample can never be determined, it can only be assumed.

For the purpose of the present study, the researcher arbitrarily decided to employ a purposive or judgmental sampling technique. Purposive samples are used primarily for exploratory research. Those samples can be particularly useful if a study group is fragmented and difficult to identify or estimate. The present study revolves around deviant driving behaviour and therefore suits this technique (see par. 2.5.4 for a detailed account of sampling).

2.4.3 Data Collection Techniques

Basically, there are three techniques for collecting data namely direct observation, learning from recorded sources and communication with others about what they have observed or experienced (Maxfield & Babbie 1998:61; Fitzgerald & Cox 1987:89; Mouton 1996:127). Communication with others about what they have observed or experienced involves the implementation of interviews and questionnaires. In the present study questionnaires have been implemented as an important tool for gathering data.

The concept "questionnaire" refers to a collection or list of questions and statements to be answered by respondents (Maxfield & Babbie 1998:236). The concept is restricted to a self-administered questionnaire as opposed to an interview. Questionnaires used in the gathering of data for the present study are related to the measurement of deviant driving behaviour. The measurement of a societal phenomenon like deviant driving behaviour involves:

- the conscious, controlled and rigorous classification of

- observations;
- assignment of numerical values to observations for the simple objective of counting; and
- the statistical analysis of deviant driving behaviour in order to search for etiological factors (Vito *et al.* 1988:61-62).

The use of questionnaires in the present study is also related to two key concepts namely the reliability and validity of the source of data. Official statistics and self-report surveys are the most common sources of data used in criminal justice research. It should be noted that the present study did not rely on official statistics pertaining to deviant driving behaviour. The researcher rather implemented a self-report survey (questionnaire). It is therefore essential to render a brief discussion of reliability and validity of self-report measuring instruments.

2.4.3.1 ***Self-report surveys***

It should pay dividends to ask directly the respondents in order to obtain their responses to deviant driving behaviour and to uncover unreported deviant driving behaviour. Self-report surveys also question the validity of official traffic crime statistics by examining the criminal justice process. System-produced data may have "holes or a dark figure" in it: some drivers of motor vehicles are caught and penalised while others are undetected and therefore not penalised.

The self-report procedure of data collection seeks to identify the etiological effects of various independent variables such as gender, age, socio-economic status, etc., on deviant driving behaviour. Through a questionnaire, respondents are asked to report about their own involvement in deviant

driving.

Vito *et al.* (1988:78-79) identify the various methods of conducting self-report surveys.

- (a) Self-report surveys can be conducted asking respondents to complete questionnaires.
- (b) Respondents can be asked to complete questionnaires identified in a circuitous fashion and validated against later interviews or (traffic) police records.
- (c) They can be requested to confess (traffic) criminal acts on signed questionnaires validated against police records.
- (d) Respondents can be asked to complete questionnaires identified by number and validated against follow-up interviews and the threat of a polygraph test.
- (e) Respondents can simply be interviewed.
- (f) Respondents can be interviewed and their responses can be validated against official records.

The use of self-report data has a respectable place in the present study. Closed-structured questionnaires were distributed to respondents.

Respondents were then asked to complete the questionnaires. Those who encountered difficulties in comprehending some questions and statements, were assisted by means of interviews with the view to explain questions in isiZulu. The researcher therefore settled to employ the methods mentioned in (a) and (e) above.

2.4.3.1.1 *Limitations of self-report surveys*

Self-report surveys have a number of methodological shortcomings (Maxfield & Babbie 1998:137; Vito *et al.* 1988:83-84; Conklin 1986:61-62).

Firstly, the major problem is the determination of validity. How can the researcher know the respondents are telling the truth? The questionnaires used in the surveys sometimes lack validity in that they do not measure accurately the amount of (traffic) crime that respondents have committed. Respondents may fabricate deviant driving behaviour to impress the researcher or they may fail to mention some traffic offences out of fear that the information will be passed to the police in spite of guarantees of anonymity.

Secondly, self-report surveys are best with the shortcoming relating to the way they have been carried out. The use of many different self-report surveys means that their results are often not comparable. Self-report surveys would be much more useful if the same questionnaire could be administered over time to national samples. This would allow the researcher to generalise about the extent of deviant driving in the population as a whole, and to observe the changes in the extent of deviant driving over time. Conklin (1986:61) opines:

“In fact, we know relatively little about self-reported crime by adults, for the vast majority of self-report studies have been

carried out on samples of juveniles.”

Thirdly, self-report surveys are flawed in that they ignore certain kinds of behaviour like white-collar crime and organised crime, whereas official crime statistics are superior in this sphere (Conklin 1986:61).

Fourthly, some self-report surveys classify juveniles as delinquents (deviant drivers) if they admit to one or more delinquent acts (traffic offences). Actually they should emphasise the frequency of delinquency (deviant driving behaviour) and seriousness of delinquent acts (traffic offences) rather than whether a motor vehicle driver has ever engaged in any act that violates a traffic law.

2.4.3.1.2 *Reliability and validity of self-report measures*

The reliability and validity of any measuring procedure adopted during research are important since the results of the study are directly affected by the quality of the procedure employed. Self-report measures of deviant driving behaviour have thus to be examined in terms of their reliability and validity (MacMillan 1975:85-87).

(a) Reliability

Reliability is defined as the extent to which a particular empirical test or any measuring procedure yields the same results on repeated trials (Carmines & Zeller 1979:11; Maxfield & Babbie 1998:107; Vito *et al.* 1988:62; Hy *et al.* 1983:50; Huysamen 1994:117). Reliability is a tendency toward consistency found in repeated measurements of the same phenomenon.

The more consistent the results given by the repeated measurement, the higher the reliability of the measuring procedure. Conversely, the less consistent the results, the lower the reliability (Carmines & Zeller 1979:11-12). Reliability deals with accuracy.

There are four methods for assessing reliability namely test-retest method, alternative-form method, split-half method and internal consistency (Carmines & Zeller 1979:37-44; Maxfield & Babbie 1998:107-109; Hy *et al.* 1983:52-55).

The test-retest method obtains a correlation between two repeated applications of the same test to the same respondents. If a researcher obtains the same correlation result on the two administrations of the test, then the test would be reliable (Carmines & Zeller 1979:38; Maxfield & Babbie 1998:108). The limitation of the test-retest method is that it may be affected by change of experience, reactivity and overestimation by the respondent (Carmines & Zeller 1979:40; Maxfield & Babbie 1998:108).

The alternative-form method is similar to the test-retest method in that it also requires two testing situations and achievement of the same correlation result. It differs from the test-retest method in that an alternative form of test is administered (Carmines & Zeller 1979:40). The advantage of the alternative-

form method is that it reduces the extent in which the respondent's memory can inflate the reliability estimate. The basic limitation of the alternative-form method of assessing reliability is the practical difficulty of constructing alternative forms that are parallel (Carmines & Zeller 1979:40-41). It is often difficult to construct one form of a test much less two that displays the properties of parallel measurements.

The split-half method differs from the test-retest method and the alternative-form method in that the test is administered only once (Carmines & Zeller 1979:41). The split-half method is used more often than the test-retest method because the coefficient of internal consistency is easier to compute and the carry-over effect is minimal. The totals of the items in the test are split into halves and the scores in each half are correlated to obtain an estimate reliability (Carmines & Zeller 1979:41).

The internal consistency method of assessing reliability also requires a single measurement administration. It provides a unique estimate of reliability for a given test administration. The most popular internal consistency method is the so-called Cronbach's Alpha Individual Item Analysis (Carmines & Zeller 1979:44; Harry 2001:715). The internal consistency method for assessing reliability will be implemented in the present study:

Cronbach's Coefficient Alpha (α) requires that the correlation coefficient should be at least 0,80 before a test can be said to be reliable. If a test cannot satisfy this requirement, the researcher may search from the following reasons: whether a test contains enough items or whether the set of items in a test share a common focus (Crano & Brewer 1973:231).

Internal consistency reliability problems crop up in many forms. Glanz (1990:73) states that if a test is to be regarded as reliable, it is generally expected that correlations must be 0,70 or more.

Huizinga and Elliot (1986:301) noted that some findings on reliability may not be so high and still be viewed as reliable. Glanz (1990) cites Hindelang's study of Black and White males where reliabilities between 0,62 and 0,81 were found. A general comment is that self-report surveys have produced reliable item consistencies irrespective of any method implemented in assessing their reliability.

(b) Validity

Validity is defined as the extent to which a measuring instrument measures what it is intended to measure (Camines & Zeller 1979:17; Maxfield & Babbie 1998:109; Leedy 1985:24; Hy *et al.* 1983:56; Mouton 1996:109; Harry 2001:715). A self-report instrument or questionnaire adequately reflects the

meaning of the concept under consideration. It is therefore essential that a definition should correspond to the concept being measured. In the present study it became necessary to operationalise the concept "deviant driving behaviour" and the measuring instrument had to measure deviant driving behaviour. Validity can thus be assessed only through empirical testing; it cannot be assumed.

Subsequent paragraphs discuss different types of validity namely criterion-related validity, content validity and construct validity.

(i) Criterion-related validity

Criterion-related validity is relevant when the purpose is to use an instrument to estimate some important form of behaviour that is external to the measuring instrument itself, the latter being referred to as the criterion (Carmines & Zeller 1979:17; Maxfield & Babbie 1998:110; Hy *et al.* 1983:56; Mouton 1996:128).

There are two types of criterion-related validity: predictive and concurrent

- Predictive validity

Predictive validity is concerned with how well the scores of an operational

definition predict some future criterion (Carmines & Zeller 1979:18; Hy *et al.* 1983:56; Mouton 1996:128; Maxfield & Babbie 1998:110). An example is when researchers use the voluminous traffic offences committed by motor vehicle drivers as a predictor of deviant driving behaviour. If a high positive correlation were to be found between age, income, education and deviant driving behaviour, the former could justifiably be regarded as a good predictor of the latter.

- Concurrent validity
When the criterion and the other measurements are used simultaneously this is referred to as concurrent validity (Mouton 1996:128; Carmines & Zeller 1979:18; Hy *et al.* 1983:57). Concurrent validity is assessed by correlating a measure with known groups or known instrument findings.

(ii) Content validity

Content validity requires that an instrument should measure the phenomenon under study. In the present study content validity measures how an instrument estimates the

concept "deviant driving". There are two types of content validity namely face validity and sampling validity (Leedy 1985:25; Maxfield & Babbie 1998:110; Hy *et al.* 1983:57).

- Face validity
This type of validity relies basically upon the subjective judgment of the researcher. To know whether an instrument has face validity, the researcher need first to know the definition of the concept being measured and second whether information being collected is germane to that concept.
- Sampling validity
The purpose of sampling validity is to identify items which adequately represent a concept. Sampling validity assumes that every concept (for instance deviant driving) can be operationalised by a variety of variables (content driving population).

Content validity is fraught with problems which arise when there is no consensus about the definition of the concept to be measured;

when the concept is multidimensional; and when the measure is lengthy and complex. These problems become apparent in under-reporting and over-reporting on some items by respondents simply because of misunderstanding.

(iii) Construct validity

Construct validity is based on the logical relationships among variables (Maxfield & Babbie 1998:110; Mouton 1996:128; Leedy 1985:25; Hy *et al.* 1983:58). Constructs are abstract variables. Constructs are assumed to relate to some observable behaviour. To determine their validity hypotheses are deduced from theoretical statements and tested. If the data supports the hypotheses, the construct is assumed valid.

Construct validation involves three distinct steps (Carmines & Zeller 1979:23). Firstly, theoretical relationship between the concepts must be specified; secondly, the empirical relationship between the measures of the concepts must be examined; and thirdly, the empirical evidence must be interpreted in terms of how it clarifies the construct validity of the particular measure.

The probability exists that the theoretically

derived predictions and empirical relationships may be inconsistent with each other. A researcher may thus be inclined to conclude that the evidence relevant to construct validity is negative. Four interpretations are possible (Carmines & Zeller 1979:24-25). Firstly, the theoretical framework used to generate empirical predictions is incorrect. Secondly, the method or procedure used to test the theoretically derived hypotheses is faulty, defective or inappropriate. Thirdly, negative evidence is due to the lack of construct validity or the unreliability of some other variable(s) in the analysis. Fourthly, the possible interpretation would be that either the present measure or the former lack construct validity which implies that the indicator does not measure what it is intended to measure. Since construct validity culminates in hypothesis testing, it can be viewed as the strongest type of validation procedure.

2.5 DESIGN OF THE STUDY

In paragraphs 2.2, 2.3 and 2.4 an exposition of research methodology and related issues has been given. It is appropriate for the researcher to give an account of the actual design of the present study which will include the procedures and techniques that were implemented in conducting the study.

2.5.1 Literature Review

Literature forms the basis on which the choice of an approach, research method and techniques; theoretical explanations and the design of the present study are based. Following are the documents which were consulted.

2.5.1.1 ***Books, research reports and periodicals***

Books and periodicals are secondary sources which include journals and literature that contain reports on related research projects. The following sources were widely consulted.

(a) Research methodology

- (i) Carmines, E.S. and Zeller, R.A. 1979. *Reliability and Validity Assessment*. London: Sage.
- (ii) Hagan, F.E. 2000. *Research Methods in Criminal Justice and Criminology*. Fifth Edition. Boston, MA: Allyn & Bacon.
- (iii) Hy, R.J.; Feig, D.G. and Regoli, R.M. 1983. *Research Methods and Statistics: A Primer for Criminal Justice and Related Sciences*. Cincinnati, Ohio: Anderson.
- (iv) Maxfield, M.G. and Babbie, E. 1998. *Research Methods for Criminal Justice and Criminology*. Second Edition. Belmont: Wadsworth.

- (v) Mouton, J. 1996. *Understanding Social Research*. Pretoria: J.L. van Schaik.
- (vi) Vito, G.E.; Latessa, E.J. and Wilson, D.G. 1988. *Introduction to Criminal Justice Research Methods*. Springfield: Charles C. Thomas.
- (vii) Welkowitz, J.; Ewen, R.B. and Cohen, J. 2000. *Introductory Statistics for the Behavioural Sciences*. Fifth Edition. Forth Wroth: Harcourt Brace & Company.

(b) Theoretical explanations

A variety of sources were widely consulted for the theoretical explanations of deviant driving behaviour but the few below are important:

- (i) Aggleton, P. 1987. *Deviance*. London: Routledge.
- (ii) Akers, R.L. 1985. *Deviant Behaviour: A Social Learning Approach*. Third Edition. Belmont, California: Wadsworth.
- (iii) Matza, D. 1969. *Becoming Deviant*. Englewood Cliffs, New Jersey: Prentice-Hall.
- (iv) McCaghy, C.H. and Capron, T.A. 1994. *Deviant Behaviour: Crime, Conflict and Interest Groups*. Third Edition. New York: MacMillan.

- (v) Simmons, J.L. 1969. *Deviants*. Berkeley: Glendessary Press.
- (vi) Taylor, L. 1971. *Deviance and Society*. London: Michael Joseph.
- (vii) Thio, A. 1983. *Deviant Behaviour*. Second Edition. Boston: Houghton Mifflin Co.

2.5.1.2 **Research reports**

Research reports are primary sources from which the construction of the questionnaire; approaches to measurement of deviant driving; and comparisons for validation purposes was established. The following few reports are important in this study:

- (a) Corbett, C. and Simon, F. 1992. *Unlawful driving behaviour: A criminological perspective*. Contractor Report 301. Crowthorne: Transport Research Laboratory.
- (b) De la Cour, A.D.; Hegarty, P.; Swam, A.; Van Blerk, J. and Wilson, K. 1999. *Looking for "road rage": an ethnographic investigation of Gauteng traffic culture*. Witwatersrand: University of Witwatersrand.
- (c) MacMillan, J. 1975. *Deviant Drivers*. Saxon: D.C. Heath & Co.

- (d) Parry, M.H. 1968. *Aggression on the road: a pilot study of behaviour in the driving situation*. London: Tavistock.

The above-mentioned reports, coupled with many others, are important in that they highlight various issues and dynamics of deviant driving behaviour. They even refer to the implementation of self-report questionnaire in the gathering of data.

2.5.2 **Self-report Survey**

The researcher had previously undertaken a study on the issue of: "Penalisation of traffic offenders in the magisterial district of Lower uMfolozi", a study which was mainly based on information available in court records and related statistics. After a thorough study of the related literature, it was arbitrarily decided that a self-report survey would be the most suitable method for the present study in order to highlight the problem of "hidden" deviant driving behaviour. It would have been ideal to draw a large sample from the areas under study. The researcher foresaw that numerous logistical problems would have been encountered. This could have resulted in employing field-workers and interviewers in which case general costs would have been enormous.

2.5.3 **The Questionnaire**

Design of the questionnaire was of great importance to yield raw data for the study. The questionnaire was divided into the following sections:

- Section A: Demographic data (the driving population)

This section includes variables such as marital status, gender, age, education, etc., which actually describes the demographic "make-up" of respondents.

- Section B
Questions in this section relate to the respondents' driving experience.
- Section C (Scale 1)
This section deals with deviant driving behaviour.
- Section D (Scale 2)
Aggressive driver attitudes are measured by questions in this section. In other words, the questions are concerned with how the respondent drives: whether he or she likes driving fast, likes to accelerate and so forth.
- Section E (Scale 3)
Anxious driving (anxiety) as a theoretical construct is being operationalised by statements (variables) contained in this section.
- Section F (Scale 4)
This section devotes attention to various issues surrounding traffic policing.
- Section G (Scale 5)
This section is concerned with deviant driving behaviour – especially the commission of driving offences such as

speeding, inconsiderate driving, etc.

- Section H (Scale 6)
Violations relating to traffic document offences are measured by questions in this section.
- Section I (Scale 7)
The commission of motor vehicle-related offences or the operation of a defective motor vehicle is being dealt with in this section.

2.5.4 **The Sample**

In selecting the sample for the present study, purposive (judgmental) sampling technique was employed. An exposition of purposive sampling has been fully accounted for in paragraph 2.4.2.2.5.

The sample in this exploratory study was drawn from respondents within the jurisdiction of uMhlatuze City Council and adjacent areas located on the North Coast of KwaZulu-Natal which also include: Mthunzini, KwaMbonambi and Mtubatuba. The researcher, therefore, had to settle for a specific group of respondents in the uMhlatuze City Council's jurisdiction as well as those municipalities adjacent to it. It could, therefore, be expected that the municipalities under study represent a cross-section of motor vehicle (deviant) drivers. The choice of areas from which the sample was drawn was limited by two factors namely finance and convenience. Consequently, it became necessary for the survey to be carried out in uMhlatuze City Council's jurisdiction and adjacent municipalities. The decision was taken arbitrarily, taking into account the size of towns. Further, the researcher has stayed in Northern KwaZulu-Natal for a

very long time and knows the area very well. uMhlathuze City Council's jurisdiction covers Richards Bay, Esikhawini, Empangeni, Ngwelezane, Nseleni and Vulindlela.

Table 2.1 shows that questionnaires were distributed as follows:

–	Empangeni	:	132
–	Esikhawini	:	129
–	Ngwelezane	:	90
–	Nseleni	:	60
–	Richards Bay	:	153
–	Vulindlela	:	20
	TOTAL	:	584 (71,7%) (also see paragraph 2.5.5.2)

Table 2.1 also shows that questionnaires in respect of adjacent areas were distributed as follows:

–	KwaMbonambi	:	30
–	Mtunzini	:	50
–	Mtubatuba	:	150
	TOTAL	:	230 (28,3%) (also see paragraph 2.5.5.2)

A total of 814 questionnaires were distributed in this study. The observed frequencies thus portray a cross-section of motor vehicle (deviant) drivers.

An urban area arbitrarily qualified for inclusion in the present study because of the exposure to the high frequency of driving and also the exposure to risks which are likely to affect deviant driving behaviour. Further, an urban area also qualified for inclusion in the study because of its "within reasonable travelling distance" from

Esikhawini where the researcher resides.

2.5.5 **Field-Work**

Fieldwork was undertaken between April and November 2002. Questionnaires in respect of Esikhawini and Vulindlela were hand-delivered to respondents and administered by the researcher personally. Questionnaires in respect of Empangeni, Richards Bay, Ngwelezane, Nseleni, Mtunzini, Mtubatuba and KwaMbonambi were hand-delivered and administered by field-workers. The researcher arranged a one-day training session for field-workers. Training included the understanding of the questionnaire in isiZulu. The objective was to enable field-workers to administer questionnaires to respondents who could not comprehend in English. Field-workers were acquainted with terminology employed in criminal justice research. Some of the field-workers are graduates in the Department of Criminal Justice (University of Zululand) whilst others were final year learners (2003) towards their BA (Police Studies and Correctional Studies) degree programmes.

Two stages of field-work were carried out, namely a pilot study and the final survey.

2.5.5.1 ***Pilot study***

The pilot study played an important part in the development of the final questionnaire that was administered in the present study.

The pilot sample consisted of 45 selected respondents: male, female, young, old, unskilled and professional respondents. The main purpose of the pilot study was to determine whether the questionnaire was understandable to

different respondents. Thus, those who were interviewed by the researcher were encouraged to criticise and comment freely on the questionnaire which contained 80 questions or statements. Their comments related to its length, content and comprehension. The overall response during the pilot study was very encouraging.

Criticism by the respondents was confined to the wording of the attitude questions. The length of the interview lasted about 35 minutes and seemed quite acceptable. Most of the revisions which were introduced as a result of the pilot study related to the attitude questions and those revisions were aimed at simplifying the wording of some questions while some other questions were eliminated.

The pilot study also showed that the order in which the questions were asked needed some revision.

The crux of the problem lay in deciding when to ask respondents about their deviant driving behaviour. The solution adopted was to "lead in" with questions relating to demographic data and driving experience, as these assisted in putting respondents at ease. Then followed the "attitude questions", followed by those relating to "traffic offence experience". It was hoped that through this procedure untruthful replies to attitude questions, especially by respondents with "records" of traffic offences/deviant driving, would have been avoided. The final questionnaire contains 73 questions or statements (see Annexure A).

2.5.5.2 ***Final study***

Questionnaires were arbitrarily distributed to 814 respondents (see paragraph

2.4.2.2.5 and Table 2.1). In certain instances completion of questionnaires was done on the spot while in other cases, questionnaires were collected at a later stage.

Table 2.1 portrays the sample distribution of the final survey.

TABLE 2.1: QUESTIONNAIRE DISTRIBUTION AMONG RESPONDENTS BY AREA (N=722)

AREA	EXPECTED FREQUENCY		OBSERVED FREQUENCY	
	N	%	N	%
Empangeni	132	16.21	131	18.10
Esikhawini	129	15.84	104	14.10
KwaMbonambi	30	3.70	30	4.20
Mtubatuba	150	18.40	100	13.90
Mtunzini	50	6.10	46	6.40
Ngwelezane	90	11.05	79	10.90
Nseleni	60	7.40	60	8.30
Richards Bay	153	18.80	152	21.05
Vulindlela	20	2.50	20	2.75
TOTAL	814	100.00	722	100.00

Out of 814 questionnaires that were distributed, only 722 (89%) were returned and thus constitute the observed frequencies. A sample of 722 cases is considered large enough to permit statistical analysis and conclusions. Further, the sample compared favourably with other related studies (Parry 1968; MacMillan 1975; De la Cour *et al.* 1999).

2.5.5.3 *Demographic profile of sample*

Tables 2.2 – 2.8 portray the frequency distribution of demographic characteristics of the sample.

TABLE 2.2: FREQUENCY DISTRIBUTION OF RESPONDENTS BY GENDER (N=722)

GENDER	FREQUENCY	
	N	%
Male	446	64.5
Female	256	35.5
TOTAL	722	100.0

TABLE 2.3: FREQUENCY DISTRIBUTION OF RESPONDENTS BY RACE (N=722)

RACE	FREQUENCY	
	N	%
Black	385	53.3
White	163	22.6
Coloured	69	9.6
Asian	105	14.5
TOTAL	722	100.0

**TABLE 2.4: FREQUENCY DISTRIBUTION OF RESPONDENTS BY AGE
(N=722)**

AGE	FREQUENCY	
	N	%
18 – 20 years	26	3.6
21 – 30 years	155	21.5
31 – 40 years	227	31.4
41 – 50 years	198	27.4
51 – 60 years	83	11.5
61 – 70 years	31	4.3
71 years +	2	0.3
TOTAL	722	100.0

**TABLE 2.5: FREQUENCY DISTRIBUTION OF RESPONDENTS BY
MARITAL STATUS (N=722)**

MARITAL STATUS	FREQUENCY	
	N	%
Married	381	52.8
Single	257	35.6
Widowed	42	5.8
Divorced	34	4.7
Separated	8	1.1
TOTAL	722	100.0

TABLE 2.6: FREQUENCY DISTRIBUTION OF RESPONDENTS BY EDUCATION (N=722)

EDUCATION	FREQUENCY	
	N	%
Uneducated	2	0.3
Standard 8 (Grade 10 and below)	101	14.0
Matric (Grade 12)	246	34.1
Diploma	122	16.9
Technical	92	12.7
Degree	159	22.0
TOTAL	722	100.0

TABLE 2.7: FREQUENCY DISTRIBUTION OF RESPONDENTS BY OCCUPATION (N=722)

OCCUPATION	FREQUENCY	
	N	%
Professional drivers (bus, taxi)	147	20.4
Skilled or semi-skilled worker	164	22.7
Unskilled worker	22	3.0
Professional (e.g. educator, lawyer, etc.)	189	26.2
Executive	41	5.7
Managerial (e.g. supervisor)	122	16.9
Unemployed	37	5.1
TOTAL	722	100.0

TABLE 2.8: FREQUENCY DISTRIBUTION OF RESPONDENTS BY INCOME (N=722)

INCOME	FREQUENCY	
	N	%
R500 or less	17	2.4
R501 – R1 000	10	1.0
R1 001 – R2 000	46	6.4
R2 001 – R3 000	127	17.6
R3 001 – R4 000	131	18.1
R4 001 – R5 000	102	14.1
R5 001 or more	263	36.4
No income	26	3.6
TOTAL	722	100.0

2.5.6 Statistical Analysis of Data

Statistics are numerical tools available to a researcher to describe and explain social phenomena. Statistics will also be used to describe and explain deviant driving behaviour. Potgieter and Mersham (2002:14) opine:

“The researchers decided to keep the analysis of the collected data as simple as possible – due to the exploratory character of the investigation.”

For the purpose of the present study, data will also be presented in descriptive, tabular format and analysed in the terms of raw scores (N) and percentages (%). Further statistics are used to establish differences (if any) and relationship (if any). Appropriate tests have been selected for this purpose. Statistics are also used to test reliability and validity of the questionnaire.

2.5.6.1 **Reliability of items: internal consistency**

Cronbach's reliability analysis (ALPHA) has been referred to as a technique of testing internal consistency. Following is the statistical results yielded by Cronbach's Coefficient Alpha of the various scales (Table 2.9).

TABLE 2.9: CRONBACH'S COEFFICIENT FOR VARIOUS SCALES: DEVIANT DRIVING BEHAVIOUR

SCALE 1 TO 7	ALPHA	STANDARDISED α
Deviant Driving Behaviour	.7456	.7462
Aggression	.7624	.7691
Anxiety	.5468	.6037
Traffic Policing	.6165	.6086
Offensive Driving	.5776	.4752
Document Offences	.8071	.8017
Vehicle Defects	.7897	.7867

From the above reliability analysis (alpha) it is clear that correlations range between .5468 and .8071.

2.5.6.2 **Validity of the questionnaire**

Validity of the measurement has been dealt with in paragraph 2.4.3.1.2 of this chapter. The present study is validated on content and construct validity.

Content validity is contingent upon the extent to which a measurement reflects on a specific domain of content. Relevance and number of items are the most important aspects for content validity (Carmines & Zeller 1979:20).

For a questionnaire to have valid and relevant items, it must contain items which reflect the meaning associated with a specific dimension. In the present study items measuring a particular dimension are combined together and their sum constitutes a scale as indicated below and as reflected in the questionnaire (see Annexure A; Neuman & Wiegand 2000:162)).

- (a) Scale 1: Deviant driving behaviour (Q16 to Q20).
- (b) Scale 2: Aggression (Q21 to Q29).
- (c) Scale 3: Anxiety (Q30 to Q40).
- (d) Scale 4: Traffic policing (Q41 to Q53).
- (e) Scale 5: Offensive driving (Q54 to Q64).
- (f) Scale 6: Document offences (Q65 to Q69).
- (g) Scale 7: Vehicle defects (Q70 to Q73).

Carmines and Zeller (1979:21) state that it is not possible to specify exactly the number of items to be developed for a scale, but it is preferable to construct as many items as possible, rather than too few. In the present study data analyses are based on seven statistical scales consisting of 58 variables. Such categorisation of items in scales format ensures relevance of items to a particular domain, thus enhancing content validity.

Construct validity is concerned with the extent to which a particular measure relates to other consistent with theoretically derived hypotheses concerning the concepts that are being measured (Carmines & Zeller 1979:23; Harry 2001:728). In the present study, different scales highlight different theoretical constructs of deviant driving behaviour.

Chapters 4 to 7 give an exposition of presentation and analysis of data pertaining to the distribution of responses to deviant driving behaviour items,

grouped under 7 deviant driving behaviour scales.

2.5.6.3 ***Statistical processing of data***

Descriptive and inferential statistics are important for the present study. Inferential statistics is important for generalisations. In the present study different statistics were used with the aim of making empirical inferences about data. Inferential statistics are employed to draw inferences.

- (a) Analysis of variance (ANOVA) and Chi-square (X^2).
- A one-way analysis of variance refers to a procedure that tests the effect of one independent variable (several independent groups) on the means of one dependent variable. The ANOVA F-statistic is a ratio, with the between-groups variance estimate in the numerator and the within-groups variance estimate in the denominator. ANOVA has therefore been used to establish differences between deviant driving behaviour and the following characteristics: gender, race, marital status, occupation, regularity of driving and type of motor vehicle.

In addition to ANOVA statistic, the chi-square statistic has also been used with the aim of finding differences between certain categories of independent variables and 7 deviant driving behaviour scales.

In both statistics differences are significant at the 5

percent level ($p \leq 0.05$).

- (b) Spearman Rank-Order Correlation Coefficient (ρ). Data on relationships between deviant driving behaviour and respondents' age, education, income, duration of passing a driving test and years motor vehicle driven are correlated by the 2-tailed Spearman Rank-Order Correlation Coefficient (ρ). Probability values of .01 and .05 depict that the correlation is significant. A positive correlation between the independent and dependent variable means that the two variables vary in the same direction.

Likewise, a negative correlation between a dependent variable (deviant driving behaviour) and an independent variable means that the higher the independent variable score the lesser deviant driving behaviour reported.

2.6 SUMMARY

In this chapter an exposition of research methodology and design has been given. Research methodology requires skill and sophistication merely to determine the kinds of results that the researcher wants to examine. Common human errors are also reduced through research methodology. Research involves the application of a variety of research methods and techniques in the pursuit of knowledge into deviant driving behaviour. The present study employed the analytical research method in the pursuit of knowledge and insight into deviant driving behaviour. Descriptive and inferential statistics have been used

to account for observations.

Research techniques are tools used by the researcher in order to achieve the desired goals. The researcher used specific research techniques. The literature study technique has been used for explaining research methodology, designing the present study and to give an account of the theoretical explanations of deviant driving behaviour. Sampling techniques have been used to enable the researcher to pronounce scientifically based conclusions. Non-probability sampling techniques, namely purposive/judgmental sampling, was used in this study. The final source of data on deviant driving behaviour was to go directly to the respondents with the objective of uncovering "hidden" deviant driving behaviour. For this purpose a self-report instrument, namely the questionnaire, was used to collect data.

Statistical techniques were used to test internal consistency of items through Cronbach's Correlation Coefficient Alpha. Further, for statistical analysis of data inferential statistics was used. The ANOVA F- and Chi-square tests were used to establish differences and Spearman Rank-Order Correlations Coefficient (ρ) has been used to establish relationships.

CHAPTER 3

THEORETICAL EXPLANATIONS OF DEVIANT DRIVING BEHAVIOUR

3.1 INTRODUCTION

Theories of deviant driving behaviour are much more than a set of abstract notions about its etiology, nature and consequences. Such theories are usually implicit; some researchers are often not even consciously aware of them. This can be ascribed to the fact that theories are so deeply buried. Theories are the basis of how researchers feel and act in actual situations. It is likely to see surface reflections of such underlying theories when traffic officers feel that deviant drivers should be "roughed up a little". We are concerned here with drivers who behave in both unexpected and unacceptable ways. What constitutes unexpected and unacceptable behaviour may seem to be rather personal and individual judgements. If any community is to continue as an operating entity, there must be some agreement among members upon how they shall act toward one another. Obversely, there will be at least tacit consensus on what constitutes unexpected and unacceptable motor vehicle driving. Deviant driving behaviour can be ascribed to primary and secondary factors (Williams III & McShane 1994:138; McCaghly 1985:84; Thio 1983:59). Primary deviant driving behaviour refers to the violation of traffic law stemming from original causes which may be social, situational, physiological and psychological factors. Primary deviant driving behaviour can be observed in cases where a motor vehicle is driven under the influence of alcohol. This may be due to one or more of a variety of personal reasons such as feelings of failure, death of a loved one and group pressures. Deviant driving behaviour will remain primary and of little consequence for either the deviant driver or those viewing his or her behaviour, so long as such deviance can be tolerated and incorporated into a non-deviant image. However, should

the drinking precipitate an adverse reaction from others and nevertheless continue unabated, it is possible that the drinking can eventually be attributed not to the original causes, but to new problems created by the unfavourable reactions (Williams III & MacShance 1994:137-139). At this point, deviant driving behaviour becomes secondary. When a driver begins to employ his or her deviant driving behaviour as a means of defence, attack or adjustment of the overt and covert problems created by the consequent societal reaction to him or her, deviation is secondary.

Deviant driving is a diverse and epidemiological phenomenon with divergent causes. The inventory of causes that applies to particular cases include the entire range of physical conditions, human emotions and social forces which influence human behaviour generally and deviant driving in particular. Simmons (1969:51) opines:

“Since virtually and behaviour is deviant from the moral perspective of some judge, virtually everything causes deviance.”

Two major processes can be referred to as responsible for creating deviant driving (Simmons 1969:57):

- (a) role-recruitment: which implies that a number of factors combine to encourage drivers to experiment with deviant driving; and
- (b) role-imprisonment: which implies the process that forces some drivers into deviant driving, especially forces on those who have already experimented with deviant driving to adopt and maintain deviant driving.

Committing a deviant driving act at some time is not a sufficient condition for really going deviant but may be a necessary step. However, it should not be thought of as the

starting point in becoming deviant because both recruitment and imprisonment processes have already been actively influencing the driver long before he commits his first traffic offence.

Thio (1983:8-24) points out that the theoretical explanations of deviance (deviant driving) can best be understood in terms of traditional and modern perspectives and theories. Traditional theoretical explanations deal with the etiology of deviant driving behaviour; while the modern theoretical explanations concentrate on the meaning of deviance (deviant driving behaviour) (Thio 1983:55-80; McCaghy & Capron 1994). Theories of aggression and anxiety are important in the understanding of aggressive and anxious approaches to driving.

3.2 THEORETICAL EXPLANATIONS OF DEVIANT DRIVING BEHAVIOUR

It is sometimes assumed that an epidemiological study of deviant driving behaviour embodies one specific set of principles and codified knowledge when in fact it includes a wide variety of criminological, psychological and sociological thought as well as other contributing disciplines. Because of the complex nature of the phenomenon of deviant driving, no single theory exists that can purport to explain all deviant driving, nor can one single cause of deviant driving be specifically determined and applied in all traffic offences. Because of the varied nature of causative factors and the complexity of the problem, it will be necessary to examine a variety of theoretical explanations in relation to deviant driving causation.

3.2.1 Traditional Theoretical Explanations

In an attempt to offer a comprehensive examination of deviant driving behaviour, the researcher deems it appropriate to first highlight the traditional perspectives of deviant driving behaviour. This may yield a profound insight into an

epidemiological study of deviant driving behaviour.

3.2.1.1

Traditional perspectives of deviant driving behaviour

Deviant driving behaviour possesses some characteristics distinguishing it from conforming motor vehicle driving behaviour. Thio (1983:9) avers that deviant driving behaviour is intrinsically real. Penologists and criminologists (Khoza 1993; Mqadi 1994; Potgieter, Mqadi & Khoza 1992) who are influenced by such a perspective tend to view deviant driving behaviour as an attribute that is inherent in the individual. The intrinsic characteristics of deviant driving can be identified as the ability to injure, hurt or anger other road users. Deviant driving possesses the ability to affect road users disagreeably. Therefore, the researcher assumes deviant driving to be basically real in itself. As Nettler (Blumberg 1981:358) puts it:

"It seems wiser to operate with the assumption that there is a real world out there than to adopt the notion that it is all in our head."

Moreover, Nettler's phrase "out there" implies that there is yet another dimension of the traditionally assumed deviant driving reality, one that leads us to the next issue of the objective (factual) nature of deviant driving.

Deviant driving behaviour is objective in the sense that it is something "out there" and accordingly can become the object of empirical research, as is evident in the present epidemiological study. In assuming deviant driving behaviour as something "out there" with an objective nature, and in treating the deviant driver as if he or she was an object, the researcher has attempted to observe and study deviant driving behaviour. To

demonstrate the objective reality of deviant driving, the researcher has conducted a self-report study into deviant driving behaviour. Deviant driving behaviour cannot be properly understood without understanding the causal aspects thereof (Thio 1983:13). It should also be noted that deviant driving behaviour is a product of causation. This assumption implies that deviant driving behaviour is determined or caused by certain events, occurrences or phenomena in the environment. Thus, the traditional approach is purely deterministic (Vold 1958:39-40). The causal factors that can be advanced in respect of deviant driving behaviour are rooted in non-conformity to the National Road Traffic Act of 1996 (Act 29 of 1996). Further, explanations can be located in the social environment, e.g., economic deprivations, rapid changes of road traffic legislation, social disorganization, unhappy homes, lower class background and differential traffic law enforcement.

3.2.1.2 ***Traditional theoretical explanations***

It has already been pointed out that traditional theoretical explanations concentrate on the etiology of deviant driving behaviour (Thio 1983:28-50). Three theories: strain (anomie), differential association and control theories will be discussed as primarily traditional.

3.2.1.2.1 *Strain (anomie) theory*

Merton (1957) opined that the society encourages the individual to engage in deviant (driving) behaviour (Thio 1983:29). Merton was reacting against biological theories which suggested that man's behaviour is the result of inherited traits. The problem is to discover why some drivers in the same environment involve themselves in deviant driving behaviour.

Merton's thesis proffers that social structures exert pressures on some drivers to violate traffic laws (Reid 1976:177). Merton (1957) begins by suggesting that all social structures have two common characteristics:

- (a) They establish goals which are to be the aspirations of all drivers of motor vehicles within the society. These goals are those properties that are worth striving for.
- (b) Approved means or methods for obtaining the goals are established and recognized by the society. Some societies emphasize the goals, others the means, whilst most societies fall somewhere on a continuum between these two extremes. As long as all drivers do not violate traffic laws, there can be no reference to deviant driving behaviour. But when the goals for abiding by the National Road Traffic Act (Act 29 of 1996) or the means of obtaining good driving behaviour are rejected, deviant driving is likely to result.

It is apparent that anomie refers to the breakdown of (traffic) norms and a condition in which those norms are no longer controlling the activities of members (drivers) of the society (Williams III & McShane 1994:88). The implication is that drivers may have difficulty in adjusting to the Road Traffic Act which is being amended from time to time. This in turn leads to dissatisfaction, frustration, conflict and the end result is deviant driving (Gibbons & Jones 1975:88-89). Merton (Williams III & McShane 1994:93; Reid 1976:177) designed a typology to describe the methods or modes of adaptation that are available to those who react to the goals and means of society. He identified the following five modes demonstrated as in Table 3.1 below (Williams III & McShane 1994:93).

TABLE 3.1: MERTON'S TYPOLOGY OF ADAPTATIONS: ANOMIE

Adaptation	Culture Goals	Institutionalised Means
Conformity	+	+
Innovation	+	-
Ritualism	-	+
Retreatism	-	-
Rebellion	±	±

Key: (+) signifies "acceptance"; (-) signifies "elimination"; and (±) signifies "rejection and substitution of new goals and standards"

If the emphasis on goals and means are maintained even in the face of a realisation that the means are restricted, a driver will remain (traffic law-abiding) conforming (Glick 1995:139-140). It is the most frequently used mode of adaptation. If it is not frequently used, the very existence of society (road users) would be threatened. The remaining four modes of adaptation, however, represent a departure from this all-endorsing adaptation and could thus result in real deviant driving behaviour.

Innovation represents the acceptance of the goals but rejection of the means for obtaining those goals (Thio 1983:30-31; Glick 1995:139). Innovative means, especially for deviant drivers, may actually be more efficient in reaching a goal than the approved means to do so. For instance, instead of obtaining the valid driving licence through approved means, the driving licence may be obtained through fraudulent means. If the goals are rejected and focus is shifted to the means, the mode of adaptation is that of ritualism (Glick 1995:139). In this mode the means can become the aspirations of the driver, as when one may attempt to treat a

job (means) such as professional driving as a form of security instead of using a job as a means of achieving success (Khoza 1993:57). The ritualist adaptation frequently includes blaming scapegoats for personal failure (Gibbons & Jones 1975:90).

Retreatism involves a rejection of both the goals and means (Williams III & McShane 1994:72; Gibbons & Jones 1975:90). It includes withdrawal from the competitive struggle. The retreatist adaptation leads to involvement in deviant driving through which the driver demonstrates that he has ceased to observe and abide by the road traffic legislation (Khoza 1993:33).

Rebellion is that adaptation in which disgruntled drivers actively reject goals which they view as unattainable and means which they hold to be unworkable and tend to substitute new, socially unapproved goals toward which they strive by non-normative means (Glick 1995:139; Williams III & McShane 1994:92-93; Thio 1983:31). The implication is that drivers may be inclined to rebel and are revolutionaries in as far as the Road Traffic Act and Road Traffic Regulations are concerned. This may result in the amendment or repeal of formal traffic prescriptions such as the Road Traffic Act. Strain theory can thus be viewed as a functionalist theory. Functionalism presumes that it is desirable to explain deviant driving behaviour in terms of its effect on and its consequences for the society in which it exists. The conception of cultural goals and norms is used to explain how they serve to produce both conformity to traffic laws and deviant driving within the society.

3.2.1.2.2 *Differential association theory*

Differential association theory is the brainchild of Edwin Sutherland (Williams III & McShane 1994:70). He developed this theory to explain two sets of deviant (driving) phenomena. First, Sutherland wanted to explain why crime (traffic crime) rates vary with different groups of people (deviant drivers); for instance why males commit more traffic offences than females (Khoza 1993:149-156). It is therefore of utmost significance to establish why deviant driving behaviour vary with different groups of people. The varieties of deviant driving behaviour can be ascribed to the fact that society is composed of differential social group (drivers) organization. Secondly, Sutherland developed the theory in order to explain individual criminality (deviant driving); i.e., to explain why some drivers become deviant drivers while others do not. It is thus appropriate to consider the cause of crime (deviant driving) to be what Sutherland called differential association (Thio 1983:37; Glick 1995:160-161; Williams III & McShane 1994:75-76). Differential association theory proffers nine statements which are intended to show clearly how a particular individual (driver) becomes engaged in criminal (deviant driving) behaviour. However, the researcher does not intend giving a detailed account of these nine statements. These statements are listed below in order to give a more complete picture.

- (a) Criminal behaviour is learned;
- (b) Criminal behaviour is learned in interaction with other persons in a process of communication;
- (c) Learning of criminal behaviour occurs within intimate personal groups;

- (d) Learning of criminal behaviour includes techniques of committing crime(s) and motives, rationalisation and attitudes;
- (e) Direction of motives is learned from definitions of law as either favourable or unfavourable;
- (f) Differential associations may vary in duration, priority, intensity and frequency;
- (g) An individual become criminal because of an excess of definitions favourable to violation of law over definitions unfavourable to violation of law;
- (h) Learning criminal behaviour by association with criminal patterns involves mechanisms that are involved in any learning; and
- (i) Although criminal behaviour is an expression of general needs and values, it is not explained by those needs and values since non-criminal behaviour is an expression of the same needs and values (Williams III & McShane 1994:76).

The theory posits that deviant driving is learned in association with intimate other drivers by interacting and communicating with them. Two things are eventually learned: deviant driving techniques; and definitions (values, motives, drives, attitudes and rationalizations) that support deviant driving. Sutherland (Williams III & McShane 1994:76) stressed that:

"A relationship must exist, that the transfer of skills or values cannot be accomplished by reading books or watching movies. The techniques may be thought of as the 'hows' or the content of an act and the definitions as the 'whys' or the reason for doing it."

The differential association theory does not necessarily emphasize who the deviant driver's associates are; instead it focusses on the definitions provided by those associations. It suggests that once the techniques of deviant driving are learned, the values (definitions) supporting deviant driving may be learned (through perception) from anyone.

3.2.1.3 ***Control theory***

Control theories share a conviction that crime (deviant driving) is to be expected (Williams III & McShane 1994:181; Hagan 1986:448; Thio 1983:45). It should be noted that what causes conformity is social control (traffic law enforcement) over drivers and, therefore, the absence of traffic officers (as visible role-fulfillers) is likely to cause deviant driving.

3.2.1.3.1 *Containment theory*

This approach was developed by Reckless (Hagan 1986:448; Williams III & McShane 1994:45-46). This theory attempts to account both for social forces which may predispose drivers to deviant driving as well as driver characteristics which may insulate them from or further propel them toward deviant driving. External (outer containment) pressures which may cause deviant driving behaviour include adverse economic conditions, temptation, limited access to success; whilst internal (inner containment)

pressures which may cause deviant driving include personality contingencies such as feelings of inferiority, frustrations, conflicts, motives, disappointments, rebellion and hostility (Khoza 1993:102-104). If drivers are caught up in the inner and outer forces they have a strong tendency to become deviant drivers. There are a variety of “pushes and pulls” toward deviant driving that all drivers experience. The effect of these inducements to deviant driving depends upon the strength of the driver’s inner and outer containments. If the self-concept (inner) was bad, outer social controls would have little effect on the driver and deviant driving would be more likely to result. On the other hand, a driver with a good self-concept could withstand weak external social control and resist deviant driving.

3.2.1.3.2 *Social control theory*

Nye (Thio 1983:47) maintains that there are powerful forces pushing all people (drivers) to deviance (deviant driving). In South Africa, the National Road Traffic Act (Act 29 of 1996) is used to effect social control so as to help regulate and control (prevent) deviant driving tendencies. There are four social control categories:

- internal control;
- indirect control;
- direct control; and
- legitimate need satisfaction.

Through internalized traffic control drivers internalize the mores, norms and values, consequently developing the conscience of the driver.

Internal control is self-enforcing and pervasive; it is lost only when a driver loses effective consciousness. The lack of the effectiveness of internal control is a consequence of lack of agreement on traffic laws. Affection and rejection from traffic law authorities plays a major role in traffic control and indirect control can be exercised only when there is affectional relationships to the conforming driver. When there is rejection between the driver and traffic officers, indirect control cannot be exercised (Nye 1958:6). Attitudes towards law (traffic officers) can be viewed as varying along the continuum of complete acceptance and complete rejection. Complete acceptance occurs when relationship changes from dependency to affectionate more independent status, and the traffic officer is seen as an experienced friend. Partial rejection occurs when the driver frees him- or herself from traffic law obedient processing behaviour but does not develop active hatred. Nye (1958:7) opines:

“Neither does he have affection or respect, nor positive or negative feelings; strikes a rough balance, thus forming an indifferent or somewhat ambivalent relations.”

Complete rejection of traffic law develops when the driver violates traffic law and thus becomes a deviant driver.

The society does not depend on internal and indirect control alone but restraint on (deviant) drivers is exercised by traffic officers and other law enforcement agencies; or entirely by disapproval, ridicule and ostracism (Nye 1958:7). Direct control can be effective in securing conformity.

Nye (1958:8) identifies three essential needs that need satisfaction: affection, recognition and security. If these needs are satisfied adequately

and without delay, a minimum of indirect and direct traffic control is necessary. The society greatly affects the satisfaction of these needs and if the driver can achieve them in socially approved ways, there would be less pressure to achieve them through deviant driving tendencies. There are limitations to need satisfaction. For instance, drivers have to learn that there are wants and needs that have to be deferred such as procurement of a valid driving licence and valid clearance certificates.

3.2.1.3.3 *Social bond theory*

Hirschi (1969) presented his social bond theory, which basically states that juvenile delinquency (deviant driving) takes place when a person's (driver's) bonds to society are weakened or broken, thus reducing the driver's stakes in abiding by the Road Traffic Act. In essence, drivers conform not to fear of prescribed penalization in the (traffic) court, but more from concern with violating the mores and the personal image of them held by important groups of which they are members. According to Hirschi (Williams III & McShane 1994:189; Hagan 1986:450; Thio 1983:48) there are four ways in which individuals (drivers) bond themselves to society:

- commitment;
- attachment;
- involvement; and
- belief.

If these four elements of the driver's bond to conventional society are strong, the driver is likely to abide by the Road Traffic Act. If these four elements of bond are weak, deviant driving is more likely to result

(McCaghy 1985:70).

3.2.2 **Modern Theoretical Explanations**

Modern theories of deviant driving are basically non-etiological: they do not focus on the causes of deviant driving as the traditional theories do (Thio 1983:55). Instead, modern theories focus on the meanings of deviant driving as well as on how drivers behave in relation to those meanings. In this chapter three theories will be discussed; namely labeling, phenomenological and conflict.

3.2.2.1 ***Modern perspectives of deviant driving behaviour***

Modern perspectives have emerged in order to challenge the traditional perspectives which had earlier been predominant in the understanding of deviant driving. It is therefore essential to briefly examine the assumptions, beliefs and attitudes of modern perspectives.

3.2.2.1.1 *Deviant driving as a label*

It is common practice that whenever a driver violates traffic law, other people will automatically label the driver a deviant or traffic offender. In studying traffic law enforcement, a huge lack of consensus can be found as to whether traffic offences are really offences, and whether traffic offenders ought to be seen as real (criminal) offenders (Khoza 1993:36-37). Traffic officers may disagree among themselves as to whether a traffic offender should be arrested and judicial officers (magistrates) may disagree as to whether those charged should be convicted or acquitted. This clearly indicates the principle of relativity in the consideration of deviant driving: driving gets defined as deviant relative to a given norm, standard

way of driving a motor vehicle.

3.2.2.1.2 *Deviant driving as a subjective experience*

Deviant driving is subjective experience and the supposedly deviant driver is a conscious, feeling, thinking and reflective subject (Thio 1983:18). It is therefore appropriate to use an objective approach by staying aloof from deviant drivers by exclusively studying the external aspects of deviant driving; and by relying upon a set of preconceived ideas for guiding their study. The danger is the result of a collection of surface facts about deviant drivers such as their poverty, lack of education, poor self-image and low aspirations. What is of cardinal importance about a deviant driver is how he or she drives in his or her daily driving activities and what he thinks about anxious and aggressive driving tendencies. In order to understand the life of a deviant driver researchers need to use the subjective approach which may require their appreciation for and empathy with the deviant driver. The objective of this subjective approach, in Matza's words,

"is to comprehend and to illuminate the subject's view and to interpret the world as it appears to him" (Matza 1969:25).

Merton (1972:17-18) argues that subjective data are extremely unreliable because people tend to glorify the group of which they are members.

3.2.2.1.3 *Deviant driving as a voluntary act*

The premise here is that deviant driving is a voluntary act or an expression of human volition or choice (Thio 1983:20; Neser 1993:21-22). The

fundamental point is that drivers because they possess free will and choice-making ability, determine or cause their own deviant driving behaviour.

3.2.2.2 ***Modern theoretical explanations***

The behavioural area of deviant driving behaviour denotes that it is essential to examine modern theoretical explanations. These theories account for the meaning of deviant driving behaviour.

3.2.2.2.1 *Labeling theory*

Conflict theory asserts that people will be at odds with one another because their values differ and their interests are divergent. After gaining power and translating their normative and value preferences into rules governing institutional life, they are then in a position to successfully place negative labels on traffic law violators. Labeling theorists have used this perspective to develop what has been termed labeling theory (McCaghy 1985:79; Glick 1995:178; Williams III & McShane 1994:133). The labeling theory was popularized by Howard Becker. The nature and consequences of traffic-law making and traffic law enforcement are the bases of the labeling, societal reaction or interactionist perspective (Khoza 1993:187). Becker (1963:9) opines:

“Societal groups create deviance by making the rules whose infraction constitutes deviance, and by applying those rules to particular people and labeling them as outsiders. From this point of view, deviance is not a quality of the act the person commits, but rather a consequence of the

application by others of rules and sanctions to an 'offender'.

The deviant is one to whom that label has successfully been applied; deviant behaviour is behaviour that people so label

..."

A possibility exists that drivers may be involved in various forms of deviant driving without other drivers' knowledge. If their deviant driving becomes known, they may be labeled by other drivers as deviant drivers.

The stigma of the deviant label may render drivers "outsiders". It is thus the reaction to deviant driving behaviour that creates it. It is also problematic to explain how deviant drivers are chosen and labeled. To explain this problem, Becker (1963:19-22) refers to four types of deviant (driving) behaviour:

- falsely accused;
- pure deviant;
- conforming; and
- secret deviant.

Falsely accused deviant driving acts are those that either did not exist or were actually conforming but the community members reacted as if the driving were deviant.

Conforming and pure deviant driving acts are those in which perceptions match the reality of the deviant driving act.

Secret deviant behaviour implies that deviant driving has indeed occurred but the community members drivers ignored traffic law violations.

Williams III and McShane (1994:136) consider labeling as a cause of deviant (driving) behaviour. This may take two forms. Firstly, the attention of the community may be caught and thus the community may continue labeling the individual (driver) as deviant; and secondly, the label may be internalized by the driver and thus leading to an acceptance of deviant driving self-concept. The danger of this may be that of creating a career deviant driving (Thio 1983:60). This subsequent reaction is that drivers who have been so labeled may become more visible in the sense that people are aware of them. It is this awareness which often causes them to be watched more closely. Traffic officers closely watch deviant drivers once they come to their attention (Williams III & McShane 1994:136-137). Drivers who have been identified as deviant may have fewer chances to make good progress in the conventional world. The implication is that conventional avenues to success may be often cut off, and illegal means (deviant driving) may become the only way left open to them. It may be argued that people who commit traffic offences are probably because they have very few legitimate opportunities available to them to get a job, to have money in order to learn proper driving behaviour at driving schools, to acquire a driving licence to avoid driving and to repair a defective motor vehicle (Khoza 1993:71).

3.2.2.2.2 *Phenomenological theory*

Thio (1983:66) avers that a phenomenological theory concerns itself with the deviant driver's reaction to their own behaviour. Phenomenologists attack positivists who take an objective and deterministic approach to deviant driving behaviour. In this context, the deviant driver is viewed as a person whose behaviour is determined by various forces beyond his or her control. Positivists, therefore, focus their attention on the causal factors;

thus ignoring how the deviant driver thinks and feels about his or her deviant driving experience (Thio 1983:66; Williams III & McShane 1994:31). The phenomenological theory concentrates on the immediate experience and consciousness of the deviant driver. In order to understand what the real phenomenon is, it is appropriate to undertake research on the driver's subjective experience, to discover how the deviant driver feels and what he or she thinks about his or her deviant driving experience. Thio (1983:67) opines:

"Thus deviant reality is the subjective meaning that the deviant person imputes to his or her own deviant experience."

Therefore, according to phenomenologists, the driver's subjective experience constitutes the real phenomenon of deviant driving. The phenomenologist's commitment to the subjective view is not absolute. This implies that sometimes it is not possible to always concur with the driver's own interpretation of his or her deviant driving experience. This danger or pitfall is that taking the driver's interpretation at face value may distort the deviant driving reality, because the driver may not know who he or she is talking about. Thio (1983:69) remarks that phenomenologists

"... must objectively observe and analyze that experience to turn it into scientific data to be used in constructing and testing scientific theories ..."

It is for this reason that the researcher will endeavour to elicit responses in as far as anxious and aggressive driving are concerned. Anxious and aggressive driving experiences on the part of drivers may be associated

with deviant driving and may be related to deviant driving-concept.

3.2.2.2.3 *Conflict theory*

Deviant drivers are manifestations of the failure of society to meet the needs of drivers (Glick 1995:174). Conflict theory is based on the idea that many social values related to driving conflict with one another and that these value conflicts are the root of much deviant driving. The conflict perspective assumes that the basic form of social interaction is competition and this competition may manifest itself in aggressive deviant driving. Conflict theory focuses on such issues as who makes traffic laws. Therefore, central to the conflict perspective are the ideas of power and dominance (Williams III & McShane 1994:157; Glick 1995; Thio 1983:75). Vold (1958) produced a theory that emphasizes the group nature of society and the various competing interests of those groups. He observed that

“groups come into conflict with one another as the interests and purposes they serve tend to overlap, encroach on one another, and become competitive” (Vold & Bernard 1986:272).

Vold went on to highlight the presence of conflict in (traffic) criminal law, stating that

“the whole process of law making and law enforcement directly reflects deep-rooted and fundamental conflicts between group interests and the more general struggle among groups for control of the police power of the state

(Vold & Bernard 1986:274).

Austin Turk (Thio 1983:73-74; Williams III & McShane 1994:159-160) endeavoured to find out how people come to acquire (deviant driving) criminal status and this theory is known as (traffic) criminalization. His original concerns were to specify the conditions under which an individual (driver) would be defined as a criminal (deviant driver) in an authority-subject relationship. This concept of authority-subject relationship remains important in Turk's writings (Turk 1969; Turk 1976:276-291). The most important forms of control are physical force or coercion and subtle control which is represented by the control of traffic legal images. Turk (Thio 1983:74) avers that the probability of criminalization (deviant driving) is contingent upon the following conditions:

- (a) If the traffic law itself can come to be seen as highly significant than people, traffic officers are likely to assign deviant driving status to the drivers who violate the National Road Traffic Act (Act 29 of 1996).
- (b) If traffic officers find drivers' legally prohibited behaviour to be prevalent, drivers are likely to be treated as deviant drivers.
- (c) If the traffic authorities have greater power difference, there will be greater probability of deviant driving because drivers may display some resistance to traffic law enforcement.
- (d) The success of either traffic justice authorities or deviant

driving population is contingent upon realistic (reactive) actions.

Realistic actions on the part of traffic officers may involve avoiding the use of brutal force, thus showing respect for normal traffic legal procedure. Further, traffic officers will do whatever they can to prevent deviant driving behaviour.

Quinney (1970:15-23) questioned the definitions of crime and the legal process being offered by other authorities. Thus, he integrated his ideas and those of other theorists about society, power and criminality (deviant driving). He began to argue that social reality of crime (deviant driving) is merely how people perceive it. Deviant driving can thus be seen as the product of reaction to traffic legislation.

Six propositions of Quinney's theory of social reality of crime are as follows:

- definitions of crime;
- formulation of criminal definitions;
- application of criminal definitions;
- development of behaviour patterns in relation to criminal definitions;
- construction of criminal conceptions; and
- the social reality of crime (deviant driving) (Quinney 1970:15-23).

The first proposition stresses that deviant driving behaviour is defined by the social reactions to it, and deviant driving is a definition of behaviour that

is "created" and "developed" by the authorities. The second proposition has its roots in Vold's ideas that

"whichever group interest can marshal the greatest number of votes will determine whether or not there is to be a new law to hamper or curtail the interests of some opposition group" (Vold 1958:208-209).

Regarding proposition three, Vold (1958:209) opines

"... those who produce legislative majorities win control over the police power and dominate the policies that decide who is likely to be involved in violation of the law."

The fourth proposition relies on the differential association theory of deviant driving (Vold & Bernard 1986:279). The last two propositions are based on the notion of socially constructed deviant driving (Glick 1995:176-177; Williams III & McShane 1994:162; Thio 1983:77). This implies that deviant driving is the product of traffic legal definitions constructed through the exercise of political power. Deviant driving can thus be seen to refer to concrete happenings that drivers personally experience. It can also refer to conceptions of social reality that are created and communicated to individual deviant drivers through various forms of interaction such as the media. The possibility exists that individuals might not think about the fact that definitions have been constructed for them.

3.2.2.2.4 *Power theory*

The positivistic approach emphasizes the concept of social constraint. In this context, individuals are regarded as objects at the mercy of forces beyond their control (Thio 1983:83; Neser 1993:21-22). These individuals may be considered to be relatively powerless, which constitutes a deterministic approach to deviant driving behaviour. The humanistic or indeterministic concept of individual freedom portrays drivers as being rational in the decision-making processes. Therefore, these individuals may be considered powerful, and this represents an indeterministic approach to deviant driving. These two concepts highlight degrees of power. Thio (1983:84) opines

“... we can integrate these two theories by showing how the difference in the amount of power relates to deviant behaviour. Let us call the result of this integration power theory.”

The concept of social inequality can be applied in a variety of classes, e.g., rich and poor, races, gender and drivers of motor vehicles. This may result in one group being powerful and the other being powerless. Power inequality also affects the quality of driving activities. It may be argued that the more legitimate opportunities for an individual to attain success, the greater opportunities for deviant driving. This is primarily because, as Albert Cohen (1966:110) has observed that:

“... there are not some things that are legitimate opportunities and other things are illegitimate opportunities, but ... the same things are typically, and perhaps always both.”

This implies that since the powerful have more legitimate opportunities than the powerless, the powerful also have more illegitimate opportunities for deviant behaviour (driving). The argument is that the powerful may have far greater opportunities for getting good education, better salaries, social influence and prestige. This may thus be the case in as far as it affects deviant driving. The powerless may also resort to deviant driving due to greater opportunities for deviance. Deviant driving may also be due to experiencing greater subjective deprivation. The individual experiences a feeling of being unable to get what he or she wants. For instance, if one wishes to obtain a driving licence and has been unsuccessful in a number of tests, he or she may be inclined to drive without a valid driver's licence. Subjective deprivation has been referred to by Merton as anomie (Williams III of McShane 1994:90; Thio 1983:86).

3.2.3 **Theoretical Explanations of Aggressive Driving Behaviour**

Aggression refers to the behaviour that results in personal injury and physical destruction. Aggression also refers to a complexity of events that lead people to be involved in various forms of deviant driving. Theories of aggression rest on different assumptions about the nature of aggression, and hence, vary in their emphasis on unlearned or learned components, internal or external determinants, and affective or cognitive processes. They therefore differ in how they address the critical questions of how deviant driving tendencies are acquired, maintained, and regulated, and how acts of aggressive driving are "triggered" or provoked (Feist & Feist 2002:31-33; Shaffer 2000:272).

2.2.3.1 ***Biological theories***

Blackburn (1994:216-217) maintains that aggression depends on inborn

structural properties of the brain and musculature. Biological theories assume that this co-ordination is under the control of innate and specific neurochemical systems. Theories of this nature describe aggression as determined by a driving force within man, and can therefore be called intra-psychic theories (Blackburn 1994:216). Lorenz (1966) and Blackburn (1994:217), through ethological studies of lower vertebrates, proposed a universal instinct of aggression which ensures population control. He carried out animal studies, using mostly fish and birds as subjects. He uses the term "aggression" to refer only to fighting among members of the same species. He excludes predation. He sees aggression as an instinct, fulfilling important biological functions in the service of survival of the species. In the present study, aggressive driving is considered as an instinct, fulfilling important functions in the service of survival of vehicle drivers. Lorenz, therefore, postulates that a constant need to discharge aggressive energy governs human behaviour in general. Aggressive driving behaviour expresses a universal emotional predisposition, but is subject to cultural adaptation and individual learning (Feist & Feist 2002:33; Shaffer 2000:277-279). Aggressive driving can be seen to be an adaptive reaction to threats to survival on the road.

3.2.3.2

Psychological theories

Psychological theories of aggression describe man as aggressive by nature (Van der Westhuizen 1982:83; Shaffer 2000:274-277; Feist & Feist 2002:31-32). They also focus on how aggressive driving is channelled and controlled in the course of the deviant driver development and how it is accommodated and regulated by internal mechanisms of the ego and superego (Blackburn 1994:219).

Freud (Feist & Feist 2002:31) saw male sexual behaviour as necessarily incorporating a tendency towards overpowering the female, and hence the affinity between sex and sadism. Freud later replaced the ego theory (Van der Westhuizen 1982:84). The implication is that the ego is pressurized by the id and is responsible for all drive satisfaction and survival of the driver. According to Freud, man's behaviour is caused by two basic drives (instincts): eros (or the life drive) and thanatos (the death or destructive drive) (Blackburn 1994:219; Feist & Feist 2002:31-33; Shaffer 2000:274-275). The death drive is destructive and it continually strives to break down the structures built up by the eros. The aim is to lead the individual to death. A notable fact is that the self-destructive drive immediately comes into conflict with the constructive life of the driver. This then causes the death drive to be turned outwards. Therefore, the death drive, displaced from the self to external objects, is the cause of aggressive behaviour (driving). The driver is somehow forced to consume his aggressive energy in some form or another, because unconsumed energy may be turned back towards the driver himself; in this case it can take the form of severe guilt feelings, various kinds of self-penalization and suicide (Van der Westhuizen 1982:85). Aggressive driving can also be considered as a reaction to frustrating situation(s) on the road. The notion of catharsis, i.e., the purging of aggressive tension by means of direct or substitute expression features appropriately in accounting for aggressive driving behaviour (Blackburn 1994:219). This underpins the popular view that suppression of anger is unhealthy for the driver, and that vigorous competition dissipates aggressive driving.

It should be noted that in the "healthy" driver, ego control modifies aggressive feelings and prevents aggressive driving. In deviant drivers, ego weakness results in the repression of aggression and its expression in

aggressive driving. A "healthy" personality would include the following manifestations or characteristics:

- adequate feelings of security;
- adequate self evaluation;
- adequate spontaneity and emotionality;
- effective contact with reality;
- adequate physical desires and the ability to satisfy them;
- adequate self-knowledge;
- adequate integration;
- adequate goals in life;
- ability to learn from experience;
- ability to comply with the demands of the community; and
- capacity for adequate emancipation from the group (Feist & Fesit 2002:31-33; Shaffer 2000:272-275).

Learning and cognitive theories see aggressive driving as acquired and maintained according to the driver's history of direct and vicarious reinforcement and penalization (Blackburn 1994:220). Social cognitive theories incorporate social influences and deviant driving behaviour, but give primacy to individual factors. Aggressive driving behaviour can also be understood by referring to the social context and meaning of deviant driving. Felson (1978:205-213) proposes that aggression is a means of impression management, which restores one's threatened identity.

3.2.4 **Theoretical Explanations of Anxious Driving Behaviour**

Anxiety is one of the most important concepts in deviant driving. It plays an important role in the development of the deviant driver personality as well as in the dynamics of the deviant driver personality functioning. Fear is as old as human existence and belongs to no particular era or culture. The capacity to experience fear is an inheritance from our infrahuman ancestors. The purpose of the theories of anxiety is to explain the existence of an observable phenomenon (deviant anxious driving) whose cause is not yet fully known.

3.2.4.1 ***Biological theories***

Naturally, one may be inclined to ask what happens to a driver when confronted with a dangerous driving situation. The implication is that anxiety can be interpreted biologically (May 1977:52-53; Feist & Feist 2002:162-163; Fischer 1970:50-56). With regard to the question of that about which people are anxious, it can be considered that anxious driving can be equated with fear. An explanation of what makes people (drivers) anxious will be given in chapter six. Fischer (1970:57) avers that it has also been observed that anxious driving involve the activity of particular areas of the central nervous system, the secretion of hormonal substances and the arousal of the deviant driver. A driver is thrown into a catastrophic traffic condition: when he or she cannot cope with the demands of the traffic environment and therefore feels a threat. The catastrophic traffic condition must not be seen as always referring to high emotional intensity. It may come with just deviant driving though running through one's mind of a threat to his existence. The degree of intensity is not the issue; it is a qualitative experience. A threat of pain causes catastrophic traffic condition and consequently anxious driving (May 1977:59). It is natural

that when a driver is subjected to threat, bodily changes occur which prepare the driver for anxious driving. This implies fighting or fleeing from the dangerous traffic conditions. The bodily changes induced through activity of the autonomic nervous system are known to everyone in his or her own experiences of (anxious) driving.

3.2.4.2 ***Psychological theories***

Anxiety is the fundamental traffic phenomenon and the central problem of deviant driving. It is crucial to note how the driver interprets the threat. Freud (Feist & Feist 2002:27-30; Levitt 1967:40; May 1977:126-129) conceptualised the structure of the human personality as being composed of three parts: the id, the ego and the superego.

The id represents the biological or "instinctual" drives including sex, aggression and hunger. The ego is the aspect of the personality which is attuned to reality. The superego is equivalent to the conscience and is strictly a social creation. Its development is a consequence of conflict between the id and ego. According to Freud, the first experience of anxiety in human life occurs at birth. Therefore, the first experience of anxious driving occurs at the early driving lessons. This primary anxiety, arising from a circumstance which is a basic threat to the survival of the driver, sets the pattern for all subsequent anxious deviant driving reactions.

3.2.4.3 ***Cultural theories***

The probability exists that the occasions of the driver's anxiety may be conditioned by the standards and values of his or her culture (May 1977:172). By occasions is meant the kinds of motor vehicle driving

threats which cue off anxious driving and these are largely defined by the culture in which the driver lives. Anxious driving is a function of the beliefs accepted in the culture superimposed on the actual danger situation.

The driver's anxiety may be conditioned by the fact that he lives in a given culture at a particular point in the historical development of that culture. This brings in the genetic, long-term, developmental background of the patterns which are the occasions of contemporaneous deviant driving in particular. The understanding of the historical development of the modern driver's character structure is as necessary for an understanding of contemporaneous anxious driving as an analysis of deviant driving factors is to the understanding of anxious driving (Feist & Feist 2002:162-163; May 1977:186-187).

3.3 THEORIES RELEVANT TO THE STUDY

The search for the explanation of deviant driving behaviour is complex and no single theory can explain, nor specifically be determined and applied in all cases. It is therefore, appropriate to reject the "either/or" approach in favour of drawing together the most useful and tenable features of major theories. This will result in incorporating them into a coherent conception of deviant driving behaviour causation model.

In the present study, causal models (independent variables) constitute various measures of deviant driving behaviour. Following is a brief elaboration of the measures.

3.3.1 Gender and Deviant Driving Behaviour

Sex and gender are important concepts. Sex is a nominal variable for which male and female constitute categories. Sex differences are physiological features

related to procreation, i.e., biological reproduction. Gender differences are socially constructed. The concept of gender is based on cultural interpretation of sex differences (Hess & Ferree 1987:34; Doyle & Paludi 1998:4). The concept "gender" is therefore used when discussing the social, cultural and psychological aspects pertaining to characteristics, norms, stereotypes, and roles of women and men. The relationship between gender and deviant driving can be analysed from various theoretical angles and differential analysis can be effected. The strain theory suggests that the goals and means are culturally determined for males and females (see paragraph 3.2.1.2.1). Morris (1964:82-89) maintains that studies also suggest that financial success is not a goal for most females who seek, culturally, fulfilment in marriage and affective relationships. Consequently, females would report less deviant driving behaviour than males (Elliott 1988:3).

Lombroso (1911), Thomas (1923) and Pollak (1950) ascribed male-female differential rates to the females' psycho-biological "inferiority". It should be noted that these theories have been discarded in favour of theories that either employ the radical approach or explain deviant driving behaviour of women on similar theoretical basis as male deviant driving behaviour (Hagan 1988).

ANOVA and Chi-square statistics have been employed to measure gender differences in respect of deviant driving behaviour scales (see chapter 4, Table 4.1). Further, differential analyses of deviant driving behaviour would be established in accordance with race, marital status, type of employment, regularity of driving and type of motor vehicle.

3.3.2 Age and Deviant Driving Behaviour

Age is a neutral concept which obtains its legal, economic, socio-cultural and socio-psychological significance when correlated with deviant driving behaviour

scales. Desistance theories have sought to explain the relationship between age and crime (deviant driving) (Baldwin 1985:1326-1329; Greenberg 1977:189-223; Shover 1985). These theories have explained the linear relationship between age and crime (deviant driving). To a large degree these theories have provided a base for the explanation of this relationship.

The sample of the present study consists of respondents aged between 18 years and above (see Annexure A, Q.3). The linear relationship between deviant driving and respondents' age, education, income, duration of passing a driving test and years vehicle driven would be established (see Chapter 5). Spearman Rank-Order Correlation Coefficient (ρ) will be used to establish relationships.

3.3.3 **Aggressive and Anxious Driving Behaviour**

Theoretical explanations of aggressive and anxious driving behaviour have been accounted for in paragraphs 3.2.3 and 3.2.4 of this chapter. Theories of aggressive and anxious driving behaviour highlight the fact that aggression and anxiety are contributory factors in deviant driving. Researchers (MacMillan 1975; Parry 1968) have found that drivers who are aggressive and anxious do commit traffic offences (deviant driving).

The present study examines aggressive and anxious approaches to driving by testing the null hypotheses: "drivers displaying aggressive and anxious driving behaviour are not inclined to commit traffic offences." Chi-square statistics will be used to analyse certain aspects relating to driving experience. This analysis will be effected in relation to manifestation(s) of deviant driving behaviour, namely:

- offensive driving scale;
- document offences scale; and

- vehicle defects scale (see Chapter 6).

3.3.4 **Traffic Policing**

Deviant driving behaviour can affect the stability of the community. Effective traffic control measures can play an important part in the maintenance of order on (public) roads. Social control theories have laid an emphasis on the significance of controlling deviant driving (Hirschi 1969; Nye 1958; Johnston 1992; Reiss 1971; Wilson 1968; Leonard & More 1982).

In the present study, various aspects of traffic control will be discussed in chapter seven. Differences in the rating of certain selected aspects relating to traffic policing will be analysed in the same chapter.

3.4 **SUMMARY**

Theories discussed in this chapter blend in at many traffic-related issues. Deviant drivers think and act on the basis of several theories, thus emphasizing different theories in different concrete motor vehicle driving situations. Each person may have different attitudes toward different kinds of deviant driving. It has perhaps become more apparent by now that these various theoretical explanations of deviant driving are important because they shape the societal reactions that shape deviant drivers. In this chapter three major traditional theories of deviant driving behaviour are discussed, all of which focus on the causes of deviant driving. Anomie (strain) theory comments on extreme emphasis on cultural goals and accompanying cultural messages that assert the significance of striving for those goals. Unless the means to reach those goals are equitably distributed in society the overemphasis on goals and inequality of means will result in socially structured and patterned rates of deviant driving. The National Road Traffic Act (Act 29 of 1996) is so clear-cut that the distinction between obeying it

(conformity) and violating it (deviant driving) can be easily established. Differential association represents a theory of social process rather than of social structure. The theory states that an individual will become a deviant driver if he or she associates (on the road) more with other deviant drivers than with traffic law-abiding drivers. Deviant driving is based on interactions drivers have with others and the values they receive during those interactions. These values either support or oppose deviant driving. Control theory proffers that traffic control (through patrol, surveillance, formal traffic prescriptions, etc.) contributes toward law conformity.

Lack of traffic control causes deviant driving. Reckless refers to this causal factor of conformity as containment, Nye as social control and Hirschi as bond to society.

Modern theories of deviant driving deal mostly with the meaning of deviant driving and with the impact of the meaning of deviant drivers' behaviour. According to the labeling theory, parties in power apply the deviant driving label to traffic law violators. The deviant driving-label produces unfavourable consequences for the driver so labeled; and labeling others as deviant drivers generates favourable consequences for the individual, groups or communities that do the labeling. The phenomenological theory can cut into the heart of deviant driving experience with the scalpel of subjective interpretation and phenomenological reduction. The theory offers a much needed subjective version of deviant driving behaviour. Conflict theory describes how the powerful segment of society imposes deviant driving definitions upon the powerless. Conflict may be viewed as natural and also unnatural to society. Conflict is characterized by high degree of competition for resources. It is in this framework of competition and the use of power that traffic justice and traffic law enforcement become "tools" to gain control over deviant driving. If traffic justice gains control over enough resources and is able to maintain its position long enough, the conflict may result in deviant driving.

Aggressive driving refers to a complexity of events that lead drivers to be involved in

various forms of deviant driving. Theories of aggression (biological and psychological) rest on different arguments about the nature of aggressive driving. The most important theories of anxious deviant driving are rooted in biological, psychological and cultural properties. It is evident from the exposition of these theories that anxiety plays an important role in the development of the deviant driver personality.

There are various theories which are relevant to the present study. Differential analysis of deviant driving behaviour will be effected according to gender. Additional differential analyses will include respondents' race, marital status, type of employment, regularity of driving and type of motor vehicle. Linearship theories have explained correlations, especially between age and crime (deviant driving behaviour scales). Further correlational analyses will include education, income, duration of passing a driving test and years vehicle driven. Theoretical explanations of aggression and anxiety are relevant to analyse whether or not aggressive and anxious drivers are (more) inclined to commit traffic offences (deviant driving). Control theories have emphasised the importance of maintenance of road traffic order. It will thus be essential to find out whether differences exist in the rating of selected aspects relating to traffic policing by respondents.

CHAPTER 4

DIFFERENTIAL ANALYSIS OF DEVIANT DRIVING BEHAVIOUR

4.1 INTRODUCTION

It has been hypothesised that: "Deviant driving behaviour will not differ when grouped according to gender, race, marital status, type of employment/occupation, regularity of driving, and type of motor vehicle." It is, therefore, the objective of this chapter to statistically examine the presence of such differences, if any. This step will necessitate the presentation of some statistical data (findings) to show how deviant driving behaviour differs in accordance with the demographic characteristics (predictor variables) mentioned in the hypothesis. No, every motor vehicle driver is equally involved in deviant driving behaviour or likely to be the victim of traffic crime. Deviant driving behaviour varies with demographic characteristics.

Different rates of traffic criminal activity for males and females are one of the documented in the field of traffic criminal justice (Khoza 1993). Further, the interests in gender differences in deviant driving behaviour gained momentum with the implementation of self-report studies. A notable fact is that although it appears that males continue to commit the majority of traffic crimes, females have also increased their involvement in traffic criminal activity (Khoza 1993:155).

The implementation of a self-reported survey, therefore reveals "hidden" deviant driving behaviour which traffic crime statistics has failed to expose up to now.

4.2 DIFFERENTIAL ANALYSIS OF DEVIANT DRIVING BEHAVIOUR

Deviant driving behaviour is a complex epidemiological phenomenon which embraces characteristics associated with the driver. The same behaviour may have very different consequences, depending on a number of variables such as gender, race, marital status, type of occupation, regularity of driving and type of motor vehicle. It is common knowledge that some drivers commit more traffic offences than others. It is therefore one of the aims of the present study to establish differences, if any, between deviant driving behaviour and the characteristics mentioned in the hypothesis (see paragraph 4.1).

4.2.1 Gender

Perhaps the best predictor of whether a motor vehicle driver will violate traffic laws, is *gender* (Conklin 1992:130). The appropriate use of sex and gender has probably raised the greatest controversy. There is an assertion that sex should be restricted to a person's maleness or femaleness, and gender for the social, cultural and psychological aspects that pertain to the traits, norms, stereotypes, and roles of women and men (Doyle & Paludi 1998:6; Golombok & Fivush 1994; Deaux 1985:49-81).

The terms *sex* and *gender* are often used interchangeably. However, this synonymous usage can lead to confusion. In everyday usage, sex refers to maleness or femaleness and unchangeable biological categories. In the present study the term "gender" will be employed since driving a motor vehicle is both male and female activity.

A distinction is generally made among the terms gender identity, gender role, and sexual orientation. Gender identity refers to an individual driver's concept of

himself or herself as being male or female. Gender role includes the behaviour and attitudes considered appropriate for males or females in a particular situation or culture. For instance, aggression on the road (road rage) may be viewed as a male (gender) role. Khoza (1993:155) opines: "Traditionally, males are socialised to be active, dominant, and aggressive." Sexual orientation refers to a person's sexual attraction toward a person of the opposite sex (heterosexual orientation) or the same (lesbian or gay male sexual orientation).

Gender typing and gender stereotypes are important concepts in the understanding of gender as a factor in deviant driving behaviour (Golombok & Fivush 1994:5). Typing refers to the extent to which a person conforms to prescribed male and female gender roles. Men may love rough sports, fighting, use of guns and may frequently be engaged in aggressive driving. Stereotypes are the characteristics generally believed to be typical of men and women. Stereotypes are organised sets of beliefs about characteristics of all members of a particular group. A gender stereotype then is defined as a set of beliefs about what it means to be male or female. Gender stereotypes include information about physical appearance, attitudes and interests, psychological traits, social relations and occupations.

Even though male-female differences in traffic crime rates vary from one society to another, and over time, gender is a primary factor differentiating traffic offenders from non-traffic offenders (Khoza 1993). This could be partly the result of hormonal differences that make men more aggressive than women, but it is more likely the result of differences in the socialisation of males and females (Conklin 1992:130).

While there is no doubt that according to traffic crime statistics and general impressions, the total female traffic crime rate is much lower than that of males, it

is essential to avoid the frequent mistake of studying the subject "gender differences" solely under such comparative aspects. This one-sided approach may induce the researcher to search for nothing but plausible explanations of the differential traffic crime rate and unwittingly to limit his or her attention to those factors which are likely to furnish reasons why females commit less traffic crimes than males. Chapter five will portray correlational analysis in accordance with age, education, income, duration of passing a driving test; and years vehicle driven; whilst chapter six will highlight the possible explanations of the differential gender rates in terms of the manifestations of deviant driving behaviour.

Differences between men and women allow for possible explanations of deviant driving behaviour. Many of the gender differences seem related to the different roles of men and women and the different social worlds in which they live (Conklin 1992:132). The differences can also be ascribed to physical, psychological and social factors. It is important to understand to what extent the physical health of an individual motor vehicle driver may be considered to be a factor in deviant driving behaviour. Physical health is also considered in the context of physical geography (Siegel 1989:74-76). The traffic significance of the physical environment can be examined with reference to climatic conditions. Deviant driving behaviour, especially gender differences, can be explained within the context of weather conditions. The state of physical health of each driver of a motor vehicle plays a role in the extent of involvement in deviant driving behaviour. There might be physical defects and illnesses among drivers. It is for this reason that traffic authorities emphasise that drivers should on the average be found healthy. Lack of physical strength on the part of women should not be seen as illness. This may account for the argument that women are less aggressive drivers.

Presentation and analysis of data

The Null-hypothesis for the present study is as follows:

“Deviant driving behaviour will not differ when grouped according to gender.”

This perspective is in accordance with certain research findings (Potgieter, Mqadi & Khoza 1992; Khoza 1993; MacMillan 1975; Parry 1968).

In regard to the analysis of gender differences, the analysis of variance (ANOVA) and Chi-square were employed to calculate all deviant driving behaviour scales. Presented in Table 4.1, are mean squares and F-values. In all instances the level of significance is put at 0.05.

TABLE 4.1: DIFFERENCES BETWEEN DEVIANT DRIVING BEHAVIOUR AND GENDER (N=722)

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F-value	Sig.
Deviant driving behaviour (labelling)	BG	2.059	6	0.343	1.504	0.174
	WG	163.171	715	0.228		
	T	165.230	721			
Aggression	BG	2.967	4	0.742	3.275	0.011*
	WG	162.262	717	0.226		
	T	165.230	721			
Anxiety	BG	6.110	4	1.528	6.892	0.000*
	WG	158.703	717	0.222		
	T	164.813	721			
Traffic policing	BG	0.384	4	9.595	0.417	0.796
	WG	164.846	717	0.230		
	T	165.230	721			
Offensive driving	BG	1.176	6	0.229	1.028	0.400
	WG	163.637	715	0.547		
	T	164.813	721			
Document offences	BG	3.279	6	0.226	2.414	0.026*
	WG	161.408	715			
	T	164.688	721			
Vehicle defects	BG	3.000	4	0.750	3.315	0.011*
	WG	162.230	717	0.226		
	T	165.230	721			

* $p \leq 0.05$: Significant
 BG: Between Groups
 WG: Within Groups
 T: TOTAL
 df: degrees of freedom
 Sig.: Significance level (0.05)

Figure 4.1: Gender and Aggression

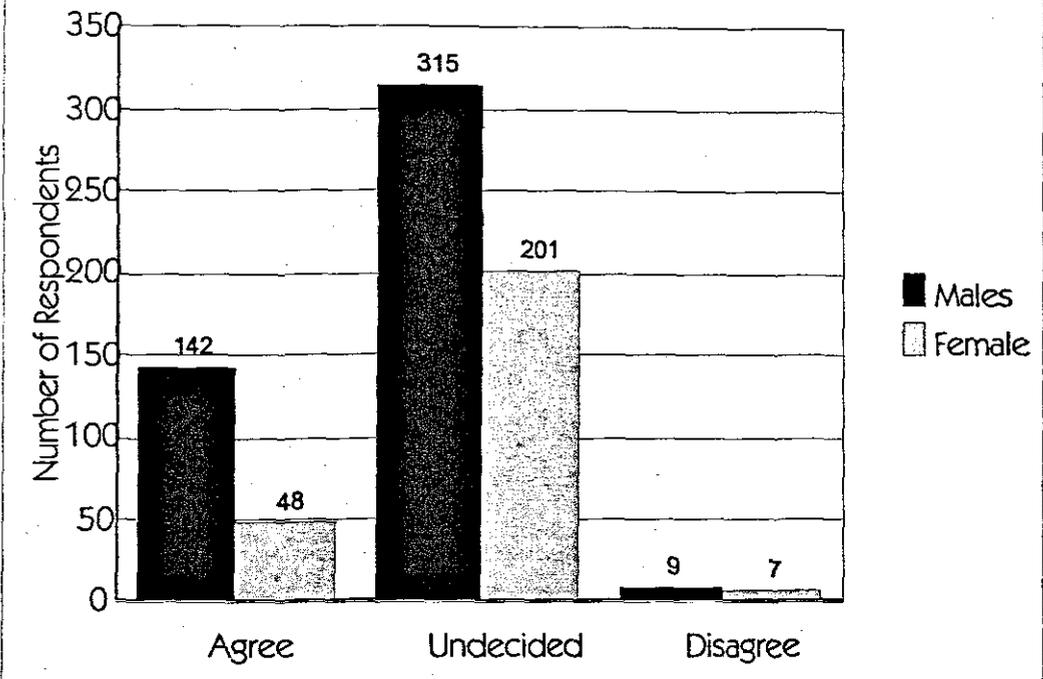


Figure 4.2: Gender and Anxiety

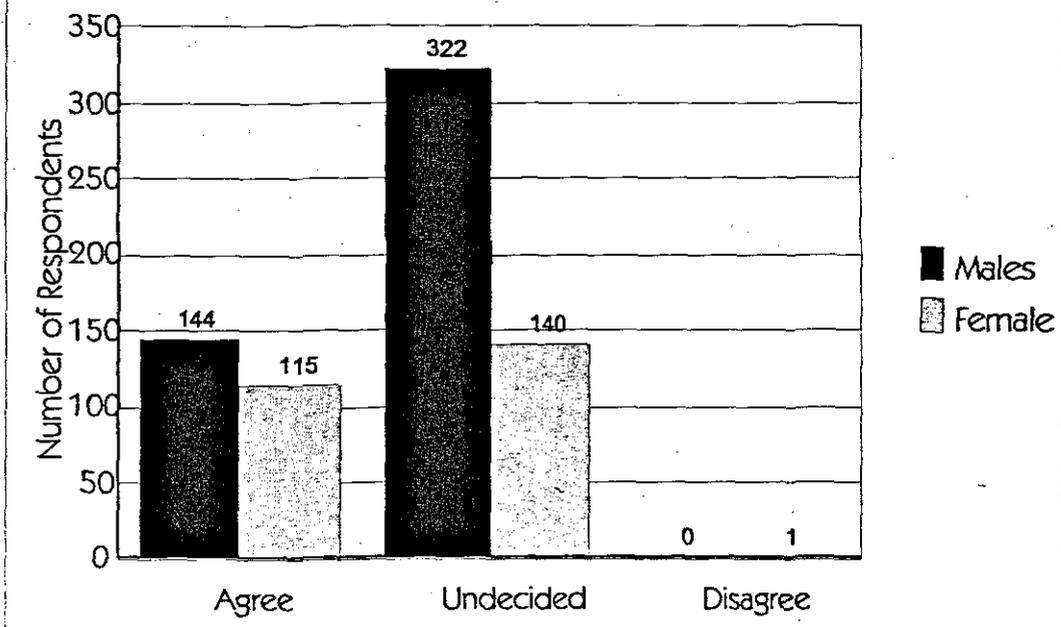


Table 4.3: Gender and Document Offences

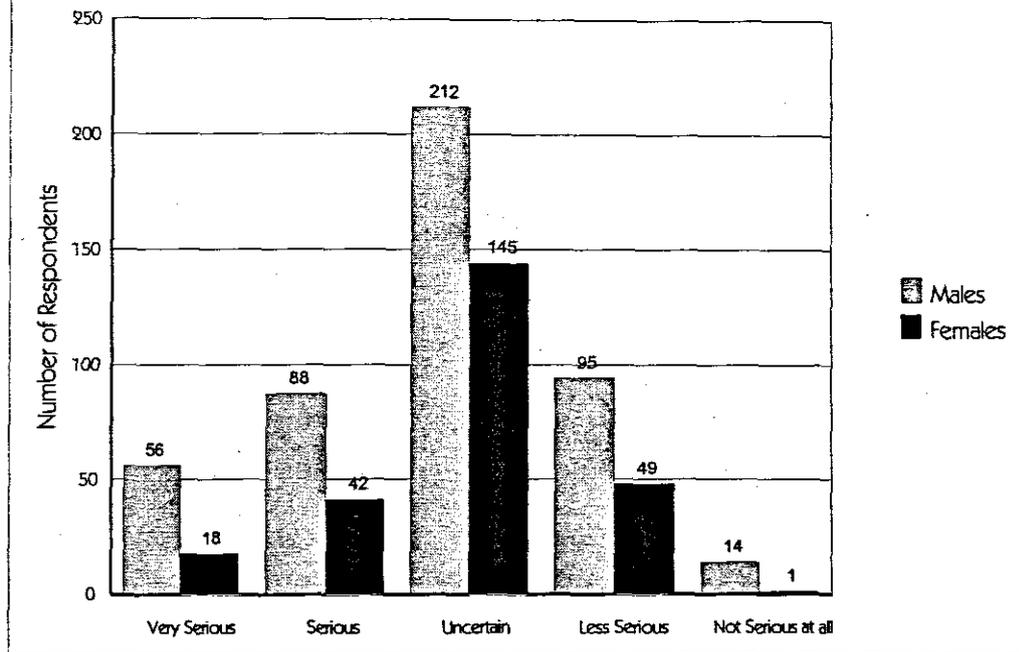


Figure 4.4: Gender and Motor Vehicle Defe

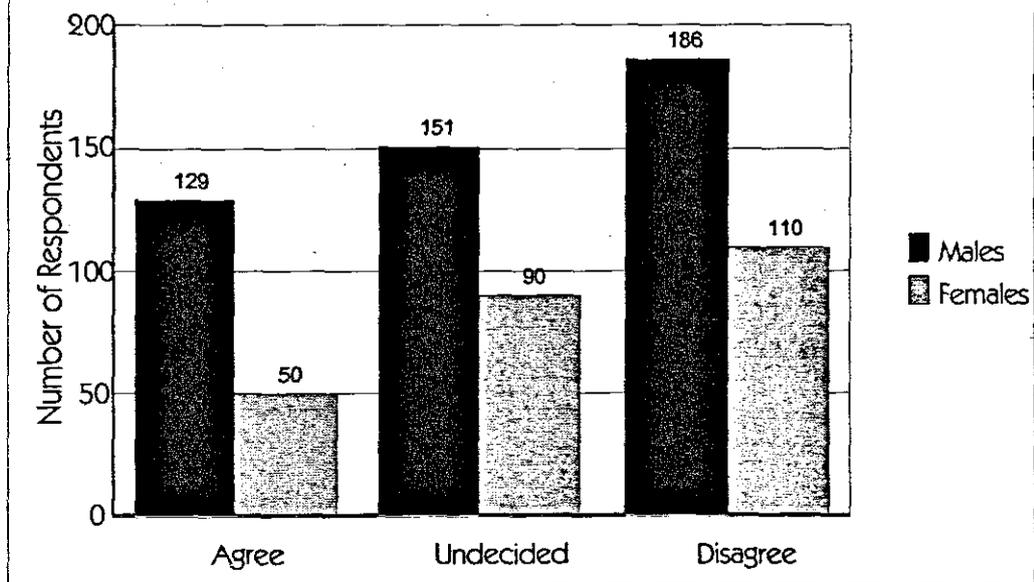


Table 4.1 clearly indicates that deviant driving behaviour differs significantly according to gender in respect of aggression, anxiety, document offences and vehicle defects. In all instances the level of significance is 0.05. The one way analysis of variance (ANOVA) statistical computations yielded the highest F-value (6.892) in respect of anxiety. All ANOVA gender differential calculations were substantiated by the Pearson Chi-square, yielded the same results (significant levels) as those of ANOVA.

Male (respondents) drivers displayed more aggression than female (respondents) drivers. In the present study, 30.0 percent of males accounted for aggressive driving behaviour whilst only 19.0 percent of females reported aggressive behaviour on the road.

Female drivers are more anxious than male drivers. This is substantiated by the fact that 45.0 percent of females reported the highest anxious approach to driving, whilst only 31.0 percent of males reported the lowest anxious driving behaviour.

Differences also exist in respect of the violation of traffic laws, namely the so-called "document offences". A portion of the sample, 23.0 percent of males rated the commission of document offences as not serious; whilst 20.0 percent of females perceived such violations as not serious.

The driving population displayed deviant driving behaviour by being in disagreement with the imposition of severe penalties for various motor vehicle defects (43.0% females and 40.0% males respectively).

Table 4.1 reveals no differences on three scales: deviant driving behaviour, the rating of selected aspects relating to traffic policing and offensive

driving. The Null-hypothesis is therefore rejected and the research hypothesis stating that "deviant driving behaviour differs when grouped according to gender in respect of aggression, anxiety, document offences and vehicle defects", is accepted.

4.2.2 Race

Omi and Winant (1986:68) opine that *race* is conceptualised as an unstable and decentred complex of social meanings, constantly being transformed by political struggle. The concept "race" should be understood in relation to the dynamics of culture. It has been around the definition and significance of culture that some of the disagreements and disputes in the field of multiculturalism and anti-racism have been expressed (Donald & Rattans 1992:1). Culture therefore refers to the processes, categories and knowledge through which communities are defined as how they are rendered specific and differentiated.

The concepts "race and culture" play an important part in the differential analysis of deviant driving behaviour. Clashes between different cultures can arise without local changes in the composition and structure of the driving population. On the other hand, such changes may occur without causing culture conflicts. Such conflicts may persist and give rise to deep-rooted antagonisms and serious outbreaks of deviant driving behaviour. Culture conflicts are conflicts of meanings, namely social values, interests and norms. Further, such conflicts are sometimes regarded by-products of the growth of civilisation and therefore they may be studied as mental conflicts or as clashes of cultural codes. Conflicts may arise through the introduction of road traffic legislation.

Race is a matter of the distribution of genes in populations of the human species (Donal & Rattansi 1992:3; Conklin 1992:139; Siegel 1989:77). The existence of

different cultures is evidence that driving populations of varying sizes have lived in relative isolation from one another. Variations in traffic crime by racial group reflect social, cultural and economic differences among the drivers of motor vehicles. The race factor appears to be an important aspect in deviant driving behaviour. Differences in deviant driving behaviour according to race may often be explained by referring to different factors such as adverse social, economic and educational conditions (Dekeseredy & Schwartz 1996:105). Racial differences in the traffic crime rate is an extremely sensitive issue. For instance, being a member of a specific race group, is, in itself, not a stimulus to deviant driving behaviour. All what can be observed, is that the causes of deviant driving behaviour are not equally distributed among races highlighted in the present study (see Annexure A). The explanation for race differences in deviant driving behaviour should be sought in social, economic, cultural and other similar factors, rather than in inborn qualities and tendencies (Siegel 1989:77-78).

Official traffic crime statistics may be suspected of reflecting discriminatory (differential) traffic law enforcement. Circumstances and factors that could be related to deviant driving behaviour may include the following: cultural background and general level of social development and civilisation; culture conflict; conflict with traffic prescriptions; the social place, role and status of the individual driver and the group.

4.2.2.1 ***Presentation and analysis of data***

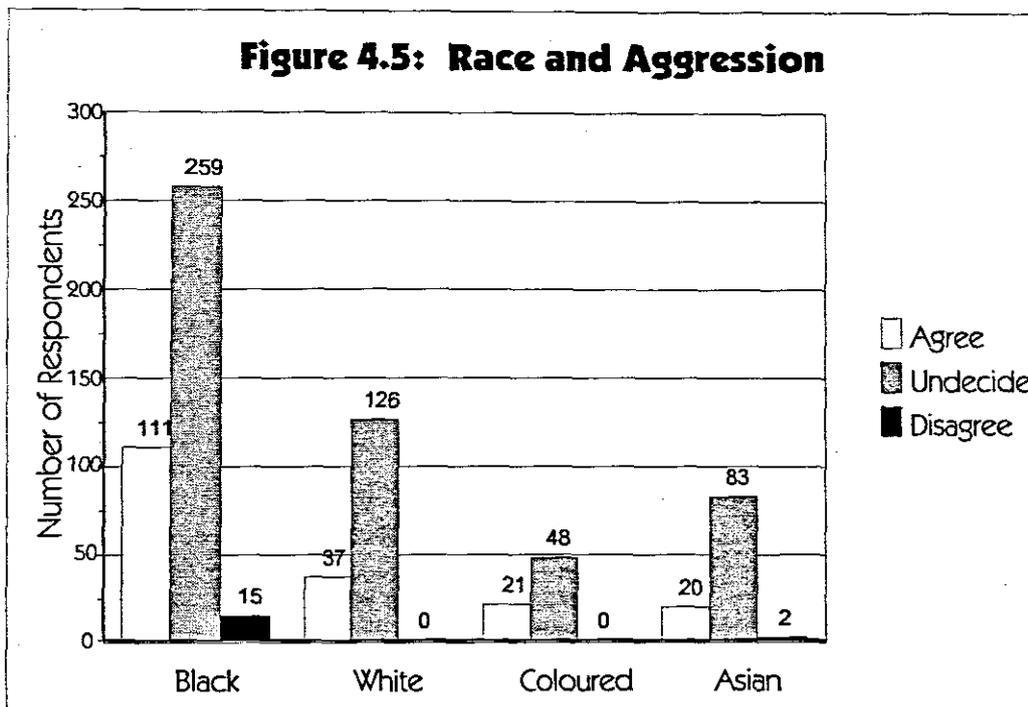
The general attitudes of society toward racial groups might add to the difficulties in dealing with deviant drivers. Table 4.2 portrays the hypothetical reasoning underlying the following Null-hypothesis:

“Deviant driving behaviour will not differ when grouped according to race.”

TABLE 4.2: DIFFERENCES BETWEEN DEVIANT DRIVING BEHAVIOUR AND RACE (N=722)

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F-value	Sig.
Deviant driving behaviour	BG	6.946	6	1.158	0.958	0.453
	WG	864.074	715	1.208		
	T	871.019	721			
Aggression	BG	11.182	4	2.796	2.331	0.055*
	WG	859.837	717	1.199		
	T	871.019	721			
Anxiety	BG	7.623	4	1.906	1.583	0.177
	WG	862.086	717	1.204		
	T	869.789	721			
Traffic policing	BG	4.622	4	1.155	0.956	0.431
	WG	866.398	717	1.208		
	T	871.019	721			
Offensive driving	BG	12.952	5	2.590	2.160	0.057*
	WG	857.335	716	1.199		
	T	870.286	721			
Document offences	BG	15.899	6	2.650	2.209	0.040*
	WG	855.079	715	1.199		
	T	870.978	721			
Vehicle defects	BG	8.143	4	2.036	1.692	0.150
	WG	862.876	717	1.203		
	T	871.019	721			

* $p \leq 0.05$: Significant
 BG: Between Groups
 WG: Within Groups
 T: TOTAL
 df: degrees of freedom
 Sig.: Significance level (0.05)



ANOVA calculations reveal that racial differences exist in respect of deviant driving behaviour in accordance with:

- aggression
- offensive driving and
- document offences.

Chi-square computations yielded different significant levels:

- deviant driving behaviour : 0.003*
- aggression: 0.001*
- anxiety: 0.148
- traffic policing: 0.013*
- offensive driving: 0.238
- document offences: 0.000*

- vehicle defects: 0.020*
(* $p \leq .05$: Significant)

Deviant driving behaviour differs significantly (0.003*) in terms of race and is accounted for as follows: Black respondents: 26.0 percent; White respondents: 13.0 percent; Coloured respondents: 36.0 percent; and Asian respondents: 24.0 percent. Coloured respondents reported the highest deviant driving behaviour; whilst White respondents reported the lowest.

Aggressive driving behaviour differs significantly (0.001*) in terms of race. Cross-tabulations yielded the following results: Black respondents: 29.0 percent; White respondents: 23.0 percent; Coloured respondents: 30.0 percent; and Asian respondents: 19.0 percent. Once again, Coloured respondents reported the highest aggressive driving behaviour; whilst Asian respondents reported the lowest.

The data on the rating of selected aspects relating to traffic policing will be presented in Chapter 7. It is apparent that respondents of different races rated those aspects differently (0.013*).

Coloured respondents featured predominantly in respect of offensive driving behaviour (0.057*) and are accounted for in 52.0 percent. Offensive driving behaviour was reported by 51.0 percent of the Asian and 37.0 percent by Black respondents. White respondents (29.0%) reported the least forms of offensive driving behaviour.

Deviant driving behaviour responses were also elicited by the rating of statements (as serious or not serious), relating to document offences. Black

respondents (28.0%) featured predominantly, and Whites (7.0%) the least visible in their rating of document offences as not serious, compared to the rating by the Asian and Coloured respondents (23.0% respectively).

Deviant driving behaviour was also measured by the extent of disagreement with the imposition of severe penalties for various motor vehicle defects. Black and Coloured respondents (46.0% respectively) outnumbered all the other respondents in their scores relating to their disagreement with regard to penalising such traffic law violators. Disagreement was also reported by 41.0 percent Asian respondents.

White respondents (28.0%), on the other hand, reported the lowest disagreement in regard to penalising motor vehicle drivers for vehicle defects. It is therefore evident that deviant driving behaviour differs when grouped according to race within the context of deviant driving behaviour, aggression, driving offences, document offences and vehicle defects. The Null-hypothesis is, therefore, rejected.

4.2.3 **Marital Status**

"Marriage" and "family" are thought of as synonymous terms, but strictly speaking, they are not the same. Marriage may be defined as an institutionalised mating arrangement between human males and females (Naas & McDonald 1982:5). It usually involves a public ceremony of some kind to signal co-operation and the expectation of permanence. The term "family" refers to a social group having specified roles and statuses (for example wife, husband, son, daughter) with ties of blood, marriage or adoption who usually share a common residence and co-operate in the field economics. Marriage is the institutionalised means of legitimising offsprings whereas the family is the institutionalised means of rearing

children.

A notable fact is that the concept "marital status" is linked up with a specific type of marital relationship within the context of marriage. In other words, marital status signifies the specific status: married, single, widowed, separated or divorced (Aiken 1995:208-217). Happiness and unhappiness may be observed in marital relationships. Unhappiness may thus produce "deviant" drivers; whilst happiness may produce "healthy" drivers. Some marriages survive to celebrate a golden wedding, whilst some marriages last into old age and are characterised by higher levels of companionship, emotional gratification and marital satisfaction. A marriage is not necessarily a happy venture, simply because a married couple stay together. They may remain incompatible but unseparated for years, living under an "armed truce" and finally divorce or separate later on in their lives. The couple who are dissatisfied with their marriage may wait until their children (if any) leave home to separate and divorce (Aiken 1995:212).

Widowhood is another form of marital status featuring in the present study (see paragraph 4.2.3.1). The rationale for the gender difference in the incidence of widowhood is based on the reasoning that men die at a younger age than women, they tend to marry women who are younger than they are and when widowed, they are more likely to terminate their widower status by remarrying fairly soon (Aiken 1995:212). Consequently, widowhood may be viewed as primarily a status of women. Problems of adjusting to the loss of a spouse are often far more worse for a woman than for a man. Her income, social life and standard of living may decline. All these factors may contribute to deviant driving behaviour among those who are licenced to drive a motor vehicle.

The status of singlehood signifies that men and women respondents had never been married. Others simply prefer to remain unattached, and still, others view

singlehood as a temporary state to which they involuntarily and regretfully resign themselves (Aiken 1995:217; Naas & McDonald 1982:477-478). Remaining single by choice is a surprising trend in a society where marriage not only has been associated with normality, but also has been considered nearly synonymous with "a good life". A variety of motivation for singlehood may be cited:

- desire for freedom,
- opportunity to develop multiple friendships, financial independence, sexual availability and
- personal growth (Naas & McDonald 1982:478).

It is therefore necessary to establish differences, if any, between deviant driving behaviour and marital status because the researcher suspects that "marital status" and the factors underlying this social condition may influence or contribute towards deviant driving behaviour.

4.2.3.1 ***Presentation and analysis of data***

Marital status is a factor upon which there is very little information relating to deviant driving behaviour. Table 4.3 portrays the statistical picture of the differences between deviant driving behaviour and marital status.

TABLE 4.3: DIFFERENCES BETWEEN DEVIANT DRIVING BEHAVIOUR AND MARITAL STATUS (N=722)

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F-value	Sig.
Deviant driving behaviour	BG	2.898	6	0.483	0.635	0.702
	WG	543.602	715	0.760		
	T	546.500	721			
Aggression	BG	0.739	4	0.185	0.243	0.914
	WG	545.761	717	0.761		
	T	546.500	721			
Anxiety	BG	0.715	4	0.179	0.235	0.918
	WG	543.981	717	0.760		
	T	544.696	721			
Traffic policing	BG	2.997	4	0.749	0.988	0.413
	WG	543.503	717	0.758		
	T	546.500	721			
Offensive driving	BG	4.554	5	0.911	1.202	0.307
	WG	541.829	716	0.758		
	T	546.383	721			
Document offences	BG	2.600	6	0.433	0.569	0.756
	WG	543.350	715	0.762		
	T	545.950	721			
Vehicle defects	BG	4.525	4	1.131	1.496	0.201
	WG	541.975	717	0.756		
	T	546.500	721			
BG:	Between Groups	df:	degrees of freedom			
WG:	Within Groups	T:	Total			

According to ANOVA calculations reflected in Table 4.3, there are no significant differences in respect of all the scales of deviant driving behaviour.

Chi-square computations yielded the following divergent results:

- deviant driving behaviour: 0.072
- aggression: 0.399
- anxiety: 0.058*
- traffic policing: 0.363

- offensive driving: 0.133
 - document offences: 0.003*
 - vehicle defects: 0.060
- (* $p \leq .05$: significant)

Anxious driving behaviour differs significantly according to marital status and differences are accounted for as follows:

- widowed: 51.0 percent
- married: 36.0 percent
- single: 35.0 percent
- divorced: 29.0 percent
- separated: 12.0 percent

Widowed respondents reported the highest anxiety than respondents in other categories. The rating of traffic law violations (document offences) as not serious at all, differs significantly according to marital status (0.003*). Cross-tabulations yielded "never been married" (single) category (30.0%) as being the respondents who rated document offences as not serious. Other differences are accounted for in the following way:

- widowed (21.0%)
- married (17.0%)
- separated (3.0%) and
- divorced (1.0%).

Deviant driving behaviour, therefore, differs when grouped according to marital status. Observed differences notably relate to anxiety and document offences only.

4.2.4 **Type of Employment or Occupation**

The link which exists between deviant driving behaviour and occupation may be considered as economic causes of deviant driving behaviour. The influence of economic factors on deviant driving behaviour indicates there are certain occupations which offer more opportunities for committing traffic offences. For instance, professional drivers earn their livelihood by being regularly behind the steering wheels of motor vehicles. This in turn, offers more opportunities for clashes with traffic authorities and prescriptions.

Occupation or employment may be defined as that specific activity with a marked value which an individual continually pursues for the purpose of obtaining a steady flow of income (Green 1990:10-11; Hall 1986:14; Grint 1991:8-9; Barlow 1990:284-285). The type of employment can also be accounted for by alluding to the terms "labour and work". Labour entails bodily activity, designed to ensure survival in which the results are consumed almost immediately. Work or employment, on the other hand, is the activity undertaken with the human hands, which gives objectivity to the world. Work has been imputed with transformative capacity, an activity which culminates in altering nature. An occupation may be viewed as something which locates individuals within some form of market.

In the present study, the driving population (respondents) is divided between those who are "economically active" and those who are "economically inactive or unemployed" (see Annexure A). This model of employment reflects the emergence of a perspective in which economic activity appears as a foundation and accordingly, the sphere of employment assumes a discrete existence.

It is, therefore, evident that the type of employment is also symbolic to an individual's social position. Occupation is a major source of identity for most

respondents. The answers to the type of occupation took a variety of self-revealing forms. The forms of occupation in the present study include: professional drivers; skilled or semi-skilled; unskilled; professional; executive; and an "unemployed" category has also been provided for.

4.2.4.1 ***Presentation and analysis of data***

The Null-hypothesis: "Deviant driving behaviour will not differ when grouped according to respondents' occupation", will be subjected to statistical testing. A radical approach, it could be argued that there are observable significant differences in the cross-correlations between deviant driving behaviour and occupation. Table 4.4 presents the illuminating data in this regard.

TABLE 4.4: DIFFERENCES BETWEEN DEVIANT DRIVING BEHAVIOUR AND OCCUPATION (N=722)

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F-value	Sig.
Deviant driving behaviour	BG	11.072	6	1.845	0.501	0.808
	WG	2635.827	715	3.686		
	T	2646.899	721			
Aggression	BG	146.984	4	36.746	10.539	0.000*
	WG	2499.914	717	3.487		
	T	2646.899	721			
Anxiety	BG	92.379	4	5.595	1.527	0.193
	WG	2624.220	717	3.665		
	T	2646.599	721			
Traffic policing	BG	162.805	4	40.701	11.748	0.000*
	WG	2484.094	717	3.465		
	T	2464.899	721			
Offensive driving	BG	56.111	5	11.222	3.100	0.009*
	WG	2588.674	716	3.621		
	T	2644.785	721			
Document offences	BG	169.341	6	28.224	8.143	0.000*
	WG	2471.236	715	3.466		
	T	2640.578	721			
Vehicle defects	BG	69.059	4	17.265	4.802	0.001*
	WG	2577.840	717	3.595		
	T	2646.877	721			

* $p \leq 0.05$: Significant
 BG: Between Groups df: degrees of freedom
 WG: Within Groups T: Total

It is evident from the above table that deviant driving behaviour differs significantly according to respondents' type of occupation. The substantive analysis of deviant driving behaviour (scales) reveal that, according to ANOVA, differences exist in respect of:

- aggression,
- rating of selected aspects relating to traffic policing,
- document offences,
- driving offences and

- vehicle defects.

Chi-square computations yielded the following significance levels:

- deviant driving behaviour: 0.230
 - aggression: 0.000*
 - anxiety: 0.009*
 - traffic policing: 0.000*
 - offensive driving: 0.093
 - document offences: 0.000*
 - vehicle defects: 0.006*
- (* $p \leq 0.05$: significant).

Differences in ANOVA and Chi-square significance levels are worth noting. Chi-square calculations reveal that deviant driving behaviour differs significantly according to occupation, if cross-correlated with the anxiety scale (0.009*). However, the same scale displays no significant differences according to ANOVA (0.193). It can, therefore, be argued that differences could not have been observed if the present study employed ANOVA statistics only. It paid dividends to implement different tests to highlight the significant differences.

Another significant difference in terms of ANOVA (0.009*) relates to offensive driving, whilst differences are not significant in terms of Chi-square (0.093).

An aggressive approach to deviant driving behaviour, differs according to various occupations, illustrated below:

- professional drivers: 31.0 percent
- managerial: 26.0 percent
- professional: 25.0 percent
- skilled: 22.0 percent
- executive: 21.0 percent
- unskilled: 18.0 percent and
- unemployed: 8.0 percent.

As could be expected, professional drivers who participated in this research study, reported the highest scores of aggression compared to unemployed respondents who reported the lowest scores.

Anxiety is another factor affecting deviant driving behaviour, and has been exposed by various occupations:

- unemployed: 57.0 percent
- professional: 43.0 percent
- unskilled: 45.0 percent
- skilled: 38.0 percent
- professional drivers and executive: 24.0 percent respectively and
- managerial: 30.0 percent.

Unlike the aggression scale, the driving population (respondents) in the unemployed category reported the highest anxiety scores, whereas professional drivers and executive occupation categories reported the lowest anxiety scores.

Statistical scores supporting the extent of involvement in offensive driving,

is as follows:

- professional drivers: 50.0 percent
- skilled: 42.0 percent
- unemployed: 41.0 percent
- executive: 39.0 percent
- unskilled: 36.0 percent
- professional: 33.0 percent and
- managerial: 30.0 percent.

Professional drivers featured predominantly in offensive driving category, whilst respondents in the managerial category were the least to commit driving offences.

Respondents in various occupations reported significant differences in the rating of document offences (as being very serious traffic law violations). The following scores were observed:

- professional drivers: 39.0 percent
- unskilled: 32.0 percent
- unemployed: 29.0 percent
- skilled: 25.0 percent
- professional: 14.0 percent and
- executive and managerial: 7.0 percent respectively.

Professional drivers might thus be considered the most deviant drivers based on their perceptions of document offences being not serious traffic law violations. Respondents in executive and managerial occupational categories revealed the least deviant driving behaviour in this regard.

Deviant driving behaviour was also measured in accordance with the extent of agreement or disagreement with penalisation of motor vehicle drivers who operated defective vehicles. The following results were obtained:

- professional drivers and skilled workers: 48.0 percent respectively
- unskilled workers: 45.0 percent
- unemployed respondents: 41.0 percent
- professional: 40.0 percent and
- executive and managerial occupational categories: 29.0 percent respectively.

Professional drivers and skilled workers reported the highest scores with regard to penalisation of drivers who operated defective vehicles, compared to executive and managerial workers who had the lowest scores in this regard.

The Null-hypothesis is therefore rejected. Deviant driving behaviour differs significantly when grouped according to and cross-correlated with occupation.

4.2.5 **Regularity of Driving**

Clarke (1982:17) defines a driver as an individual who drives or is in actual physical control of a motor vehicle. Regularity of driving within the context of the present study refers to the frequency, consistency and attitude of the driver towards driving a motor vehicle. For instance, a regular driver is inclined to conform to the established practices of driving a motor vehicle. The driver is

regarded the most sophisticated element in the traffic equation. Regularity of driving can often result in the learning of certain undesirable driving habits while operating a motor vehicle.

Understanding the "regularity driving" phenomenon could also be accounted for in terms of four types of drivers (Hand, Sherman & Cavanagh 1980:112-114).

Co-operative drivers know that they have violated traffic laws or regulations and usually concede to such deviant driving behaviour. They are upset with their deviant driving behaviour, and their attitude in most instances seems to be positive or neutral and traffic officers are perceived as devoted to performing their functions efficiently.

Blameless drivers might be perceived as insecure people who perceive themselves as blameless. They are unlikely to admit mistakes to a traffic officer. Hand *et al.* (1980:111) opine: "Blameless drivers who are stopped for going through a red light protest that it was still amber; and those who are stopped for following too closely blame the driver in front; those who are stopped for speeding blame their speedometer; and those who are stopped for going through a stop sign blame the officer for having been too far away to see the situation clearly". In short, these drivers maintain their self-esteem by calling other drivers wrong throughout their driving habits.

Non-chalant drivers have an indifferent or a very casual attitude towards traffic laws and regulations which might result in deviant driving behaviour. For instance, a driver who is late for picking up somebody may compensate by speeding. The implication is that a driver knows the provisions of traffic laws, but rather, the needs of the driver are viewed more important than that of traffic laws.

Hostile drivers view traffic laws as unnecessary restrictions to their driving. Problem solution is not envisaged by hostile (aggressive) drivers, but instead, conflict with traffic officers might ensue.

The mental state of drivers has a great deal to do with their driving habits. Psychological hazards may be differentiated from physical hazards in that they are the result of a certain mental state or attitude peculiar to the driver of motor vehicle. Persons engaged in regular driving may have imagination in varying degrees. Preoccupation might seem to be the contributor to accidents (deviant driving behaviour) (Lauer 1972:47). It might be of importance to know what motor vehicle drivers think when driving. That what keeps the mind busy (except concentration on driving *per se*), could, in all probability, exert either a positive or negative influence on motor vehicle drivers' behaviour (Lauer 1972:48).

Memory features in the regularity of driving. Memory refers to that characteristic of drivers which lead them to retain things that happened in the past for reproduction in the future (Lauer 1972:50). In certain instances drivers have lapses of memory. Drivers might undertake a journey and find themselves well towards their destination without having the knowledge of having passed through any of the places they knew they must have gone through (Lauer 1972:50-51). The lapse of memory might result in disorientation and inability to cope with situations which crop up. Another feature of regularity of driving is to know the characteristics of the road being used. This enables drivers on a given road to be aware of traffic hazards of whatever nature (Lauer 1972:53-55).

Emotions are very important to handling emergencies during driving. Reference is made to the types of activity drivers express such as aggression and anxiety (the subject which will be discussed in chapter 6). A "psychological healthy personality" is an advantage to drivers. Such dexterous drivers can get along

better whilst driving than those who might appear "clumsy" (Lauer 1972:56-57).

Perhaps no other convenience of modern life gives more enjoyment than the motor vehicle. People desire to go somewhere, be it near or distant. Regardless of the purpose for which individuals may be going, a motor vehicle stands out as one of the preferred methods of travel. The importance of the regularity of driving is essential to everyone in practically every walk of life (Lauer 1972:268-271).

Variable 13 of the questionnaire (see Annexure A) deals with the regularity of driving. There are basically two types of driving activities:

- (a) driving for pleasure, and
- (b) driving for profit (occupation-related driving).

Some persons drive for pleasure and may include driving during weekends, for holiday purposes and for shopping purposes. Vocational driving in the present study includes activities such as going to work, as an employed driver and in one's own business in order that he or she may carry on the important business of making a living. Such driving activities may give rise to deviant driving behaviour.

4.2.5.1 ***Presentation and analysis of data***

It is essential to test the following Null-hypothesis: "Deviant driving behaviour will not differ when grouped according to regularity of driving."

Table 4.5 presents the relevant data.

TABLE 4.5: DIFFERENCES BETWEEN DEVIANT DRIVING BEHAVIOUR AND REGULARITY OF DRIVING (N=722)

Deviant Driving Behaviour Scale		Sum of Squares	df	Mean Squares	F-value	Sig.
Deviant driving behaviour	BG	3.144	6	0.524	0.092	0.997
	WG	4051.633	715	5.667		
	T	4054.777	721			
Aggression	BG	17.773	4	4.443	0.789	0.532
	WG	4037.004	717	5.630		
	T	4054.777	721			
Anxiety	BG	19.314	4	4.829	0.858	0.489
	WG	4029.826	717	5.628		
	T	4049.140	721			
Traffic policing	BG	17.225	4	4.306	0.765	0.548
	WG	4037.552	717	5.631		
	T	4054.777	721			
Offensive driving	BG	17.423	6	3.485	0.618	0.686
	WG	4030.441	715	5.637		
	T	4047.864	721			
Document offences	BG	40.991	6	6.833	1.214	0.297
	WG	4013.254	715	5.629		
	T	4054.244	721			
Vehicle defects	BG	38.387	4	9.597	1.713	0.145
	WG	4016.390	717	5.602		
	T	4054.777	721			
BG:	Between Groups	df:	degrees of freedom			
WG:	Within Groups	T:	Total			

The above calculations were obtained by applying ANOVA. It is apparent that deviant driving behaviour does not differ when grouped according to regularity of driving.

The converse is found on the application of the Chi-square which yielded the following significant values:

- deviant driving behaviour: 0.445
- aggression: 0.000*
- anxiety: 0.002*

- traffic policing: 0.000*
- offensive driving: 0.610
- document offences: 0.013*
- vehicle defects: 0.004*

(* $p \leq .05$: significant).

It is evident from the Chi-square computations that deviant driving behaviour differs significantly according to regularity of driving. Aggression differs according to regularity of driving and the difference is accounted for in respect of the following driving activities:

- for pleasure: 56.0 percent
- during weekends: 35.0 percent
- for shopping purposes: 32.0 percent
- for holiday and other purposes: 29.0 percent
respectively
- as an employed driver: 27.0 percent
- in personal work: 23.0 percent and
- to go to work: 20.0 percent.

Respondents involved in the driving activity "for pleasure", reported the highest aggression, compared to those in the "to go to work" activity who reported the lowest.

Driving activities such as driving "for pleasure and for shopping purposes", produced the highest anxious drivers/respondents (52.0% respectively), whilst the "personal work" activity produced the lowest anxious scores (25.0%). Anxious respondents reported as follows in various driving activities:

- during weekends: 50.0 percent
- to go to work: 39.0 percent
- other: 38.0 percent
- for holiday purposes: 29.0 percent and
- as employed drivers: 26.0 percent.

Respondents who regularly drove for holiday purposes, rated document offences as not serious (57.0%) and, as such, can be viewed as the most deviant. Employed-driver activity represented 34.0 percent respondents, compared to "go to work" activity (13.0%) of the deviant respondents.

Seventy-one percent of the sample who are engaged in driving predominantly for "holiday purposes", disagreed with penalisation of motor vehicle drivers operating such vehicles with defects. The following results were also obtained in this regard:

- for shopping purposes: 60.0 percent
- other: 46.0 percent
- during weekends and as employed drivers: 45.0 percent respectively
- personal work: 39.0 percent and
- for pleasure and to go to work: 37.0 percent respectively.

The Null-hypothesis is therefore rejected.

Deviant driving behaviour therefore differs when grouped according to regularity of driving.

4.2.6 **Types of Motor Vehicles**

Types of motor vehicles alluded to in the present study include public motor vehicle, light delivery van, bus, goods delivery vehicle, privately-owned sedan, etc. (see Annexure A).

Vehicle refers to a device designed and adapted to travel on wheels on a road. A light motor vehicle includes a motor vehicle with a gross vehicle mass not exceeding 3 500 kilograms and any other motor vehicle with a tare not exceeding 3 500 kilograms (South Africa 1996, Regulation 155(5)(a); 213). This definition does not include a bus, minibus or goods vehicle. A heavy motor vehicle refers to any motor vehicle which is not a light motor vehicle. Tare in relation to a motor vehicle refers to the mass of vehicle ready to travel on a road. Tare will therefore include mass of spare wheel and any permanent structure of a vehicle, but excludes the mass of fuel and anything attached to a vehicle which is not permanent (South Africa 1996: Section 1(77)).

Public motor vehicle (sedan, taxis, minibus taxis, buses and goods delivery vehicles) play a major role in transport economics. A public motor vehicle refers to any vehicle which is used to convey passengers and goods for hire and reward (Cooper 1982:325). Hire refers to the contract in terms of which an operator of a motor vehicle receives remuneration or a consideration for conveying passengers or goods or both.

The conveyance of goods, in this context, refers to the carriage of another person's goods in return for a reward or remuneration. Reward means a return or recompensation effected to and received by an operator for services rendered. Payment can be of any kind; it is not essential that payment should always be monetary. Conveyance for reward also implies that passengers pay for

being transported. Payment need not be made by the person conveyed.

It is important to note that public transport operators are involved in what has been called plying for hire. Plying for hire means to go periodically to and from between places for hire or the driver may attend regularly at a certain place for hire. It means waiting regularly for business or offering a service and a regular stream of passengers for transportation implies solicitation. Usually the vehicle itself should be exhibited, but sometimes a person may ply for hire by touting passengers without the vehicle being present. A general invitation by the person in charge of the vehicle to members of the public to make contracts with him or her for carriage in the vehicle constitutes plying for hire (Cooper 1982:327).

It constitutes deviant driving behaviour to operate a public motor vehicle on a public road without a certificate of fitness. The fact that the operator had obtained a certificate of fitness implies that the vehicle was acquired to be used as a public motor vehicle. The holder of a certificate of fitness is not allowed to operate a public motor vehicle contrary to the terms and conditions of the (public transport permit) operating licence. For instance, passenger overloading is a serious document offence (see Annexure A); Cf. Khoza 1993). Drivers of public motor vehicles should possess professional driving permits, since their livelihood (income) is contingent upon the conveyance of passengers for reward.

4.2.6.1 ***Presentation and analysis of data***

It is important to consider the types of vehicles driven by respondents, as this variable may be related to deviant driving behaviour. The Null-hypothesis: "Deviant driving behaviour will not differ when grouped according to type of vehicle" will be statistically tested. The data is presented in Table 4.6.

TABLE 4.6: DIFFERENCES BETWEEN DEVIANT DRIVING BEHAVIOUR AND TYPE OF MOTOR VEHICLE (N=722)

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F-value	Sig.
Deviant driving behaviour	BG	28.531	6	4.755	1.392	0.215
	WG	2442.093	715	3.416		
	T	2471.093	721			
Aggression	BG	55.475	4	13.869	4.117	0.003*
	WG	2415.618	717	3.369		
	T	2471.093	721			
Anxiety	BG	23.086	4	5.772	1.688	0.151
	WG	2447.904	717	3.419		
	T	2470.990	721			
Traffic policing	BG	57.935	4	14.484	4.303	0.002*
	WG	2413.158	717	3.366		
	T	2471.093	721			
Offensive driving	BG	28.590	4	5.718	1.674	0.139
	WG	2442.400	717	3.416		
	T	2470.990	721			
Document offences	BG	25.275	6	4.213	1.230	0.288
	WG	2441.253	715	3.424		
	T	2466.528	721			
Vehicle defects	BG	4.636	4	1.159	0.337	0.853
	WG	2466.457	717	3.440		
	T	2471.093	721			

* $p \leq 0.05$: Significant
 BG: Between Groups df: degrees of freedom
 WG: Within Groups T: Total

Attitude towards driving may be influenced by the type of motor vehicle. The tendency may thus be to think that deviant driving behaviour does not differ according to type of motor vehicle. ANOVA computations in Table 4.6 reveal that deviant driving behaviour differs significantly in respect of aggression and the rating of selected aspects relating to traffic policing.

Chi-square computations yielded significant differences in respect of five scales:

- deviant driving behaviour: 0.061
 - aggression: 0.000*
 - anxiety: 0.470
 - traffic policing: 0.000*
 - offensive driving: 0.026*
 - document offences: 0.000*
 - vehicle defects: 0.000*
- (* $p \leq .05$: significant).

Chi-square computations also confirm significance levels yielded by ANOVA but, in addition, yielded significant values in respect of offensive driving, document offences and vehicle defects.

Table 4.6 reveals that respondents who operated other vehicles (other than those reflected in Annexure A) account for 67.0 percent. This implies that these respondents reported the highest level of aggression. The aggressive approach to driving is distributed or differentiated as follows:

- motorcycle: 50.0 percent
- minibus taxis (public motor vehicle): 39.0 percent
- privately-owned motor vehicle: 28.0 percent
- light delivery van: 22.0 percent
- taxi motor car (public sedan motor vehicle): 18.0 percent
- passenger bus: 16.0 percent and
- goods delivery vehicle: 15.0 percent.

The latter respondents reported the lowest aggression. The extent of involvement in offensive driving using different types of motor vehicles is

noteworthy, and differentiates as follows:

- minibus taxis: 60.0 percent
- privately-owned light delivery van: 43.0 percent
- public sedan (taxi motor car): 36.0 percent
- passenger bus: 34.0 percent
- pay loader, privately-owned motor vehicle and other:
33.0 percent respectively and
- goods delivery vehicle: 30.0 percent.

Drivers of minibus taxis reported the highest offensive driving behaviour, whilst respondents who operated goods delivery vehicles reported the lowest.

The rating of document offences being not serious at all, was reported as follows:

- minibus taxis: 55.0 percent
- privately-owned light delivery van: 28.0 percent
- goods delivery vehicle: 22.0 percent
- taxi motor car: 18.0 percent
- privately-owned motor vehicle: 13.0 percent and
- passenger bus: 3.0 percent.

Again, minibus taxi drivers reported the highest deviant driving behaviour, whilst passenger bus drivers reported the lowest.

The extent of disagreement with penalisation for operating defective vehicles is accounted for as follows:

- minibus taxis: 69.0 percent
- privately-owned light delivery van: 51.0 percent
- taxi motor car: 41.0 percent
- privately-owned motor vehicle: 34.0 percent
- other: 33.0 percent
- goods delivery vehicle: 20.0 percent and
- passenger bus: 13.0 percent.

Again, minibus taxis topped the list of defective vehicles and drivers of such vehicles can, therefore, be viewed as predominantly deviant drivers.

The Null-hypothesis is therefore rejected. Deviant driving behaviour differs indeed when grouped according to types of motor vehicles.

TABLE 4.7: VEHICLE TYPES: INVOLVEMENT IN FATAL ACCIDENTS (N=10 330)

Province	Type of Motor Vehicle											National
	Bicycle	Bus	Truck	LDV	Minibus	Minibus Taxi	Motor Cycle	Other	Sedan	Tractor	Unknown	
Eastern Cape	18	23	94	228	39	85	8	1	343	11	70	920
Free State	27	10	117	178	40	48	15	7	309	12	39	802
Gauteng	58	34	158	345	81	184	68	6	1 284	10	216	2 444
KwaZulu-Natal	41	54*	203*	387*	66*	156*	13	5	638*	38*	212**	1 813**
Limpopo	27	17	83	252	27	47	7	7	299	11	57	836
Mpumalanga	44	27	143	221	47	70	15	4	392	15	67	1 045
North West	41	13	89	242	36	69	10	4	454	15	70	1 043
Northern Cape	22	5	33	87	15	11	5	2	118	7	19	324
Western Cape	27	17	120	187	41	34	25	4	520	13	115	1 103
National	305	200	1 040	2 127	394	704	166	40	4 357	132	865	10 330

* Highest scores in KZN

** Second highest scores in KZN

LDV: Light delivery van

Source: National Fatal Accidents Information Centre, Pretoria

Table 4.7 reveals the extent of involvement of various types of motor vehicles in fatal accidents during the period 01 July 2002 to 30 June 2003 (National Fatal accident Information Centre, National Department of Transport). In the present study, the types of motor vehicles have been employed as an independent variable to establish differences in relation to deviant driving behaviour (Annexure A). The global picture of involvement of vehicle types in fatal accidents is illuminating in portraying the extent (status) of such accidents across the nine provinces. The present study was conducted in areas under the jurisdiction of uMhlatuze Municipality (City Council) and adjacent areas: Mtunzini, KwaMbonambi and Mtubatuba. The study area is situated in the North of KwaZulu-Natal Province (Annexure B).

It is apparent (Table 4.7) that passenger buses in KZN produced the highest scores (27%), compared to those in the Northern Cape which produced the lowest (3%). The highest number of fatal accidents in KZN was caused by goods delivery vehicles (trucks) and this accounts for 20 percent of all the cases. The highest scores (18%) of fatal accidents in KZN were caused by light delivery vans, whilst the Northern Cape produced the lowest scores (4%). Fatal accidents caused by tractors in KZN produced the highest scores (29%). Involvement of tractors in fatal accidents in Northern Cape was the lowest and accounts for 5 percent.

Further, it has been observed that KZN 'scored' second highest in fatal accidents involving minibuses, minibus taxis, sedans, etc. A noteworthy observation appears to be that KZN rated also the second highest province, taking into account the scores of other provinces. Gauteng province produced the highest scores (24%) of fatalities, whilst KZN reported the second highest (18%) in this regard.

4.3 SUMMARY

The objective of this chapter was to establish differences, if any, between deviant driving behaviour and respondents' characteristics: gender, race, marital status, occupation, regularity of driving and type of motor vehicle. Gender is considered an important predictor of deviant driving behaviour. The differences in deviant driving behaviour between men and women can be ascribed to a variety of reasons. The concept "race" should be understood within the context of culture. Deviant driving behaviour is not equally distributed among races. The term "marital status" is associated with a specific type of marital relationship within marriage.

The statistical link that exists between deviant driving behaviour and occupation relate to economic causes of deviant driving behaviour. The terms "labour and work" imply that the individual driver is located within some type of "market", such as professional work, skilled, executive, managerial, unskilled and the unemployed. Regularity of driving refers to the frequency, consistency and involvement in driving which could result in learning (internalising) certain driving habits. There are two types of driving activities:

- (a) driving for profit and
- (b) driving for pleasure.

There are various types of motor vehicles driven for both profit and pleasure.

Statistical findings of the present study reveal the following:

- (1) There are significant differences between male and female respondents in self-reported deviant driving behaviour in respect of aggression, anxiety, document offences and vehicle defects.

Male respondents reported the highest scores of aggression; whilst female respondents reported the highest scores of anxiety.

- (2) Racial differences exist in respect of deviant driving behaviour according to the scales: deviant driving behaviour, offensive driving, aggression, traffic policing, document offences and vehicle defects. Coloured respondents reported the highest scores of aggression whilst White respondents reported the lowest. Blacks and Coloureds were predominantly and equally against the imposition of heavy penalties for vehicle defects. White respondents were less opposed to the imposition of such penalties.
- (3) Anxiety and violation of traffic law (document offences) differ according to marital status. Widowed respondents reported the highest anxiety level, whilst respondents who are separated, reported the lowest anxiety level. Single respondents featured predominantly in document offences, whereas divorced respondents were least involved therein.
- (4) Deviant driving behaviour differs according to various types of occupations. The majority of professional drivers reported the highest involvement in aggressive driving behaviour. Unemployed respondents reported the lowest involvement in aggressive driving behaviour. Drivers who were unemployed featured predominantly in anxious driving behaviour, whilst managers reported the lowest anxiety level. Professional drivers reported the highest involvement in document offences, whilst the executive reported the lowest involvement. Professional drivers also featured the highest in offensive driving. Professional drivers and skilled respondents were

not supportive of the penalisation of drivers for vehicle defects; managers and executive showed the least support in this regard.

- (5) Driving for pleasure, as a predominant driving activity, produced the most aggressive drivers; whilst respondents who regularly drove to go to work were least aggressive. Respondents who usually drove for pleasure and for shopping purposes, were the most anxious, compared to those employed as drivers, who reported the least anxiety. Respondents who drove regularly for holiday purposes, featured predominantly in rating document offences to be not serious at all. Respondents predominantly involved in the driving "to go to work" category, produced the least respondents. Respondents who engage in driving "for holiday purposes", maintained that drivers should not be penalised for vehicle defects; whilst respondents engaged in driving "for pleasure and to go to work", were less in disagreement with such penalisation.
- (6) Respondents who operated vehicles (other than those reflected in Annexure A), reported the highest level of aggression. No aggressive driving behaviour was reported by tractor and pay loader drivers. Minibus taxi drivers reported the highest in perceiving document offences as "not serious at all," while passenger bus drivers reported the lowest in this regard. The majority of minibus taxi drivers were against the penalisation of the operators of defective vehicles. Drivers of passenger buses were less in disagreement with this observation.

CHAPTER 5

CORRELATIONAL ANALYSIS OF DEVIANT DRIVING BEHAVIOUR

5.1 INTRODUCTION

Correlation implies relationship or connection between two or more objects, events, or drivers of motor vehicles and other variables. Criminal justice researchers may wish to measure the extent to which two or more variables are "related" to each other. It may be necessary to determine:

- whether or not an association exists;
- the magnitude of strength of the association; and
- the nature of the relationship.

The numerical value of measures of association range from no correlation to perfect correlation. When two variables are positively related, as one increases, the other also increases. When two variables are inversely (negatively) related, as one increases, the other decreases, or as one decreases, the other increases.

It is essential for researchers to understand the relationships among different events. Such knowledge enable researchers to make accurate predictions about future events such as deviant driving behaviour, and these predictions make it possible for researchers to achieve some degree of control over the formidable traffic environment. It should be noted that one variable correlates meaningfully with another one when there is a common causal bond that links the phenomena of both variables in a logical and causal relationship. It may be assumed, for instance, that a relationship between low income

and operating defective vehicles (deviant driving behaviour) implies that one causes the other because the income is inadequate. The correlation coefficient is, therefore, merely a signpost pointing to further discovery and research. Correlations are therefore merely statistical descriptions. They describe the strength of the bond of relationship between one variable and the other. At best, correlations imply statistical conclusions or inferences.

5.2 CORRELATIONAL ANALYSIS OF DEVIANT DRIVING BEHAVIOUR

Facts exist in dynamic interrelationships with each other. Relationships between one kind of data and another are in existence. One of the functions of statistics is to describe or indicate the intensity and magnitude of such co-related factors (Welkowitz, Ewen & Cohen 2000:164-166; Toothaker & Miller 1996:615).

This chapter deals, *inter alia*, with the testing of the Null-hypothesis: "There is no statistical relationship between deviant driving and respondents' —

- age
- education
- income
- duration of passing a driving test and
- years vehicle is driven."

5.2.1 Age

The conditions associated with the risk of being involved in deviant driving behaviour should be evaluated within the context of belonging to a specific age group. The probability that a person will become a deviant driver may be determined by the age at which that driver begins his or her deviant driving

behaviour (Siegel 1989:71). It is therefore essential to examine the correlation between age and deviant driving behaviour.

Correlates may refer to conditions or events which "go with" deviant driving behaviour. When these conditions or events are of an interpersonal nature, they constitute the social location of deviant driving behaviour. The search for the causes of conduct among the correlates of deviant driving behaviour requires correlation analysis. The meaning of correlation is therefore crucial and has been accounted for in paragraph 5.1 of this chapter. Age is correlated with deviant driving behaviour regardless of gender, race and social class (Nettler 1984:102-104). It may be contended that age, coupled with gender, is the best predictor of involvement in deviant driving behaviour. Mannheim (1965:677-679) refers to the age-curve approach in explaining the relationship between age and crime which explains a curvilinear relationship, implying that as age increases, crime decreases. Age-deviant driving behaviour involvement can be seen as peculiar to economic, social and legal prescriptions of a society. This refers to a socio-cultural approach to the study of the age factor.

Age is one of the most important demographic characteristics of the respondents in relation to the present study (see Annexure A, Q.3). The driving population (sample) consists of respondents whose social, natural, psychological and transcendental make-up may make them involved in deviant driving behaviour. The age-distribution of the sample ranges from 18 years to 71 years and more. Further, the suitability of the analysis of the sample is also based on the socio-economic structure and the relevant "generation" category. Different cultures have diverse prescriptions for persons belonging to a specific age-category (Siegel 1989:75). It might be expected that laws be adapted to meet the changes in cultural trends. The socio-psychological changes, coupled with physiological changes, create road traffic adjustment problems and conflicting situations

(MacMillan 1975). Such conflicts may result in seeking pleasure which can be satisfied by driving a motor vehicle. The ultimate result might be deviant driving behaviour. Age also denotes a specific status. For instance, a person shall be disqualified from obtaining or holding learner's or driving licence if he or she is under the age of 16, 17 and 18 years (South Africa 1996: Section 15(1) (a) (i), (ii) and (iii)). Driving a motor vehicle under the specific age entails therefore a serious traffic law violation (deviant driving behaviour).

The various types of aging may play a role in deviant driving behaviour. This implies theoretical explanations of aging. The most important types of aging are-

- (a) physical aging: biological theories;
- (b) psychological: psychological theories; and
- (c) social aging: sociological theories (Bond, Coleman & Peace 1994:53-77).

Ideas about physical aging are tied to the concept of the life span of the individual driver. The human body passes through a period of maturation in the body and develops to its peak level of physical functioning and maturity. During this period the physical functioning remains at a peak level; and a period of aging, during which the body gradually loses its capacity for peak performance (Atchley 1988:69; Bond *et al.* 1994:6). Various patterns of driving can be observed in different age-groups. It is possible to observe certain deviant driving behaviour patterns that are predominant at certain age-groups. Physical aging might affect the functioning of the human body in many ways. It may change the amount of energy drivers can mobilise, co-ordination and physical aging may increase the susceptibility to illness. Bond *et al.* (1994:22-23) refer to programmed aging as underpinning physical aging within the context of the biological theories of aging. Some mechanisms involved in aging may be "unprogrammed". These may be

ascribed to random damage to the human body.

Basic psychological processes such as sensation, perceptions, emotions ("road rage/aggression"), and volitional activities may give rise to psychological aging (Bond *et al.* 1994:24-25). The senses are the means by which the human mind experiences the (road traffic) world outside and inside the body. Vision is a particularly important sense. A notable fact is that a person shall be disqualified from obtaining or holding a learner's or driving licence if he or she is suffering from defective vision, and/or any physical defects (South Africa 1996: Section 15). Driving a motor vehicle with defective vision therefore constitutes deviant driving behaviour. Drivers are expected to be accurate during the driving activity. The speed of movement and accuracy may tend to decrease with age (Atchley 1988:89).

Social aging is analysed within the context of sociological theories (Bond *et al.* 1994:31-40). Structuralism is based on the assumption that all social behaviour, including deviant driving behaviour, are the result of the organisation and structure of society in which drivers live. The structure of the traffic system demands that drivers should abide by traffic law. The disregard of traffic law result in deviant driving behaviour. The structural-functionalist perspective has offered two approaches in the study of aging:

- (a) disengagement and
- (b) activity theories.

(a) *Disengagement-theory*

Disengagement-theory refers to an inevitable process in which many of the relationships between a person and other members of the society are severed and those

remaining are altered (Bond *et al.* 1994:32). This implies phasing out of older people from certain roles in order that society can continue to function. The disengagement theory may be viewed as preparing the structure of its members so that when the inevitable arrives, it does not disrupt the orderly functioning of the society. A critique might be that disengagement condones a policy of indifference towards the problems of older (drivers) people.

(b) *Activity-theory*

Activity theory emphasises the need to keep old people active in order to integrate them into society so that society is able to continue to function (Bond *et al.* 1994:32). A critique is that the activity theory might be unrealistic because the economic, political and social structure of society prevents the older worker from maintaining a major activity of "productive" employment.

A conflict perspective of structuralism is represented by the theory, known as *the political economy of old age* (Bond *et al.* 1994:34). Political economy refers to the study of interrelationships between political, economic and social structures. The idea of structured dependency is also central to political economy. Structural dependency implies the development of a dependent status resulting from restricted access to a wide variety of social resources especially income. It is, therefore, essential to examine the relationship between deviant driving and respondents' income (see paragraph 5.2.3).

It should be appreciated that in some way *symbolic interactionism* is an all-embracing term employed in various characteristics which identify biological,

psychological and sociological explanations of aging (Bond *et al.* 1994:35). Symbolic interactionism may also show how (deviant driving) behaviour which, from one perspective, could be interpreted as totally irrational, while from another perspective it could be a rational response to (driving) circumstances. If drivers define situations as real, they are also real in their consequences.

This definitional approach has been applied in the present study. Reference is made to what is known as the labelling theory of deviant driving behaviour, that is, how members of society come to define and label some of its members as deviant drivers (see Annexure A, Q.18: "I have been tagged a 'bad driver' by other persons").

Persons of a certain age-group can develop their own sub-culture within the context of driving a motor vehicle. The development of a sub-culture would be attributed to various factors such as age, education, race, income, years vehicle driven, etc., and the exclusion from interactions with other groups in society (Bond *et al.* 1994:37).

5.2.1.1 **Presentation and analysis of data**

Respondents are grouped into 7 age-categories (Annexure A). The categorisation aims at testing Null-hypothesis 2: "there is no relationship between deviant driving behaviour and respondents' age." The analysis of variance (ANOVA) and Chi-square statistics were used to test for differences in deviant driving behaviour in relation to various scales. The ANOVA product is an F-value. Bolhuis (Van der Westhuizen 1982:139-142) maintains that age does exert influences on (deviant) driving behaviour and on attitudes to driving. The variable of age is ranked from the lowest age-group to the highest age-group and the various age-

categories are ranked from 1 (18 to 20 years) to 7 (71 years and above). Spearman Rank-Order Correlation Coefficient (ρ) has been employed to establish relationships.

**TABLE 5.1: AGE DIFFERENCES: DEVIANT DRIVING BEHAVIOUR
(N=722)**

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F	Sig.
Deviant driving behaviour	BG	26.668	6	4.445	3.939	0.004*
	WG	981.138	715	1.372		
	T	1007.806	721			
Aggression	BG	18.551	4	4.638	3.361	0.010*
	WG	989.255	717	1.380		
	T	1007.806	721			
Anxiety	BG	15.611	5	3.903	2.836	0.024*
	WG	985.202	716	1.376		
	T	1000.813	721			
Traffic policing	BG	8.655	4	2.164	1.553	0.185
	WG	999.151	717	1.394		
	T	1007.806	721			
Offensive driving	BG	39.906	6	7.981	5.907	0.000*
	WG	966.056	715	1.351		
	T	1005.961	721			
Document offences	BG	1540.588	6	6.765	5.010	0.000*
	WG	962.677	715	1.350		
	T	1003.265	721			
Vehicle defects	BG	19.512	4	4.878	3.539	0.007*
	WG	988.294	717	1.378		
	T	1007.806	721			

* $p \leq 0.05$: Significant

KEY:

BG: Between Groups

WG: Within Groups

T: TOTAL

df: degrees of freedom

(f) F-value

Sig.: Level of Significance

Figure 5.1: Age and Aggression

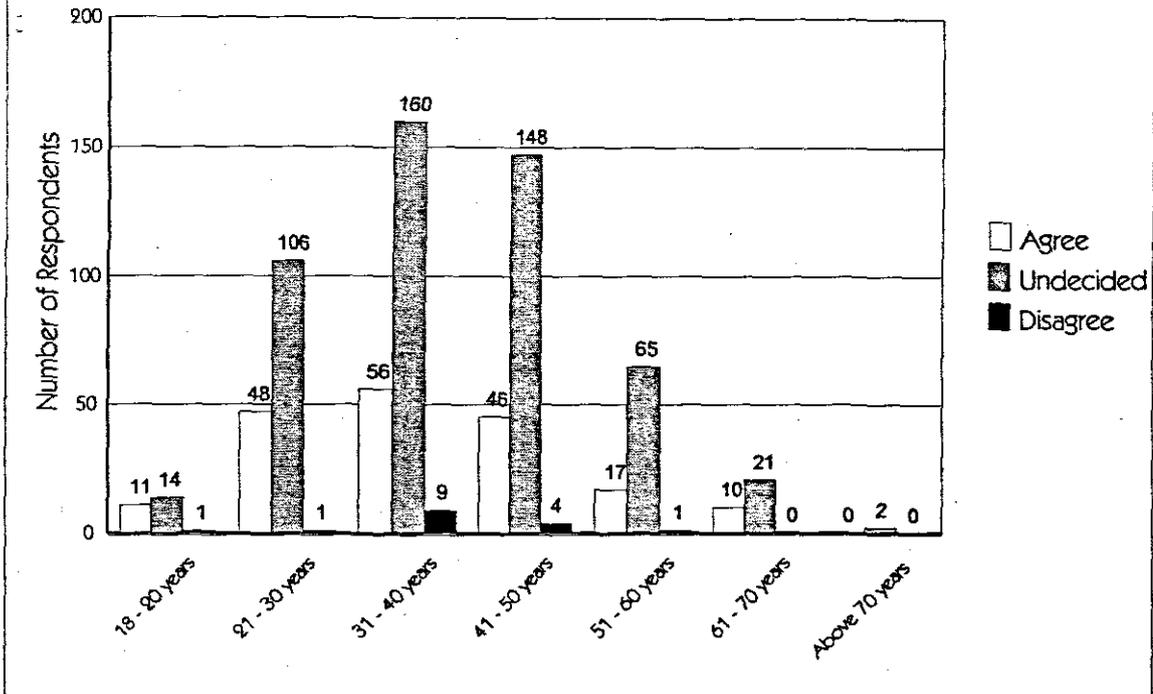


Table 5.1 reveals that, with the exception of traffic policing, the apparent differences are statistically significant at the 0.05 level. Age differences exist in respect of the following scales: deviant driving behaviour, aggression, anxiety, offensive driving, document offences and vehicle defects.

Interpretation of correlations is effected on the following basis:

- (i) 0.01 to 0.40: low
- (ii) 0.40 to 0.70: moderate
- (iii) 0.70 to 0.90: high
- (iv) 0.90 to 1.00: very high (Vito *et al.* 1988:37).

TABLE 5.2: AGE CORRELATION COEFFICIENT (ρ): DEVIANT DRIVING BEHAVIOUR (N=722)

Scale	Correlation Coefficient (ρ)	Sig. (2-tailed)
Deviant driving behaviour	0.101**	0.006
Aggression	0.090*	0.016
Anxiety	0.078*	0.035
Traffic policing	-0.087*	0.020
Offensive driving	-0.184**	0.000
Document offences	-0.145**	0.000
Vehicle defects	-0.134**	0.000

** correlation is significant at the 0.01 level

* correlation is significant at the 0.05 level

Table 5.2 shows that for all deviant driving behaviour scales, there is a relationship between deviant driving and respondents' age. Correlation coefficients of 0.078 (anxiety), 0.087 (traffic policing) and 0.090 (aggression) have been obtained. In these instances the level of significance is 0.05. Significant correlations, at the 0.01 level have also been reported between age and the various scales, namely deviant driving behaviour, offensive driving, document offences and vehicle defects.

The Null-hypothesis is therefore rejected, because there is a relationship between deviant driving and age. A positive deduction is made about the relationship of the scales:

- deviant driving behaviour
- aggression and
- anxiety.

A deduction is made of negative correlation in relation to the scales:

- traffic policing
- offensive driving
- document offences and
- vehicle defects.

It is therefore apparent that correlations reflected in Table 5.2, are low but statistically significant.

5.2.2 Education

Education plays an important part in the development of individuals. The striking development of primary, secondary, high school and higher education is often accompanied by a strong trend towards career development or vocationalism (Halsey, Lander, Brown & Wells 1998:8; Carr & Kemmis 1986:55-56); Watts, Law, Killeen, Kidd & Hawthorn 1996:24-33). Education increasingly takes on the character of training and is related to the requirements of modern trades and professions. Even in the sphere of driving, there are professional drivers who have selected driving as a career or vocation (South Africa 1996: Section 32; Regulation 115).

Education is essentially a social process. People learn not only from teachers but also from other by sharing their knowledge and experience. Therefore, learning is cognitive, social, emotional and moral. It is thus essential that autonomy should be developed both intellectually and morally. The ways in which educators and learners interact and the factors which influence this interaction is of prime importance for the development and shaping of motor vehicle drivers (Downey & Kelly 1987:1). Some of the most important forces influencing the nature of interaction, are physical setting, interpersonal judgements and mode of communication, both verbal and non-verbal. Interpersonal judgement is one form

of social interaction and as such, it may be viewed as one of the causes of deviant driving behaviour. The process of forming judgements of other drivers is essentially interactive, rather than reactive in nature. Perceptions of other drivers and judgement of their (deviant driving) behaviour affect the way they behave. Downey and Kelly (1987:9) opine

“... unfavourable judgements made by teachers of pupils are coupled with low expectations of attainment. In response to this, pupils often do not achieve little partly because their motivation is depressed and partly because the teachers offers little to stretch their abilities.”

Judgement made of an individual motor vehicle driver by other drivers, play a significant part in the development of the self as a driver. The self may be seen as a social product arising from interactive driving experience with other drivers. Educators, therefore, can either reinforce the view a driver has of himself or herself, be it positive or negative. It may help to reverse a deviant driver's negative self-concept or boost his or her self-esteem by creating in him or her a more positive view of themselves and their driving abilities. The types of educators also play a role in the education process. Downey and Kelly (1987:13) refer to four main types of educators: individual monitors, class enquirers, group instructors and style changers. Individualised monitors engage in little or no class teaching but adopt a high degree of individualised work. Class enquirers use greater proportion of open questions leading to higher level of cognitive functioning in their learners. Group instructors emphasise conveying information to learners. Style changers consist of those who change other persons' style in response to learner reaction. The educator types play an important role in the education of (drivers) learners. Learners will be able to grow and develop accordingly and to advance through various grades of education, thus enabling them to select

careers on the basis of educational qualifications.

Conversely, there might be some effects of learner styles upon the behaviour of educators. Downey and Kelly (1987:14) refer to four types of learners: attention seekers; intermittent and solitary workers; and quick collaborators.

Attention seekers interact more with their educators and expect educators to ask them about their work. Intermittent workers avoid attention. Solitary workers prefer not to have their privacy disturbed. Quick collaborators also prefer to work alone but will co-operate with other when asked to do so.

These types of learners will determine the abilities of each learner in relation to the standard of education that can be attained.

Learners can also be grouped according to ability, friendship and interest. Such grouping might negate the principle of nonstreaming of learners within the educational institution. A possibility exists that groups of learners may become labelled as bright and dull. The label "dull" may have a negative impact on the education of learners. There are also learners who are shy and tend to withdraw.

These learners will find it difficult to make friends. Learners who share common interests should preferably work together. This will realise the goals of interest-based or enquiry-based education. Learner groupings can improve the standard of education at various levels (Siegel 1997:9-14). It is therefore essential that drivers of motor vehicles should acquire necessary skills of driving so as to minimise deviant driving behaviour.

Presentation and analysis of data

Education is a process which continues into adulthood and therefore influences, positively or negatively the whole life of the motor vehicle driver. Education is thus likely to prevent deviant driving behaviour or to provoke it. There are various types of crimes which require a certain degree of general and especially technical education (skill), and the criminal has often to be an expert in his or her selected branch. Crimes such as complicated financial transactions require a certain degree of education and intelligence. Education may be viewed from two points of departure namely education relating to the acquisition of technical skill needed to practise a profession or occupation and the other education which leads to a broad, liberal and understanding of the world in which the community live.

The educational background of the sample has been divided into six (6) categories (Annexure A). The categorisation was necessary to test the Null-hypothesis: "There is no relationship between deviant driving and respondents' level of education."

ANOVA and Chi-square statistics were implemented to test for significant differences between the various deviant driving behaviour scales and respondents' level of education.

TABLE 5.3: EDUCATIONAL DIFFERENCES: DEVIANT DRIVING BEHAVIOUR (N=722)

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F	Sig.
Deviant driving behaviour	BG	19.258	6	3.210	1.664	0.127
	WG	1379.181	715	1.929		
	T	1398.439	721			
Aggression	BG	70.454	4	17.614	9.510	0.000*
	WG	1327.985	717	1.852		
	T	1398.439	721			
Anxiety	BG	14.598	4	3.650	1.888	0.011
	WG	1383.837	717	1.933		
	T	1398.436	721			
Traffic policing	BG	40.185	4	10.046	5.303	0.000*
	WG	1358.254	717	1.894		
	T	1398.439	721			
Offensive driving	BG	59.512	5	11.902	6.360	0.000*
	WG	1338.041	716	1.871		
	T	1397.553	721			
Document offences	BG	96.575	6	16.096	8.850	0.000*
	WG	1296.736	715	1.819		
	T	1393.311	721			
Vehicle defects	BG	30.496	4	7.624	3.996	0.003*
	WG	1367.943	717	1.908		
	T	1398.439	721			

* $p \leq 0.05$: Significant

KEY:

BG: Between Groups
 WG: Within Groups
 T: TOTAL
 df: degrees of freedom
 F: value
 Sig.: Level of Significance

Table 5.3 reveals that deviant driving behaviour differs significantly according to education with regard to aggression, traffic policing, offensive driving, document offences and vehicle defects.

The variable of education is ranked from uneducated to possession of a degree. Spearman Rank-Order Correlation Coefficient (ρ) was implemented to establish relationships between deviant driving and the

various educational levels of respondents.

**TABLE 5.4: EDUCATION CORRELATION COEFFICIENT (rho):
DEVIANT DRIVING BEHAVIOUR (N=722)**

Scale	Correlation Coefficient (rho)	Sig. (2-tailed)
Deviant driving behaviour	0.022	0.549
Aggression	0.203**	0.000
Anxiety	0.009	0.815
Traffic policing	-0.171**	0.000
Offensive driving	-0.191**	0.000
Document offences	-0.216**	0.000
Vehicle defects	-0.129**	0.001

** correlation is significant at the 0.01 level

It is evident from Table 5.4 that there is a significant relationship between deviant driving behaviour and respondents' education in relation to –

- aggression (rho -0.203)
- traffic policing (rho -0.171)
- offensive driving (rho -0.191)
- document offences (rho -0.216) and
- vehicle defects (rho -0.129).

Although correlation coefficients are low, all of them are significant at the 0.01 level. The deduction could, therefore, be made that a positive correlation exists between aggression and respondents' level of education. A further deduction could be made that a negative correlation exists between deviant driving behaviour (referring specifically to traffic policing, offensive driving, document offences and vehicle defects) and

respondents' level of education.

The Null-hypothesis is partly rejected, since, there is a relationship between deviant driving behaviour (aggression, traffic policing, offensive driving, document offences and vehicle defects) and respondents' level education. Conversely, the Null-hypothesis is partly retained in as far as there is no relationship between deviant driving behaviour (anxiety) and respondents' level of education.

5.2.3 **Income**

The concept "income" is used to justify the satisfaction of human needs and wants. An important influence on the income of individuals is the source from which they derive those incomes. Sundrum (1990:30-31) maintains that types of income distribution may be classified into the following categories:

- (a) primary income distribution, which refers to the way income earned from productive activity are distributed;
- (b) secondary income distribution, which refers to the primary distribution of income, modified by direct cash transfers such as income tax and social security; and
- (c) tertiary income distribution, which entails the secondary distribution, further modified by public sector activities: regulation of prices and provision of public goods and services.

The relationships among the income distributions are particularly important in

showing the impact on deviant driving behaviour. Income is defined within the context of a "flow phenomenon" (Peterson 1962:34-35). Income flow is usually thought of in terms of money between two points and time. Therefore, the amount of income can be measured in terms of productive activity that has taken place in a given period of time. Productive activity usually culminates into the possession and usage of goods, such as motor vehicles which, of course, necessitates statistical analysis to establish the relationships between deviant driving behaviour and income. A logical point of departure would be, in most cases, to assume that real income will depend upon the level of employment (Dahl & Lindblom 1976:136). One of the most important factors influencing individuals' income might be the level of education. Therefore, it may be expected that the distribution of income in the driving population could be related to its educational position.

According to Doyal and Gough (1991:23), income may determine an individual's needs. Need or want refers to a motivational force instigated by a state of disequilibrium or tension set-up in an individual driver because of a particular shortage. The term "need" is also used explicitly or implicitly to refer to a particular category of goals which are believed to be universal (Doyal & Gough 1991:39). For instance, an individual may need to have an expensive motor vehicle during the current year. Doyal and Gough (1991:39) opine:

"Referring to needs as universalisable goals, risks obscuring the reason why universality is imputed to some aims and not other. The imputation rests upon the belief that if needs are not satisfied, then serious harm of some specified and objective kind will result."

If the individual driver is seen not to try to satisfy his or her needs he seem to be against his or her objective interests and will, therefore, be viewed as deviant.

Serious harm is understood to refer to the significantly impaired pursuit of goals which are deemed to be of value by individuals (Doyal & Gought 1991:50). The driving population is viewed as seriously harmed if it is fundamentally disabled in the pursuit of its vision. Such impairment in the pursuit of goals is ascribable to the level of income distribution. Harm refers to whatever shortage of income which interferes directly or indirectly with motor vehicle driving activities essential to his or her plan of life. For instance, the individual may be unable to maintain his or her motor vehicle satisfactorily due to low income or poverty. Such an individual may therefore be viewed as in need of (money) income to "fix" his or her motor vehicle.

5.2.3.1 ***Presentation and analysis of data***

Halsey *et al.* (1998:163) ascribe income inequalities to competitive positions occupied in the world economy. The divergent nature of income thus account for why the rich are getting richer and the poor are becoming poorer.

Attention is being devoted to the income distribution of the respondents. The variable of income has been divided into eight (8) categories (see Annexure A). It was necessary to devise the categories to test the Null-hypothesis stating: "There is no relationship between deviant driving and respondents' income."

**TABLE 5.5: INCOME DIFFERENCES: DEVIANT DRIVING BEHAVIOUR
(N=722)**

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F	Sig.
Deviant driving behaviour	BG	26.802	6	4.467	1.750	0.107
	WG	1824.612	715	2.552		
	T	1851.414	721			
Aggression	BG	69.302	4	17.326	6.971	0.000*
	WG	1782.112	717	2.486		
	T	1851.414	721			
Anxiety	BG	12.332	4	3.083	1.202	0.309
	WG	1836.944	717	2.566		
	T	1849.276	721			
Traffic policing	BG	42.966	4	10.741	4.959	0.002*
	WG	1808.448	717	2.522		
	T	1851.414	721			
Offensive driving	BG	19.086	5	3.817	1.490	0.191
	WG	1832.037	716	2.562		
	T	1851.123	721			
Document offences	BG	114.836	6	19.139	7.879	0.000*
	WG	1732.075	715	2.429		
	T	1846.911	721			
Vehicle defects	BG	78.531	4	19.633	7.970	0.000*
	WG	1772.883	717	2.473		
	T	1851.414	721			

* $p \leq 0.05$: Significant (ANOVA and Chi-square)

** $p \leq 0.05$: Significant (Chi-square only)

KEY:

BG: Between Groups

WG: Within Groups

T: TOTAL

df: degrees of freedom

F: value

Sig.: Level of Significance

Figure 5.2: Income and Vehicle Defects

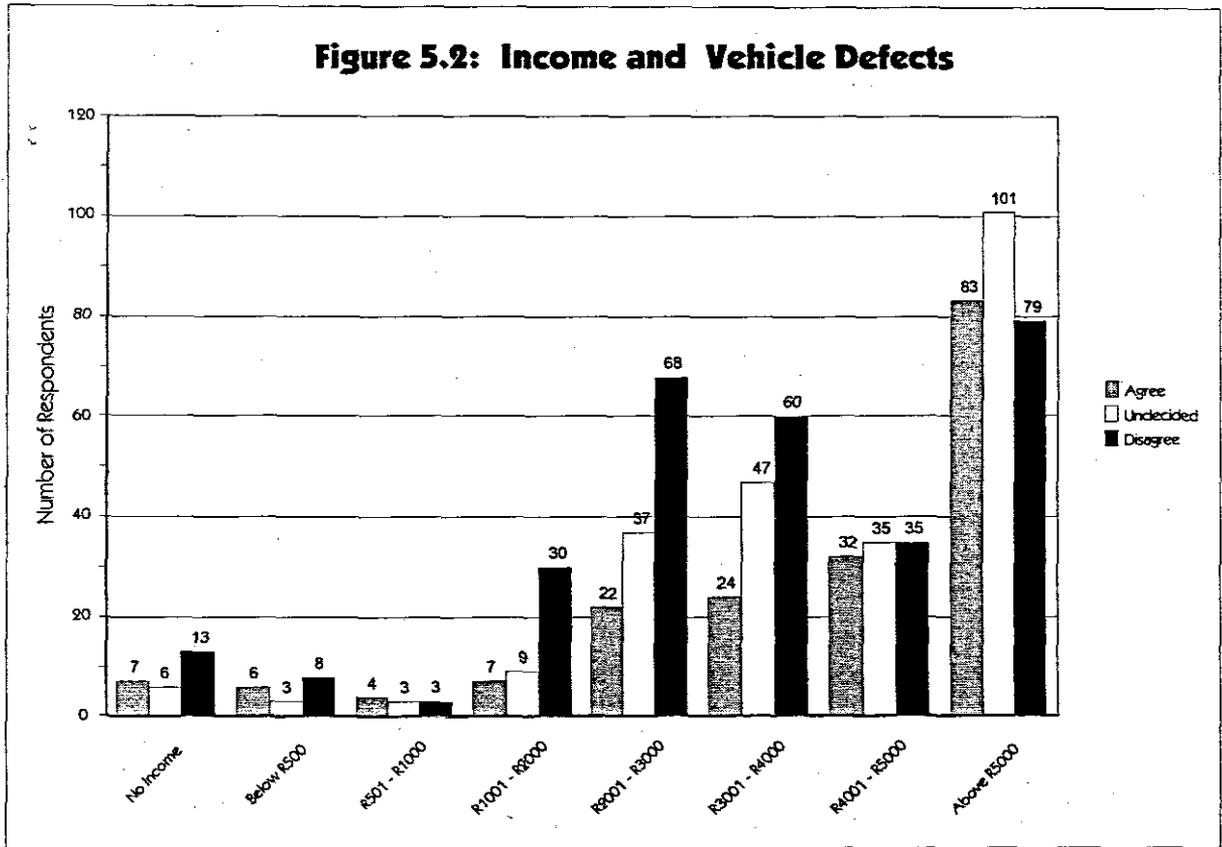


Table 5.5 reveals that income differs according to deviant driving behaviour in relation to aggression, anxiety, traffic policing, document offences and vehicle defects.

Income levels are ranked from no income to R5 000 or more. Such a rank order necessitated the application of Spearman Rank-Order Correlation Coefficient (ρ) to establish relationships between deviant driving behaviour and the various income levels of respondents.

TABLE 5.6: INCOME CORRELATION COEFFICIENT (rho): DEVIANT DRIVING BEHAVIOUR (N=722)

Deviant Driving Behaviour Scales	Correlation Coefficient (rho)	Sig. (2-tailed)
Deviant driving behaviour	0.040	0.277
Aggression	0.194**	0.000
Anxiety	-0.005	0.897
Traffic policing	-0.188**	0.000
Offensive driving	-0.112**	0.003
Document offences	-0.227**	0.000
Vehicle defects	-0.195**	0.000

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

Table 5.6 portrays that there is a significant relationship between deviant driving and respondents' income. Positive correlation has been established between aggression ($\rho = 0.194$) and respondents' income. The deduction is also made that negative correlations exist between the deviant driving behaviour scales and income:

- traffic policing ($\rho -0.188$)
- offensive driving ($\rho -0.112$)
- document offences ($\rho -0.227$) and
- vehicle defects ($\rho -0.195$).

Correlations are low but significant. The Null-hypothesis is partially retained, indicating "there is no relationship between anxiety and respondents' income." Conversely, the Null-hypothesis is rejected in respect of other deviant driving behaviour scales. There is a relationship between deviant driving behaviour (aggression, offensive driving, document offences and vehicle effects) and respondents' income.

5.2.4 Duration of Passing a Driving Test

An individual has to fulfil certain requirements if he or she has to become a legal driver on a public road in South Africa. In order to be considered "fit drivers" provision is being made for learner's licences (provisional licences), driving licences and professional driving permits (South Africa 1996: Sections 13-14). It is a requirement that an individual, government or registered authority should operate a registered and graded driving licence testing centre (South Africa 1996: Section 8). A centre can be suspended or cancelled if an inspector of driving licence testing centre has observed that a centre no longer complies with the requirements specified in the manual of the "Minimum Requirements for Registration and Grading of Driving Licence Testing Centre" (South Africa 1996: Regulation 92). Provinces can also appoint inspectorates to evaluate driving licence testing centres. Inspectors can then take appropriate action.

Drivers should note that they are not allowed to operate motor vehicles on a public road unless they keep driving licences with them in vehicles (South Africa 1996: Section 12 & Regulation 100). The National Road Traffic Act (South Africa 1996: Section 14 & Regulation 99) prescribes the classification and extent of learner's or driving licence.

The following are the prescriptions:

- the category of learner's or driving licence;
- the class of motor vehicle to which the learner's or driving licence relates (Codes 1, 2 & 3);
- the authority granted by such licence;
- the period of validity of such licence; and
- the limitations, if any.

The first step to obtain a driving licence is to pass a learner's driving licence test (South Africa 1996: Regulation 101). The duration of passing a driving test is therefore linked with the period of validity of a learner's driving licence. A learner's driving licence is issued for 18 months from the date of examination and test, if the person is not disqualified from obtaining such licence (South Africa 1996: Section 15(1) & Regulation 102). The examiner of driving licences shall satisfy himself or herself that the applicant knows and possesses insight into:

- rules of the road;
- road traffic signs;
- controls of a motor vehicle of the class to which the application relates; and
- that he or she is not disqualified.

A learner's licence is then issued upon satisfying these requirements and upon passing a learner's licence test (South Africa 1996: Regulation 105).

The possibility exists that it may require several attempts to pass a driving test. This, therefore, accounts for the fact that the duration of passing a driving test will be prolonged. Some learner drivers pass the test at first attempt, whilst others pass the test at various attempts, namely second, third, fourth or fifth attempts (see Annexure A). Khoza (1993:96) observed that out of 5 060 applicants for driving licences during the period 01 January 1990 to 30 June 1990, only 1 656 (32.73%) applicants passed a driving licence test, whilst 3 404 (67.27%) applicants failed that test. The implication is a prolonged duration of passing a driving test. In short, the duration becomes the shortest if the learner driver passes a driving test at first attempt. Conversely, the duration is prolonged if the learner driver presents himself or herself for various attempts. The duration of passing a

driving test is contingent upon the degree to which the learner driver succeeds in demonstrating to the examiner that he or she has mastered and understood road traffic signs, rules of the road, and has a sound knowledge of the different signals which a driver of a motor vehicle is required to give when driving on a public road. A learner driver will then be issued with a driving licence if he or she has passed a driving test (South Africa 1996: Regulation 108).

5.2.4.1 ***Presentation and analysis of data***

It has been observed that some respondents passed their driving tests at first attempt, whilst others passed such tests at various attempts as reflected in the questionnaire (see Annexure A). Categorisation of attempts was necessary in order to test the Null-hypothesis: "There is no relationship between deviant driving behaviour and the duration of passing driving tests."

ANOVA and Chi-square statistics were implemented to establish differences between deviant driving behaviour and respondents' duration of passing driving tests.

**TABLE 5.7: DIFFERENCES ACCORDING TO DURATION OF PASSING
A DRIVING TEST: DEVIANT DRIVING BEHAVIOUR
(N=722)**

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F	Sig.
Deviant driving behaviour	BG	51.685	6	8.614	3.107	0.005*
	WG	1982.449	715	2.773		
	T	2034.134	721			
Aggression	BG	72.053	4	18.013	6.583	0.000*
	WG	1962.081	717	2.737		
	T	2034.134	721			
Anxiety	BG	32.240	4	8.060	2.888	0.022*
	WG	1998.026	717	2.791		
	T	2030.266	721			
Traffic policing	BG	129.407	4	32.352	12.176	0.000*
	WG	1904.727	717	2.657		
	T	2034.134	721			
Offensive driving	BG	90.963	6	18.193	6.707	0.000*
	WG	1939.303	715	2.712		
	T	2030.266	721			
Document offences	BG	77.008	6	12.835	4.695	0.000*
	WG	1949.124	715	2.734		
	T	2026.132	721			
Vehicle defects	BG	63.455	4	15.864	5.772	0.000*
	WG	1970.679	717	2.749		
	T	2034.134	721			

* $p \leq 0.05$: Significant

KEY:

BG: Between Groups

WG: Within Groups

T: TOTAL

df: degrees of freedom

F: value

Sig.: Level of Significance

Figure 5.3: Duration of Passing a Driving Test and Document Offences

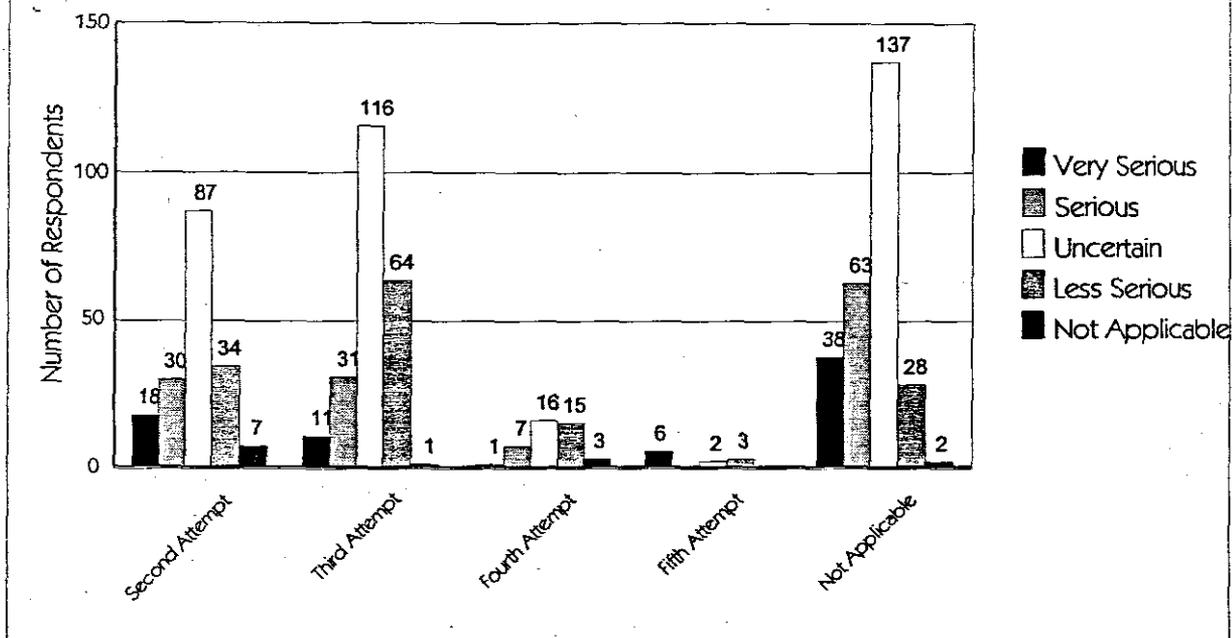


Table 5.7 reveals that the duration of passing a driving test differs significantly according to all scales of deviant driving behaviour.

The duration of passing a driving test has been ranked from second attempt to fifth attempt. Spearman Rank-Order Correlation Coefficient (ρ) was implemented to establish relationships between deviant driving behaviour and the duration of passing a driving test.

**TABLE 5.8: DURATION OF PASSING A DRIVING TEST
CORRELATION COEFFICIENT (rho): DEVIANT DRIVING
BEHAVIOUR (N=722)**

Deviant Driving Behaviour Scales	Correlation Coefficient (rho)	Sig. (2-tailed)
Deviant driving behaviour	0.142**	0.000
Aggression	0.154**	0.000
Anxiety	0.049	0.192
Traffic policing	-0.214**	0.000
Offensive driving	-0.154**	0.000
Document offences	-0.146**	0.000
Vehicle defects	-0.133**	0.000

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

Table 5.8 portrays that there are significant relationships between deviant driving behaviour and duration of passing a driving test. There is no relationship between anxiety and duration of passing a driving test. It can be deduced that there is a positive relationship between deviant driving behaviour scale and aggression. There is a negative relationship between deviant driving (with reference to offensive driving, document offences and vehicle defects) and duration of passing a driving test.

It should be noted that correlation coefficients are low but significant. The Null-hypothesis is partially retained, because "there is no relationship between anxiety and duration of passing a driving test." The Null-hypothesis accordingly rejected in respect of all other scales. There are relationships between deviant driving behaviour scales and aggression, traffic policing, offensive driving, document offences and vehicle defects and duration of passing a driving test.

5.2.5 **Years Motor Vehicle Driven**

The years a vehicle was driven in fact refer to the driving experience of the respondents in years. Reasons for driving motor vehicle are numerous and this relates to the regularity of driving. Driving activities include driving for pleasure, driving during weekends, holidays, to go to work, as an employed driver, for shopping purposes and in personal work. Variations in driving activities has been discussed and analysed in chapter 4 (see paragraph 4.2.5).

Yearly increases of drivers and motor vehicles on the roads may affect the statistical probability of deviant driving figures. Parry (1968:3-4) maintains that, despite having driven for many years, some drivers are unfit to drive. The unfitness might be due to factors other than those covered by the driving-test situation, namely the not-so-obvious factors of adverse personality patterns such as aggression and anxiety.

Exposure to risk is a factor affecting the incidence of deviant driving behaviour. The degree of risk a driver is prepared to take may be a decisive factor in deviant driving behaviour, and if it goes undetected, it may increase over the years. MacMillan (1975:47) refers to four facets of exposure to risk, namely the type of motor vehicle; where it is driven (urban or rural roads); when it is driven (day or night, on wet or dry roads); and finally, what distance has been covered and years driven.

Deviant driving behaviour, in this chapter (especially in the context of paragraph 5.2.5), is linked to taking account the number of years' driving experience of respondents. Years driven is sometimes analysed in relation to the distance travelled (MacMillan 1975:97). The present research study did not include the distance as a variable. Years driven will be correlated with the various forms

(scales) of deviant driving behaviour.

Driving is, therefore, a skill which is learned, and judgement comes only with experience. It would seem self-evidence that the inexperienced driver will be at greater risk to become a deviant driver. Likewise, those who are most exposed to deviant driving behaviour because they have driven for many years, might be expected to become deviant drivers.

5.2.5.1 ***Presentation and analysis of data***

The factual review is that the motoring environment of each respondent differs. Some respondents drive large vehicles, others small; some drive regularly, others only occasionally; some drive long distances daily, others only few distances a day; and some have driven for years. It was, therefore, necessary to devise various categories of years driven (see Annexure A) to test the Null-hypothesis: "There is no relationship between deviant driving and respondents' years of driving."

TABLE 5.9: DIFFERENCES: YEARS VEHICLE DRIVEN: DEVIANT DRIVING BEHAVIOUR (N=722)

Deviant Driving Behaviour Scales		Sum of Squares	df	Mean Squares	F	Sig.
Deviant driving behaviour	BG	48.179	6	8.030	3.576	0.002*
	WG	1609.697	715	2.251		
	T	1657.873	721			
Aggression	BG	77.904	4	19.476	8.838	0.000*
	WG	1579.969	717	2.204		
	T	1657.873	721			
Anxiety	BG	14.609	5	3.652	1.591	0.175
	WG	1643.191	716	2.295		
	T	1657.800	721			
Traffic policing	BG	77.848	4	19.462	8.832	0.000*
	WG	1580.024	717	2.204		
	T	1657.873	721			
Offensive driving	BG	127.431	6	25.486	11.930	0.000*
	WG	1527.440	715	2.136		
	T	1654.871	721			
Document offences	BG	139.913	6	23.319	10.994	0.000*
	WG	1512.275	715	2.121		
	T	1652.188	721			
Vehicle defects	BG	77.286	4	19.321	8.765	0.000*
	WG	1580.578	717	2.204		
	T	1657.873	721			

* $p \leq 0.05$: Significant

KEY:

BG: Between Groups

WG: Within Groups

T: TOTAL

df: degrees of freedom

F: value

Sig.: Level of Significance

Figure 5.4: Years Motor Vehicle Driven and Offensive Driving

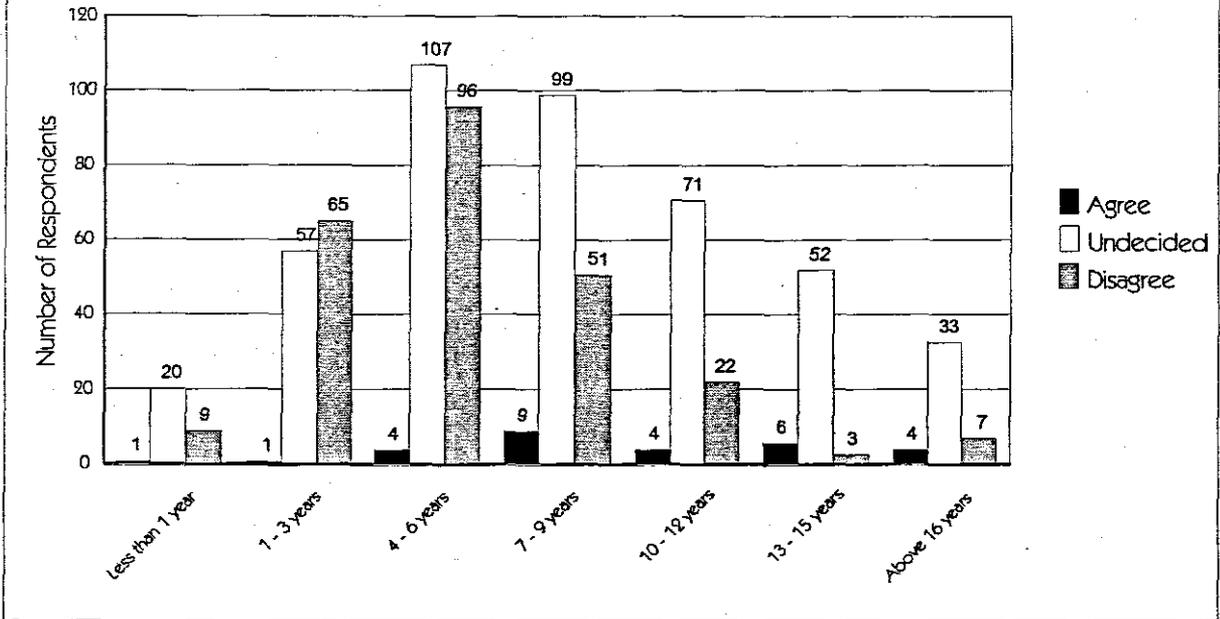


Table 5.9 shows that, with the exception of anxiety, deviant driving behaviour differs significantly according to years driven. Differences exist in respect of the following scales: deviant driving behaviour, aggression, traffic policing, offensive driving, document offences and vehicle defects. ANOVA and Chi-square statistics were employed to establish differences.

Years driven has also been ranked from less than 1 year to 16 years and more (see Annexure A). Spearman Rank-Order Correlation Coefficient (ρ) was used to establish relationships between deviant driving and years driven.

TABLE 5.10: YEARS VEHICLE DRIVEN CORRELATION COEFFICIENT (ρ): DEVIANT DRIVING BEHAVIOUR (N=722)

Deviant Driving Behaviour Scales	Correlation Coefficient (ρ)	Sig. (2-tailed)
Deviant driving behaviour	0.147**	0.000
Aggression	0.184**	0.000
Anxiety	0.054	0.144
Traffic policing	-0.209**	0.000
Offensive driving	-0.282**	0.000
Document offences	-0.281**	0.000
Vehicle defects	-0.190**	0.000

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

Table 5.10 shows that positive relationships exist between deviant driving behaviour (with reference to scales deviant driving behaviour and aggression) and years vehicle driven. Further, it can be deduced that negative correlations exist between deviant driving behaviour (referring to scales traffic policing, offensive driving, document offences and vehicle defects) and years vehicle driven. Correlations are low but significant – both in positive and negative directions.

The Null-hypothesis is partially retained in that there is no relationship between anxiety and years vehicle driven. Conversely, relationships had been established between deviant driving (with reference to scales deviant driving behaviour, aggression, traffic policing, offensive driving, document offences and vehicle defects) and years vehicle driven.

In the present study, age has been correlated with deviant driving behaviour (paragraph 5.2.1.1). Table 5.11 contains informative data about the extent of fatalities according to age in the nine provinces for the period 01 July 2002 to 30 June 2003.

TABLE 5.11: FATALITIES PER AGE GROUP (N=9 879)

Province	Age Group									Unknown	National
	0 - 1	2 - 5	6 - 12	13 - 16	17 - 18	19 - 24	25 - 39	40 - 69	70		
Eastern Cape	7	31	62	25	16	79	234	188	15	349	1 006
Free State	2	21	42	17	18	52	208	157	11	338	866
Gauteng	11	57	77	35	24	162	522	355	23	806	2 072
KwaZulu-Natal	4	52**	117*	37*	39*	150**	433**	271**	30*	654**	1 787**
Limpopo	10	20	62	17	14	74	239	181	16	194	827
Mpumalanga	5	17	42	25	14	64	289	180	8	308	952
North West	6	27	49	16	24	71	210	192	13	377	985
Northern Cape	2	9	12	7	10	35	105	73	9	58	320
Western Cape	6	31	51	15	22	86	219	203	19	412	1 064
National	53	265	514	194	181	773	2 439	1 800	144	3 496	69 879

* Highest scores in KZN

** Second highest scores in KZN

Source: National Fatal Accidents Information Centre, Pretoria

It renders a clear picture of the relationship between deviant driving behaviour and age. It is not the intention of the researcher to provide a detailed analysis of data in this regard. The present study has been undertaken in the area located in KZN north coast (Annexure B). It is therefore essential to present an overview of age distribution in KZN.

Table 5.11 reveals that KZN produced the highest scores of fatalities in respect of the following age categories:

- 6 – 12 years: 23 percent
- 13 – 16 years: 19 percent
- 17 – 18 years: 22 percent and
- 70 years: 21 percent

It has been observed that KZN rated second highest in respect of the following age groups: 19–24 years, 25–39 years, 40–69 years, the “unknown category as well nationally. Fatalities were the highest in Gauteng in all other age groups. It should be noted that KZN scored the second lowest in respect of fatalities for the age group 0–1 years. Gauteng appeared first on the list of fatalities.

5.3 **SUMMARY**

Correlation implies relationship or connection between two or more objects. Correlations are therefore merely statistical descriptions. They describe the strength of the bond of relationship between one variable and the other. The aim of this chapter was to establish relationships between deviant driving and respondents' age, education, income, duration of passing a driving test and years vehicle driven. The conditions

associated with the risk of being involved in deviant driving behaviour should be evaluated within the context of belonging to a specific age group. Age may be viewed as one of the best predictors of involvement in deviant driving behaviour. The theoretical explanations discussed in this chapter include biological theories, psychological theories and sociological theories.

The striking development of primary, secondary and high school and higher education is often accompanied by a strong trend toward a career development or vocationalism. There are professional drivers who have selected driving as a career or vocation. Individuals learn by sharing knowledge and experience with other individuals. The ways in which (driving schools instructors) educators and (learner drivers) learners interact plays an important role in shaping the driver of a motor vehicle. The process of forming judgements of other drivers will determine attitudes towards driving. Judgement also play a role in the development of the "self" as a driver. The comprehension of the self should be done within the context of the various types of educators and learners. The attainment of higher qualifications can be influenced by those types. Education may prevent deviant driving behaviour or provoke it.

The concept "income" refers to the so-called "flow phenomenon" and is used in attempts to justify the satisfaction of human needs and wants. Income is earned in various ways such as to be involved in productive activity. Productive activity refers to some type of employment. Income is also influenced by the level of education. Disparities or inequalities in income can be ascribed to various factors. This result in other (drivers) individuals being rich and others poor.

The driver of a motor vehicle should acquire the necessary skills. A learner driver is therefore required to possess a learner's licence in order to learn to drive. He or she can then apply to be examined for a driving licence. He or she can pass a driving test at first attempt, or at various attempts. Vehicles may be driven for years and for a variety of

purposes such as for shopping, pleasure, to go to work, as an employed driver, during weekends and during holidays. Exposure to risk is a factor affecting the incidence of deviant driving during the years vehicles have been driven.

Statistical evidence of the present study reveals the following:

- (1) There are significant age differences in relation to deviant driving behaviour. Further, there are significant relationships between deviant driving and respondents' age.
- (2) Education differs significantly according to – aggression, traffic policing, offensive driving, document offences and vehicle defects. ANOVA statistics yielded differences that are not significant in respect of anxiety. Spearman Rank-Order Correlation Coefficient yielded significant correlations in respect of aggression, traffic policing, offensive driving, document offences and vehicle defects. Anxiety once again yielded correlation that is not significant.
- (3) Significant income differences were yielded in respect of aggression, anxiety, traffic policing, document offences and vehicle defects. Significant negative correlations were yielded by Spearman Rank-Order Correlation Coefficient in respect of aggression, traffic policing, offensive driving, document offences and vehicle defects.
- (4) There are significant differences between deviant driving and duration of passing a driving test. Significant relationships have been found between deviant driving and deviant driving behaviour scales, with the exception of anxiety which portrays insignificant

relationships.

- (5) Significant differences have been established for deviant driving behaviour scales and years vehicles driven, with the exception of anxiety scale. There are significant relationships between deviant driving behaviour and years vehicle driven. The relationship between anxiety and years vehicle driven is not significant.

CHAPTER 6

AGGRESSIVE AND ANXIOUS DRIVING BEHAVIOUR

6.1 INTRODUCTION

The increase in the number of motor vehicles on public roads may affect the statistical probability of higher deviant driving behaviour, and thus constitute one of the reasons for the upward trend in traffic offences and their undesirable consequences. The increased number of driving licence holders may be advanced as the main factor in the steady rise of deviant driving behaviour, although it may be more plausible to suggest that the increase in the number of potentially dangerous drivers could be directly responsible for the increase of deviant driving behaviour. The increase in the number of motor vehicles on South African roads is proportional to the number of driving licence holders incorporating "dangerous" ones (aggressive and anxious drivers). Fact is, that though some drivers who successfully passed the driving test, are yet unfit to drive motor vehicles. This unfitness may be ascribable to factors other than those covered by the driving test situation. Those factors are usually not so obvious and may stem from adverse personality patterns or behaviour characteristics. Some individual attitude sooner or later manifests itself in the kind of aggressive and anxious driving behaviour that end up in deviant driving behavioural patterns. Anxiety and aggression (hostility) are interrelated; one usually generates or complements the other.

The objective of this chapter is, therefore, to test the Null-hypothesis: "Drivers displaying aggressive and anxious driving behaviour are not inclined to commit traffic offences." Deviant driving behaviour refers to those driver actions which do not conform to normal expected driver behaviour. Deviant driving behaviour, therefore, refers to the disregard or violation of the National Road Traffic Act and Regulations (South Africa 1996).

Disregard or violation of traffic legislation will, therefore, in all probability result in the commission of traffic offences (deviant driving behaviour).

Drivers should be made aware of the human element in driving. Increasing stress involved in contemporary driving, makes psychological efficiency of the driver a more important factor than the mechanical efficiency of the motor vehicle he or she drives. The incidence of deviant driving behaviour (in the form of road accidents and traffic offences) is alarming. Therefore, this chapter is based on the analysis of the factors of aggression and anxiety as contributory to deviant driving behaviour.

6.2 **AGGRESSIVE DRIVING BEHAVIOUR**

De la Cour, Hegarty, Swan, Van Blerk and Wilson (1999:1) state that "road rage" is a term which is also used to account for incidents of extreme violence (aggression) on public roads.

Road rage is a term which is used with increasing frequency by the media in an attempt to account for incidents of extreme hostility on public roads. The issue of media reports is dealt with in paragraph 6.2.3.

The concept "aggression" refers to various fundamentally different behaviour patterns that result in the infliction of harm upon another person or driver (Green & Donnerstein 1998:1-2; Goldstein & Keller 1987:1-5; Shaffer 2000:272-274; Feist & Feist 2002:31-33). Theories of aggression have already been discussed in Chapter 3 (paragraph 3.2.3). Thanatos or death (destructive) instinct is said to be the factor responsible for the generation of aggressive energy in the human beings (Shaffer 2000:272; Feist & Feist 2002:33). Aggressive tendencies would build up to a critical level and then be discharged through some form of violent, deviant driving behaviour. Aggression can also be described as a fighting instinct triggered by certain "eliciting" events in the (traffic)

environment (Hilgard, Atkinson & Atkinson 1979:319; Marsh & Collett 1986:165). This implies that aggression should be intended to injure another driver either physically or verbally. Human (driver) aggression can also be viewed within the context of being "goal-driven".

This approach emphasises consequences of driver action rather than the intentions of actions. The implication is that any driver action that delivers pain or discomfort to another driver, has to be considered aggressive. An intentional definition of aggression implies that an aggressive action is any form of behaviour designed to harm or injure another person who is motivated to avoid such treatment (Shaffer 2000:273).

6.2.1 **Types of aggression**

Two major types of aggressive acts could be distinguished: hostile or affective aggression and instrumental aggression (Feist & Feist 2002:159; Shaffer 2000:273-274; Hilgard *et al.* 1979:319-320; Green & Donnerstein 1998:1-2; Mlangeni 2003:12).

6.2.1.1 ***Hostile or affective aggression (road rage)***

Hostile aggression is a response to some event, for instance, a motor vehicle driver who may chase another driver who has annoyed him or her on the road (see paragraph 6.2.3). Hostile aggression aims at causing other people injury: either physically or psychologically. Paragraphs 6.2.3 and 6.2.4 serve to highlight some of the dynamics involved in road rage.

Instrumental aggression

By contrast, instrumental aggression describes those situations in which a person harms another as a means to a non-aggressive end. Instrumental aggression is motivated by concerns and aims at obtaining rewards other than the victim's suffering. Sporting events symbolise instrumental aggression. In certain instances the same overt act could be classified as either hostile or instrumental aggression.

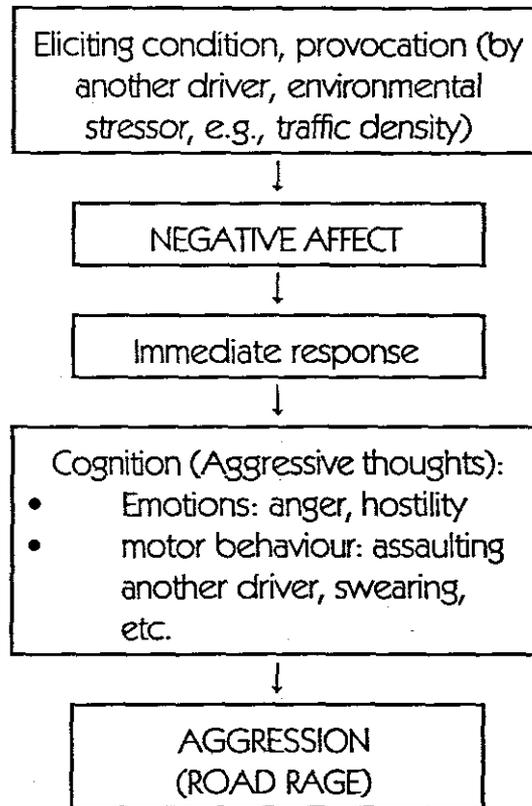
Kisker (1964:134-137) opines that hostility and aggression are internalised behaviour that take place in early life. A child, for instance, learns that aggression invites relation, loss of love and disapproval. Hostile or affective aggression is usually released in three distinct ways:

- *direct aggression* implies exacting physical force such as fighting, stealing, destruction of property and verbal action such as swearing;
- *indirect aggression*, which is usually disguised or camouflaged in teasing actions, practising sport, through hobbies and playing games; and lastly,
- *vicarious aggression*, where individuals release their aggressive impulses in a vicarious or substitute fashion (such as watching other people being aggressive).

Explanations for aggression should be built on the consideration of intervening processes that link the instigating condition to the aggressive response (Green & Donnerstein 1998:2-7). Figure 6.1 (Green & Donnerstein 1998:6) illustrates an

overview of the processes in hostile or affective aggression (“road rage”).

FIGURE 6.1: PROCESSES IN HOSTILE AGGRESSION



It is evident from figure 6.1 that threat, insult, stress and negative mood states are considered highly unpleasant experiences which precipitate aggressive driver behaviour. The immediate reaction to a condition of negative affect is therefore either to “fight back or run away.” Erwee (1999) explains it differently: “When we get behind a car, some demon takes over and we become discourteous, illegal drivers that cause a lot of problems.” Driver aggressive behaviour represents what may be called the greatest motor car sickness and appears to have become prevalent. Paragraph 6.2.3 supports this statement.

Incidents of “road rage” include blocking other motor vehicle drivers from passing,

chasing other drivers, competing on the road, driving fast, overtaking, verbal abuse, assault with weapons and other forms of aggressive driving behaviour. Other occasions have involved shoot-outs such as in narrow streets where there is only room for one car to pass and blazing headlights which impair forward vision. This may lead to view "road rage"

"... as a symptom of the kind of social tensions and dislocations in a war-torn society" (De la Cour *et al.* 1999:3).

Marsh and Collett (1986:113) define driving fast as follows:

"It's the power, a sense of superiority, a feeling of being master of it all; it's a bit like sex really ..."

Road rage may also be viewed as a culturally acquired habit (Cf. James 1999). James compared congestion on roads to rats fighting in a crowded "colony". He further felt that road rage is a culturally acquired habit formed during early years as children watching parents and other adults driving motor vehicles as well as by learning bad driving behaviour from movies and television. This implies that deviant driving behaviour can be assimilated. Acts of aggression represent the ultimate response of aggressive drivers to their frustrations of being thwarted in their pursuit of what they consider as laudatory goals.

6.2.2 **Characteristics of aggressive motor vehicle drivers**

Larson (1997:1-6) proposes five identifying characteristics and beliefs of aggressive motor vehicle drivers.

6.2.2.1 **Top priority**

Aggressive motor vehicle drivers place top priority on getting to their destination in the fastest span of time. They therefore set rigid expectations on their travelling time. Their attitude becomes that “of get out of my way” and, likewise, their self-esteem becomes contingent upon reaching their destination within the allotted time period. Anything impeding their progress from reaching their destination, becomes the cause of aggression (“road rage”).

6.2.2.2 **Competition**

Aggressive drivers apparently believe in competing with other fast motor cars. In this regard, variable 27 (Annexure A), aims at eliciting responses for the statement: “I like competing with other vehicles on the road.”

6.2.2.3 **Response**

Aggressive motor vehicle drivers respond to other aggressive drivers who intend to pass or cut in front of them by not giving the right of way. Such action will reflect a win or lose value system. The implication is that whereas the first aggressive driver may not be trying to “win”, the second aggressive driver quickly decides he or she is not going to “lose”. Both drivers’ self-esteem become invested in the traffic conflict resulting in risk-taking.

6.2.2.4 **Contempt**

Aggressive motor vehicle drivers feel contempt for drivers who do not look, act or drive the way they would want them to drive. As a result they count "useless idiots or drivers" and their contemptuous attitude thus becomes expressed through discourteous and inconsiderate driving behaviour.

6.2.2.5 **Retaliation**

Aggressive drivers feel they have a right to penalise or hit back at other motor vehicle drivers. Larson (1997:6) opines:

"When vigilante meets vigilante, violence happens unless someone else intervenes to stop the cycle of retaliatory blows."

Territorial defence is also one of the primary reasons for aggressive behaviour in male motor vehicle drivers (Marsh & Collett 1986:159). Maintenance of territorial integrity is a major motive for aggression by men. This may be intended to attain dominance and access to receptive women drivers. An invasion of the territory of the motor vehicle is likely to evoke aggressive reactions in even the weakest drivers. The motor vehicle is a special territory or "a home on wheels" (Marsh & Collett 1986:160). Defensive reactions are aroused when this "territory" is threatened. When other motor vehicle drivers, for instance, come too close to the rear bumpers, the driver may feel edgy and defensive because bumpers are inside the visible boundaries that define the mobile territory. If the situation continues, the driver's anger will rise and may become aggressive. Marsh and Collett (1986:161) opine:

"The concern felt by drivers about unreasonable invasion of the space immediately behind them is particularly illustrated by a number of common bumper stickers."

6.2.3 **Newspaper Reports on "Road Rage"**

Media play an important role in reporting various incidents of "road rage" (Howitt 1986). Examples of deviant driving behaviour that ultimately manifest itself in open aggression in the form of "road rage" have been extracted from various newspapers.

6.2.3.1 ***The Krugersdorp "road rage" incident (1999)***

Arthur Liebenberg (37), father of two minor sons, was viciously stabbed to death in the chest after an incident of road rage that occurred in Voortrekker road, Krugersdorp (Gauteng). It has been alleged the deceased was followed by his assailant, and after an altercation (the nature of which was unknown) at a traffic light controlled intersection, the victim was stabbed with a knife and fatally injured by a 63 year-old pensioner who immediately drove away from the crime scene. The suspect who had been arrested shortly after the incident, later appeared in a criminal court and was released on bail (Smith 1999:8).

6.2.3.2 ***The Cape Town "road rage" incident (2000)***

Road rage got the better of hockey player, Graeme Eadie when he, on 12 June 2000 near Cape Town, Western Province, punched Kevin Duncan unconscious with a hockey stick " ... before dragging him out of his car and stamping on his head, in a fit of road rage" (The Star 2000:2). Severe

provocation made him unable to control his emotions and feelings when Duncan was allegedly murdered during this "road rage" encounter. Defense counsel blamed the following combination of factors to have been responsible for the uncontrolled attack on and subsequent murder of Duncan: Eadie's level of intoxication, his emotional state, degree of provocation, and his concern for his family's safety and security at the time of the violent encounter (The Star 2000:2).

6.2.3.3 ***The Midrand "road rage" incident (2001)***

During March 2001, Gary Denysschen (34) appeared in a Wynberg magistrate's court on a charge of assault to do grievous bodily harm after having seriously injured Stephen Whitehead during a "road rage" incident in Midrand, Gauteng. Whitehead allegedly turned in front of Denysschen at a slow speed of about 10 km/h, almost causing an accident. The first assault incident took place when Denysschen hit Whitehead with his fists several times in his face while he was still sitting in his own vehicle. When he, however, got out of his vehicle to write down Denysschen's vehicle registration number, the latter tackled Whitehead for a second time and hit him so hard in the face with his fists, that he virtually subsided on his knees, with a crushed nose. Denysschen appeared in a criminal court, where the case was postponed.

6.2.3.4 ***The Johannesburg "road rage" incident (2001)***

Moments after a Black cyclist bumped into the back of a White man's Honda Ballade motorcar, Johannesburg Metro Police were phoned by the owner of the motor vehicle, informing them what happened and told them he's going to shoot the Black man. This urgent call was made after an apparent road rage incident in Johannesburg, Gauteng, during which occasion a heated argument

ensued between the two men, seconds before the White man pulled out his gun and fatally wounded the Black man. On the arrival of the Metro Police at the scene, the Black man was already dead. The White man, and owner of the motor vehicle, was there and then arrested on a charge of murder (Mabasa 2001:3).

6.2.3.5 ***The Meyerton, Gauteng "road rage" incident (2001)***

Andre van Heerden (26), a sales representative from Meyerton, and his 11-month old baby son were involved in a road accident which was apparently caused by a fit of road rage. Van Heerden allegedly traveled at a high speed in the fast lane of the Vereeniging highway and 'refused' to move to the left when another motor vehicle flashed its headlights behind Van Heerden's motor vehicle, 'signalling' to him to move over to the left lane and to allow him to pass through in the fast lane. The other vehicle allegedly moved over to the right lane and then bumped into the right side of Van Heerden's motor vehicle, causing him to lose control over his vehicle. The car crashed into the left road barriers, spun over it and plunged down onto an adjacent junction of the highway. Van Heerden died later in hospital, while his son, who sustained serious injuries, made a full recovery. The unknown driver of the other motor vehicle stopped at the scene of the accident, remained seated in his car for about fifteen minutes, talked on his cell phone, and then drove off and left the accident scene without having identified himself (Meyer 2001:1).

6.2.3.6 ***The Lichtenburg "road rage" incident (2002)***

A medical practitioner, Dr Pierre Pienaar (54) from Lichtenburg, became the victim of road rage, when a motor vehicle driver from Gauteng province, Alan

Searle (33), repeatedly bumped his car into that of Dr Pienaar where it was parked in front of a restaurant. When Dr Pienaar was informed about the incident, he went outside to investigate. He tried to prevent Searle from further damaging his motorcar, but Searle apparently ignored all requests from Pienaar. At that stage, the medical practitioner pressed with both hands on the bonnet of Searle's motor vehicle in a bid to 'stop' him but instead, Searle speeded forward and hit Pienaar with the front of his car, causing him to land on the bonnet of the car. About fifteen meters further, Searle instantaneously applied his brakes, causing Pienaar to 'fly' through the air and landed on the tar road. Dr Pienaar was critically injured and treated in a local hospital. Searle later appeared in a criminal court on a charge of attempted murder (De Kock 2002:4).

2.6.3.7 ***The Pietermaritzburg "road rage" incident (2002)***

Lyn Kirsten, mother of three, had herself dragged under a Telkom-bakkie that was "... speeding up and down the roadway in the complex where Telkom had been installing a telephone" (Oellermann 2002:1). Kirsten stopped and confronted the driver right in front of her simplex and reminded him he was not on a race track, and to be on the look-out for children and animals. Split seconds later, Lyn Kirsten started to scream. Having been dragged under the bakkie, neighbours then noticed him reversing over Lyn Kirsten. "He must have been blind and deaf if he didn't see her ..." and after paramedics arrived, Kirsten told her neighbour: "Naomi, he told me 'f...' you" (Oellermann 2002:1). Lyn Kirsten died of her injuries in a local hospital.

6.2.3.8 ***The Durban "road rage" incident (2002)***

The costs of a Durban road rage incident ran into thousands of rands, after

Martin Steenkamp (24) who was paralysed in a shooting incident following a fit of road rage, had to be hospitalized to remove one of the two bullets from his neck that crushed his spinal cord. Infuriated motorist Mbizeni Mathenjwa (32) “...allegedly exploded into a fit of road rage when the driver of the minibus taxi which Steenkamp was climbing into refused to move so that he could park his car” (Hosken 2002:8). Mathenjwa got out of his car, threw Steenkamp to the ground and then shot him twice in the neck, turning him (Steenkamp) into a permanent quadriplegic (Hosken 2002:8).

6.2.3.9 ***The Bloemfontein “road rage” incident (2003)***

Intolerance and road rage seem to be the major causes of deteriorating relationships between motorists and cyclist of Bloemfontein (Van Wyk 2003:10). Cyclist Fanie Meyer (36) who was seriously assaulted by motorist, Johan Frederick Joubert (36) who had been waiting for him alongside a double road in Bloemfontein, has been declared “brain dead” after he was struck with a fist, fell from his bicycle and subsequently hit the tar road with his head, suffering severe brain injuries. Road rage usually erupts between motorists and cyclists in and around Bloemfontein’s main roads. Cyclists claim that motorists are intolerable towards them, constantly try to ‘drive’ them off the road, unnecessary hoot, flash lights and even show obscene signs to them. Motorists, on the other hand, claim cyclists are indifferent and do not obey the rules of the road. Psychologist, Professor Weyers, suggest that motorists who suffer from road rage are usually less acceptable to themselves, or suffer personal frustration; they feel more easier threatened and tend overreact emotionally. Any kind of ‘explosion’ on the road may trigger a fit of road rage (Van Wyk 2003:10).

6.2.3.10 ***The (M1) Ben Schoeman-highway 'road rage' incident (2003)***

A quarrel between two motoring parties on the M1 highway on 16 March 2003, eventually led to the death of a young boy (4). The incident took place on the northbound of the highway between Johannesburg and Pretoria, Gauteng province. An argument between the driver of a minibus taxi and a BMW ensued on the Greystone bridge near Sandton, and ultimately erupted into an extreme form of road rage (Steenkamp 2003:4; The Natal Witness 2003:3). When both vehicles entered the highway, the minibus taxi allegedly swerved in front of the BMW and suddenly braked in front of it, causing the car to stop in the emergency lane of the road. The driver of the minibus taxi jumped out of his vehicle and rushed up to the (female) driver of the BMW car. Only when the husband of the female driver got up at the back seat of the car, did the driver of the minibus taxi realize there was also a man in the car.

A serious quarrel between the two male persons ensued, in which accusations against each other were made. While the two male persons (driver of the mini taxi and the passenger of the BMW car) took their rage out on each other, a Mercedes-Benz ploughed into the BMW from behind at a high speed which, in turn, pushed the BMW car into the back of the minibus taxi that was parked in front of it. In the process, a four year-old boy, Kabelo Nxumalo, was swung out of the BMW and killed instantly and his mother seriously injured (The Natal Witness 2003:3; Steenkamp 2003:4).

6.2.3.11 ***The Lebowakgomo 'road rage' incident (2003)***

A forty-year old police Inspector employed at the police garage at Lebowakgomo, Limpopo province, was arrested and being held in custody

on a charge of murder after having shot another motorist. The police Inspector allegedly swerved in front of the other motor vehicle, which caused a slight accident. Both drivers got out of their vehicles, and a serious argument ensued. In a fit of road rage, the police Inspector pulled out his 9 mm service pistol, shot and fatally wounded the other driver (Fourie 2003:4).

6.2.3.12 ***Road rage on the rise: culture of road aggression (2003)***

A clinical psychologist from the Johannesburg Trauma Clinic, Lazarus Kgalema, ascribes South African motor vehicle drivers' inflated egos, their selfishness and violent past as the main reasons for the increased incidents of road rage. Referring apparently to the case for Africans, Kgalema also added 'bottled-up feelings of anger' emanating from a pre-democratic political environment which precipitated violent behaviour, as another possible source of this unfortunate situation happening on South African roads – supporting his assumption that often, road rage may show no link with any kind of traffic situation or the driving of a motor vehicle (Mlangeni 2003:12). However, contemporary motor vehicle drivers are now expressing their feelings of anger in different ways.

What seems to be of interest, is the assumption that South Africa currently suffers from a so-called *culture of road aggression*, linked with a " ... modern, high-pressure lifestyle, stress, and lack of consideration for fellow human beings which not only leads to road rage but also contributes in no small measure to our high road fatality" (Mlangeni 2003:12). The culture of road aggression may also be exacerbated by motorists who travel around in big, powerful cars which " ... gives people exaggerated egos ... drivers feel the size and power of their car gives them more rights than those in small cars" (Mlangeni 2003:12). This point is best illustrated by an incident of extreme

road rage that took place recently in Cape Town. "A taxi driver cut in front of a truck and blocked its way. The outraged truck driver got out to slash the tyres of the minibus and then used his 30-ton horse-and-trailer to sandwich the minibus taxi against a petrol tanker and squashed it into a pile of metal" (Mlangeni 2003:12).

6.2.3.13 ***The Zululand 'road rage' incident (2003)***

A fit of road rage saw an empty bottle hurled against the motorcar of Angeline Jansen who was travelling back from Durban to Richards Bay in the left lane of the N2 highway. Another motorcar was travelling next to her in the right lane at roughly the same speed. Having just passed the Dokodweni turnoff, she observed a white light delivery van pulling up to her vehicle from behind. The driver of the LDV apparently got impatient, due to the fact that he couldn't overtake Jansen's motor vehicle. Had he moved to the right lane he would have had, in all possibility, the opportunity of passing her without any hassles. Instead, the driver of the LDV "... suddenly veered over the yellow line and raced past her on the left, nearly hitting her vehicle as it moved back into the lane" (Waterworth 2003:6).

Once the LDV had passed Jansen's vehicle, it kept on speeding up and slowing down in front of her. Next, Jansen decided to pass the LDV in an attempt to get away from it. She moved over to the right lane and as she was passing the LDV, the driver threw a glass bottle at her car which exploded and caused pieces of glass to fly through the one open back window where her child was sitting in a safety chair. "She had shards of glass all over her hair. It was terrifying" (Waterworth 2003:6). The driver of the white LDV then disappeared.

6.2.3.14 ***The Fourways, Johannesburg 'road rage' incident (2003)***

A taxidriver and passenger have been fatally injured in a shootout with another driver of a Mercedes-Benz motorcar near Fourways north of Johannesburg, with whom they had a serious altercation. The suspect who fled the scene, but eventually handed himself over at the Douglasdale police station, stopped his vehicle in William Nichol drive, just after the Fourways crossing. The driver of the minibus taxi also stopped, and a serious altercation, followed by ructions between the two drivers ensued. The driver of the Mercedes Benz then pulled out a firearm and fired shots at the other driver and passenger. The driver of the taxi died instantly, while his passenger died later in hospital. Although the driver of the Mercedes Benz has been detained for night in police custody, the senior public prosecutor did not proceed with any charges, pending the assembling of more evidence (Basson 2003:2).

6.2.4 **High Court Case on "Road Rage"**

It seems essential at this stage to briefly highlight decided case on "road rage", that was heard in the High Court of South Africa, Bisho (Case No. 38/02). This case illustrates that enraged traffic offenders are severely penalised.

Mr Justice AEB Dhlodhlo presided during the trial of Sebenzile Mkaba (44) who, unlawfully and intentionally, killed Masibuyele Mdunyelwa (26) on 12 October 2001 at or near N49 in Mdantsane. Sebenzile Mkaba was charged with murder. *The crime resulted from what is referred to as "road rage".* On the night of 12 October 2001 at about 21h30, Sebenzile Mkaba and his friend Masixole were seated in Mkaba's car which was parked outside the tavern of Sizwe Boniwe. They had consumed half a bottle of gin which they had purchased from the tavern. Earlier they had also consumed two half-bottles of gin. A commentary is

that Mkaba did not know whether he was drunk but he knew what he was doing because after the shooting incident he was able to drive his car for a distance of about seven kilometres to the police station. Masibuyele Mdunyelwa (the deceased) was driving his car on that night, accompanied by three passengers. Near Sizwe's tavern, his car was involved in a collision with that of Mkaba. The court was unable to determine with certainty which of the drivers were responsible for the collision. Mkaba said that he was reversing into the road with the aim of driving away from the tavern. After the collision, the deceased (Mdunyelwa) and his friend Vuyisile Gqirana confronted Mkaba accusing him of having caused the collision. An argument ensued and some manhandling took place. Mkaba said that the deceased and Vuyisile Gqirana slapped him and hit him with clenched fists during the fracas.

Later, the deceased ran into Sizwe's tavern and hid inside a closed toilet in the tavern. Mkaba who was armed with a 9mm pistol entered the tavern and asked someone in the kitchen where the deceased was. He was told that the deceased was in the toilet. Mkaba proceeded to the toilet, fired shots through the closed door and eventually opened the door. He dragged the deceased out of the toilet into the passage where he shot him in the back. Mkaba then left the deceased and walked out of the tavern. In the kitchen he was asked by an unknown man who was armed with a handgun where the deceased was. Mkaba responded by saying that he had "finished the dog". He walked to his car and drove away to the police station. The deceased was later taken to hospital. He eventually died. According to Dr Dominic John, the cause of death was a gunshot wound to the chest. It could not be denied that the deceased and Vuyisile Gqirana manhandled Mkaba. Mkaba was provoked as a result thereof and that he was acting under the influence of liquor, but he knew what he was doing.

Intoxication did not result in his lack of criminal responsibility. The part of the

body which Mkaba targeted and the words he uttered after the shooting, showed beyond reasonable doubt that he intended to kill the deceased. The deceased was unarmed. Mkaba was not defending himself when he shot the deceased. He was the aggressor. His version was conceived beyond reasonable doubt, as false. Mkaba was accordingly found guilty of murder which resulted from "road rage" (see *S v Sehlako* 1999(1) SACR 67(WLD)71i). Mkaba was sentenced to eighteen (18) years imprisonment.

6.3 **ANXIOUS DRIVING BEHAVIOUR**

Any situation that threatens the well-being of an individual motor vehicle driver is assumed to produce a state of anxiety. Anxiety refers to the unpleasant emotion characterised by worry and fear. This state is often accompanied by a physical sensation that warns the person against impending danger (Hilgard *et al.* 1979:424-425; Feist & Feist 2002:33). The unpleasantness is often vague and hard to determine, but the anxiety is felt. The occasions of anxiety vary with different people as widely as the values on which they depend, vary. May (1977:207) opines:

"Anxiety is objectless because it strikes at that basis of the psychological structure on which the perception of one's self as distinct from the world of objects occurs."

The objectless nature of anxiety arises from the fact that the security base of the motor vehicle driver is threatened. It is in terms of this security base that the driver is able to experience himself or herself as a *self* in relation to objects. The distinction between subject and object might therefore break down. Anxiety can also be referred to as the fear of "nothingness" (May 1977:208).

6.3.1 Differences between anxiety, fear and threat

It is essential to consider the difference between anxiety, fear and threat (Feist & Feist 2002:449-450). Anxiety refers to the recognition that the events with which the individual driver is confronted, lie outside the range of convenience of the individual driver's construct system. Drivers are likely to feel anxious when they are experiencing a new event. For instance, the person driving through fast moving traffic in an unfamiliar town or city, is likely to feel anxious. This resembles a normal or realistic level of anxiety (for a discussion of the types of anxiety see paragraph 6.3.3). Feist and Feist (2002:449) state that people experience threat when they perceive that the stability of their basic constructs is likely to be shaken. A threat can be defined as the awareness of imminent comprehensive change in the individual's core structures. For instance, during driving, motor vehicle drivers may feel threatened by the prospect of change, even change for the proper and accepted style of driving behaviour which will result in conformity with the Road Traffic Act. If they see a traffic officer as a possible instigator of change, they are likely to view such traffic officer as a threat to their deviant driving behaviour. Deviant drivers may resist change and construe the traffic officer's behaviour in a negative style. This kind of resistance and negative transference are means of reducing threat and maintaining existing personal constructs (deviant driving behaviour) (Feist & Feist 2002:449).

Fear entails a relatively well-defined response to real or imagined danger. Unlike anxiety, which tends to be a more chronic condition, fear is of a temporary nature that relates to external events. Feist and Feist (2002:449) opine that fear is more specific and incidental. For instance, an individual may drive his or her motor vehicle dangerously as the result of anger or exuberance. These impulses may become threatening when he or she realises that he or she may run over a pedestrian or may be arrested for inconsiderate or reckless driving. In this case,

a comprehensive portion of the driver's personal constructs is threatened. If he or she is suddenly confronted with the probability of smashing his or her motor vehicle, he or she is likely to experience fear. Threat, on the other hand, demands a comprehensive restructuring; fear is incidental. Psychological disturbance results when either anxiety, fear and threat prevent a driver from feeling secure.

6.3.2 **Origin of anxiety**

Origin of anxiety can be accounted for in relation to three types of responses to danger: the startle pattern, the indifferenced emotional response and a differentiated emotional (fear) response (May 1977:220). The startle pattern has as its most prominent feature, a general flexion of the body. The emergency changes are of various kinds. The heart speeds up, blood pressure increases, and the pulse is quickened. In cases of extreme anxiety, palpitation of the heart and pain in the chest may be experienced. Another anxiety symptom is related to respiration. The breathing rate also increases (May 1977:55). Anxiety permeates and influences the entire body. This constitutes the physiological basis of anxiety. It might be difficult for the driver to comprehend what is taking place. The psychological side of anxiety is closely related to everyday worry. For instance, drivers (respondents) may be worried about doing the wrong things when driving in cities or big towns (see Annexure A). Anxious driving behaviour may be aroused by change to a new traffic environment, repeated failures and any situation in which the physical, emotional, social or intellectual environment become too stressful (May 1977:56-57; Feist & Feist 2002:144-148).

Drivers may startle before they actually know what threatens them. The startle pattern is therefore pre-emotional. It is an immediate response to sudden, intense stimulation which demands some out-of-the-ordinary response by the driver. The startle pattern is the first indication that a gap exists between individual (driver)

and his or her "world" (May 1977:56). The startle pattern belongs to the general type of response known as "catastrophic reaction". The individual (driver) is thrown into a catastrophic condition when he or she cannot cope with the demands of the (traffic) environment and, therefore, feels a threat to his or her existence. Anxiety is thus the subjective experience by the individual (driver) in a catastrophic condition.

6.3.3 **Types of anxiety**

Anxiety serves as an ego-preserving mechanism, because it signals that some danger is imminent. Anxiety allows the constantly vigilant ego to be on the alert for signs of threat and danger. The signal of impending danger stimulates persons to mobilise, either by means of fighting back, defending themselves, or flight. Only the ego can produce or feel anxiety, but the id, superego and external world are each involved in different kinds of anxiety. Feist and Feist (2002:34) identify three types of anxiety: neurotic anxiety, moral anxiety and realist anxiety.

6.3.3.1 ***Neurotic or pathological anxiety***

Neurotic anxiety is defined as apprehension about an unknown danger., neurotic anxiety occurs when the capacity for coping adequately with threats is not objective but subjective. Subjectivity implies that neurotic anxiety is due to inner psychological patterns and conflicts which prevent the individual (driver) from using his or her powers. Feist and Feist (2002:34) further maintain that individuals may experience neurotic anxiety in the presence of a driving instructor, an examiner for driving licences, an employer, a teacher or some other authority figure. This might be due to the fact that they previously experienced unconscious feelings of destructiveness against one or both parents. At the early stages of development, these feelings of hostility are

often accompanied by fear of punishment. This fear of punishment thus becomes generalised into unconscious neurotic anxiety.

6.3.3.2 ***Moral anxiety***

Feist and Feist (2002:34) proffered that moral anxiety stems from the conflict between the ego and superego. Individuals may experience anxiety as an outgrowth of the conflict between the realistic needs and dictates of the superego. For instance, moral anxiety would result from sexual temptations if individuals believe that yielding to the temptation would be morally wrong. It may also result from failure to behave consistently with what is regarded as morally right, such as failing to care for one's aging parents.

6.3.3.3 ***Realistic or normal anxiety***

Realistic or normal anxiety continues throughout life in the form of what Freud termed "objective anxiety" (Feist & Feist 2002:34; May 1997:209-210). Realistic anxiety bears a close resemblance to fear. Realistic anxiety is also defined as an unpleasant, non-specific feeling involving a possible danger. For instance, motor vehicle drivers may experience realistic or normal anxiety while driving in heavy, fast-moving traffic and when tailing a minibus taxi or tailed by a minibus taxi (see Annexure A). It should be noted that realistic anxiety is different from fear in that it does not involve a specific fearful object. A driver would experience fear, for example, when the motor vehicle suddenly began sliding out of control on an icy public road.

6.3.4 **Role of anxiety in (driver) personality**

Organisation and disorganisation anxiety plays two important roles in the dynamics of (driver) personality organisation and disorganisation: it serves both as a signal and a symptom (Feist & Feist 2002:35-39). Anxiety as a signal plays the role of alerting the driver to impending danger. It also makes it possible for the individual (driver) to set into motion the defensive and adjustive processes which will serve to protect the individual against inner threats. The principal defense mechanisms identified by Freud include repression, undoing, isolation, reaction formation, displacement, fixation, regression, projection, introjection, and sublimation (Feist & Feist 2002:35-39). It is not intended to discuss these defense mechanisms in more finer detail. It suffice to mention to the reader that defense mechanisms protect the ego against anxiety. They are universal in that every individual (driver) engages in defensive behaviour to a certain degree. Each defense mechanism, combined with repression, can be carried to the point of psychopathology. In the normal course of events, defense mechanisms are beneficial to the individual (driver) and harmless to society. Feist and Feist (2002:39) maintain that sublimation is the only defense mechanism which usually produces benefits both to the individual (driver) and to society.

Anxiety, as a symptom, is an expression of the breakdown of the defensive operations of the individual (driver). In this role, anxiety becomes the basic symptom in all psychoneurotic disorders (Hilgard *et al.* 1979:447-448; Feist & Feist 2002:161-162).

The objective of the present study is to uncover information in attitudinal context regarding aggression and anxiety among drivers of motor vehicles, and to elicit what influence, if any, aggression and anxiety may have on deviant driving behaviour – especially as far as the commission of traffic offences is concerned.

Paragraph 6.4 deals with the presentation and analysis of data pertaining to deviant driving (traffic offences), and aggressive-anxious driving behaviour.

6.4 **PRESENTATION AND ANALYSIS OF DATA**

It is crucial to render statistical evidence reflecting differences between aggressive-anxious driving behaviour and various aspects of motor vehicle driving experience. In the present study, aspects relating to driving experience that are cross-correlated with aggression and anxiety, include:

- learning to drive at a driving school (formal driver-training),
- informal driver-training, and
- passing a driving test at first attempt (see Annexure A).

The researcher contends that such driving experience may have an impact on aggressive and anxious driving behaviour among motor vehicle drivers in the sample. It is possible that the impact might manifest itself in deviant driving behaviour (commission of traffic offences). This necessitated the testing of the Null-hypothesis: "Drivers who display aggressive and anxious driving behaviour are not inclined to commit traffic offences."

TABLE 6.1: DIFFERENCES BETWEEN AGGRESSIVE-ANXIOUS DRIVING BEHAVIOUR AND LEARNED TO DRIVE AT A DRIVING SCHOOL (N=722)

Scale		Sum of Squares	df	Mean Squares	F	Sig.
Aggression	BG	2.331	4	0.583	1.559	0.184
	WG	268.062	717	0.374		
	T	270.393	721			
Anxiety	BG	2.158	4	0.540	1.442	0.218 0.007*
	WG	267.086	717			
	T	270.086	721			

* $p \leq 0.05$: Significant (Chi-square)

BG: Between Groups; WG: Within Groups; T: Total; df: degrees of freedom; F: F-value

ANOVA statistics in Table 6.1 reveals that differences between deviant driving behaviour (with specific reference to aggression and anxiety), and learning to drive at driving schools, are not significant.

However, Chi-square computations yielded significant differences between anxiety and learning to drive at driving schools (0.007*). It has been observed that 42 percent of respondents who learned to drive at driving schools, displayed an anxious approach to driving. Respondents who did not learn to drive at driving schools are accounted for in 35 percent cases of anxious driving behaviour.

TABLE 6.2: DIFFERENCES BETWEEN AGGRESSIVE-ANXIOUS DRIVING BEHAVIOUR AND INFORMAL DRIVER-TRAINING (N=722)

Scale		Sum of Squares	df	Mean Squares	F	Sig.
Aggression	BG	40.331	4	10.083	1.559	0.061
	WG	3194.262	717	4.455		0.001**
	T	3234.593	721			
Anxiety	BG	79.324	4	19.831	1.442	0.001*
	WG	3150.510	717	4.400		0.001**
	T	3229.834	721			

* $p \leq 0.05$: Significant (ANOVA)

** $p \leq 0.05$: Significant (Chi-square).

BG: Between Groups; WG: Within Groups; T: Total; df: degrees of freedom; F: F-value

It is apparent that there are various options pertaining to driver-training. An individual can be taught to drive by a friend, relative, employer, him or herself, or non of the above-mentioned (see Annexure A). It becomes, therefore, essential to establish whether any differences exist or not, between aggressive-anxious driving behaviour and informal driver-training.

ANOVA computations reveals that aggression does not differ according to informal driver-training (see Table 6.2). Chi-square, however, yielded significant differences in this regard (0.001**). Table 6.2 further reveals that both Chi-square and ANOVA statistical analyses yielded significant differences in relation to correlations between anxious driving behaviour and informal driver training (0.001* and 0.001** respectively).

Respondents who learned to drive a motor vehicle other than at driving schools, reported an aggressive approach to driving as follows:

- other category: 100 percent
- employer and self: 45 percent respectively
- friend: 30 percent and

- relative: 22 percent

An anxious inclination to driving has been observed among respondents who learned to drive through informal driver-training (see Table 6.2). Distribution of anxious driving behaviour is as follows:

- other category: 100 percent
- employer: 73 percent
- self: 64 percent
- friend: 28 percent and
- relative: 25 percent

TABLE 6.3: DIFFERENCES BETWEEN AGGRESSIVE-ANXIOUS DRIVING BEHAVIOUR AND PASSED DRIVING TEST AT FIRST ATTEMPT (N=722)

Scale		Sum of Squares	df	Mean Squares	F	Sig.
Aggression	BG	6.271	4	1.588	4.784	0.001*
	WG	234.959	717	0.328		0.000**
	T	241.230	721			
Anxiety	BG	1.533	4	0.383	1.145	0.334
	WG	239.572	717	0.335		
	T	241.104	721			

* $p \leq 0.05$: Significant (ANOVA)

** $p \leq 0.05$: Significant (Chi-square)

BG: Between Groups; WG: Within Groups; T: Total; df: degrees of freedom; F: F-value

Table 6.3 portrays that aggressive driving behaviour differs significantly according to passing a driving test at first attempt. Both ANOVA and Chi-square statistics yielded significant levels (0.001* and 0.000** respectively). Respondents who passed driving tests at first attempt reported the highest aggression (28%), whilst those who did not pass at first attempt reported the lowest aggression (25%).

It is evident (Table 6.3) that differences between anxious driving behaviour and obtaining a driving licence at first attempt, are not significant. This has been confirmed by ANOVA and Chi-square statistical analyses.

TABLE 6.4: CORRELATION BETWEEN DEVIANT DRIVING BEHAVIOUR (TRAFFIC OFFENCES) AND LEARNED TO DRIVE AT A DRIVING SCHOOL (N=722)

Scale	Value	df	Sig. (2-sided)
Offensive driving	26.585 ^a	15	0.032*
Document offences	34.969 ^a	18	0.010*
Vehicle defects	17.776 ^a	12	0.123

* $p \leq 0.05$: Significant

Table 6.4 portrays the manifestation of deviant driving behaviour in the form of the commission of traffic offences (traffic law violations). Khoza (1993:71) arbitrarily dichotomised traffic offences into three discrete categories:

- driving offences (in the present study the scale is referred to as offensive driving)
- vehicle-related offences (in the present study the scale is referred to as vehicle defects) and
- document offences (see Annexure A).

ANOVA computations yielded differences between traffic offences and learned to drive at driving schools that are not significant. Conversely, Chi-square tests yielded significant differences in relation to offensive driving and document offences (see Table 6.4). Chi-square tests also confirmed ANOVA computations namely that differences between vehicle defects and learned to drive at driving schools are not significant.

Respondents who learned to drive at driving schools reported the highest offensive driving behaviour – 40 percent, compared to respondents who did not learn to drive at driving schools – 39 percent.

Respondents who did not learn to drive at driving schools, reported the highest traffic law violations (document offences) – 42 percent, whereas respondents who acquired their driver-training through formal instruction at driving schools, reported lower violations (document offences) – 21 percent.

The researcher deemed it necessary to establish differences between deviant driving behaviour (with particular reference to traffic offences) and informal driver-training. Application of ANOVA and Chi-square statistics yielded differences that are not significant in relation to all three scales of traffic offences (see Table 6.5).

TABLE 6.5: CORRELATION BETWEEN DEVIANT DRIVING BEHAVIOUR (TRAFFIC OFFENCES) AND INFORMAL DRIVER-TRAINING (N=722)

Scale		Sum of Squares	df	Mean Squares	F	Sig.
Offensive driving	BG	11.417	5	2.283	0.507	0.771
	WG	3219.859	716	4.503		
	T	3231.276	721			
Document offences	BG	49.581	6	8.264	1.855	0.086
	WG	3176.946	715	4.456		
	T	3226.528	721			
Vehicle defects	BG	40.361	4	10.090	2.265	0.061
	WG	3194.232	717	4.455		
	T	3234.593	721			

BG: Between Groups; WG: Within Groups; T: Total; df: degrees of freedom; F: F-value

TABLE 6.6: CORRELATION BETWEEN DEVIANT DRIVING BEHAVIOUR (TRAFFIC OFFENCES) AND PASSED DRIVING TEST AT FIRST ATTEMPT (N=722)

Scale		Sum of Squares	df	Mean Squares	F	Sig.
Offensive driving	BG	4.424	5	0.885	2.673	0.021*
	WG	236.680	716	0.331		
	T	241.104	721			
Document offences	BG	7.504	6	1.251	3.829	0.001*
	WG	232.890	715	0.327		
	T	240.394	721			
Vehicle defects	BG	6.970	4	1.743	5.333	0.000*
	WG	234.230	717	0.377		
	T	241.230	721			

* $p \leq 0.05$: Significant (ANOVA)

** $p \leq 0.05$: Significant (Chi-square)

BG: Between Groups; WG: Within Groups; T: Total; df: degrees of freedom; F: F-value

Table 6.6 reveals that differences (correlations) between traffic offences and the passing of a driving test at first attempt are significantly related at the 0.05 level. ANOVA and Chi-square statistical tests were administered to establish the possible existence of such differences. Significant differences were recorded in relation to all the scales (categories) of traffic offences contained in the table. Chi-square test yielded no significant differences in relation to offensive driving, while ANOVA statistics yielded significant differences in this regard (see Table 6.6).

Respondents who *did not* pass their driving tests at first attempt, reported the higher deviant driving behaviour indicated below:

- vehicle defects: 47 percent
- offensive driving: 45 percent and
- document offences: 28 percent.

Lower scores of deviant driving behaviour were recorded for respondents who *passed* their driving tests at *first attempt*:

- vehicle defects: 32 percent
- offensive driving: 29 percent
- document offences: 12 percent.

Subsequently, it is important to ascertain whether any correlations exist between deviant driving behaviour (traffic offences) and aggression. In this regard, it has become imperative to facilitate the testing of the Null-hypothesis: "Drivers displaying aggressive and anxious driving behaviour are not inclined to commit traffic offence."

TABLE 6.7: CORRELATION BETWEEN DEVIANT DRIVING BEHAVIOUR (TRAFFIC OFFENCES) AND AGGRESSION (N=722)

Scale (Traffic Offences)	Value	df	Sig. (2-tailed)
Offensive driving	53.633 ^a	12	0.000*
Document offences	324.764 ^a	16	0.000*
Vehicle defects	201.218 ^a	16	0.000*

* p ≤ 0.05: Significant; df: degrees of freedom

Table 6.7 reveals that there are significant correlations (differences) between traffic offences and aggressive driving behaviour. Correlations were obtained by utilising Chi-square statistical tests. Higher scores of traffic offences have been observed among respondents who displayed aggressive driving behaviour. This observation applies to all the following traffic offence-scales:

- document offences: 68 percent
- vehicle defects: 37 percent and
- offensive driving: 34 percent.

Respondents who did not display aggressive driving behaviour, reported somewhat lower to extremely low scores in respect of the following traffic offences:

- document offences: 38 percent and
- offensive driving and vehicle defects: 6 percent respectively.

The Null-hypothesis is therefore rejected. Statistical evidence reveals that drivers displaying aggressive driving behaviour are more inclined to commit traffic offences.

Chi-square statistics were also utilised to establish correlation between traffic offences and anxious driving behaviour. To achieve this aim, it has become essential to test the null-hypothesis: "Drivers displaying anxious driving behaviour are not inclined to commit traffic offence."

TABLE 6.8: CORRELATION BETWEEN DEVIANT DRIVING BEHAVIOUR (TRAFFIC OFFENCES) AND ANXIETY (N=722)

Scale (Traffic Offences)	Value	df	Sig. (2-tailed)
Offensive driving	14.801 ^a	12	0.253
Document offences	121.377 ^a	16	0.000*
Vehicle defects	111.367 ^a	16	0.000*

* p ≤ 0.05: Significant; df: degrees of freedom

14.801^a: 12 cells (60.0%) have expected count less than 5. The minimum expected count is .00.

121.377^a: 13 cells (52.0%) have expected count less than 5. The minimum expected count is .02.

111.367^a: 12 cells (48.0%) have expected count less than 5. The minimum expected count is .06.

Table 6.8 reveals that there are correlations between two categories of traffic offences:

- document offences (0.000*)
- vehicle defects (0.000*) and anxious driving behaviour.

Differences between offensive driving and anxiety are not significant. This implies no correlation between offensive driving behaviour and anxiety.

Respondents who displayed an anxious approach to driving, scored higher on document offences than those who did not:

- respondents who displayed anxious driving behaviour: 23 percent and
- respondents who did not displayed anxious driving behaviour: 3 percent.

The operation of defective motor vehicles yielded the following scores:

- respondents who displayed anxious driving behaviour: 47 percent and
- respondents who did not displayed anxious driving behaviour: 22 percent.

It would be safe to make the deduction that drivers who display anxious driving behaviour, are more inclined to commit document offences and also more inclined to operate defective motor vehicles. This implies a partial rejection of the Null-hypothesis, because they are not likely to commit driving offences.

Correlations have been effected between deviant driving behaviour (traffic offences) and driving test passed at first attempt (Table 6.7). There are correlations (significant differences) between motor vehicle defects and driving test passed at first attempt, as one of the aspects relating to driving experience.

TABLE 6.9: MOTOR VEHICLE DEFECTS AS CONTRIBUTORY FACTORS TO FATAL ACCIDENTS (N=8 135)

Motor Vehicle Defects	Frequency	Percentage
Overloaded-Cargo/Passengers	44	0.54
Faulty brakes	107	1.29
Tyre burst prior to accident	311	3.82
Smooth tyres	18	0.25
Lights (faulty, not switched on, blinding dirty back lights)	43	0.54
Other	1 070	13.15
Unknown	6 542	80.41
Total	8 135	100.00

Source: National Fatal Accidents Information Centre, Pretoria

Table 6.9 reports the status of motor vehicle defects (vehicle-related factors) as contributory causes in respect of crashes and fatal accidents in South Africa for the period 01 July 2002 to 30 June 2003. In the present study, defective brakes and tyres have been included in the measuring instrument (Annexure A). The other two variables in this scale are not reflected in Table 6.9, but it can be assumed that these variables may be inclusive in categories "other" or "unknown". The "unknown category" of vehicle defects produced the highest scores (80.41%), whilst other defects account for:

- defective brakes: 1.29 percent
- tyre burst: 3.82 percent and
- smooth tyres: 0.25 percent.

6.5 SUMMARY

It appears from the foregoing statistical information that, although some drivers who have successfully passed their driving tests, are yet unfit to drive motor vehicles. This state of "unfitness" is due to factors other than those covered by the driving test situation. Some

individual attitude sooner or later manifests itself in the kind of aggressive and anxious driving that culminates into deviant driving behaviour. Aggression refers to various fundamentally different types of behaviour resulting in the infliction of harm to another person. The mass media frequently use the term "road rage" to describe this kind of deviant driving behaviour.

There are two types of aggression: hostile (or affective) aggression, and instrumental aggression. Hostile (affective) aggression is a response to some event whilst instrumental aggression aims at obtaining rewards other than the victim's suffering. "Road rage" is therefore symbolic of being "enraged" (hostile or affective aggression) whilst driving a motor vehicle.

Any situation that threatens the well-being of an individual driver is assumed to produce and display a state of anxious driving behaviour. Anxiety refers to the unpleasant emotion characterised by worry and fear. This state of mind is often accompanied by a physical sensation that warns the driver against impending danger which, in turn, stimulates drivers to mobilise to either fight back (defend) or flight. There are three types of anxiety:

- (a) neurotic or pathological anxiety
- (b) moral anxiety and
- (c) realistic (or objective) anxiety.

Motor vehicle drivers may experience realistic anxiety while driving in dense or heavy fast-moving traffic.

Statistical evidence in the present study suggests the following:

- (1) Respondents who have learned to drive at (formal) driving schools, displayed a more anxious approach to driving than those who have

learned to drive through informal driver-instruction. There is a positive correlation between anxious driving behaviour and formal driver-training at driving schools.

- (2) There is also a positive correlation between deviant driving behaviour (aggression and anxiety) and informal driver-training. This finding implies a correlation between deviant driving behaviour and informal driver-training.
- (3) It has been established that there is a positive correlation between deviant driving behaviour and passing a motor vehicle driving test at first attempt. The Chi-square test also confirmed that aggressive deviant driving behaviour differs significantly according to passing a driving test at first attempt.
- (4) Significant differences between traffic offences (driving offences and document offences) and learning to drive a motor vehicle at driving schools, had been established through the application of Chi-square test. There is a positive relationship between traffic offences and learning to drive at driving schools.
- (5) Traffic offences (offensive driving, document offences and vehicle defects) differ significantly according to passing a driving test at first attempt. A positive correlation exist between traffic offences and passing a driving test at first attempt.
- (6) A positive correlations also exists between three traffic offence-scales and aggressive driving behaviour. The Null-hypothesis has therefore been rejected, because motor vehicle drivers displaying

aggressive driving behaviour are more apt to commit traffic offences.

- (7) Significant differences and positive correlations exist between traffic offences (document offences and vehicle defects) and anxious driving behaviour. The Null-hypothesis has been partially rejected. Motor vehicle drivers who display anxious driving behaviour are more inclined to commit document offences and operate defective motor vehicles.

CHAPTER 7

TRAFFIC POLICING

7.1 INTRODUCTION

The presence of the automobile on South African public roads and the incidence of traffic offences (deviant driving behaviour) are inextricably linked to each other. Apart from using motor vehicles for a variety of purposes, they are *inter alia* also regularly used for criminal purposes such as to reach a crime target, or to flee from a crime scene, or to transport stolen goods. The attractiveness of motor vehicles as a financial asset, undeniably contributes towards it becoming a theft target. The availability of motor vehicles has served to vastly increase the operation of modern criminals. The reality is that there are currently many motor vehicles on South African roads. A great many of what start as "routine" traffic encounters between traffic police officers and the public, often culminate in serious traffic offences. It is essential that every police official should be aware that traffic policing is nonetheless an inescapable part of his or her overall task to protect and serve the public. A police official would not hesitate to take action against an intoxicated person running down the street firing a pistol at random. Some police officials might feel that getting drunk drivers off the road is not really part of their crime prevention function. Fact is: several motor vehicles may pose a greater danger to public safety than the discharge of a firearm. People who are concerned about the incidence of violent crime in society may soon also discover that the amount of deaths and human suffering generated by traffic accidents each year, is perhaps greater than that produced by various forms of crime. Other financial implications of traffic accidents (most of which are caused as a result of deviant driving behaviour), result in economic loss, due to damaged motor vehicles, loss of income, insurance claims, lawsuits, medical expenditure, etc.

It is, therefore, evident that problems generated by motor vehicle transportation can never be alleviated by amateurs. There is a need for trained experts in the dynamics of modern traffic policing such as high speed and heavy-volume traffic control. The public almost mechanically turn to traffic police for traffic flow, order and safety. The traffic problem is not limited to large cities.

Local government officials have long since been confronted with the necessity of facing up to the problem of a smooth traffic flow, traffic safety and security, traffic offences and accidents, parking, traffic congestion, and the like. It would be extremely difficult to find a community, no matter how small, that is not presented with a traffic problem in some degree. Traffic policing (traffic regulation and control) in all communities has now become big business. The problem has been compounded to the point where the application of the principles of sound traffic management is mandatory.

7.2 ROAD TRAFFIC LEGISLATION IN SOUTH AFRICA

The considerable increase in motor vehicles on the road, the high rate of road accidents, the voluminous number of traffic law violations (deviant driving behaviour), and the assumption that road safety cannot be guaranteed by improvements to road and environmental conditions, has necessitated the enactment and review of road traffic legislation (Khoza 1993:30). Traffic legislation does not simply depend upon its enforceability in achieving voluntary obedience amongst road users, but also on inherent consistency and predictability. This is also another rationale for enacting road traffic legislation. Traffic legislation may be directed at the traffic laws and not taking into account the consequences thereof. The point of focus, therefore, becomes the enforceable nature of traffic legislation rather than its execution. The architects of traffic legislation often adopt their own individual attitude and approach to traffic problems as a point of departure, without giving due consideration to that of the community. This may result in inflexible traffic legislation, whilst the community where it is supposed to be

implemented, is changing rapidly.

7.2.1 **Objectives and functions of traffic legislation**

Traffic legislation is usually enacted with specific objectives (Kriel 1974:2; Barkhuizen 1967:300). Traffic legislation should reflect the interest of the community rather than simply representing a set of enforceable rules. In this sense, therefore, traffic legislation aims at maintaining an equilibrium in order to best serve the interests of the community.

7.2.1.1 ***Objectives of traffic legislation***

Leonard and More (1987:381-382) maintain that traffic laws are created to ensure the orderly flow of traffic, as well as road safety by achieving a meaningful balance between traffic flow, road safety and the economy. Traffic laws regulate road behaviour in the interests of social order (Rosnow & Georgondi 1986:5).

The contextual approach to traffic legislation establishes a balance between *context* (the set of circumstances surrounding an event) and *texture* (the attributes or nature that gives an event its peculiar character). This differs from the interactional approach which equates context with the environment. The same argument may be adduced when it comes to the differences between contextual and situational traffic policing. Contextualisation is not as linear as interactionism and situationism. It is neither static and predetermined. Page (1983:xiv) states: "Situationism is an external determinism, while trait theory is an internal determinism; when we combine these, we will get determinism both external and internal". Human understanding is always characterised by individuality. The nature

of social realities is also constantly changing. This implies that every interpretation of traffic legislation should be continually re-evaluated. The scientific goals of understanding, predicting and control appear feasible only if they are viewed in broad socio-historical and cultural frameworks. Society and culture are therefore techniques that should be used in order to comprehend road traffic legislation.

Barkhuizen (1967:300) maintains that traffic legislation has a number of broad and diverse objectives:

- (a) it prescribes certain standards of behaviour for individual road users and judges certain types of traffic conduct. Such behaviour should not amount to negligence or recklessness;
- (b) standards of safe behaviour should be brought into line with the wishes and demands of road users;
- (c) the various traffic prescriptions (Road Traffic Act and Regulations) should be consistent with each other;
- (d) traffic legislation is directed at the determination of guilt and responsibility in road accidents;
- (e) traffic legislation contains objectives relating to environmental elements influencing traffic. For instance, buildings and other features should not obstruct visibility or flow of traffic; and
- (f) legal measures aimed at promotion of road safety should always go hand in hand with the improvement of road and environmental

conditions.

A great deal of traffic legislation consists of a series of road safety prescriptions in written form. The practical objective is to lay down rules of traffic conduct so that every road user will know exactly what is expected of him or her (Barkhuizen 1967:300).

7.2.1.2 ***Function of traffic legislation***

The comprehensive function of traffic legislation is to ensure order on roads, and to control and prevent deviant driving behaviour (Oosthuizen 1975:12-13; Leonard & More 1987:381). Sound principles regarding the use of roads should be adhered to. To regulate the flow of traffic, drivers of motor vehicles should observe all traffic signs, rules and regulations. The application is aimed at the reduction of risky conduct on the part of the road user with the purpose of controlling his or her behaviour which can make a considerable contribution towards fulfilling the objectives of traffic legislation. Objectives of traffic legislation are more easily achieved when they are supported by positive public opinion, attitudes and voluntary compliance (Khoza 1993:33).

Apparently, the main function of traffic legislation in relation to road safety and identification of deviant drivers, is to reinforce the duty to take care by providing additional safeguards in situations of potential danger. Justice Broome (Odendaal 1968:35) once remarked:

“These safeguards, involving as they do the creation of quite arbitrary criminal offences, are rough and ready, but they are the best that can be devised. They have the obvious

disadvantage of making punishable conduct which is not inherently wrong and which often does not involve any failure to take due care, but that is the price we must pay for safer roads.”

Kriel (1974:5-7) is of the opinion that effective functioning of traffic legislation may be influenced by a variety of factors. Factors that are characteristic of the application of traffic legislation also create various problems, for instance, the so-called “victimless traffic offences”. A fair percentage of traffic offences may be classified as such, because there is no specific complaint and immediate victim. Traffic legislation evolved with increased use and complexity of human nature. For traffic legislation to become operative, it must be consistent with the principles of criminal law. Traffic offences can, therefore, be seen as deviant driving behaviour for which there are prescribed sanctions. This implies that traffic legislation consists of various elements (*corpus delicti*) that must be present in each traffic offence before it constitutes a complete action. When all elements are present, the traffic offence is complete, regardless of the state of mind of the deviant driver (Khoza 1993:34).

7.2.2 **Problems affecting traffic legislation**

In addition to the road user, application of traffic legislation and legal aspects thereof, several problems affecting traffic legislation may be identified (Kriel 1974:6; Kirkham & Wollan 1980:72-73). Traffic legislation defines rules, guidelines, duties and limitations applicable to drivers, pedestrians, motor vehicles, roads and road traffic signs. It is therefore apparent that traffic rules promote preventive rather than repressive traffic control. The National Road Traffic Act, no. 29 of 1996 and its Regulations require all road users voluntarily to submit to reasonable

restrictions, the objective being to lower the rate of deviant driving behaviour and road accidents. These prescriptions impose a further duty on the police and traffic officer and demand of them specific high quality law enforcement through discretion, determination of tolerance thresholds and selective traffic law enforcement (Khoza 1993:34-35).

7.2.2.1 ***Criticisms against traffic legislation***

Numerous criticisms have been levelled against traffic legislation:

- (a) there are too many provisions of a too diverse nature;
- (b) correct road behaviour may not necessarily promote easy flow of traffic (Barkhuizen 1967:296). This implies that permissible road behaviour may still not be safe road behaviour; and
- (c) the total traffic system needs to be augmented because it is outdated and contains numerous shortcomings, especially with regard to penalisation of deviant drivers which appears to be too light (Erlank & Roux 1967:104; Leonard & More 1987:376-383).

7.2.2.2 ***Acceptability and practicability of traffic legislation***

Acceptability and practicability of traffic legislation is contingent upon the following basic requirements:

- (a) it must actually relate to deviant driving behaviour and penalisation thereof;

- (b) it must elicit the support of public acceptance and attitudes. The public may think that the existence of traffic legislation and its enforcement constitute a source of revenue, and it merely serves as "... a measuring stick for the determination of civil liability of those involved in automobile accidents" (Barkhuizen 1967:299); and lastly
- (c) it must be enforced (Cloete & Conradie 1984:75-76; Leonard & More 1987:381).

7.2.2.3

Differential nature of traffic legislation

There are fundamental differences pertaining to the essential nature of traffic legislation. The commentary that follows, highlights these differences:

- (a) It is a dubious fact to regard deviant driving behaviour as criminality and that deviant drivers should be treated as offenders in the true sense of the word (Khoza 1993:36). Deviant driving behaviour should be classified under the "grey area", i.e., between socially accepted behaviour and clearly unlawful actions. This distinction will imply that deviant driving behaviour is not so dangerous to justify traffic police action. Gardiner (1969:3) opines:

"From the point of view of the public police decisions on these questions are important factors in delineating the boundaries between the social values of liberty and order to security. From the point of view of the police, the need to make decisions within this limited area challenges the policeman's commitment to the public expectation that all laws

will be literally enforced, and also trains the public's support for the police in more serious matters.*

- (b) Deviant driving behaviour is a unique phenomenon. This implies that it should not be equated with the laws of the country. It should, therefore, be judged by special courts and be treated by means of special methods (Erlank & Roux 1967:127; MacMillan 1975:75-77).
- (c) Deviant driving behaviour holds no social stigmatisation for most drivers (MacMillan 1975:75-76). The National Advisory Commission (1973:227) remarked as follows: "It is therefore a basic tenet and an underlying assumption of traffic law enforcement that people regularly and without any natural consciousness of wrongdoing violate laws designed to ensure safe use of the highways."

7.2.2.4

Public opinion and attitudes towards traffic legislation

Public opinion and attitudes is predominantly inclined to identify a police or traffic officer's action amounting to clear breaches of the law or breaches of natural law, such as murder (Gardiner 1969:3; Kirkham & Wollan 1980:72-73). Erlank and Roux (1967:126) are of the opinion that traffic accidents and deviant driving behaviour are not traffic offences because they are not committed intentionally. It is for this reason that there is a notion that deviant driving behaviour should not be regarded ordinary criminal behaviour. Traffic legislation should not be applied in the same strict or relentless way. Deviant drivers should be tried by special traffic courts and should also be treated by means of unique techniques. These demands do not merely and with decriminalisation, but they extend the demand for traffic depolicing. Traffic depolicing implies that minor traffic

offences should be overlooked if they do not threaten or endanger other road users. According to Myren (Radelet 1973:47) traffic legislation is purely a set of norms for convenience and is not as such part of the legal code. Traffic law enforcement is, therefore, not a police function.

Willett (1964:3-8) opines that traffic offences (deviant driving behaviour) are ordinary crimes and traffic offenders (deviant drivers) should be penalised. It is thus possible that a breakdown in law and order may start at the level of traffic police corruption. Weston (1978:4) expresses a neutral opinion in this regard: "The provisions of a vehicle code are sanctioned law, even though most of the regulated actions are noncriminal." Seen legally, traffic laws are superfluous if they are not maintained on the same level as the ordinary laws of the land. Common law prescribes that human beings should take reasonable precautions so that others are not injured. The use and extension of road transportation created a need for specific road traffic legislation. Architects of traffic legislation rightly believed that carelessness on roads is an offence against the state and is therefore punishable. Traffic legislation, therefore, belongs to the legal code and should, as such, be enforced as a code of traffic conduct. It follows, then, that traffic legislation is therefore acceptable to most people and that its enforcement is a police and traffic police function (Khoza 1993:38).

7.2.2.5 ***Inaccurate and unreliable data***

Traffic legislation is also fraught with the problem of inaccurate and unreliable data. The objectives of traffic legislation can be executed much more effectively if it is based on accurate, meaningful and reliable data. In this regard, there are numerous shortcomings in traffic legislation. There is

a dearth of technical research findings to provide the legislator with the necessary facts regarding (road) deviant driving behaviour. Legislative bodies have meagre resources and manpower to analyse and assess traffic legislation (Kriel 1974:6). This, therefore, results in vagueness and ambiguities in traffic legislation which creates problems in the adjudication of deviant driving behaviour and problems for road users.

7.2.2.6

Risk-analysis

Entering the traffic situation is a calculated risk. Risk-taking refers to decision-making which is surrounded by an aura of uncertainty. One of the functions of traffic legislation is, without doubt, to prohibit risky behaviour by the road user and in this way to eliminate it. Sabey and Taylor (Schwing & Albers 1980:44) describe it as follows:

“In broad terms travel by road is understood by most of us to involve some risk, though the level of this risk is only dimly perceived and rarely called into prominence because it has been with people almost all of their lives. Daily journeys from the home are commonplace ... Road accidents are associated with a well-founded activity which almost everyone needs and wants to be involved in; the road accident situation is therefore very different from many threats to personal safety which are far less well appreciated and sometimes not even recognised until irreparable damage has occurred to the persons affected.”

Traffic legislation that does not take risk factors into account, could have far-reaching consequences for road safety. The rationale for risk-analysis

resides in road safety programmes not being successful. It should, however, be noted that drivers are not always adequately informed as to the purpose and essence of traffic legislation and, consequently, approach it indifferently. The reason for this seems to be that deviant driving behaviour is not viewed with the same degree of gravity as other criminal behaviour. Moreover, there is an absence of the usual social stigma when deviant drivers are penalised, regardless of how serious it is (Khoza 1993:40).

7.2.2.7 ***Diverse and complex nature of traffic legislation***

The nature of traffic legislation is comprehensive, diverse and complex. It influence opinions and attitudes of road users to a large extent, because the expression: "ignorance of the law is no excuse to escape punishment" and everyone should know the law clearly, becomes an impossibility. Mass media (including computing services) may bring aspects of new traffic legislation to the attention of the public. Average road users can hardly be expected to keep pace with all the amendments pertaining to traffic legislation on a regular basis. This impossibility often results in road users being penalised for violating traffic laws (deviant driving behaviour) of which they were not aware of (Middleton 1974).

7.2.3 **Application of traffic legislation**

Legislation or statutory law may be found in a variety of forms, depending on the body which created it. The most well-known of this body is Parliament. Its legislation is known as "Acts" and in this study, extensive reference will be made to the National Road Traffic Act, Act no. 29 of 1996. The authority or functions of traffic officers are contained in that Act. The objective of this chapter is to find out whether differences exist in the rating of

certain selected aspects of traffic policing by respondents. Data will be presented and analysed in paragraph 7.6.

Local authorities (municipalities) also have legislative powers and their legislation is known as "by-laws". Subordinate legislative power in accordance with a law of Parliament is sometimes given to persons holding certain positions (for example regulations which are decreed by a specific Minister). Road Traffic Regulations are decreed by the Minister of Transport (South Africa 1996). Regulations provide additional details on the application of the principles of the National Road Traffic Act.

The purpose of the National Road Traffic Act, Act no. 29 of 1996, is to regulate traffic on public roads. The Act regulates the powers of the officers who enforce traffic law, sets out the qualifications for drivers of motor vehicles, specifies roadworthy requirements for motor vehicles and regulates the actions of drivers on public roads. Almost all the requirements are applicable to public roads. Traffic offences (deviant driving behaviour) are created in the Act to ensure the safety of drivers and pedestrians on public roads. Certain provisions in the Act, for example the control of vehicle overloading, are specifically created to protect the road infrastructure. Although most individuals who are involved in road transport, are aware of the National Traffic Information System (NATIS), there is no reference to NATIS in the Act. NATIS is the computer system which is used to manage the information collected for road traffic management. Most of the elements that NATIS is responsible for, have been implemented in South Africa. The elements of the Road Transport Quality System (RTQS) are all contained in the Act. The principles of the RTQS are the improvement of standards on both the public and private sectors. Different elements are:

- officers
- driving licence testing centres
- vehicle testing stations
- operators
- professional drivers and

- commercial vehicles (RTQS vehicles).

Most of the above elements of the RTQS have been implemented. It has been observed that the concept of "operator fitness" for passenger vehicles has not yet been implemented. The National Road Traffic Act, no. 29 of 1996, was implemented on 01 August 2000. Discussion of the application will be based on how the Road Traffic Act is arranged or organised.

7.2.3.1 ***Interpretation of the Road Traffic Act***

Chapter I contains definitions (South Africa 1996: Section 1, Regulation 1). It is important to understand the importance of definitions. The legislator makes definitions when he or she wants to attach a specific meaning to a term or phrase. The Act numbers are called sections. Regulation numbers are called regulations. If a section or regulation is referred to in another section or regulation, it means that traffic officers have to read that part as well in order to understand the full meaning of the clause. This is also known as cross-reference. It is necessary to verify each definition to determine the exact scope of the legislation. For instance, a truck that is adapted and a diamond drill fitted to the back of the vehicle, is stopped for overloading (deviant driving behaviour). The definition of a goods vehicle has to be scrutinised to determine if a diamond drill can be prosecuted for overloading. If a term is not defined, it is assumed that the normal dictionary meaning is applicable. Certain terms are defined in different Acts and do not necessarily have the same meaning. For instance, *owner* is a term that means something totally different in various Acts.

7.2.3.2 ***Registering authorities and authorised officers***

Chapter II sets the standards for various traffic law enforcement officers and examiners (South Africa 1996). Traffic officers must be registered and graded. They have to obtain minimum prescribed qualifications. It is part

of the RTQS to ensure that a standard is maintained for personnel involved in road traffic management. Part I deals explicitly with matters relating to registering authorities (South Africa 1996).

Application of the Act is also addressed (South Africa 1996: Section 2; Regulation 1A). The National Act is applicable countrywide. This is contrary to the Provincial Acts which are only applicable in the Province for which they are promulgated. The Act details the following aspects of its application:

- (a) appointment of registering authorities which include, *inter alia*, appointment of traffic officers, application for registration as an inspector of licences, examiner for licences, examiner for driving licences, etc.;
- (b) powers, duties, suspension and cancellation of registration of officers;
- (c) powers and duties of traffic officers and examiners for driving licences;
- (d) failure to comply with instructions of traffic officers or examiners of vehicles or peace officers;
- (e) impersonating traffic officers; and
- (f) approval of training centres (South Africa 1996: Sections 3, 3A-3L & 3I; Regulations 1A, 1B, 2 & 2B).

Part II of Chapter II of the Act deals with the manner of application for registration as inspector of licences, examiner of vehicles, examiner for driving licences or traffic officer and manner of registration as such official (South Africa 1996: Regulations 1B & 1C).

7.2.3.3 ***Registration and licencing of motor vehicles and registration of manufactures, builders and importers, and manufacturers of number plates***

It is essential to understand details of how motor vehicles are registered and licensed (South Africa 1996: Chapter III). All administrative requirements regarding exemptions, special classifications, motor trade numbers, special and temporary permits are discussed in this Chapter. Details relating to number plates, registration of manufacturers, builders and importers and all other administrative matters are also dealt with in this Chapter.

Details of registration and licensing of motor vehicles are contained in regulations. Section 4 (South Africa 1996), enables the Minister of Transport to issue regulations. Regulations 3–35 and 50–86 specifically deal with registration and licensing of motor vehicles and particulars of title holders or owners (South Africa 1996). Regulations 36–49 deals with registration of manufacturers or importers of motor vehicles and manufacturers of number plates (South Africa 1996). Administrative requirements regarding circumstances in which motor vehicles may be operated on public roads under temporary or special permit, are detailed in regulations 84–90 (South Africa 1996).

Sections 5 and 6 (South Africa 1996) regulate manufacturers, builders and

importers of motor vehicles. Section 7 allows for an inspectorate to inspect activities of manufacturers, builders and importers. The purpose of the inspectorate is to ensure that every aspect of a business is operating within the parameters of the law. The inspectorate must ensure that no used parts are incorporated in new motor vehicles. Regulations 38–51 (South Africa 1996) deal with registration of manufacturers, builders and importers of motor vehicles and manufacturers of number plates.

7.2.3.4 ***Fitness of drivers***

It is essential to understand requirements individuals have to fulfil in order to become legal drivers on public roads, provision for learners' licences, driving licences and professional driving permits (South Africa 1996: Chapter IV).

Learners' licences are required before individuals can legally train to drive motor vehicles on public roads. Codes and special requirements are covered by the Act. Driving licence codes, authority granted by different codes of licence and conversion of old licences to new codes of licences are dealt with in this chapter (South Africa 1996). Suspension and cancellation of licences by the court or administrative system is also regulated accordingly. Functioning of the inspectorate of driving licence centres is also prescribed. A few special provisions dealing with exchange of old army licences, old card type licences and foreign licences are also outlined in this chapter.

7.2.3.4.1 ***Licensing***

Driving licence testing centres requirements include: registration,

application, grading, manner of registration, change of registration particulars, suspension, cancellation, appointment of inspectorate, powers and duties of inspectorate (South Africa 1996: Sections 8–11; Regulations 91–98).

Section 12 (South Africa 1996) requires that drivers of motor vehicles should be licenced. The following requirements apply to licensing of drivers of motor vehicles.

- (a) Authorisation which serves as a driving licence in terms of Section 12 is dealt with extensively in Regulation 100 (South Africa 1996).
- (b) Driving licence testing centres are authorised to issue a provisional licence (also known as a learner's licence) or a driving licence (South Africa 1996: Section 13).
- (c) Section 14 prescribes the classification and extent of learner's or driving licence.
- (d) Categories of learner's licences and classes of motor vehicles pertaining to each code of learner's licence are dealt with in Regulation 99 (South Africa 1996). There are only three categories of learners' licences.
- (e) Period of validity of learners' and driving licences is stipulated in Regulation 101.
- (f) Section 15 (South Africa 1996) deals with disqualification from obtaining or holding learner's or driving licence. It should be noted

that an individual may be disqualified from holding a licence even though he or she may have obtained such licence and is in possession of the licence.

- (g) Defective vision may disqualify an individual from obtaining or holding a licence (South Africa 1996: Regulation 102).
- (h) It is prohibited to fail to disclose a disqualification in respect of licence authorising driving of motor vehicle (South Africa 1996: Section 16).
- (i) Application for and issuing of learner's licence is dealt with in Section 17, whilst Regulation 103 contains the detailed manner of application for learner's licence (South Africa 1996).
- (j) An applicant for learner's licence shall be examined and tested by an examiner for driving licences (South Africa 1996: Regulation 104). The examiner shall satisfy himself or herself that the applicant knows and understands rules of the road, road traffic signs and controls of a motor vehicle of the class to which the application relates.
- (k) Issuing of learner's licence is contained in Regulation 105 (South Africa 1996). It should be noted that the term driver's licence has been changed to driving licence.
- (l) Manner of application and issuing of driving licence is also outlined (South Africa 1996: Section 18; Regulation 106).

- (m) Regulation 107 contains the manner and contents in which the applicant for driving licence should be examined. The examiner for driving licences shall by observation, inquiry and practical test satisfy himself or herself that the applicant:
- hold the relevant learner's licence;
 - knows and understands road traffic signs;
 - has a sound knowledge of the rules of the road and different signals which a driver of a motor vehicle is required to give when driving on a public road;
 - is not subject to disqualification in terms of Section 15 read with Regulation 102; and
 - is generally capable of driving a motor vehicle of the class to which the application relates (South Africa 1996).
- (n) Manner of issuing of driving licence is dealt with in Regulation 108 (South Africa 1996).
- (o) Provision is made for the application and issue of duplicate driving licence (South Africa 1996: Regulation 109).
- (p) Collection of driving licence on behalf of another individual, substitution of driving licence, notification of new residential and postal address, acknowledgement of foreign driving licences, conversion of army licences to civilian driving licences, suspension or cancellation of driving licences and lapse of endorsements on driving licences are dealt with (South Africa 1996: Section 19–27; Regulation 111–114).

Driving instructors should be registered, graded or may be deregistered or suspended and should be competent (South Africa 1996: Sections 28, 28A–28C; Regulations 114A–114E).

7.2.3.4.2 ***Professional driving permits***

Certain categories of drivers need professional driving permits. It is rightly so-called because the holders of such permits earn their livelihood as drivers of motor vehicles (Khoza 1993:57). The following is of utmost importance for the present study:

- professional drivers shall be required to hold professional driving permits (South Africa 1996: Section 32);
- certain drivers of certain vehicles (for instance minibus taxi, motorcar taxi, passenger bus, etc.) shall be required to hold professional driving permits (South Africa 1996: Regulation 115);
- Regulation 116 deals with categories of and authority conveyed by professional driving permit;
- disqualifications from obtaining a professional driving permit are highlighted in Regulation 117 (South Africa 1996). This regulation prescribes offences that would disqualify an individual from obtaining a professional driving permit;

- application and manner of issuing a professional driving permit (South Africa 1996: Regulations 118–119);
- a professional driving permit shall be enforced by traffic officers (South Africa 1996: Regulation 120);
- period of validity of professional driving permit is stipulated in Regulation 122; and
- professional drivers should note that professional driving permits may be suspended or cancelled (South Africa 1996: Section 34; Regulation 123).

7.2.3.5 ***Fitness of motor vehicles***

Requirements for roadworthiness and prescribed conditions for vehicle testing stations are detailed in Chapter V of the Act (South Africa 1996).

Two types of roadworthiness processes are prescribed:

- (a) certification of roadworthiness for private vehicles that change ownership, rebuilt and altered vehicles and
- (b) roadworthy certificate for those vehicles that are generally referred to as the RTQS vehicles.

Powers and duties of inspectorate of vehicle testing stations are also stipulated in this chapter.

Fitness of motor vehicles is contingent upon realisation of the following:

- registration, grading and supervision or cancellation of testing stations;
- appointment of the inspectorate;
- certification of roadworthiness is required in respect of all motor vehicles;
- roadworthy certificates should be affixed to motor vehicles;
- manner of application for certification of roadworthiness;
- issuing and voidness of roadworthy certificate;
- period of validity of roadworthy certificate; and
- notice to discontinue operation of a motor vehicle (South Africa 1996: Sections 37–44; Regulations 128–146).

An inspector of licences may direct that a motor vehicle be produced at a testing station for inspection, testing or examination. Further, a traffic officer may direct that a motor vehicle should not be operated on a public road or only be operated upon certain conditions (South Africa 1996: Regulations 147–148).

7.2.3.6

Operator fitness

The concept of operator fitness is discussed in the Act (South Africa 1996: Sections 45–51; Regulations 265–272). The operator of a motor vehicle is held responsible for managing the motor vehicle and its operations. The chapter addresses identification, administration and other details regarding operator fitness. The requirement that certain motor vehicles need operator cards is clearly set out in the Act. The most important parts of this chapter are duties of the operator and administrative powers of the Members of Executive Council. An operator can be prosecuted if he or she does not comply (South Africa 1996: Section 49). An operator is also held responsible for the running of his or her company and can be prosecuted even if he or she is not actually operating the motor vehicle on the public road. The driver does not need to be prosecuted with the operator, but it is possible to prosecute both the driver and the operator for the offence. The Member of the Executive Council can also investigate operations of an operator.

7.2.3.7

Road safety

Chapter VII is new and was not covered in the previous Road Traffic Act, Act no. 29 of 1989. Section 52 (South Africa 1996) contains powers and functions of the Chief Executive Officer in respect of preparing a comprehensive research programme to effect road safety in South Africa and to carry it out systematically. The Chief Executive Officer can assign research projects to persons who are best equipped to carry them out. Guidance should be given to any programme of action aimed at realising the objective of road safety such as national congresses, workshops, symposium and school programmes. Publications in the sphere of road

safety are important outcomes.

7.2.3.8 ***Dangerous goods***

Chapter VIII (South Africa 1996) deals with transportation of dangerous goods. This traffic legislation prescribes the duties of consignors, consignees and operators of dangerous goods (South Africa 1996: Regulation 277). The legislation contains references to South African Bureau of Standards (SABS) specifications that are incorporated. The new legislation is much more encompassing than the Hazardous Substances Act. The list of substances is extended. The quantity of products is less. Smaller loads will also fall within the ambit of the new legislation. Multi-loads are also regulated. Routes of certain types of dangerous goods will have to be pre-planned and co-ordinated with the relevant authorities.

It should be noted that this is a new chapter and was not covered in the previous legislation. Transportation of certain dangerous goods is prohibited (South Africa 1996: Section 54; Regulation 275). The interpretation of this chapter is contingent upon definitions contained in Regulation 273 (South Africa 1996). It is essential that dangerous goods should be classified by an approved classification authority and that drivers should undergo training (South Africa 1996: Regulations 279–281). There is provision for the appointment of dangerous goods inspectorate.

7.2.3.9 ***Road traffic signs and general speed limit***

Chapter IX (South Africa 1996) makes provisions relating to road traffic signs and general speed limit. The Minister is authorised to prescribe and display road traffic signs (South Africa 1996: Sections 56–57). Deviant

driving behaviour manifest itself in the failure to obey road traffic signs. Purpose, classification and types of road traffic signs is outlined in Regulation 285 (South Africa 1996).

Road traffic signs are divided into:

- (a) regulatory
- (b) warning and
- (c) guidance signs.

Dimensions for manufacture of road traffic signs, colours for manufacture, manner of display of road traffic signs and signals and manner of display of traffic signals are detailed in Regulations 286–287A (South Africa 1996). Legislation also contains provisions relating to signs regulating parking, stopping, hawkers and it is prohibited to advertise on road traffic signs (South Africa 1996: Regulations 288–290). Certain drivers may disregard directions of road traffic signs such as exceeding general speed limit and this may happen during the course or execution of their duties (South Africa 1996: Section 60). Such drivers include traffic officers, any other person engaged in civil defence and drivers of a fire-fighting vehicle or ambulance.

Regulation 292 (South Africa 1996) specifies three categories of general speed limits:

- 60 kilometres per hour in an urban area;
- 100 kilometres per hour in a public road outside an urban area; and
- 120 kilometres per hour in a freeway.

It should be noted that a driver of a motor vehicle can be prosecuted for exceeding the speed limit even if there is no speed limit sign displayed.

7.2.3.10 ***Accidents and accident reports***

Duties of the driver after he or she has been involved in an accident or accident in which any person has been injured or killed are detailed in Chapter X (South Africa 1996). Offences under this chapter carry the highest fines or imprisonment (R180 000 or 9 years). It is the duty of the driver to take certain steps in terms of section 61 (South Africa 1996), viz:

- (a) the motor vehicle should be stopped immediately;
- (b) the nature and extent of any injury should be ascertained;
- (c) assistance should be rendered to the injured person;
- (d) nature and extent of damage sustained should be ascertained;
- (e) the following particulars should be furnished: name and address of driver, name and address of motor vehicle owner and registration mark;
- (f) accident report should be completed within twenty-four hours at a police station and driver should produce his or her driving licence and identity document; and
- (g) no intoxicating liquor should be imbibed or a drug with a narcotic

effect should be taken by the driver unless he or she has complied with provisions, of (f) above.

An individual in charge of garage or other place where motor vehicles are repaired should keep a detailed record of motor vehicles involved in accidents (South Africa 1996: Section 62).

7.2.3.11

Reckless or negligent or inconsiderate driving and driving while intoxicated or under the influence of any drug having a narcotic effect and miscellaneous offences

Drivers are required not to drive recklessly or negligently, inconsiderately and should further not drive motor vehicles while under the influence of intoxicating liquor or drugs having a narcotic effect or with excessive alcohol in blood (South Africa 1996: Sections 63–65). Offences under Chapter XI of the Act also carry highest fines or imprisonment (R180 000 or 9 years).

Evidential breath testing equipment used to ascertain the concentration of alcohol in the blood should comply with requirements of the standard specifications SABS 1793 (South Africa 1996: Regulation 332).

Persons are penalised for unauthorised acts in relation to vehicle, furnishing of false information and unlawful acts in relation to registration plates, registration number, registration mark or certain documents (South Africa 1996: Sections 66–68).

7.2.3.12

Presumptions and legal procedure

Certain presumptions are accepted by the court as correct (South Africa 1996: Chapter XII). A presumption is a legal tool that helps the State prove its (traffic) case. If the State relies on a presumption, it is accepted as the truth until the contrary is proved. Various presumptions have been tested by the constitutional court and are still effective.

The following presumptions are contained in the legislation:

- (a) public freeway and public road in an urban area;
- (b) mass or weight ascertained by means of mass-measuring bridge or other mass-measuring instrument;
- (c) weight of gross vehicle;
- (d) proof of gross weight of vehicle;
- (e) owner drove or parked a motor vehicle; and
- (f) traffic officers (South Africa 1996: Sections 69–74).

7.2.3.13

Regulations

The Minister of Transport is authorised to make regulations (South Africa 1996: Chapter XIII). Parliament makes decision to allow the Minister to make regulations on various aspects of road traffic. The following regulations are detailed in the Act:

- equipment on or in respect of vehicles (brakes, lamps, retro-reflectors, direction indicators, warning devices, windscreen fittings, fuel tank, seatbelts, etc.);
- dimensions of vehicles (overall length, overhang of vehicle, projection of load, etc.);
- loads on vehicles (number of persons in relation to seating capacity, load on tyres, gross weight of vehicle, axle mass-load of vehicle with pneumatic tyres, etc.); and
- provisions relating to passenger carrying vehicles (South Africa 1996: Regulations 149–264A).

Regulation 213 (South Africa 1996) stipulates that children under three years do not need to wear seatbelts. If there is a suitable child restraint in the vehicle, a child must sit in it. Children between three and fourteen years must wear seatbelts. Adults (over 14 years) must wear seatbelts.

The following provisions are new:

- wheel flaps;
- rear underarm protection device; and
- axle or axle unit should be fitted to semi-trailer (South Africa 1996: Regulations 217–219).

Regulation 263 is in respect of the floor area prescribed for standing passengers. It must be emphasised that in determining the number of

standing passengers who may be conveyed in a bus, the number of standing passengers must be associated with the number of seated passengers determined in respect of the mass factor. Regulation 263(4) (South Africa 1996) was added to allow standing passengers in a minibus.

Regulation 296–323 (South Africa 1996) stipulate that it is imperative for drivers to adhere to the following rules of the road:

- vehicles should be driven on left side of roadway
- vehicles should be passed with great care
- driving signals should be given in time in anticipation of reaction of other road users
- carefulness is required in respect of right of way at road junctions
- a specific procedure should be followed when turning
- parking, towing and stopping of vehicles
- compulsory stops should be obeyed
- it is prohibited to use a cellular or mobile telephone
- a hooter should be used when necessary and vehicles with excessive noise should not be driven on public roads
- no person is allowed to hinder or obstruct traffic on a public road
- no vehicle should be left abandoned on a public road and
- rules relating to freeways, riding on pedal cycles, animals on public roads, animal-drawn vehicles, pedestrians, racing and sport on public roads,

damage to public roads and trading on public roads should be carefully noted (avoided).

The Act provides for the use of driving signals for the control of traffic. This include use of hand signals for left and right turns, to indicate intention to reduce speed and use of hand signals by traffic officers for the control of traffic (South Africa 1996: Regulations 324–329).

7.2.3.14 ***Registers and records***

Chapter XIV (South Africa 1996) is mainly applicable to the duties and functions of authorities. General rules are also applicable to testing stations. Legislation covers the various types of records and registers to be kept and cognisance might be taken of information contained in registers or records (South Africa 1996: Sections 77–79; Regulation 331).

7.2.3.15 ***General provisions***

Chapter XV of the Act (South Africa 1996: Sections 76–89; Regulation 333) deals with general aspects which are not addressed elsewhere in the legislation and include the following:

- (a) incorporation of standards by reference;
- (b) parking for disabled persons;
- (c) powers of local authorities to make by-laws;
- (d) exemptions of vehicles and load;
- (e) any form of inspection may be deemed necessary;
- (f) doubts regarding use or classification of vehicles;
- (g) issuing of document as proof of driving licence in special

- circumstances;
- (h) signature upon documents;
- (i) serving of notices; and
- (j) offences and penalisation.

The Minister and Member of Executive Council may delegate their powers to other persons (South Africa 1996: Section 91). Section 92 deals with provincial laws. It is prohibited to use certain lamps or lighting devices that might affect visibility and thereby endanger public safety (South Africa 1996: Regulation 337).

7.2.3.16 ***Newspaper reports on "motor vehicle crashes and fatal accidents"***

The mass media play an important and significant role in reporting various incidents of "crashes and fatal accidents". Examples of deviant driving behaviour that ultimately result in fatal accidents have been extracted from various newspapers and the Internet. The procedure to be followed after an accident has occurred has been discussed in paragraph 7.2.3.10. Offences under this paragraph carry the highest fines. Paragraph 7.2.3.11 has been devoted to reckless or negligent or inconsiderate driving and driving while intoxicated, and again, offences under this paragraph carry the highest fines (South Africa 1996: Chapter XI). Various regulations have been discussed in paragraph 7.2.3.13. The rationale underlying presenting newspaper reports (clippings) on recent "crashes and fatal accidents" under application of road traffic legislation, resides in the fact that these accidents may be ascribed to disregard of road traffic legislation and formal prescriptions (deviant driving behaviour).

7.2.3.16.1 ***Mabopane Highway incident (2003)***

Eleven Black construction workers were killed in an accident on the Mabopane highway on Tuesday, 4 November 2003 and nine other seriously injured, when the lorry they were travelling in, burst through the railing of the road, plunged down the embankment and almost landed on the N4 highway. Seven of the passengers died on the scene, while four others passed away in two separate hospitals near Pretoria. According to eye witnesses (direct evidence), another lorry swerved in front of the lorry carrying the construction workers, and "pushed" it off the road (Raubenheimer 2003:2).

7.2.3.16.2 ***Workers' Day Bus incident (May 2003)***

Sixty-three people were confirmed dead after the bus in which they were travelling to a "May Day" rally in the Eastern Free State plunged into the Saulspoort dam (Dispatch 2003:1-2). The fatal accident occurred when workers were travelling from Kimberley to Qwa-Qwa to attend Workers' Day celebrations. Many of the workers belonged to the South African Municipal Workers' Union (SAMWU) – a Congress of South African Trade Union (COSATU) affiliate. The tragic death happened when workers not only celebrated nine years of democratic rule but also to commemorate the lives of many workers who have died in a struggle for decent working and living conditions. The survivors escaped through the windows, as the door was kept closed by the pressure of the water.

7.2.3.16.3 ***The Laingsburg incident (2003)***

The death toll in a smash between a bus and a truck on the N1 in the Karoo claimed 21 lives. The fatal accident happened about 50 km from Laingsburg (Daily News 2003:1). Twenty-one people died, nine were seriously injured, while six other people were only slightly injured. The bus travelled from Johannesburg to Cape Town at the time of the accident.

7.2.3.16.4 ***The "between Babanango and Melmoth road" incident (2003)***

Fourteen people died and forty-five others were injured when a Mondi truck in which they were travelling overturned at a sharp curve (see Table 7.6) at Kwaziqungana, between Babanango and Melmoth around 5.30 pm. Fourteen passengers died instantly, while most of the 45 injured passengers were seriously injured. Three sustained slight injuries. Those killed were between the ages 20 and 40 with the youngest being a 14-year-old boy (wysiwyg://146/http://africa.com/news/sa/230982.htm. 2003:1-2).

7.2.3.16.5 ***The "near Ixopo" incident (2003)***

Twenty-two people, including six children, were injured when a bus overturned near Ixopo in the early hours. Visibility was reported to be poor (see Table 7.6), at the time when the bus overturned. Apparently, the driver of the bus lost control while trying to avoid a rockfall across the road. The passengers were travelling from Welkom to the Eastern Cape. None of them were seriously injured (wysiwyg://147/http://africa.com. news/sa/23:1168:htm 2003:1-2).

7.2.3.16.6 ***The "N2 near Piet Retief" incident (2003)***

Eleven people died after a head-on collision between a minibus taxi and truck occurred near the Umkhonto bridge. The truck driver, who was travelling towards Pongola in KwaZulu-Natal, apparently tried to avoid a man riding a horse near the bridge when he collided with the on-coming minibus taxi, travelling the opposite direction. The truck driver and a female passenger from the taxi survived the crash and were taken to hospital for treatment (wysiwyg://44/http://www.iol.co.za/index....=181&art_id=qw1067234401732B223&set_id=1 2003:1-2).

7.2.3.16.7 ***The "Tugela Ferry" incident (2003)***

The driver of a runaway truck, which killed 15 people and left 13 others injured, was charged with culpable homicide and driving under the influence of alcohol (see Table 7.5). It was further alleged that 45-year-old Siphso Mhlongo (driver) faced a similar charge of drunken driving in 1996. He paid a fine of R2 000.

A group of pensioners were queuing to collect their grants from the mobile unit, when the truck tried to overtake another truck (see Table 7.5), when it ploughed into the pensioners and some hawkers on the side of the road. The fatal accident happened three kilometres from Tugela Ferry. Three people were seriously injured and were admitted to the intensive care unit in the Church of Scotland hospital at Tugela Ferry. The driver was employed by Greytown Brewery Distributors and at the time of the accident he was on his way to deliver liquor. It was alleged that he was driving under the influence of alcohol (see Table 7.5) and he was scheduled to appear at Tugela Ferry magistrate's court (wysiwyg://38

7.3 **TRAFFIC LAW ENFORCEMENT**

Traffic law enforcement is the specialist function of the individual traffic officer which puts him or her and his or her organisation in the spotlight. It is therefore essential for the traffic officer to handle traffic legislation with utmost care (Khoza 1993:187). Traffic legislation is enforced within the framework of maintaining law and order. Traffic law enforcement refers to the total actions taken by traffic officers in dealing with deviant drivers. This entails a sound knowledge of road traffic legislation, traffic control, investigation of traffic accidents and related matters, court procedures and collection of evidence with the aim of having the deviant driver prosecuted.

7.3.1 **Objectives of Traffic Law Enforcement**

The purpose of traffic law enforcement is directed mainly at individuals in the traffic situation and the objective being to encourage a positive attitude in the road user (Leanard & More 1987:381; Kirkham & Wollan 1980:72-73). The following are the most important objectives:

- (a) to stimulate faster and safer traffic flow through careful driving habits and observance of road traffic legislation;
- (b) to render services to anyone needing help;
- (c) to meet legal and social requirements where traffic law enforcement is required, for instance, in traffic accidents and investigation of deviant driving behaviour;
- (d) to enforce road traffic legislation uniformly; and

- (e) to increase the exercise of traffic authority with discretion where traffic regulations are incomplete.

7.3.2 **Nature of Traffic Law Enforcement**

Order in traffic is reflected in apparent absence of traffic conflict. There are two basic components of traffic law enforcement: structural and functional (Cloete & Conradie 1984:85; Van Heerden 1976:223; Wilson & McLaren 1977:439-440; Leonard & More 1987:380-381; Southgate & Mirrless-Black 1991). The science of traffic control studies the constructs (structural contexts) and enforcement (functional components). Structural traffic control deals with road traffic legislation and physical aspects (road engineering and environment). The functional component consists of person and traffic-oriented action, and traffic law enforcement belongs to this category of traffic control.

7.3.2.1 ***Structural traffic control***

Structural traffic control relates mainly to the activities of the traffic engineer. Traffic engineering deals with road transportation. The traffic engineer is concerned with the question of where individuals and goods want to go, and how they are going to get there (Leonard & More 1987:383). The traffic engineer requires information concerning the flow of traffic and problem areas (dangerous intersections, road surface conditions, etc.). Road signs and road markings are introduced only after the problem has been carefully studied by the traffic engineer.

Clark (1982:214-215) maintains that the task of the traffic engineer is divided into five main areas:

- study of the nature of traffic: this implies the science of measuring traffic in terms of the fundamental laws of traffic flow;
- traffic operations: this refers to the application of the knowledge to operating traffic systems;
- transport planning;
- geometric design; and
- administration.

7.3.2.2 ***Functional components of traffic control***

Functional components of traffic control consist mainly of proactive and reactive traffic law enforcement.

7.3.2.2.1 ***Proactive traffic law enforcement***

The proactive approach is inherent measures adopted by society for purposes of reinforcing its control over the behaviour of drivers of motor vehicles (Cloete & Conradie 1984:94; Leonard & More 1987). In this sense, proactive traffic law enforcement include:

- long-term preventive techniques such as traffic law enforcement education;
- short-term techniques such as traffic patrols by which opportunities for traffic conflict could be eliminated or reduced;
- fostering respect for control structure, thereby promoting voluntary compliance with traffic

legislation;

- rendering auxiliary services which contribute to strengthen mutual respect and confidence in traffic authority structure;
- creation of safe traffic environment by improving traffic flow; and
- any of the action designed to prevent repetition of traffic conflict (Van Heerden 1982:16-17; Leonard & More 1987).

7.3.2.2.2 ***Reactive traffic law enforcement***

Reactive traffic law enforcement refers to action after traffic conflict. Reactive enforcement includes all efforts by traffic officers after traffic control measures such as traffic control, traffic education, driver-training, traffic engineering and related activities have failed to maintain traffic order (Khoza 1993:193). Traffic conflict is dealt with either by eliminating or reducing causes of traffic conflict. Reactive measures may be directed towards traffic conflict itself, for example, investigation of traffic accidents or towing away of motor vehicles causing obstructions. Further, reactive measures may consist of prosecuting deviant drivers.

Traffic law enforcement is not always confined to proactive and reactive measures. Traffic conditions are dynamic and yet traffic must be controlled. It is therefore uncertain which form of traffic law enforcement will take place at any given time. It is for this reason that it may be not easy to classify every action performed by traffic officers as proactive or reactive measures. In such circumstances it is appropriate to refer to undefined traffic law enforcement activities as remote functional component. Traffic

officers sometimes perform actions not directly connected with maintenance of traffic order, even though it may be part of their duties, for example, serving of summonses or providing an escort for dignitaries.

Traffic control is differentiated in South Africa and in particular, it is the duty of Provincial Administrations and local authorities. These constitute traffic law enforcement organisations. In areas covered in the present study, traffic control is mainly effected by KwaZulu-Natal Department of Transport, Traffic Division and city of uMhlathuze's Traffic Police Division. Traffic officers are appointed in terms of the Road Traffic Act (South Africa 1996).

Traffic law enforcement comprises activities aimed at the realisation of the primary goal of traffic safety contemplated in the Road Traffic Act. These activities relate to:

- (a) administrative functions which include demanding full particulars in connection with public motor vehicles, evidence which will lead to penalisation of deviant drivers, etc.;
- (b) executive functions which include removal of vehicles obstructing the traffic, demanding production of driving licences, halting traffic, inspecting vehicle loads, etc.; and
- (c) supervisory functions which include promoting the smooth flow of traffic and road safety (Khoza 1993:203-204).

Traffic law enforcement sometimes involves direct surveillance of traffic flow (Wilson & McLaren 1977:346-347). Direct surveillance enables traffic officers to:

- substantiate or disprove illegal traffic activities;
- verify data on traffic patterns;
- procure or confirm vehicle descriptions used for criminal activities; and
- apprehend deviant drivers red-handed.

Surveillance may also be effected in the following manner:

- continuous surveillance: where motor vehicle drivers and places are observed on a fixed and continuous basis;
- stationary surveillance: which is the study of traffic patterns for speeding; and
- mobile surveillance or "tailing": which is the technique used to observe moving motor vehicles (Khoza 1993:205-207).

There are also regulative activities which are the furtherance of traffic flow and parking control. Control of parking is problematic for traffic officers since it demands the use of discretion, degrees of tolerance and selective traffic law enforcement. Selective traffic law enforcement is a quality measure based upon the principle of deploying a sufficient number of traffic officers in an area where a particular traffic offence (deviant driving behaviour) has resulted in a large number of traffic accidents so as to prevent this particular type of traffic offence (deviant driving behaviour). One of the most common methods of selective traffic law enforcement is the use of devices to compute vehicle speeds to deter those drivers who are speeding excessively (Khoza 1993:209).

Selective traffic law enforcement further maximises proper allocation and distribution of traffic officers. Good selective traffic law enforcement can provide traffic officers with valuable information which should be used to take remedial steps to eliminate or reduce deviant driving behaviour and traffic accidents. Traffic officers cannot be available everywhere at the same time. This, therefore, justifies selective traffic law enforcement (Hale 1977:162-163; Kirkham & Wollan 1980:74-75). The most effective way in which traffic law enforcement could be achieved is by implementation of selective traffic policing. Potgieter (1983:9) defines selective traffic policing as a supplementary, specialised accident-prevention technique in which traffic officers are temporarily concentrated to direct all efforts at the reduction or elimination of traffic offences (deviant driving behaviour) and traffic accidents in selected areas of high incidence. Success of selective traffic patrolling is contingent upon the role played by discretion and tolerance. *Discretion* refers to consideration, good judgement, freedom to make decisions and the ability to form judgement (More 1975:81). Tolerance is differentiated into offence tolerance and enforcement tolerance (Khoza 1993:213-214). Offence tolerance implies that traffic officers should allow more latitude and that drivers of motor vehicles should not be prosecuted unless they have committed traffic offences (deviant driving behaviour) which are a threat and danger to other road users. Enforcement tolerance refers to public's acceptance of traffic law enforcement activities at any given period.

7.4 **DISPLAY OF TRAFFIC POLICING**

Until apprehended, the deviant driver exists in an abstract relation with organised traffic justice. The "warrant" to be stopped or arrested is there, alongside the activity of deviant driving behaviour. Being authoritative is the most important feature of traffic justice. Such display of

traffic authority may subsequently become familiar to deviant drivers and thus devoid of shock and consequence (Cf. Southgate & Mirrless-Black 1991). It becomes devoid when deviant drivers grow immured, accustomed or even wary of it. This implies that traffic authority has made its imprint. Dressed properly and acting his or her part, personification of traffic authority through traffic policing helps to cast deviant drivers in their deviant driving part.

The main purpose of the entire display of traffic authority is to convince apprehended drivers of the gravity of traffic offence (deviant driving behaviour) he or she has committed. This will ultimately restore the unity of meaning which is basic to the kind of traffic order that is conducive to an orderly co-existence of the community. In shocked discovery (deviant) drivers concretely understand that there are traffic officers who go around their driving activities such as stopping and correcting them (Southgate & Mirrless-Black 1991).

The way in which traffic authority displays itself, authoritatively provides matters to be considered by drivers. Southgate and Mirrless-Black (Cf. 1991), are of the opinion that proper display policing is contingent upon a variety of considerations. For instance, loss of contact between the traffic officer and the community he or she serves adversely affects traffic law enforcement. If a traffic officer has never met, does not know, and cannot understand the language, and habits of the driving population in the area in which he or she performs traffic patrolling, he or she cannot perform an effective traffic policing function. His or her ability to detect deviant driving behaviour may be impaired.

Display of traffic authority is also related to the method of suspicion employed by traffic officers (Southgate & Mirrless-Black 1991). Method of suspicion employs traffic police knowledge of known deviant drivers to expedite their apprehension and subsequent clearing of complaints. It deploys the strength of traffic officers towards a group of suspects and uses a variety of means of associating traffic offences (deviant driving behaviour) with drivers (deviant drivers) who are methodically suspected. Suspicion is derived from traffic police knowledge regarding identity and resemblance. Thus, the actual implementation of the method of suspicion is outgoing: it seeks regular suspects or deviant drivers in the hope that uncleared traffic offences can be settled (Southgate & Mirrless-Black 1991). Members of the community may be inclined to

consider this action by traffic officers as harassment. Traffic officers may consider this not to be harassment, because they may have accredited reasons for methodical suspicion: deviant drivers are known to them or resemble those who are known to them.

It is a remarkable fact that there are many reasons traffic officers may provide to account for their performance and actions. Some of these reasons are external and related to the widespread civic expectation that they should express their great concern and appear accountable. Some reasons are internal and implicit in the scientific checking procedures often associated with traffic police professionalisation.

7.5 **SPECIAL TRAFFIC POLICING PROBLEMS**

The traffic policing function is certainly not simple. Traffic officers face various problems such as physical attacks, brutality and corruption (bribery).

7.5.1 **Attacks on Traffic Officers**

Leonard and More (1987:380-382) opine that attacks on traffic officers have the following effects:

- Individual traffic officer's morale deteriorates, their independent authority is adversely affected and they have less control of a traffic policing situation.
- It hampers the traffic police institution's efforts to recruit staff, damages traffic police relations with the community and impairs or tarnishes traffic institution's professional image.

Various theoretical models are used to explain these attacks (Leonard & More 1987:380-382):

(a) Conflict model

Traffic police are often reluctant intermediaries between opposing parties. Sometimes they are regarded as symbols of the ruling party.

(b) Subcultural model

This model basically entails an ecological explanation of these attacks. The implication is that attacks may occur mainly in "decayed" areas.

(c) Interactive model

In this model, emphasis is on an "us-them" perspective in which traffic officers are perceived as belonging to the system (government).

Kieselhorst (1974) traces the causes of attacks on the traffic police institution itself, incompetence, ineffectiveness, errors of judgement, etc. The study by Conradie and Freislich (Cf. 1994), deals with both quantitative and qualitative features.

7.5.2 **Brutality**

Once the traffic officer has decided to intervene in a traffic situation, how he or she intervenes will also be charged by competing standards of justice. The kind of intervention that has attracted most attention is the use of force (police brutality). Use of necessary and proper force will enable (traffic) police to effect an arrest, subdue and unruly deviant driver, or to protect themselves. What degree of force is necessary and proper will be a matter of dispute even when the purpose for which that force is applied (Leonard & More 1987:380-382). For instance, preventing the flight of deviant drivers is not questioned. If the traffic officer's function is to maintain or re-establish traffic order, and if he or she believes that to accomplish this he or she must assert his or her personal authority, then the use of force will be controversial and, as a result, place the

goal of road safety in jeopardy.

7.5.3 **Corruption (Bribery)**

The traffic police role carries considerable authority, and traffic officers are expected to exercise a well-informed discretion in all of their traffic law enforcement activities and encounters. The combination of authority and discretion, however, produces great potential for abuse (Leonard & More 1987:380-382).

Police deviance has been a problem since the early days of traffic policing. This tendency is complicated in today's materialistic society by greed and by personal and financial benefits to be derived from evading the law. Hence, temptations towards illegality offered to traffic officers, range from minor to huge monetary bribes (Schmalleger 1999:233-238).

Exactly what constitutes corruption (bribery) may not always be clear. Acceptance of minor gratuities may constitute the so-called "slippery slope" (Schmalleger 1999:233). A slippery slope perspective holds that even small "thank you's" which are accepted from members of the public can lead to a more ready acceptance of larger bribes. Traffic officers who begin to accept, and then expect gratuities, may soon find that their practice of traffic policing become influenced by such gifts and that larger ones soon follow. At this point traffic officers may easily slide to the bottom of the moral slope (Schmalleger 1999:233-234).

Punch (1985:13) identifies the following framework for (traffic) police corruption:

- (a) Straightforward corruption: something is done or not done for some form of reward.
- (b) Predatory (strategic) corruption: (traffic) police stimulate bribery, extort money and actively organise grafts.

- (c) Combative (strategic) corruption: falsifying evidence and intimidating witnesses.
- (d) Corruption as perversion of justice: "planting" of evidence.

7.6 **PRESENTATION AND ANALYSIS OF DATA**

One of the aims of the present study is to investigate whether differences exist in the rating of selected aspects relating to traffic policing by respondents. To realise this aim, it is therefore essential to test the null-hypothesis: "Respondents do not rate selected aspects relating to traffic policing differently." Presentation and analysis of data is based on selected aspects relating to traffic policing (see Annexure A: Section F – Scale 4). Differential rating of selected aspects relating to traffic policing will be measured by means of cross-tabulations with demographic characteristics and driving experience of respondents (see Annexure A).

Paragraph 7.5 deals with special traffic policing problems. It is essential to portray the picture of susceptibility of traffic officers to bribery. Data will, therefore, be presented and analysed by means of cross-tabulations of susceptibility of traffic officers to bribery with demographic characteristics and respondents' driving experience (see Annexure A).

**TABLE 7.1: DIFFERENTIAL RATING OF SELECTED ASPECTS OF TRAFFIC POLICING
ACCORDING TO RESPONDENTS' DEMOGRAPHIC CHARACTERISTICS
(N=722)**

Demographic Characteristics		Sum of Squares	df	Mean Squares	F-values	Sig.
Gender	BG	0.384	4	9.595E-02	0.417	0.796
	WG	164.846	717	0.230		
	T	165.230	721			
Race	BG	4.622	4	1.155	0.956	0.431
	WG	866.398	717	1.208		
	T	871.019	721			
Age	BG	8.655	4	2.164	1.553	0.185
	WG	999.151	717	1.394		
	T	1007.806	721			
Marital Status	BG	2.997	4	0.749	0.988	0.413
	WG	543.503	717	0.758		
	T	546.500	721			
Education	BG	40.185	4	10.046	5.303	0.000*
	WG	1358.254	717	1.894		
	T	1398.439	721			
Occupation	BG	162.805	4	40.701	11.748	0.000*
	WG	2484.094	717	3.465		
	T	2646.899	721			
Income	BG	42.966	4	10.741	4.259	0.002*
	WG	1808.448	717	2.522		
	T	1851.414	721			

* $p \leq 0.05$: Significant (ANOVA)

** $p \leq 0.05$: Significant (Chi-square)

BG: Between Groups

WG: Within Groups

T: Total

df: degrees of freedom

Figure 7.1: Occupation and Aspects Relating to Traffic Policing

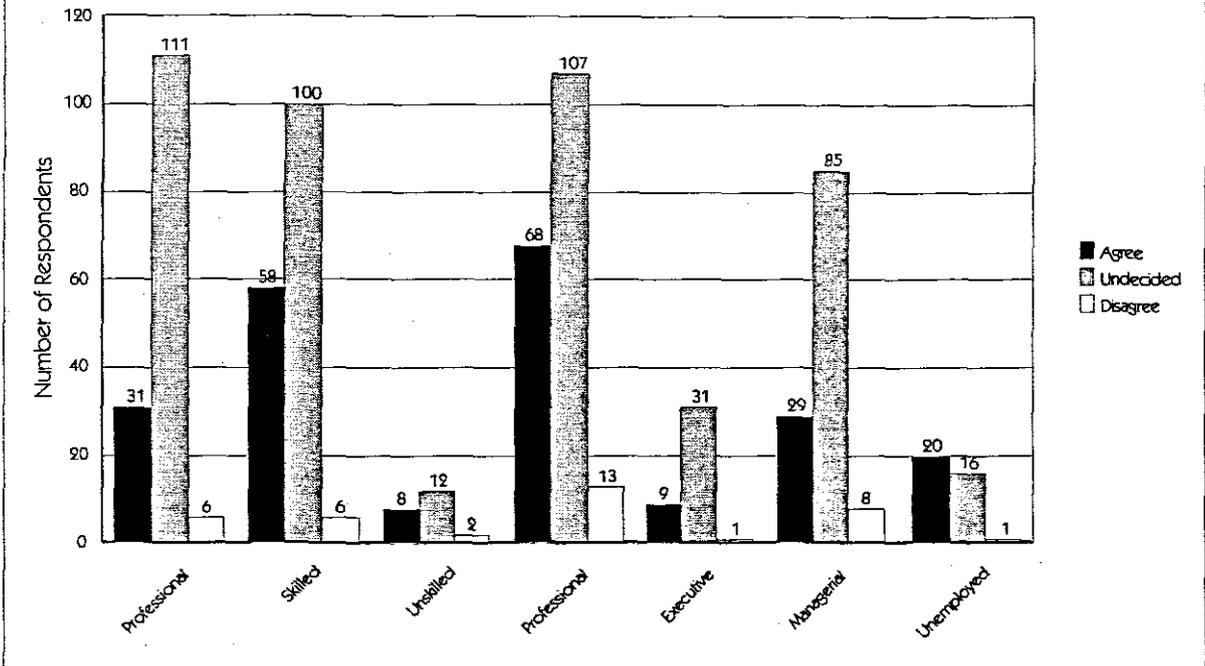


Table 7.1 portrays differential rating of selected aspects relating to traffic policing (Annexure A: Section F – Scale 4) according to respondents’ demographic characteristics. ANOVA and Chi-square statistical computations yielded scores (values) which are significant at the .05 level.

Differences according to gender, age and marital status are not significant.

Demographic characteristics which are significant according to ANOVA statistics are: education ($p=0.000$), occupation ($p=0.000$) and income ($p=0.002$).

Chi-square statistical test yielded significant differences in relation to race ($p=0.013$).

Rating of selected aspects of traffic policing by respondents belonging to different races, was obtained by measuring the extent of agreement and disagreement with statements reflected in the traffic policing scale (see Annexure A Section F). The observed extent of agreement is as follows:

- White and Asian: 32.0 percent respectively.
- Black: 28.0 percent.
- Coloured: 16.0 percent.

Respondents disagreed with selected statements (aspects) and this is accounted for as follows: Coloured (14.0%), Asian (8.0%), Black (6.0%) and White (2.0%). White and Asian respondents reported the highest scores of agreement, whilst the Coloured reported the lowest scores. Highest scores of disagreement were reported by the Coloured whilst White respondents reported the lowest scores. It is apparent that respondents rate selected aspects relating to traffic policing differently according to race.

Table 7.1 also reveals that there are significant differences according to education in the rating of selected aspects relating to traffic policing by respondents. Chi-square computations yielded the following scores of agreement:

- Grade 10 and below: 16.0 percent.
- Grade 12: 24.0 percent.
- Diploma: 34.0 percent.
- Technical: 29.0 percent.
- Degree: 45.0 percent.

Scores of disagreement are indicated below:

- Grade 10 and below: 10.0 percent.
- Grade 12: 7.0 percent.
- Diploma: 1.0 percent.
- Technical: 3.0 percent.
- Degree: 4.0 percent.

Respondents in possession of degrees reported the highest scores of agreement with selected

aspects (see Annexure A: Section F) relating to traffic policing, whilst those with qualifications below grade 10 reported the lowest scores. Again, respondents with qualifications below grade 10 reported the highest scores of disagreement in rating selected aspects relating to traffic policing. Lowest scores of disagreement were reported by respondents in the “diploma category”.

Respondents therefore rate selected aspects relating to traffic policing according to education differently.

Differential rating of selected aspects (see Annexure A: Section F) relating to traffic policing was also measured according to occupation. Chi-square computations yielded the following scores of agreement with selected aspects:

- Professional driver: 10.0 percent.
- Skilled/semi-skilled: 24.0 percent.
- Unskilled: 9.0 percent.
- Professional: 35.0 percent.
- Executive: 41.0 percent.
- Managerial: 39.0 percent.
- Unemployed: 46.0 percent.

Unemployed respondents reported the highest scores of agreement with selected aspects relating to traffic policing whilst the “managerial category” of respondents reported the lowest scores.

Respondents in various categories of occupation reported the following scores of disagreement with selected aspects relating to traffic policing: professional drivers (8.0%), skilled/semi-skilled (14.0%), professional (6.0%), managerial (4.0%), and unemployed (5.0%). Fourteen percent of unskilled respondents reported the highest scores of disagreement with selected aspects relating to traffic policing. The lowest scores of disagreement with selected aspects relating to traffic policing was observed in 4.0 percent in the managerial category.

Rating of selected aspects (Annexure A: Section F) relating to traffic policing by respondents differ according to occupation.

The extent of agreement with selected aspects relating to traffic policing was observed among respondents in various income levels as reflected below:

- R500 or less: 59.0 percent.
- R501 – R1 000: 40.0 percent.
- R1 001 – R2 000: 9.0 percent.
- R2 001 – R3 000: 13.0 percent.
- R3 001 – R4 000: 22.0 percent.
- R4 001 – R5 000: 30.0 percent.
- R5 001 or more: 38.0 percent.
- No income: 31.0 percent.

Respondents in income level R500 or less, reported the highest scores of agreement as opposed to the lowest scores of agreement reported by respondents in the income level R1000 – R2000. Scores of disagreement with selected aspects (see Annexure A: Section F) relating to traffic policing are as follows:

- R1 001 – R2 000 and R3 001 – R4 000: 7.0 percent.
- R2 001 – R3 000: 14.0 percent.
- R4 001 – R5 000: 4.0 percent.
- R5 001 or more: 3.0 percent.
- No income: 8.0percent.

Respondents in the income category R2001 – R3000, reported the highest scores of disagreement with selected aspects relating to traffic policing, whilst those in income level R5001 or more, reported the lowest scores in this regard. Respondents therefore rate selected aspects (Annexure A: Section F) of traffic policing, according to income, differently. The null-hypothesis is therefore rejected.

Differential rating of selected aspects of traffic policing according to race may be ascribed to diverse cultural backgrounds and attitudinal disposition. Enculturation may play a role in this regard. Educational level of respondents does contribute to the comprehension of the various aspects of traffic policing. Significant differences in the rating of selected aspects of traffic policing was in the expected trend. The occupational classification of respondents revealed that the "unemployed" were more-like conformists. A further deduction is that respondents in the income category R2 001 – R3 000 were not supportive of traffic law enforcement activities and could thus be considered deviant drivers. Respondents in the income category R5 000 or more were the least deviant. The null-hypothesis is rejected because it has been observed that respondents rate selected aspects of traffic policing differently according to race, education, occupation and income.

**TABLE 7.2: DIFFERENTIAL RATING OF SELECTED ASPECTS OF TRAFFIC POLICING
ACCORDING TO RESPONDENTS' DRIVING EXPERIENCE (N=722)**

Driving Experience		Sum of Squares	df	Mean Squares	F-values	Sig.
Possession of driving licence	BG	7.407E-02	4	1.852E-02	0.048	0.996
	WG	27.904	717	3.892		
	T	27.911	721			
Learned driving at driving school	BG	0.813	4	0.203	0.540	0.706
	WG	69.581	717	0.376		
	T	70.393	721			
Informal driver-training	BG	26.032	4	6.508	1.454	0.214
	WG	3208.561	717	4.475		
	T	3234.593	721			
Driving test passed at first attempt	BG	10.585	4	2.646	8.266	0.000*
	WG	230.645	717	0.322		0.000**
	T	241.230	721			
Duration of passing driving test	BG	129.407	4	32.352	12.178	0.000*
	WG	1904.727	717	2.657		0.000**
	T	2034.134	721			
Regularity of driving	BG	17.225	4	4.306	0.765	0.548
	WG	4037.552	717	5.631		0.000**
	T	4054.777	721			
Years vehicle driven	BG	77.848	4	19.462	8.832	0.000*
	WG	1580.024	717	2.204		0.000**
	T	1657.853	721			
Type of motor vehicle	BG	57.935	4	14.484	4.303	0.002*
	WG	2413.158	717	3.366		0.000**
	T	2471.093	721			

* $p \leq 0.05$: Significant (ANOVA)

** $p \leq 0.05$: Significant (Chi-square)

BG: Between Groups

WG: Within Groups

T: Total

df: degrees of freedom

Figure 7.2: Regularity of Driving and Aspects Relating to Traffic Policing

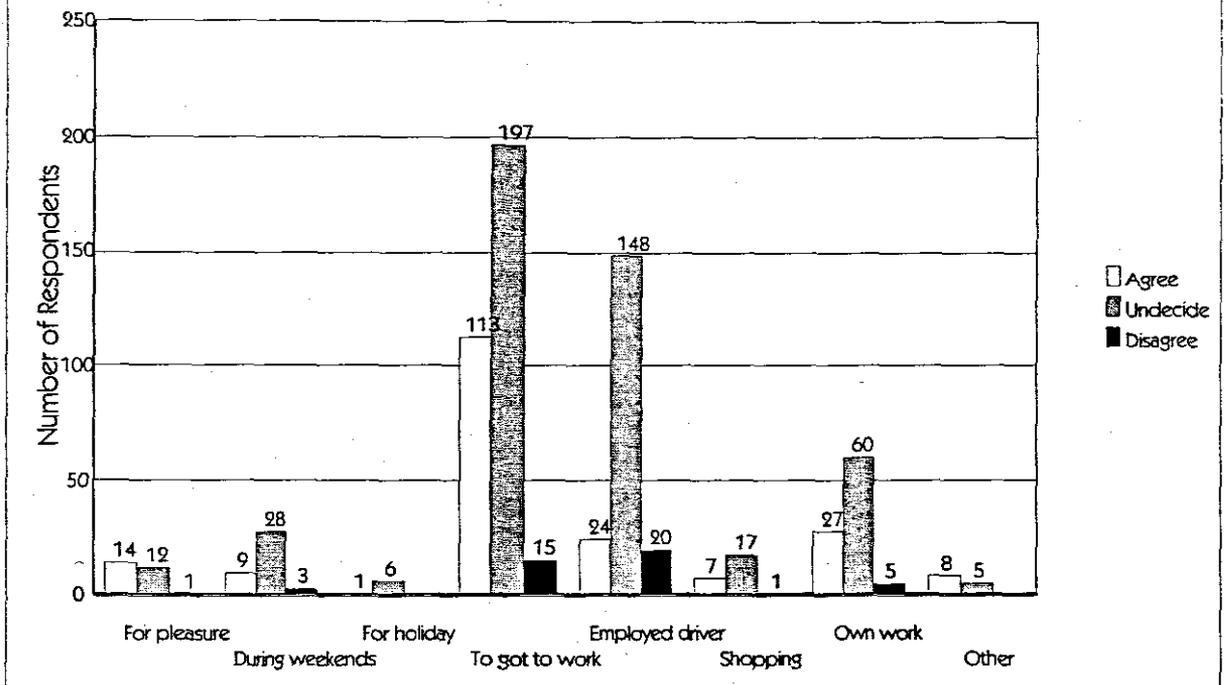


Table 7.2 portrays ANOVA and Chi-square statistical analyses in respect of the differential rating of selected aspects relating to traffic policing according to respondents' driving experience. ANOVA and Chi-square statistical computations yielded significant values in relation to the following aspects relating to driving experience (Annexure A: Section B):

- driving test passed at first attempt ($p=0.000$);
- duration of passing a driving test ($p=0.000$);
- years vehicle driven ($p=0.000$); and
- type of motor vehicle ($p=0.002$; $p=0.000$).

Respondents' differential rating of aspects relating to regularity of driving is not significant according to ANOVA statistics, but differences are significant according to Chi-square test ($p=0.000$).

Respondents who passed the driving test at first attempt rated selected aspects (see Annexure

A: Section F – scale 4) relating to traffic policing extremely positively ($p=0.000$) in 42.0 percent of the cases – the highest score reported for this table. The lowest score in respect of agreement with selected aspects relating to traffic policing was also observed in 19.0 percent of the cases. Scores of disagreement with selected aspects relating to traffic policing are accounted for as follows:

- passed driving test at first attempt: 3.0 percent.
- driving test not passed at first attempt: 8.0 percent.

Respondents who did not pass the driving test at first attempt reported the highest scores of disagreement, whilst those who passed at first attempt reported the lowest scores.

The rating of selected aspects relating to traffic policing differ significantly according to “driving test passed at first attempt.”

Some respondents passed the driving test at various attempts (see Annexure A: Section B). Respondents reported the following scores of agreement with selected aspects relating to traffic policing (see Annexure A: Section F – scale 4):

- second attempt: 24.0 percent.
- third attempt: 16.0 percent.
- fourth attempt: 10.0 percent.
- fifth attempt: 73.0 percent.
- not applicable category: 42.0 percent.

Respondents in fifth attempt-category reported the highest scores of agreement with selected aspects relating to traffic policing, whilst those in the fourth attempt-category reported lowest scores in this regard.

Respondents’ in various categories of attempts reported their disagreement with selected aspects relating to traffic policing as follows:

- second attempt (11.0%),
- third attempt (8.0%),
- fourth and “not applicable” categories (2.0%) respectively.

Respondents’ in second attempt-category reported the highest scores of disagreement, whilst those in fourth attempt and “not applicable” categories reported the lowest scores of disagreement with selected aspects relating to traffic policing (see Annexure A: Section F – scale 4). Aspects relating to traffic policing are rated by respondents differently according to the duration of passing the driving test.

It has been statistically established that respondents rate selected aspects relating to traffic policing differently according to regularity of driving. Respondents in various driving activity-categories reported the following scores of agreement with selected aspects relating to traffic policing:

- driving for pleasure: 52.0 percent.
- during weekends: 23.0 percent.
- for holiday purposes: 14.0 percent.
- to go to work: 35.0 percent.
- as an employed driver: 13.0 percent.
- for shopping purposes: 28.0 percent.
- in one’s own work: 29.0 percent.
- “other” category: 62.0 percent.

Respondents in the “other” category reported the highest scores of agreement with selected aspects relating to traffic policing, whilst those in the driving activity “employed drivers”, reported the lowest scores in this regard.

Scores of disagreement with selected aspects relating to traffic policing are accounted for as follows:

- employed drivers: 10.0 percent.
- during weekends: 8.0 percent.
- to travel or commute to work and in one's work category: 5.0 percent respectively.
- for pleasure and shopping purposes: 4.0 percent respectively.

Highest scores of disagreement were reported by "as employed drivers"-category, whilst respondents who drove motor vehicles for pleasure and shopping purposes, reported the lowest scores of disagreement with selected aspects relating to traffic policing (see Annexure A: Section F – score 4). The rating of selected aspects relating to traffic policing differs significantly according to regularity of driving.

A noteworthy trend is that scores of agreement point to more like conformist behaviour, whilst scores of disagreement indicate an inclination toward deviant driving behaviour (non-conformist behaviour).

The rating of selected aspects relating to traffic policing was also measured in accordance with years vehicle driven (see Annexure A).

The following scores of agreement were obtained:

- less than 1 year and 7 – 9 years: 33.0 percent respectively.
- 1 – 3 years: 16.0 percent.
- 4 – 6 years: 18.0 percent.
- 10 – 12 years: 34.0 percent.
- 13 – 15 years: 43.0 percent.
- 16 years or more: 52.0 percent.

Respondents who have driven motor vehicles for more than 16 years, reported the highest degree of commitment to selected aspects relating to traffic policing, whilst those who have driven between 1 and 3 years reported the lowest scores in this regard.

The number of years respondents have been driving a motor vehicle produced the following scores of disagreement (non-commitment) with aspects relating to traffic policing (see Annexure A: Section F – score 4):

- 1 – 3 years and 4 – 6 years: 9.0 percent respectively.
- 7 – 9 years: 6.0 percent.
- 10 – 12 years: 4.0 percent.
- 13 – 15 years: 2.0 percent.
- 16 years or more: 5.0 percent.

Respondents in 1 – 3 years and 4 – 6 years-categories, reported the highest scores of disagreement, whilst those in the 13 – 15 years-category reported the lowest scores of disagreement with selected aspects relating to traffic policing.

It has therefore been established that the rating of selected aspects relating to traffic policing differs significantly according to years respondents have been driving a motor vehicle.

Rating selected aspects that relate to traffic policing was also measured in terms of the type of motor vehicle driven (see Annexure A: Section B). Respondents reported the following scores of commitment:

- privately-owned motor vehicle: 39.0 percent.
- privately-owned light delivery van: 7.0 percent.
- taxi motor car: 36.0 percent.
- minibus taxi: 9.0 percent.
- motorcycle and tractor: 50.0 percent respectively.
- goods delivery vehicle: 24.0 percent.
- passenger bus: 16.0 percent.
- other category: 67.0 percent.

Respondents who operated motor vehicles in the “other category” reported the highest scores

of agreement with aspects relating to traffic policing (see Annexure A: Section F – scale 4), whilst those who operated public motor vehicles or minibus taxis reported the lowest scores in this regard.

Scores of disagreement with aspects relating to traffic policing are accounted for as follows:

- privately-owned motor vehicle: 2.0 percent
- privately-owned light delivery van: 12.0 percent
- delivery van: 12.0 percent
- taxi motor car: 5.0 percent
- minibus taxi: 13.0 percent
- goods delivery vehicle: 7.0 percent
- passenger bus: 3.0 percent

Once again, respondents who operated minibus taxis reported the highest scores of non-commitment (disagreement) to selected aspects relating to traffic policing. This implies that minibus taxi operators may be labeled deviant drivers since they are not supportive of traffic law enforcement activities (functions). Respondents who operated privately-owned motor vehicles reported the lowest scores of disagreement with selected aspects relating to traffic policing. This implies that these respondents are to a lesser degree inclined to deviant driving behaviour.

The null-hypothesis namely that “respondents do not rate selected aspects relating to traffic policing differently,” is therefore rejected. Respondents rate selected aspects relating to traffic policing differently according to aspects relating to driving experience: driving test passed at first attempt, duration of passing driving test, regularity of driving, years motor vehicle driven and type of motor vehicle.

Respondents who passed the driving test at first attempt rated selected aspects of traffic policing extremely positively. Such rating may be ascribed to confidence displayed during the driving test situation.

Respondents may view themselves as "intelligent" learner drivers of motor vehicles. Respondents who did not pass the driving test at first attempt could be considered "not intelligent/slow learners" because they reported highest scores of disagreement with selected aspects of traffic policing. Respondents in the fifth attempt category could be viewed as traffic law abiding since they reported the highest scores of agreement with selected aspects of traffic policing (Annexure A). Those in the second attempt-category could be viewed as more-like deviant since they reported the highest scores of disagreement with selected aspects of traffic policing. Respondents in the driving activity "other" category may be considered as abiding by traffic law because they reported the highest scores of agreement with selected aspects of traffic policing. The "employed driver"-category point to a more-like deviant driver behaviour since the highest scores of disagreement are found in this category. This implies that employed (respondents) drivers were not supportive of traffic law enforcement activities. Respondents who have driven motor vehicles for more than 16 years are more conformists since the highest scores of agreement with selected aspects of traffic policing were reported. Such a high degree of commitment may be ascribed to cumulative experience and maturity in vehicle control. It may be argued that respondents who have driven between 1 and 3 years lack the necessary driving experience and maturity in vehicle control. Such respondents may be labeled deviant drivers since the highest scores of disagreement had been observed.

TABLE 7.2: DIFFERENTIAL RATING OF TRAFFIC OFFICERS' SUSCEPTIBILITY TO BRIBERY ACCORDING TO RESPONDENTS' DEMOGRAPHIC CHARACTERISTICS (N=722)

Respondents' Demographic Characteristics		Sum of Squares	df	Mean Squares	F-values	Sig.
Gender	BG	0.541	1	0.541	1.120	0.290
	WG	347.821	720	0.483		
	T	348.361	721			
Race	BG	0.553	4	0.138	0.285	0.888
	WG	347.809	717	0.485		
	T	348.361	721			
Age	BG	2.152	6	0.359	0.741	0.617
	WG	346.209	715	0.484		
	T	348.361	721			
Marital Status	BG	3.403	4	0.851	1.768	0.133
	WG	344.959	717	0.481		
	T	348.361	721			
Education	BG	8.001	6	1.333	2.801	0.011*
	WG	340.361	215	0.476		
	T	348.361	721			
Occupation	BG	2.665	6	0.444	0.919	0.481
	WG	345.696	715	0.483		
	T	348.361	721			
Income	BG	2.129	7	0.304	0.627	0.734
	WG	346.233	714	0.485		
	T	348.361	721			

* $p \leq 0.05$: Significant (ANOVA)

** $p \leq 0.05$: Significant (Chi-square)

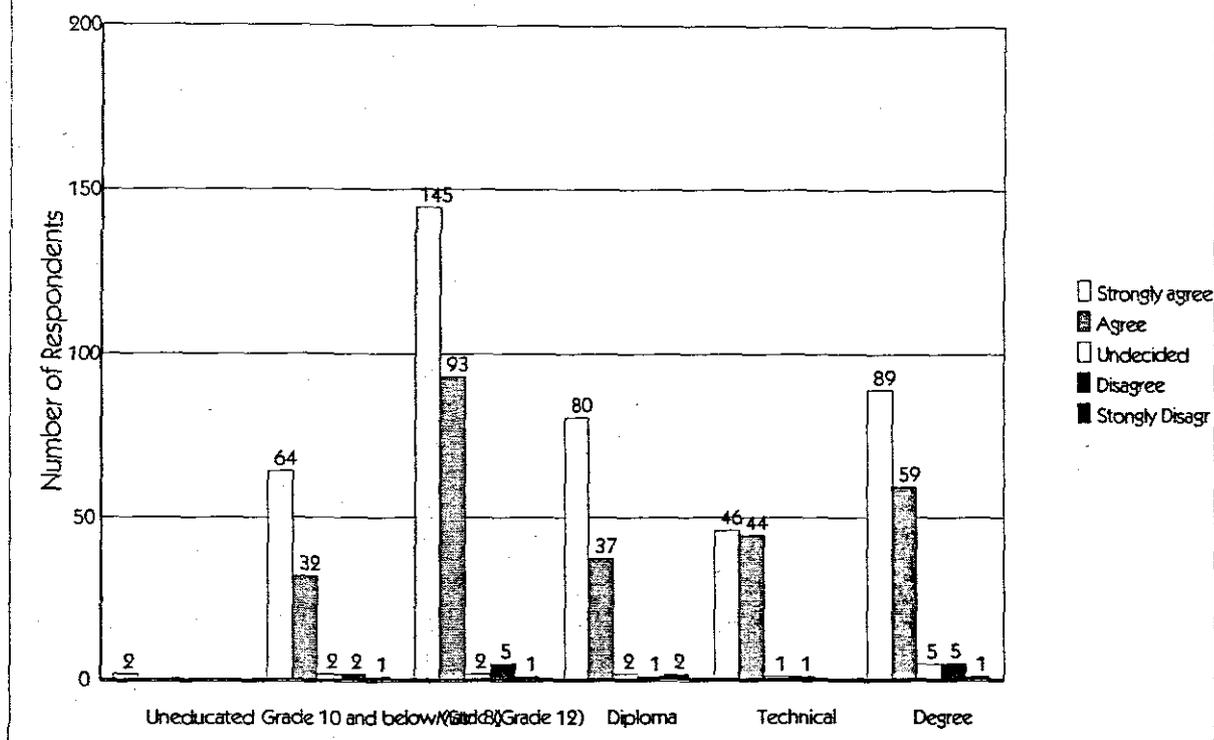
BG: Between Groups

WG: Within Groups

T: Total

df: degrees of freedom

Figure 7.3: Education and Susceptibility to Briber



In paragraph 7.5 special traffic policing problems which include physical attacks, brutality and corruption (bribery) were briefly highlighted. In the present study, bribery has been included as one of the special traffic policing problem(s)/selected aspects relating to traffic policing (see Annexure A: Section F, variable 43).

The rationale for including bribery as a dysfunctional aspect resides in the fact that traffic officers will not be inclined to prosecute bribers (deviant drivers). Bribery is dysfunctional because it is not only a criminal offence, but undermines public confidence in road traffic management. Bribery entails the briber's (giver/receiver) giving a certain benefit to the traffic officer (receiver) with a specific intent. It is moreover a severe form of corruption.

The act of giving or offering is known as "active" bribery, whereas that of receiving is known as "passive" bribery. The benefit must be received by any traffic officer upon whom power has been conferred or who has been charged with any duty by virtue of his or her employment as a traffic officer (South Africa 1996: Section 31).

Bribery must be a completed act (South Africa 1996: Sections 1(1)(a)(ii) & (1)(1)(b)(ii)). Completed corruption (bribery) by the briber (deviant driver) implies that the benefit must be given or offered to the traffic officer (bribee) himself or herself. If the benefit is given or offered to another person, the offence (bribery) had not been committed. Bribery is therefore dysfunctional because the traffic officer will neglect to perform his or her traffic law enforcement duties. The briber (deviant driver) must act intentionally and must have the intention to reward the traffic officer (bribee) because he or she (the traffic officer/bribee) acted contrary to his or her duties and powers to the briber's (deviant driver's) benefit. The briber (deviant driver) and bribee (traffic officer) are prosecuted for corruption (bribery). The offence committed by the traffic officer mainly entails unlawfully receiving a benefit in exchange for a traffic offence (deviant driving behaviour) committed.

Table 7.3 portrays that respondents rated susceptibility of traffic officers to bribery differently according to education. Differences are significant according to ANOVA ($p=0.011$) and Chi-square ($p=0.000$) statistical computations. Various scores of agreement with susceptibility of traffic officers to bribery (deviant driving behaviour) are as follows:

- uneducated: 100.0 percent.
- grade 10: 95.0 percent.
- grade 12: 97.0 percent.
- diploma: 96.0 percent.
- technical: 98.0 percent.
- degree: 93.0 percent.

Uneducated respondents reported the highest scores of susceptibility to bribery among traffic officers, whilst respondents in possession of degrees reported the lowest scores in this regard.

Other respondents disagreed with the statements: "traffic officers are susceptible to bribery" and they are accounted for as follows:

- grade 10 and below: 3.0 percent.

- grade 12 and diploma: 2.0 percent respectively.
- technical: 1.0 percent, and
- degree: 4.0 percent.

Respondents in possession of degrees reported the highest scores of disagreement, whilst respondents with technical qualifications reported the lowest scores.

It has been established that bribery is a traffic policing problem viewed within the context of respondents' educational framework.

It is also essential to establish how respondents rate traffic officers' susceptibility to bribery according to respondents' driving experience.

TABLE 7.4: DIFFERENTIAL RATING OF TRAFFIC OFFICERS' SUSCEPTIBILITY TO BRIBERY ACCORDING TO RESPONDENTS' DRIVING EXPERIENCE (N=722)

Respondents' Driving Experience		Sum of Squares	df	Mean Squares	F-values	Sig.
Possession of driving licence	BG	0.334	2	0.167	0.345	0.708
	WG	348.027	719	0.408		
	T	348.361	721			
Learned driving at driving school	BG	1.518	3	0.506	1.048	0.371
	WG	346.843	718	0.483		
	T	348.361	721			
Informal driver-training	BG	1.287	5	0.257	0.531	0.753
	WG	347.075	716	0.485		
	T	348.361	721			
Driving test passed at first attempt	BG	7.126	5	1.425	2.991	0.011*
	WG	341.235	716	0.477		
	T	348.361	721			
Duration of passing driving test	BG	1.501	6	0.250	0.516	0.797
	WG	346.860	715	0.485		
	T	348.361	721			
Regularity of driving	BG	3.608	8	0.451	0.933	0.489
	WG	344.754	713	0.484		
	T	348.361	721			
Years vehicle driven	BG	8.154	6	1.359	2.856	0.009*
	WG	340.207	715	0.476		
	T	348.361	721			
Type of motor vehicle	BG	7.358	8	0.920	1.923	0.045*
	WG	341.004	713	0.478		
	T	348.361	721			

* $p \leq 0.05$: Significant (ANOVA)

** $p \leq 0.05$: Significant (Chi-square)

BG: Between Groups

WG: Within Groups

T: Total

df: degrees of freedom

Table 7.4 reveals that there are significant differences between traffic officers' susceptibility to bribery and various aspects of respondents' driving experience. ANOVA and Chi-square statistical tests yielded significant values in relation to informal driving-training (0.041: Chi-square test only), driving test passed at first attempt (ANOVA: 0.011 and Chi-square: 0.000), years

vehicle driven (ANOVA: 0.009 and Chi-square: 0.002), and type of motor vehicle (ANOVA statistics: 0.054 and Chi-square test: 0.035). ANOVA computations also yielded values (differences) that are not significant according to informal-driver training.

Learning to drive a motor vehicle also involves being taught by a friend, relative, employer one self and/or other type of instruction (see Annexure A). A collective term for such instruction has been labelled informal driver-training (see Table 7.4). Respondents reported the following scores of agreement with traffic officers' susceptibility to bribery in relation to being taught to drive by:

- friend: 94.0 percent,
- relative: 98.0 percent,
- employer: 82.0 percent,
- self and other types: 100.0 percent respectively and
- "not applicable" category: 95.0 percent.

Respondents who learned to drive motor vehicle by means of self instruction and "other types", reported the highest scores of traffic officers' susceptibility to bribery. Respondents who were taught to drive by employers reported the lowest scores of traffic officers' susceptibility to bribery.

Respondents reported the following scores of disagreement:

- friend (6.0%),
- relative (1.0%)
- employer (9.0%) and
- "not applicable" category (3.0%).

Respondents who learned to drive through employers' instruction reported the highest scores of traffic officers' being not susceptible to bribery, whilst those who were taught by relatives, reported the lowest scores in this regard.

Respondents who passed driving test at first attempt reported agreement with traffic officers' susceptibility to bribery in 96.0 percent of the cases. Likewise, those who did not pass their driving test at first attempt also reported agreement in 96.0 percent of the cases. Respondents who passed their driving test at first attempt reported the lowest scores of disagreement (2.0%), whilst those who did not pass at first attempt reported the highest scores of disagreement (3.0%) with traffic officers' susceptibility to bribery.

Scores of agreement with traffic officers' susceptibility to bribery according to years vehicle driven are as follows:

- less than 1 year, 4 – 6 years, 7 – 9 years and 13 – 15 years: 97.0 percent respectively
- 1 – 3 and 10 – 12 years: 96.0 percent respectively and
- 16 years or more: 82.0 percent.

Respondents' in the less than 1 year, 4 – 6 years, 7 – 9 years, and 13 – 15 years category, reported the highest scores of agreement with traffic officers' susceptibility to bribery, whilst those who have driven motor vehicles for more than 16 years reported the lowest scores of agreement.

Respondents who disagreed with traffic officers' susceptibility to bribery reported the following scores: less than 1 year, 4 – 6 years and 10 – 12 years (3.0% respectively); 1 – 3 years and 7 – 9 years (2.0% respectively) and 16 years or more (7.0%).

Respondents who have driven motor vehicles for more than 16 years reported the highest scores of disagreement, whilst those with driving experience in categories 1 – 3 years and 7 – 9 years reported the lowest scores of disagreement with traffic officers' susceptibility to bribery.

Agreement with traffic officers' susceptibility to bribery was also reported by respondents who have operated various types of motor vehicles and scores are accounted for as follows:

- privately-owned motor vehicle and privately-owned light delivery van: 96.0 percent respectively
- taxi motor car: 86.0 percent
- minibus taxi: 97.0 percent
- motorcycle and pay loader: 50.0 percent respectively
- goods delivery vehicle: 91.0 percent and
- passenger bus and tractor: 100.0 percent respectively.

Respondents who operated passenger buses and tractors reported the highest scores of agreement with traffic officers' susceptibility to bribery, whilst those who operated motorcycles and pay loaders reported the lowest scores in this regard.

Scores of disagreement with traffic officers' susceptibility to bribery are as follows:

- privately-owned motor vehicle and minibus taxi: 2.0 percent respectively
- privately-owned light delivery van and goods delivery vehicle: 4.0 percentage respectively
- taxi motor car: 5.0 percent and
- motorcycle and pay loader: 50.0 percent respectively.

Respondents who operated motorcycles and pay loaders reported the highest scores of disagreement with traffic officers' susceptibility to bribery, whilst privately-owned motor vehicles and minibus taxi operators reported the lowest scores in this regard.

Respondents who learned to drive motor vehicles by means of self-instruction and "other types", reported the highest scores of traffic officers' susceptibility to bribery. A deduction is that these respondents might have bribed traffic officers and also lacked formal driver-training. The implication is that traffic officers might have compromised the quality of traffic law enforcement. Respondents who learned to drive motor vehicles through employers' instruction could not be considered as bribers since they reported the highest scores of disagreement with traffic officers' susceptibility to bribery. It can be concluded that employers could afford to pay costs incurred

as a result of driver-training. The highest scores of agreement with traffic officers' susceptibility to bribery was observed in respondents who have driven motor vehicles in less than 1 year, 4–6 years, 7–9 years and 13–15 years. A deduction is that a driving experience of less than 1 year may produce deviant drivers and bribers due to inexperience, immaturity and lack of confidence in vehicle control. Erratic driver-behaviour may often be displayed by such drivers. A probability exists that these drivers might opt for bribing traffic officers in order to evade prosecution. Respondents who have driven motor vehicles for more than 16 years could be regarded as "non-bribers" since they reported the highest scores of disagreement with traffic officers' susceptibility to bribery. This may be ascribed to advanced experiential knowledge, maturity and confidence in vehicle control.

Professional drivers, especially those who operated buses and tractors, could be viewed as "experienced" bribers (givers) since they reported the highest scores of agreement with traffic officers' susceptibility to bribery. Minibus taxi operators reported the second highest scores of agreement. It may be deduced that the handling of large sums of money may easily influence professional drivers to bribe traffic officers in order to evade prosecution. It should be noted that this does not imply that traffic officers only target drivers of certain motor vehicles to bribe them. Drivers of privately-owned motor vehicles could be considered "non-bribers" since they reported the highest scores of disagreement with traffic officers' susceptibility to bribery. It is essential that drivers of motor vehicles should contemplate to abide by the National Road Traffic Act (South Africa 1996) at all costs than to "waste" their money by bribing traffic officers. Drivers of privately-owned motor vehicles could have been aware that bribery will "eat up" all their savings.

It is evident that susceptibility to corruption (bribery) is a serious traffic policing problem which may hamper the effective realisation of objectives of traffic policing. It is not the objective of the present study to investigate factors that contribute to traffic offences (deviant driving behaviour). Drivers of motor vehicles should be aware of the various factors. Tables 7.5 and 7.6 provide data in this regard. The present study is based on an epidemiological study of deviant driving behaviour in areas under the jurisdiction of uMhlatuze City Council and adjacent areas: Mtunzini, KwaMbonambi and Mtubatuba. It is essential to portray the extent of motor vehicle crashes and

fatal accidents (deviant driving behaviour) in KwaZulu-Natal in particular and South Africa in general. Tables 7.7 and 7.8 highlight the extent.

TABLE 7.5: INDIVIDUAL-HUMAN FACTORS AS CONTRIBUTORY TO FATAL ACCIDENTS IN SOUTH AFRICA: 01 JULY 2002 – 30 JUNE 2003 (N=8167)

Individual-Human Factors (Offensive Driving Behaviour Scale)	Frequency	
	N	%
Pedestrian-Jay walking	3 269	40.0
High speed	1 832	22.4
Overtook when unsafe/unlawful	314	3.8
Turned in front of oncoming traffic	298	3.6
Disregarded red robot/stop/yield	155	1.9
Followed vehicle in front too close	71	0.9
Driver suspected of alcohol/drugs	234	2.9
Pedestrian suspected of alcohol/drugs	96	1.2
Fatigue/falling asleep	150	1.8
Using/holding a cell phone	5	0.2
Other	351	4.3
Unknown	1 392	17.0
Total	8 167	100.0

Source: National Fatal Accident Information Centre, Pretoria

Paragraphs 7.2.3.9 and 7.2.3.13 respectively dealt with road traffic signs and general speed limit and regulations. Motor vehicle drivers are required to abide by various regulations (rules of the road). It is not the aim of the present study to establish the contributory role of individual-human and (road) environmental factors, but it becomes essential to indicate the important role of these factors in deviant driving behaviour which eventually culminate in crashes and fatal accidents.

Khoza (1993:104) opines: "The interaction between individual-human and environmental factors contribute towards creating a unique personality of the traffic offender." Table 7.5 portrays the extent of the contributory role of individual-human factors in fatal accidents in South Africa for

the period 01 July 2002 – 30 June 2003.

In the present study individual-human factors (variables) contained in Table 7.5, include some of the factors (variables) reflected in the offensive driving behaviour scale (Annexure A) and these include, *inter alia*, pedestrian-jay walking, speeding, overtaking and disregarding of robots.

Table 7.5 reveals that “pedestrians constitute a serious traffic safety concern” (Annexure A, Q.69) and this account for the highest scores (40.0%) of fatalities. Speeding produced the second highest scores (22.4%) of fatalities. Other individual-human factors contributed to fatalities in the following magnitude:

- “unknown” category: 17.0 percent.
- overtook when unsafe and turned in front of oncoming motor vehicle: 3.8 percent respectively.
- driver suspected of alcohol/drug: 2.9 percent.
- pedestrian suspected of alcohol/drugs, fatigue/falling asleep and disregarded red robot: 1.2 percent respectively and
- using/holding a cellular phone: 0.2 percent.

TABLE 7.6: ROAD AND ENVIRONMENTAL FACTORS AS CONTRIBUTORY TO FATAL ACCIDENTS IN SOUTH AFRICA: 01 JULY 2002 – 30 JUNE 2003 (N=8017)

Road and Environmental Factors	Frequency	
	N	%
Poor visibility (rain, mist)	162	2.06
Poor street lighting	101	1.25
Sharp bend	139	1.73
Blind rise/corner	35	0.43
Bad road surface	60	0.74
Road wet/slippery	76	0.94
Defective road/poor road	11	0.13
Narrow road	28	0.34
Other	17	0.21
Unknown	1195	14.90
Total	8017	100.0

Source: National Fatal Accident Information Centre, Pretoria

Structural traffic control, which includes road design and engineering, has been discussed in paragraph 7.3.2.1. The present study does not include road and environmental factors as deviant driving behaviour scale. Table 7.6 presents the picture in respect of road and environment as factors contributing to fatalities in South Africa for the period 01 July 2002 – 30 June 2003. The “unknown” category produced the highest scores (14.90%), whilst the “other” category produced second highest scores (0.21%) in this regard.

The following scores have been observed in respect of environmental factors:

- poor visibility (rain, mist): 2.06 percent.
- road wet/slippery: 0.94 percent.

Other factors that contribute to fatal accidents relate to road design and engineering and these yielded the following scores:

- poor street lighting and bad road surface: 1.25 percent.
- sharp bend: 1.73 percent.
- blind rise/corner: 0.43 percent.
- defective robot: 0.13 percent.
- narrow road: 0.34 percent.
- road works: 0.21 percent.

TABLE 7.7: FATAL ACCIDENTS IN VARIOUS PROVINCES PER DRIVER, PASSENGER AND PEDESTRIAN (N=9979)

Province	Frequency (N)					
	Driver (N)		Passenger		Pedestrian	
	N	%	N	%	N	%
Eastern Cape	209	7.95	385	12.05	412	9.93
Free State	247	9.37	380	11.89	239	5.76
Gauteng	601	22.79	397	12.45	1074	25.89
KwaZulu-Natal	347**	13.16	610*	19.09	930**	22.44
Limpopo	253	9.59	311	9.73	263	6.34
Mpumalanga	314	11.93	356	11.14	282	6.79
North West	308	11.68	315	9.85	362	8.84
Northern Cape	102	3.86	133	4.16	85	2.04
Western Cape	255	9.67	308	9.64	501	12.07
Total (National)	2363	100.00	3195	100.00	4148	100.00

Source: National Fatal Accident Information Centre, Pretoria

* Highest scores in KZN

** Second highest scores in KZN

Table 7.7 reveals that the highest number (scores) of passengers were killed in KZN road accidents and this account for 19.09 percent, whilst Gauteng was the second highest in this regard. Accidents which caused fatalities in respect of drivers and pedestrians were highest in Gauteng for the period 01 July 2002 – 30 June 2003. In both instances of fatalities KZN was the second highest as depicted below:

- drivers: 13.16 percent
- pedestrians: 22.44 percent

TABLE 7.8: MOTOR VEHICLE CRASHES IN VARIOUS PROVINCES: RURAL-URBAN DIFFERENCES (N=8140)

Province	Frequency (N)			
	Rural		Urban	
	N	%	N	%
Eastern Cape	561	9.67	208	8.90
Free State	503	8.67	108	4.62
Gauteng	843	14.53	1013	43.33
KwaZulu-Natal	1154*	19.89*	364**	15.57**
Limpopo	580	9.99	83	3.55
Mpumalanga	659	11.36	112	4.79
North West	689	11.88	123	5.26
Northern Cape	231	3.98	30	1.28
Western Cape	582	10.03	297	12.70
Total (National)	5802	100.00	2338	100.00

Source: National Fatal Accident Information Centre, Pretoria

* Highest scores (rural) in KZN

** Second highest scores (urban) in KZN

It is essential to provide a global picture and extent of motor vehicle crashes in rural and urban roads in South Africa. This will indicate future trends and directions in respect of road management.

Table 7.8 presents the picture of vehicle crashes in various provinces in rural and urban roads in South Africa for the period 01 July 2002 – 30 June 2003. It is evident (Table 7.8) that the highest number (scores) of motor vehicle crashes happened in KZN rural roads and this is accounted for in 19.89 percent cases. Gauteng was the second highest in this regard.

It has also been observed that KZN was the second highest in respect of urban crashes and this

yielded 15.57 percent scores (crashes). The highest scores (43.33%) in respect of urban crashes were observed in Gauteng.

Table 7.6 revealed that the structure of roads is one of important factors contributing to fatal accidents in South Africa.

7.7 SUMMARY

A great many of what start as routine traffic encounters between traffic officers and public, turn out to involve serious traffic offences (deviant driving behaviour). Traffic policing in all communities has now become business enterprise. Application of the principles of sound traffic management is therefore mandatory. Traffic legislation has been enacted with specific objectives. Road traffic legislation aims at maintaining an equilibrium in order to best serve the interests of the community. Comprehensive function of traffic legislation is to ensure order on the roads, and to control and to prevent deviant driving behaviour. Numerous problems affect traffic legislation: criticisms, acceptability, application, diversity, risk analysis, risk analysis, inaccurate and unreliable data.

Road traffic legislation should be applied with meticulous care. Application of traffic legislation has been discussed in this chapter with special reference to National Road Traffic Act, Act no. 29 of 1996 and accompanying regulations. The Act regulates powers and functions of traffic officers during the enforcement of traffic prescriptions, sets out qualifications for drivers of motor vehicles, specifies roadworthy requirements for motor vehicles and regulates actions of drivers on public roads. Deviant driving behaviour is created in the act (by stipulating traffic law violations) to ensure safety of drivers and pedestrians. Certain provisions in the Act, like overloading control, are specifically created to protect road infrastructure. The Act also deals with transportation of dangerous goods. Provision have also been made in respect of traffic signs, speed limits, accident-reporting, reckless or negligent or inconsiderate driving and driving while under the influence of drugs, and presumptions. Regulations contain additional details on the application of the principles of the Act.

Traffic law enforcement is the specialist function of the individual traffic officer which puts him or her and his or her traffic organisation in the spotlight. Traffic legislation is enforced within the framework of maintaining law and order on public roads. Traffic law enforcement refers to the total actions taken by traffic officers in dealing with deviant drivers. There are two basic components of traffic law enforcement: structural and functional. Structural traffic control deals with traffic legislation and road engineering. The functional component consists of traffic law enforcement. Traffic law enforcement also consist of proactive and reactive measures, remote actions; administrative, executive, and supervisory functions; and direct surveillance. Selective traffic law enforcement further maximises proper allocation and deployment of traffic officers.

Display of traffic policing will ultimately restore unity of meaning which is basic to traffic order, conducive to an orderly co-existence of community. Display of traffic policing is also related to the method of suspicion employed by traffic (police) officers. Traffic policing is fraught with diverse problems such as attacks on traffic officers, brutality and susceptibility to corruption (bribery).

Statistical findings of the present study reveal the following:

- (1) Respondents rate selected aspects relating to traffic policing differently. Differences in rating exist according to respondents' education, race, occupation and income.
- (2) Differential rating of selected aspects (Annexure A: Section F) relating to traffic policing exist according to various aspects relating to respondents' driving experience, driving test passed at first attempt, duration of passing driving test, regularity of driving, years vehicle driven and type of motor vehicle.
- (3) Susceptibility to bribery is a special traffic policing problem which faces traffic authorities. Differential rating exist according to education as respondents' demographic characteristic and respondents' driving experience in relation to informal driver-training, driving test passed at first attempt, years motor vehicle driven and type of motor vehicle.

CHAPTER 8

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

Empirical research on deviant driving behaviour is the primary aim of the present study. Deviant driving behaviour is classified as such in terms of traffic offences and traffic offenders (deviant drivers). Any traffic offence, no matter how trivial, which is adjudicated according to the Road Traffic Act (South Africa 1996), is classified as deviant driving behaviour. An epidemiological study of deviant driving behaviour has been undertaken by focussing on important aspects relating to this social phenomenon (Annexure A).

Research methods and techniques selected for the attainment of aims (paragraph 2.3) and testing of hypotheses (paragraph 2.4) are presented in chapter 2. A self-report instrument for data capturing was used to reveal the nature and extent of "hidden" deviant driving behaviour among respondents (drivers) residing in areas under the uMhlathuze City Council's jurisdiction and other adjacent areas (Annexure B). Seven hundred and twenty-two respondents constituted the observed frequency. For the purpose of statistical analyses, the following statistics were used: analysis of variance (ANOVA) and Chi-square (χ^2) for differential analysis and Spearman Rank-Order Correlation Coefficient (ρ) for correlational analysis of deviant driving behaviour.

Chapter 3 of this study deals with theoretical explanations of deviant driving behaviour. Four sets of theories were analysed: traditional theoretical explanations, modern theoretical explanations, theoretical explanations of aggressive driving behaviour and theoretical explanations of anxious driving behaviour. Theoretical constructs of

independent variables include demographic characteristics and selected aspects relating to respondents' driving experience. The dependent deviant driving behaviour variables include seven statistical scales:

- deviant driving behaviour,
- aggression,
- anxiety,
- traffic policing,
- offensive driving,
- document offences, and
- vehicle defects (Annexure A).

Statistical analyses of data are presented in chapters 4, 5, 6 and 7. Findings, testing of hypotheses, conclusions and recommendations are accordingly discussed in this chapter.

8.2 PROBLEMS AND LIMITATIONS ENCOUNTERED DURING THE STUDY

The researcher encountered limitations and problems during the course of the study. For ethical reasons, the researcher would like to bring to the attention of the reader that some of the limitations and problems were eliminated during the course of this study. However, the following limitations and problems are noteworthy:

- (a) The dearth of literature and research studies in South Africa that have used self-report data collection techniques presented a major problem. The researcher had to rely mostly on foreign (self-report) studies for the compilation of a deviant driving behaviour check-list or index.

- (b) The sample consisted of respondents drawn from various racial groups. This presented certain selected limitations:
- Socio-cultural realities presented problems with regard to the operationalisation of some concepts. Some respondents could not view mere disregard of traffic law as constituting deviant driving behaviour.
 - The questionnaire had to be explained in IsiZulu. The researcher was cautious not to influence the respondents in the process of completing the questionnaire. However, the possibility of such influence cannot be ruled out.
 - The level of driving experience of respondents had an effect on the validity of their responses. For instance, some respondents do not drive motor vehicles frequently.
- (c) The bulk of the attitude questions (Annexure A) were framed as statements with which the respondents (drivers) had been asked to agree or disagree or remain neutral. Attitudes are not easily examined. It is generally recognised that attitudes are important determinants of driver behaviour. It is probably rare for a driver of a motor vehicle to have a consistent set of attitudes and because they are not static and unchanging, they are difficult to measure. MacMillan (1975:137) once cautioned that it may be dangerous to infer behaviour in specific situations from verbally expressed attitudes. For instance, a respondent's attitude towards overtaking another motor vehicle may be a product of his or her past

experiences as a driver, how he or she sees the particular situation confronting him or her, and his or her attitude towards other drivers and other driving situations.

8.3 TESTING OF HYPOTHESES

Four hypotheses were formulated for statistical testing. These hypotheses are based on:

- establishing differences according to respondents' demographic characteristic and driving experience
- establishing relationships according to respondents' demographic characteristics and driving experience
- establishing whether or not aggressive and anxious drivers do commit traffic offences (deviant driving behaviour) and
- finding out whether or not differences exist in the rating of selected aspects relating to traffic policing.

8.3.1 Hypothesis 1: "Deviant driving behaviour does not differ when grouped according to gender, race, marital status, type of employment/occupation, regularity of driving and type of motor vehicle"

To a large extent, statistics in the present study reject this null-hypothesis. The following observations have been made in this regard:

- (a) Deviant driving behaviour differs significantly according to gender in respect of aggression, anxiety, document offences and vehicle defects (Table 4.1). Male respondents (drivers) displayed more aggression, whilst female respondents (drivers) reported the highest scores in respect of anxious driving behaviour.

(b) Significant differences were recorded for race. Coloured respondents (30.0%) featured predominantly in the aggression-scale. Black respondents (29.0%) featured second highest in aggressive driving behaviour. White respondents reported the lowest scores in respect of the deviant driving behaviour-scale. Coloured respondents reported the highest scores in the offensive driving behaviour-scale, whilst White respondents reported the least in this regard. Deviant driving behaviour differs when grouped according to race within the context of the following five scales:

- deviant driving behaviour,
- aggression,
- driving offences,
- document offences, and
- motor vehicle defects (Table 4.2).

(c) Deviant driving behaviour also differs when grouped according to marital status. Observed differences notably relate to the anxiety and document offences-scales (Table 4.3). Widowed respondents reported the highest scores of anxiety. Cross-tabulation yielded the "single/never married category" as being respondents who rated document offences as not serious.

(d) Table 4.4 indicates that deviant driving behaviour differs significantly according to respondents' type of occupation. Differences exist in respect of aggression, rating of selected aspects of traffic policing, document offences, driving offences, vehicle defects and anxiety. Professional drivers reported the highest scores of aggression, whilst drivers

in the "unemployed category" reported the highest anxiety scores. Again, professional drivers featured predominantly in offensive driving behaviour.

- (e) Deviant driving behaviour differs significantly according to regularity of driving (Table 4.5). Respondents involved in the driving activity "for pleasure", reported the highest scores of aggression, compared to those in the "to go to work" activity who reported the lowest scores. Driving activities such as driving "for pleasure" and "for shopping purposes" produced the highest scores of anxious drivers, whilst the "personal work" activity produced the lowest anxiety scores.
- (f) Statistical computations yielded significant differences of deviant driving behaviour according to type of motor vehicle (Table 4.6). Respondents who operated other vehicles (i.e., other than those reflected in Annexure A), reported the highest level of aggression. Drivers of minibus taxis reported the highest scores of offensive driving behaviour. Again, minibus taxi drivers reported the highest deviant driving behaviour with regard to the rating of document offences as being not serious at all. Minibus taxi drivers were predominant in the operation of defective motor vehicles.

8.3.2 Hypothesis 2: "There is no statistical relationship between deviant driving behaviour and respondents' age, education, income, duration of passing a driving test and years motor vehicle drive"

This hypothesis was rejected. It is based on the following aim of the study: "to establish relationships, if any, between deviant driving behaviour and respondents' age, education, income, duration of passing a driving test and years motor vehicle driven". To a very large extent, statistics in the present study do not support this null-hypothesis. The following is especially noticeable:

(a) Table 5.2 shows, that for all deviant driving behaviour scales, there is a significant relationship between deviant driving behaviour and respondents' age. A positive deduction could be made about the relationship of the scales:

- deviant driving behaviour,
- aggression and anxiety.

A deduction could be made that a negative correlation exists in respect of the following deviant driving behaviour –

- traffic policing
- offensive driving
- document offences and
- vehicle defects.

Correlations are low but statistically significant.

(b) There is a significant relationship between deviant driving behaviour and respondents' level of education in respect of aggression, traffic policing, offensive driving, document offences and vehicle defects (Table 5.4). The deduction could be made that a positive correlation exist between aggression and respondents' level of education. A negative correlation exists between deviant driving behaviour (referring specifically to traffic policing, offensive driving, document offences and vehicle defects) and respondents' level of education.

(c) Table 5.6 portrays that there is a significant relationship between deviant driving behaviour and respondents' income. A positive correlation has

been established between aggressive driving behaviour and respondents' income. A negative correlation exist between the deviant driving behaviour scales (referring specifically to traffic policing, offensive driving, document offences and vehicle defects), and income. Correlations are low but statistically significant.

- (d) Significant relationships exist between deviant driving behaviour and duration of passing a driving test (Table 5.8). There appears to be a positive correlation between the deviant driving behaviour scale and aggression, while a negative correlation prevails between deviant driving behaviour (with reference to offensive driving, document offences and vehicle defects) and duration of passing a driving test. Correlation coefficients are low but statistically significant.
- (e) Positive correlations exist between deviant driving behaviour (referring specifically to scales deviant driving behaviour) and years motor vehicle driven. Further, negative correlations exist between deviant driving behaviour (with reference to scales traffic policing, offensive driving, document offences and vehicle defects) and years vehicle driven. Correlations are low but statistically significant – both in positive and negative directions.

8.3.3 **Hypothesis 3: “Drivers displaying aggressive and anxious driving behaviour are not inclined to commit traffic offences”**

Statistics in the present study do not support this hypothesis and was, therefore, partially rejected.

- (a) Table 6.2 reveals significant differences in relation to correlations between

anxious driving behaviour and informal driver-training.

- (b) Aggressive driving behaviour differs significantly according to passing a driving test at first attempt (Table 6.3).
- (c) Table 6.4 portrays the manifestation of deviant driving behaviour in the form of the commission of driving and document offences. Respondents who learned to drive at driving schools reported the highest scores of offensive driving behaviour, whilst those who did not learn to drive at driving schools, reported the highest scores of document offences.
- (d) Differences (correlations) between traffic offences and passing of a driving test at first attempt are significant (Table 6.6). Significant differences (correlations) were also recorded in respect of all three scales (categories) of traffic offences: driving offences, document offences and vehicle defects.
- (e) Table 6.7 reveals that there are significant correlations (differences) between traffic offences and aggressive driving behaviour. This observation applies to all traffic offence-scales (Annexure A). Drivers (respondents) displaying aggressive driving behaviour are more inclined to commit traffic offences.
- (f) Drivers displaying anxious driving behaviour are more inclined to commit document offences and more inclined to operate defective motor vehicles (Table 6.8). Differences between offensive driving behaviour and anxiety are not statistically significant. This implies a partial rejection of the null-hypothesis.

8.3.4 Hypothesis 4: “Respondents do not rate selected aspects of traffic policing differently”

According to the statistics, this hypothesis is not supported. The following is especially noticeable:

- (a) Table 7.1 reveals that differential rating of selected aspects relating to traffic policing (Annexure A, section F) differ according to respondents' education ($p=0.000$), occupation ($p=0.000$), income ($p=0.002$) and race ($p=0.013$). Differential rating according to gender, age and marital status are not significant.

White and Asian respondents reported the highest scores of agreement with selected aspects relating to traffic policing. Highest scores of disagreement were reported by the Coloured, whilst Whites reported the lowest scores. African respondents reported the second highest scores of agreement with selected aspects relating to traffic policing.

Respondents in possession of degrees reported the highest scores of agreement with selected aspects relating to traffic policing, whilst those with qualifications below grade 10 reported the lowest scores. The latter category reported the highest scores of disagreement. Lowest scores of disagreement were reported by respondents in the “diploma category”. Unemployed respondents reported the highest scores of agreement with selected aspects relating to traffic policing, whilst the “managerial category” of respondents reported the lowest scores. The highest scores of disagreement were reported by the “unskilled category”. Again, lowest scores of disagreement with selected aspects relating to traffic policing was observed in the “managerial category”.

Respondents in the income level R500 or less, reported the highest scores of agreement as opposed to the lowest scores of agreement reported by respondents in the income level R1 001–R2 000. Respondents in the income category R2 001–R3 000, reported the highest scores of disagreement, whilst those in income level R5 001 or more reported the lowest scores.

(b) Agreement or disagreement with selected aspects relating to traffic policing differ significantly according to respondents' driving experience:

- driving test passed at first attempt ($p=0.000$)
- duration of passing a driving test ($p=0.000$)
- years vehicle driven ($p=0.000$) and
- type of motor vehicle ($p=0.002$; $p=0.000$) (Cf. Table 7.2).

Respondents who passed their driving test at first attempt rated selected aspects relating to traffic policing extremely positively ($p=0.000$). The following are noteworthy:

- (i) Respondents who did not pass the driving test at first attempt reported the highest scores of disagreement with selected aspects relating to traffic policing (Annexure A: Section F – scale 4), whilst those who passed at first attempt reported the lowest scores.
- (ii) Respondents who passed their driving tests at fifth attempt reported the highest scores of agreement, whilst those in the fourth attempt-category reported the lowest scores in this regard. Respondents in the second attempt-category, reported the highest

scores of disagreement, whilst those in the fourth attempt and “not applicable”-categories, reported the lowest scores of disagreement with selected aspects relating to traffic policing.

- (iii) Respondents in the “other category”, in respect of regularity of driving, reported the highest scores of disagreement, whilst those in the driving activity “employed drivers”, reported the lowest scores. Highest scores of disagreement were reported by respondents in the category “as employed drivers”. Respondents in driving activities “for pleasure and shopping purposes” reported the lowest scores of disagreement.
- (iv) Respondents who have driven motor vehicles for more than 16 years reported the highest degree of commitment to selected aspects relating to traffic policing, whilst those who have driven between 1 and 3 years reported the lowest scores in this regard. Respondents in 1–3 years and 4–6 years categories, reported the highest scores of disagreement, whilst those in the 13–15 years category reported the lowest scores of disagreement.
- (v) Respondents who operated motor vehicles in the “other category”, reported the highest scores of agreement with selected aspects relating to traffic policing, whilst those who operated public motor vehicles or minibus taxis reported the lowest scores. Again, respondents who operated minibus taxis reported the highest scores of non-commitment to selected aspects relating to traffic policing. A trend likely to be observed here, might be that minibus taxi operators are deviant drivers because they do not support traffic law enforcement activities. Respondents who operated

privately-owned motor vehicles reported the lowest scores of disagreement.

8.4 **DISCUSSION OF THE MOST IMPORTANT FINDINGS**

The aims of the present study are divided into four goals (Cf. Chapter 1). The most important findings discussed in this chapter include differential analysis of deviant driving behaviour, correlational analysis of deviant driving behaviour, aggressive and anxious driving behaviour and traffic policing (control measures).

8.4.1 **Differential Analysis of Deviant Driving Behaviour**

It has been pointed out in Chapter 4 (paragraph 4.2.1), that belonging to a particular gender has always been associated with the commission of crimes (deviant driving behaviour). It is generally accepted that males are more involved in crime than females (for a discussion of theories relevant to the present study, see Chapter 3 (paragraph 3.3). With regard to differential analysis of deviant driving behaviour, the following findings are important:

(a) Gender

Females are proportionately under-represented. In the present study, 64.5 percent of the respondents are males compared to 35.5 percent female respondents (Cf. Table 2.2). Male (respondents) drivers displayed more aggression than female (respondents) drivers. MacMillan (1975) found that the "high" scoring-driver was the one who was willing to take risks, and who had little respect for the rules of the road. Such a driver would also seem to regard driving as a challenge, and to have little regard for other road users. MacMillan (1975:159) also found that male drivers were

significantly more aggressive than female drivers: 30.1 percent were male drivers and only 14.3 percent were female drivers. In the present study, 30.0 percent of male respondents accounted for aggressive driving behaviour, compared to 19.0 percent female respondents who reported aggressive driving behaviour (Table 4.1).

Female (respondents) drivers are more anxious than male drivers. Parry (1968:90) opines: "... the female groups tend to have a rather different pattern of behaviour, becoming more anxious in their motoring ...". MacMillan (1975:151) found that 38.1 percent women displayed an anxious approach to driving, whilst 21.2 percent men displayed "anxiety" about driving behaviour. This is substantiated by the present study's finding that 45.0 percent of females reported the highest scores of an anxious approach to driving, whilst only 31.0 percent of males reported the lowest scores of anxious driving behaviour. Respondents displayed deviant driving behaviour by being in disagreement with the imposition of severe penalties for various motor vehicle defects: 43.0 percent females and 40.0 percent males. Females appear more deviant in this regard.

(b) Race

Coloured respondents reported the highest deviant driving behaviour, whilst White respondents reported the lowest scores. Black respondents reported third highest scores in respect of deviant driving behaviour. Asian respondents reported the fourth highest scores in this regard. Again, Coloured respondents reported the highest scores of aggressive driving behaviour; whilst Asian respondents reported the lowest scores (Table 4.2). Black respondents reported the second highest scores of aggressive driving behaviour. White respondents reported the third highest scores in

respect of aggressive driving behaviour (paragraph 4.2.2.1). Coloured respondents featured predominantly in respect of offensive driving behaviour, whilst White respondents reported the least forms of offensive driving behaviour. Asian respondents reported the second highest scores of offensive driving behaviour. Black respondents reported the third highest scores in this regard. Black respondents featured predominantly in rating document offences as not serious at all, whilst White respondents reported the lowest scores. Asian and Coloured respondents equally reported the second highest scores in respect of rating document offences as not serious at all.

Bolhuis (Van der Westhuizen 1982:149) cites the South African Bureau of Statistics portraying Coloured (69.80%) and Black (84.13%) who, predominantly, operated defective motor vehicles during the period 1965–1967. Statistical findings of the present study support the South African Bureau of Statistics. In the present study Black and Coloured respondents (46.0% respectively) outnumbered all the other respondents in their scores relating to their disagreement with regard to the imposition of severe penalties for various motor vehicle defects. White respondents (28%) reported the lowest scores of disagreement, whilst the Asian respondents reported the second highest scores in this regard (paragraph 4.2.2.1).

(c) Marital status

Widowed respondents (51.0%) reported the highest scores of anxiety than respondents in other marital status-categories. Cross-tabulations yielded "never been married" (30.0%) as being the respondents who rated document offences as not serious (Table 4.3).

(d) Occupation

Tillman and Hobbs (Van der Westhuizen 1982:137-138) carried out a study between two groups of taxi drivers, of which one group had been involved in several accidents whereas the other group had clean accident records. The study revealed:

- the conditions in the homes of the accident-prone taxi drivers (professional drivers) had been and continued to be less stable
- the attitude towards public (traffic) authorities was considerably more aggressive
- this group had more frequent dealings with the authorities on matters other than traffic and
- professional drivers definitely showed more aggressive driving behaviour.

Professional drivers (31.0%), who participated in the present study, reported the highest scores of aggressive driving behaviour compared to unemployed respondents (8.0%) who reported the lowest scores (Table 4.4). Unlike in the aggressive scale, respondents in the “unemployed category” (57.0%), reported the highest anxiety scores, whereas professional drivers and executives (24.0% respectively), reported the lowest anxiety scores. Professional drivers (50.0%) featured predominantly in offensive driving behaviour, whilst respondents in the “managerial category” (30.0%) were the least to commit driving offences. Professional drivers (39.0%) may thus be considered the most deviant drivers based on their perceptions of document offences being not serious at all. Again, professional drivers and skilled workers (48.0% respectively) reported the

highest scores with regard to disagreement with penalisation of drivers who operated defective vehicles, compared to the executive and managerial (29.0% respectively) who had the lowest scores in this regard.

(e) Regularity of driving

Respondents (56.0%) in the driving activity "for pleasure", reported the highest scores of aggressive driving behaviour, compared to those in the "to go to work" activity (20.0%) who reported the lowest scores (Table 4.5). Driving activities such as "for pleasure and for shopping purposes" produced the highest anxious drivers/respondents (52.0% respectively), perhaps because of the fear of being hijacked, whilst the "professional work" activity produced the lowest anxious scores (25.0%). Respondents (57.0%) who regularly drove motor vehicles for holiday purposes, rated document offences as not serious and, as such, can be viewed as the most deviant in this regard. Seventy-one percent of the sample who are engaged in driving predominantly for "holiday purposes" disagreed with penalisation of motor vehicle drivers who operated defective vehicles. The rationale for disagreement might be that traffic fines will "eat up" all their holiday spending money.

(f) Type of motor vehicle

Finally, differential analysis of deviant driving behaviour was statistically computed in accordance with the type of motor vehicle (Table 4.6). Respondents (67.0%) who operated vehicles other than those reflected in Annexure A, reported the highest level of aggression. Respondents (15.0%) who operated goods delivery vehicles reported the lowest scores of aggression. The extent of involvement in offensive driving was

reported highest by drivers (60.0%) of minibus taxis, whilst respondents (30.0%) who operated goods delivery vehicles reported the lowest scores.

Once again, minibus taxi drivers (55.0%) reported the highest deviant driving behaviour in rating document offences being not serious at all, whilst passenger bus drivers reported the lowest scores. Again, minibus taxis (69.0%) topped the list of defective vehicles and drivers of such motor vehicles can, therefore, be viewed as predominantly deviant drivers because they expressed disagreement with penalisation for operating defective vehicles.

8.4.2 **Correlational Analysis of Deviant Driving Behaviour**

An exposition of correlational analysis of deviant driving behaviour has been given in Chapter 5. The age curve approach to the study of age and deviant driving behaviour has also been highlighted in Chapter 3 (paragraph 3.3.2). Within the operational definition of the present study, it was expected, therefore, that there should be linear relationships between deviant driving behaviour and respondents' age, education, income, duration of passing a driving test and years vehicle driven (hypothesis 2). Findings of the present study confirms this linear relationship.

(a) Age

Table 5.2 shows that for all deviant driving behaviour-scales, there is a relationship between deviant driving behaviour and respondents' age. A positive correlational relationship is to be found with the following scales:

- deviant driving behaviour ($\rho = 0.101$)
- aggression ($\rho = 0.090$) and
- anxiety ($\rho = 0.078$).

Negative correlations in respect of the scales are observed:

- traffic policing ($\rho = 0.087$)
- offensive driving ($\rho = 0.184$)
- document offences ($\rho = 0.145$) and
- vehicle defects ($\rho = 0.134$).

Correlations are low but statistically significant. Parry (1968:104) found a high positive correlation between the age groups and aggressive driving behaviour.

(b) Education

Deviant driving behaviour differs significantly according to respondents' levels of education with regard to:

- aggression ($p=0.000$)
- traffic policing ($p=0.000$)
- offensive driving ($p=0.000$)
- document offences ($p=0.000$) and
- vehicle defects ($p=0.003$) – see Table 5.3.

Table 5.3 reveals significant relationships between deviant driving behaviour and respondents' level of education in respect of

- aggression
- traffic policing
- offensive driving
- document offences
- vehicle defects.

A positive correlation exists between aggressive driving behaviour and respondents' level of education ($\rho = 0.203$). However, negative correlations exist between deviant driving behaviour, with specific reference to

- traffic policing ($\rho = 0.171$)
- offensive driving ($\rho = 0.191$)
- document offences ($\rho = 0.216$) and
- vehicle defects ($\rho = 0.129$), and respondents' level of education.

Correlations are low but significant at the 0.01 level. No relationship could be established between anxious driving behaviour and respondents' level of education.

MacMillan (1975:115-116) studied education in relation to deviant driving behaviour from three angles: type of school attended, age when full-time education was finished and the incidence of post-school qualification. Such data could not indicate any trends in relation to the present study, since MacMillan's study did not contain information pertaining to the relationship between deviant driving behaviour and respondents' level of education as reflected in Annexure A (section A).

(c) Income

Deviant driving behaviour (with reference to aggression: $p=0.000$, anxiety: $p=0.000$, traffic policing: $p=0.002$, document offences: $p=0.000$ and vehicle defects: $p=0.000$) differs significantly according to respondents' monthly income (Table 5.5).

Table 5.6 reports a significant relationship between deviant driving behaviour and respondents' monthly income. A slight positive relationship was obtained in the correlation between aggression and respondents' income ($\rho 0.194$). However, slight negative correlations exist between deviant driving behaviour-scales:

- traffic policing ($\rho - 0.188$)
- offensive driving ($\rho - 0.112$)
- document offences ($\rho - 0.227$) and
- vehicle defects ($\rho - 0.195$).

Correlations are low but statistically significant.

(d) Duration of passing a driving test

Table 5.7 reveals that deviant driving behaviour differs significantly according to the respondents' duration of passing a driving test. Significant differences exist in respect of all deviant driving behaviour scales:

- deviant driving behaviour ($p=0.005$)
- aggression ($p=0.000$)
- anxiety ($p=0.022$)

- traffic policing ($p=0.000$)
- offensive driving ($p=0.000$)
- document offences ($p=0.000$) and
- vehicle defects ($p=0.000$).

There are significant relationships between deviant driving behaviour and duration of passing a driving test (Table 5.8). Slight positive correlations exist in respect of the following scales:

- deviant driving behaviour ($\rho 0.142$) and
- aggression ($\rho 0.154$).

Slight negative correlations were established in respect of the scales below:

- offensive driving ($\rho 0.154$)
- document offences ($\rho 0.146$)
- vehicle defects ($\rho 0.133$) and
- traffic policing ($\rho 0.214$).

Correlations are low but statistically significant. No correlation was established between anxious driving behaviour and the duration of passing a driving test.

(e) Years motor vehicle driven

MacMillan (1975:97-99) analysed the years vehicle were driven in relation to convictions and accidents. He paid special attention to the distance travelled per year. The present study did not include the distance

travelled, convictions and involvement in accidents. MacMillan (1975:99) found that as driving experience increases for both male and female drivers, more drivers become involved in accidents and traffic offences. The increase was the highest for least-experienced drivers and this would suggest a relationship between accidents and traffic offences (deviant driving behaviour).

With reference to the present study, Table 5.9 shows that, with the exception of anxiety, deviant driving behaviour differs significantly according to years a vehicle was driven. Differences were observed as follows:

- deviant driving behaviour ($p=0.002$)
- aggression ($p=0.000$)
- traffic policing ($p=0.000$)
- offensive driving ($p=0.000$)
- document offences ($p=0.000$) and
- vehicle defects ($p=0.000$).

Slight positive relationships were reported between the following measures: deviant driving behaviour ($\rho -0.147$), aggression ($\rho -0.184$) and years vehicle driven (Table 5.10). Further, slight negative correlations exist between deviant driving behaviour-scales and: traffic policing ($\rho -0.209$), offensive driving ($\rho -0.282$), document offences ($\rho -0.281$), vehicle defects ($\rho -0.190$) and years vehicle driven. Correlations are low but statistically significant both in positive and negative directions. No correlation could be established between anxious driving behaviour and years vehicle driven (Table 5.10).

8.4.3 **Aggressive and Anxious Driving Behaviour**

The influence of aggression and anxiety on traffic offences (deviant driving behaviour) constitutes the core thesis of the present study (Cf. Chapter 3, paragraphs 3.2.3, 3.2.4, 3.3.3; Chapter 6). Hypothesis 3 stating: "Drivers displaying aggressive and anxious driving behaviour are not inclined to commit traffic offences", has been tested in that chapter.

Parry (1968:99) discovered that drivers displaying aggressive and anxious approaches to driving were more likely to be involved in accidents (i.e., to be accident-prone). The assumption could be made that individual's tendency to be involved in an accident is due to the laws of chance or an inherent capacity to accidents. This would necessitate categorising and separating motor vehicle accidents into those precipitated by some known and measurable "human weaknesses" and those brought about by chance situations. Parry (1968:117) also found that aggression and anxiety, when combined, were extremely dangerous in their influence on the causation of accidents (deviant driving behaviour).

MacMillan (1975:151-160) found that drivers displaying aggressive and anxious approaches to driving were convicted for traffic offences such as: driving a motor vehicle while intoxicated, reckless driving, operating defective motor vehicles, parking offences, etc. This researcher maintained that traffic offences (deviant driving behaviour) contributed towards traffic accidents (MacMillan 1975:87).

Willett (Van der Westhuizen 1982:137) found that 11.0 percent of 653 traffic offenders (deviant drivers) were aggressive, shameless or violent traffic offenders who apparently had little concern for the needs or safety of other road users, and seemed to be quite indifferent to social or (traffic) legal sanctions.

With reference to the present study, the following are important findings:

- (a) Aggressive-anxious driving behaviour and learned to drive at a driving school

Table 6.1 yielded significant differences between anxiety and formal driver-training ($p=0.007$). Forty-two percent respondents who received formal driver-training displayed anxious driving behaviour.

- (b) Aggressive-anxious driving behaviour and informal driver-training

Respondents who learned to drive through informal instruction reported an aggressive approach to driving (Table 6.2, $p=0.001$). An anxious inclination to driving has also been observed among respondents who learned to drive through informal driver-training (Table 6.2, $p=0.001$).

- (c) Aggressive-anxious driving behaviour and passing driving test at first attempt

Respondents (28%) who passed their driving tests at first attempt reported the highest scores of aggression, whilst those (25%) who did not pass at first attempt reported the lowest scores (Table 6.3).

- (d) Correlation between traffic offences (deviant driving behaviour) and learned to drive at a driving school

Table 6.4 reveals that respondents who learned to drive at driving schools reported the highest offensive driving behaviour (40.0%), compared to respondents who did not learn to drive at driving schools (39.0%).

Respondents who did not learn to drive at driving schools, reported the highest commission of document offences (42.0%), whereas those who acquired their driver-training through formal instruction at driving schools, reported lower scores for document offences (21.0%) – Table 6.4.

- (e) Correlation between traffic offences (deviant driving behaviour) and passing driving test at first attempt

Significant differences were recorded in respect of all traffic offence-scales (Table 6.6). Respondents who did not pass their driving test at first attempt, reported higher deviant driving behaviour in respect of vehicle defects (47.0%), offensive driving (45.0%) and document offences (28.0%). Lower scores were recorded for respondents who passed their driving test at first attempt: vehicle defects – (32.0%), offensive driving – (29.0%) and document offences – (12.0%).

- (f) Correlation between traffic offences (deviant driving behaviour) and aggression

Table 6.7 reveals significant (differences) correlations between traffic offences and aggressive driving behaviour and this observation applies to all traffic offence-scales: document offences (68.0%), vehicle defects (37.0%) and offensive driving (34.0%). Respondents who did not display aggressive driving behaviour, reported somewhat lower to extremely low scores in respect of document offences (38.0%), offensive driving and vehicle defects (6.0%) respectively.

- (g) Correlation between traffic offences (deviant driving behaviour) and anxiety

Significant (correlations) differences exist between anxious driving behaviour and two categories of traffic offences (Table 6.8). Respondents who displayed an anxious approach to driving, scored higher on document offences (23.0%) and those who did not scored lower (3.0%) in this regard. Respondents who displayed an anxious approach to the operation of defective motor vehicles scored higher (47.0%) than those who did not (22.0%).

The present study reports no (differences) correlation between traffic offences (deviant driving behaviour) and informal driver-training (Table 6.5).

8.4.4 Traffic Policing (traffic control measures)

Social control theories have laid an emphasis on the significance of controlling deviant driving behaviour (Cf. Chapter 3, paragraphs 3.2.1.3 and 3.3.4). The rating of selected aspects relating to traffic policing (Annexure C: Section F), produced the following important findings:

- (a) Race

White and Asian respondents (32.0% respectively) reported the highest scores of agreement with selected aspects of traffic policing. Black respondents (28.0%) reported the second highest scores of agreement. Coloured respondents (16.0%) reported the lowest scores in respect of agreement with selected aspects relating to traffic policing. Highest scores (14.0%) of disagreement were reported by Coloured respondents, whilst White respondents (2.0%) reported the lowest scores. Asian respondents (8.0%)

reported the second highest scores of disagreement. The third highest scores (6.0%) of disagreement were reported by Black respondents.

(b) Education

Respondents (45.0%) in possession of degrees reported the highest scores of agreement with selected aspects of traffic policing (Table 7.1). The possibility exists that such level of education might enable (drivers) respondents to make more informed decisions. Respondents (10.0%) with qualifications below grade 10 reported the highest scores of disagreement. Lowest scores (1.0%) of disagreement were reported by respondents in the "diploma category".

(c) Occupation

Unemployed respondents (46.0%) reported the highest scores of agreement with selected aspects relating to traffic policing (Table 7.1). Unskilled respondents (14.0%) reported the highest scores of disagreement with selected aspects relating to traffic policing (Annexure A: Section F).

(d) Income

Respondents (59.0%) in the income level R500 or less, reported the highest scores of agreement, whilst those (14.0%) in the income level R2 001–R3 000 reported the highest scores of disagreement with selected aspects of traffic policing.

Table 7.2 shows that there are significant differences in respondents' rating of selected aspects relating to traffic policing in terms of the following aspects of driving experience: driving test passed at first attempt, duration of passing driving test, regularity of driving, years vehicle driven and type of motor vehicle.

(e) Driving test passed at first attempt

Forty-two percent of the respondents who passed their driving test at first attempt reported extremely positively ($p=0.000$) – the highest score reported for this table. Respondents (8.0%) who did not pass the driving test at first attempt reported the highest scores of disagreement, whilst those (3.0%) who passed at first attempt reported the lowest scores.

(f) Driving test passed at various attempts

Seventy-three percent of the respondents in the fifth attempt-category reported the highest scores of agreement with selected aspects relating to traffic policing reflected in Annexure A (Section F: scale 4), whilst respondents (11.0%) in the second attempt-category reported the highest scores of disagreement.

(g) Regularity of driving

Respondents (62.0%) in the driving activity "other category" reported the highest scores of agreement with selected aspects relating to traffic policing. Highest scores of disagreement were reported by respondents (10.0%) in the driving activity "employed drivers", whilst respondents (4.0%) who drove motor vehicles for pleasure and shopping purposes, reported the lowest scores of disagreement with selected aspects relating to traffic policing.

(h) Years motor vehicle driven

Fifty-two percent of respondents who have driven motor vehicles for more than 16 years, reported the highest degree of commitment with selected aspects relating to traffic policing. Such reporting may be ascribed to driving maturity. Respondents (16.0%) who have driven between 1 and 3 years reported the lowest scores. Respondents (9.0% respectively) in 1–3 and 4–6 years-

categories, reported the highest scores of disagreement, whilst those (2.0%) in the 13–15 years-category reported the lowest scores of disagreement.

(i) Type of motor vehicle

Respondents (67.0%) who operated motor vehicles in the "other category", reported the highest scores of agreement with selected aspects relating to traffic policing (Annexure A: Section 4), whilst those who operated public motor vehicles or minibus taxis reported the lowest scores in this regard (9.0%). Respondents (13.0%) who operated minibus taxis reported the highest scores of disagreement, implying they do not support traffic law enforcement activities.

(i) Susceptibility of traffic officers to bribery

Bribery is perceived as a dysfunctional aspect of traffic policing because traffic officers will not be inclined to enforce traffic laws. Such might result in precipitating more deviant drivers (non-conformists). In the present study, tables 7.3 and 7.4 reveal that there are significant differences (correlations) according to education in the rating of this dysfunctional aspect (bribery/corruption) by respondents. Respondents in almost all levels of education scored extremely very high scores of agreement with the statement that "traffic officers are susceptible to bribery". This implies that respondents might have committed "active bribery". Uneducated respondents (100%) reported the highest scores of agreement, whilst respondents (93.0%) with degrees reported the lowest scores (Table 7.3).

Table 7.4 reveals significant differences in respect of traffic officers' susceptibility to bribery according to respondents' driving experience: informal driver-training, driving test passed at first attempt, years vehicle driven and type of motor vehicle. Respondents who learned to drive motor vehicle by means of self-instruction and "other types"-categories reported the highest scores of traffic officers'

susceptibility to bribery (100.0% respectively). The "employer category" had the lowest scores (82.0%). Respondents (9.0%) who learned to drive through employers' instruction reported the highest scores of traffic officers being not susceptible to bribery, whilst those (1.0%) who were taught by relatives, reported the lowest scores in this regard.

Respondents (96.0%) who passed their driving tests at first attempt reported agreement with traffic officers' susceptibility to corruption (bribery). Likewise, those (96.0%) who did not pass their driving tests at first attempt also reported agreement with this variable. To a fairly large extent, the findings show that respondents might have been involved in "active" bribery, primarily as givers of material things to traffic officers. Respondents (2.0%) who passed their driving test at first attempt reported the lowest scores of disagreement, compared to those (3.0%) who did not pass at first attempt reported the highest scores of disagreement with traffic officers being not susceptible to bribery.

Respondents (97.0%) in the less than 1 year, 4–6 years, 7–9 years and 13–15 years categories, reported the highest scores of agreement with traffic officers' susceptibility to bribery. Seven percent of the respondents who have driven motor vehicles for more than 16 years reported the highest scores of disagreement, whilst those (2.0%) with driving experience in categories 1–3 years and 7–9 years reported the lowest scores of disagreement.

The highest reporting in respect of disagreement (referring specifically to the category 16 years or more) may be ascribed to the cumulative effect of driving experience which have contributed to self-confidence and defensive driving behaviour. The latter attitude causing (drivers) respondents not to perceive traffic officers as susceptible to bribery.

Respondents who operated passenger buses and tractors, reported the highest scores of agreement with traffic officers' susceptibility to bribery (100.0%

respectively). A reasonable deduction could be made that active bribery might have been committed by those respondents, whilst traffic officers might have conceded to passive bribery. Respondents who operated motorcycles and pay loaders reported the highest scores of disagreement (50.0% respectively), whilst privately-owned motor vehicles and minibus taxi operators (2.0% respectively) reported the lowest scores in this regard.

Statistical findings of the present study reveal that respondents rate selected aspects relating to traffic policing (Annexure A: traffic policing-scale/section F) differently.

8.5 **CONCLUSIONS: DEVIANT DRIVERS**

In assessing the results of the present study, it is important to bear in mind that the researcher has not studied a “deviant driver population”, but only a sample of that population.

The analysis in Chapters 4, 5, 6 and 7 has been directed towards establishing differences and/or relationships between deviant driving behaviour (see Annexure A: deviant driving behaviour-scales 1–7/Sections C–I) and respondents’ demographic characteristics (see Annexure A: Section A) and their driving experience (see Annexure A: Section B).

It should be noted that sections A and B of the measuring instrument constitute independent variables, whilst sections C–I (Annexure A) constitute dependent variables and have been operationalised to refer to seven deviant driving behaviour scales.

The following conclusions can be drawn from the empirical findings emanating from the present study:

8.5.1 **Differential Analysis of Deviant Driving Behaviour**

One of the aims of the present study is to establish differences, if any, between deviant driving behaviour and predictor variables such as gender, race, marital status, type of occupation, regularity of driving and type of motor vehicle. The following conclusions are based on those variables.

(a) Gender

Findings and opinions that have been maintained for decades, namely that males exceed females in crime involvement (also in deviant driving behaviour), must be upheld. Male drivers appear to be significantly more involved in self-reported deviant driving behaviour than their female counterparts. Aggression is also frequently shown by ordinary drivers of motor vehicles. It can be concluded that male drivers are much more aggressive, whilst female drivers are markedly less aggressive than male drivers.

Female respondents, on the other hand, reported higher levels of anxiety. The conclusion could be made that female drivers are more anxious than male drivers when driving a motor vehicle.

(b) Race

Race emerges as another predictor of deviant driving behaviour. The relationship between race and deviant driving behaviour appears to be inconsistent and might necessitate further research. Deviant driving behaviour is a reality for various races. Coloured respondents are being more involved in aggressive driving behaviour. Black respondents are

much more deviant in respect of the commission of document offences and the operation of defective motor vehicles. White respondents are deviant in respect of offensive driving behaviour, but to a low degree. Asian respondents are deviant in aggressive driving behaviour, also to a low degree.

(c) Marital status

Respondents in the "widowed category" are much more anxious when driving a motor vehicle, whilst those in "never married" (single) category are the most deviant in respect of the commission of document offences.

(d) Type of employment/occupation

Professional drivers who participated in the present study are considered much more deviant in respect of the commission of driving offences, document offences and the operation of defective motor vehicles. Respondents in the "unemployed category" are more anxious drivers.

(e) Regularity of driving

Regularity of driving should be understood within the context of exposure to risk in accordance with various types of driving activities. Respondents in the driving activity "for pleasure" are much more aggressive. Respondents in driving activities "for pleasure and for shopping purposes" tend to be deviant because they displayed an anxious approach to driving. Respondents who drove regularly for "holiday purposes", were found to be the most deviant in the commission of document offences and the operation of defective vehicles.

(f) Type of motor vehicle

Drivers (respondents) of minibus taxis were found to be much more deviant in the commission of all categories of traffic offences (deviant driving behaviour): driving offences, document offences and the operation of defective public motor vehicles. The conclusion points to minibus taxi drivers as being deviant drivers.

8.5.2 **Correlational Analysis of Deviant Driving Behaviour**

The following conclusions can be drawn from empirical findings of the present study:

(a) Age

Positive correlations exist between age and aggressive-anxious driving behaviour. Negative relationship exist between age and traffic offences (deviant driving behaviour). The conclusion points to a significant relationship between age and deviant driving behaviour. Age, therefore, does exert some significant influences on deviant driving behaviour, and – as could be expected – the older a driver, the less aggressive he or she becomes.

(b) Education

Respondents displayed low positive relationships in respect of aggression. Negative correlations in accordance with the commission of traffic offences (deviant driving behaviour) were established. The present study could not establish any relationship between education and anxious driving behaviour. The conclusion suggests that anxiety is not significant in the analysis of deviant driving behaviour according to education.

(c) Income

Correlations among the income distributions are particularly important in showing the impact on deviant driving behaviour. There appears to be a positive correlation between aggressive driving behaviour and income. Negative correlations have also been found between traffic offences (deviant driving behaviour) and income. The conclusion indicates that deviant drivers can be accounted for in terms of income.

(d) Duration of passing a driving test

Conclusive statistical evidence was found to suggest positive correlations between deviant driving behaviour (aggression) and duration of passing a driving test. Negative correlations exist in respect of the commission of traffic offences (deviant driving behaviour). No statistical evidence was found to suggest that anxious driving behaviour was related to duration of passing a driving test.

(e) Years motor vehicle driven

Statistical evidence, with the exception of anxiety, seems to point conclusively to deviant driving behaviour being related to years motor vehicles driven. Positive correlation between years vehicles driven and aggression has been recorded. Negative correlations exist in respect of the commission of traffic offences. The conclusion is that "years vehicle driven" does account for relationships with deviant driving behaviour. Years vehicle driven exert the powerful influence on various forms of deviant driving behaviour.

8.5.3 **Aggressive and Anxious Driving Behaviour**

The following conclusions can be drawn from the aggression-anxiety construct:

- Respondents who learned to drive motor vehicles at driving schools are anxious drivers. They also committed traffic offences.
- Respondents who learned to drive through informal instruction are both aggressive and anxious drivers. No significant differences could be established between traffic offences and informal driver-training.
- Respondents who passed their driving tests at first attempt are aggressive drivers. No statistical evidence could be found in respect of anxiety. The conclusion suggests that these respondents did not display any forms of anxious driving behaviour.
- Respondents who passed their driving tests at various attempts are to a greater extent involved in respect of the commission of all three types of traffic offences. The conclusion points to drivers displaying aggressive and anxious driving behaviour are more inclined to commit traffic offences.

8.5.4 **Traffic Policing**

Traffic policing statistical findings of the present study lead to the following conclusions:

- (a) White, Black and Asian respondents were more conformists, whilst Coloured respondents were deviant because they mostly expressed disagreement with selected aspects relating to traffic policing. The conclusion is that disagreement points to a trend toward deviant driving behaviour.

- (b) Respondents in possession of degrees were greater conformists, and to a lesser degree deviant, which points to a more informed attitude towards formal traffic prescriptions, responsibilities and obligations. Respondents with qualifications below grade 10 were to a greater extent more deviant. The conclusion suggests the level of education in the driving situation plays an important part in drivers' perceptions about traffic law enforcement activities and accompanying formal traffic prescriptions.
- (c) Unemployed and unskilled respondents were, to a greater extent, conformists, whilst managers were less conformists. Thus, deviant driving behaviour is a reality for respondents (drivers) in various types of occupation.
- (d) Respondents in the income category "R500 or less" could be considered more conformists, whilst those in the income category "R2 001–R3 000" were to a greater extent more deviant. An inference to be drawn, is that income emerges as a strong predictor of deviant driving behaviour.
- (e) Respondents who passed their driving tests at first attempt were more conformists, whilst those who did not were deviant. There is a relationship between deviant driving behaviour and passing a driving test at first attempt.
- (f) Respondents who passed their driving test at the "fifth attempt" were more "conformists". Respondents who passed their driving test at the "second attempt" were deviant drivers.
- (g) Regularity of driving is another predictor of deviant driving behaviour. Respondents in the category "as employed drivers" were more deviant.
- (h) Respondents who have driven motor vehicles for more than 16 years were more "conformists", whilst those in 1–6 years category were to a greater extent deviant. A trend which may be observed is that inexperienced drivers lack self-

confidence.

- (i) Professional drivers (respondents) who operated minibus taxis were to a greater extent deviant. They were not supportive of traffic law enforcement.
- (j) Uneducated respondents were mostly deviant because they, to a greater extent, agreed that traffic officers are susceptible to bribery. Respondents in possession of degrees were to a lesser extent deviant. Education broadens an (driver's) individual's mental horizons. Further, education empowers (drivers) individuals to be analytical and critical in their (motor vehicle driving) approaches. The conclusion points that bribery is a very serious traffic policing problem. Respondents' characteristics: gender, race, age, occupation, income and marital status emerged as not predictors of traffic officer's susceptibility to bribery (deviant driving behaviour).
- (k) Respondents who learned to drive motor vehicles by means of self-instruction were to a greater extent deviant in agreeing that traffic officers are susceptible to bribery. Statistical distribution is equal among respondents who passed their driving test as well as those who did not. It can be concluded that these respondents were deviant and "might have bribed" traffic officers.
- (l) Respondents who have driven motor vehicles for less than 1 year, 4–6 years, 7–9 years and 13–15 years were to a greater extent deviant (involvement in "active" bribery). Respondents who have driven vehicles for more than 16 years were to a lesser extent deviant in this regard.
- (m) There are significant differences between the type of motor vehicle and susceptibility of traffic officers to bribery. This does not imply that traffic officers target only certain types of motor vehicle drivers to bribe them. Respondents who operated passenger buses and tractors were to a greater extent deviant. The conclusion suggests that most (drivers) respondents were deviant. Thus, the

act of "active bribery" is a reality for respondents of the present study.

8.6 AIMS ATTAINMENT

The present study was undertaken with the purpose of achieving four discrete aims (Cf. Chapter 1: paragraph 1.4). The following aims have been formulated:

- (a) To establish differences, if any, between deviant driving behaviour and respondents' characteristics. It was essential to formulate the null-hypothesis in order to achieve this aim (Cf. Chapter 1: paragraph 1.6). The null-hypothesis was tested in Chapter 4. The present study has achieved this aim because the statistical findings revealed significant differences between deviant driving behaviour and respondents' characteristics: gender, race, marital status, occupation, regularity of driving and type of motor vehicle normally driven (see tables 4.1 – 4.6).
- (b) To establish relationships, if any, between deviant driving behaviour and respondents' characteristics. This necessitated the formulation of the null-hypothesis (Cf. Chapter 1: paragraph 1.6). Chapter 5 deals with correlational analysis (testing of the null-hypothesis) of deviant driving behaviour. Statistical evidence has established positive and negative correlations between deviant driving behaviour and respondents' age, education, income, duration of passing a driving test and years motor vehicle driven (see tables 5.1 – 5.10). The present study has achieved this aim.
- (c) To find out whether or not aggressive and anxious drivers do commit traffic offences. In the present study, traffic offences are

perceived as manifestations of deviant driving behaviour. The formulated null-hypothesis was tested in Chapter 6. The aim of this study has been attained because the statistical computations revealed that aggressive and anxious respondents (drivers) do commit traffic offences (see tables 6.1 – 6.4; tables 6.6 – 6.8).

- (d) To ascertain whether differences, if any, exist in the rating of selected aspects relating to traffic policing. Chapter 7 (paragraph 7.6) deals with the testing of the null-hypothesis. Statistical findings revealed significant differences in the rating of selected aspects relating to traffic policing (see tables 7.1 – 7.4). The present study has, therefore, attained this aim.

8.7 **RECOMMENDATIONS**

The emphasis of the present study is on the epidemiological (empirical analysis) study of deviant driving behaviour. Statistical findings of the study has resulted in making a number of non-prescriptive recommendations. In the light of the findings and conclusions referred to in paragraph 8.4 and 8.5 of this chapter, the researcher offers the following recommendations. Some of the recommendations derive directly from the statistical findings (evidence) of the present study, whilst others are related to road traffic educational matters on which road traffic (administration) management has a bearing.

8.7.1 **The Driving Test**

It is essential to note the limitations of the driving test (final “passing-out”). For instance, the driving test takes place only in daylight and lasts only for a very short time. A more searching test in more varied conditions might be undertaken during night driving, driving at speed, and to cope with challenging conditions. A two-

part driving test, with an interval of several months in between, might be desirable.

Probably the most defect of the present driving test is that it pays no attention to personality characteristics, such as aggression and anxiety of the driver. The deviant driver is not so much an individual who is poor at controlling his or her motor vehicle, but the real problem is that he or she may suffer from a serious pathological inadequacy of character and personality. The aggressive and anxious individual driver is the most deviant driver. It might, therefore, be appropriate for the obligatory course of approved driving instruction to include a searching test on the driver's personality inadequacies.

8.7.2 Driver-Training and Education

Driver-training and education programmes should be much more extensive. Further, driver-training, education and observation of the Road Traffic Act and Regulations should be concerned with the moulding of the driver into someone who knows, understands and respects the rights of other road users by fulfilling his or her own duties. The Driver-Training Academy could be a worthwhile establishment to prioritise driver-training and such an Academy could be used to improve driver-performance. Driver-training and education could take place in public schools and on public roads. The training course should entail hazards of motor vehicle driving and how to cope with those hazards.

8.7.3 Disposal of convicted (deviant) drivers by Criminal Courts

Information should be made available to the courts about the background and character of the convicted driver. The court, in sentencing the traffic offender, might be concerned with the actual traffic offence (deviant driving behaviour) and the offender's (deviant driver's) general adjustment. This might suggest the need

for setting up driver psychological-psychiatric clinics where drivers' mental and physical fitness to drive motor vehicles could be assessed.

Traffic courts might be desirable establishments where there are voluminous traffic law violations, where ordinary criminal courts are overburdened, and computer facilities at hand.

8.7.4 **Pedestrian-driver education**

It has been observed that pedestrian-jay walking was the main leading individual-human factor which contributed to fatal accidents in South Africa for the period 01 July 2002 – 30 June 2003 and this is accounted for in 40.0 percent cases (Cf. Table 7.5). It is, therefore, recommended that consideration be given to employ educational processes to produce awareness within the individual pedestrian and driver of dangers on public roads. There is a need for the development of ethics and "good drivership" behind the wheel. An important approach to building a safe motor vehicle driving attitude is to make safe driving behaviour part of (good manners) propriety norms.

Traffic safety education should be prioritised in the curriculum of educational institutions. For instance, educational institutions should provide an excellent opportunity for reaching a large group with a programme of road traffic education by using traffic officers. Youth should be taught at an early age to know, understand and respect traffic laws.

A traffic safety programme could include:

- the driving task
- the readiness task

- freeway emergencies
- transportation systems and
- improvement tasks.

8.7.5 **Surcharge**

Employers should be discouraged from being tempted for commercial reasons to impose tight delivery schedules which are conducive to traffic law violations (deviant driving behaviour) by professional drivers. Thought should be devoted to deriving a surcharge payable by employers in respect of fines for traffic offences committed by professional drivers during the course of their duties.

Drivers who become involved in unexplained or freak traffic offences should be protected against accusations of deviant driving behaviour (improper driving) when the (vehicle defect) liability basically resides with certain motor vehicle manufacturers or repairers. These defects are known as "designed-in-dangers". Surcharge should be made payable by these repairers and manufacturers. The defection and documentation under those circumstances can be achieved through "on-the-spot" analysis by traffic officers trained in investigation of motor vehicles.

8.7.6 **Periodic Inspections of Motor Vehicles (Operation "Juggernaut")**

The effectiveness of a system of periodic inspection of motor vehicles instead of prosecution should be implemented and assessed. This system will be realised if drivers acquaint themselves with regard to various aspects of motor vehicle maintenance such as checks on brakes, tyres, lights, etc. Drivers should be encouraged to study motor vehicle manuals and the time so spent could result in less mechanical difficulty and better motor vehicle performance.

Zwecker (2003:2) alludes to the fact that the Gauteng's Department of Transport has announced the introduction of Operation Juggernaut, or so-called "moving road blocks" that will particularly target minibus taxis, buses and heavy motor vehicles for routine inspections. Such a national traffic law enforcement strategy should be carried out regardless of the time of the year.

8.7.7 Provision for More Traffic Officers

Inadequate staffing in the Department of Transport is a national issue. Newspaper reports (Neveling 2003:15; Kwapa 2003:6; Van Rooyen & Davids 2003:1) have revealed that the shortage of traffic officers poses a major problem. Van Rooyen and Davids (2003:1) have revealed that South Africa has only one traffic officer for every 11 000 motor vehicle drivers. It is, therefore, apparent that more traffic officers should be employed. Effective traffic policing should be highly prioritised if road traffic law and order is to be successfully maintained.

It is, however, essential that the problem of under-provision and resultant understaffing be isolated from what the Department of Transport could do in terms of distribution and utilisation of existing resources. A staffing formula could be applied to traffic divisions in accordance with category, the volume of drivers of motor vehicles and driver-instructions.

8.7.8 Prevention of (Corruption) Bribery

Prevention implies the pro-active function which should include the education of (givers/drivers) bribers who give certain benefits of whatever, nature to (receivers) traffic officers with a specific intent. Further, traffic officers should be well-grounded in refraining from being bribed. High moral standards, embedded into the principles of road traffic police profession should be communicated to traffic

officers through formal training and prescriptions. These measures should undoubtedly be the most effective way to prevent bribery in traffic police work. There are, of course, many traffic officers of great personal integrity who hold the highest professional values. The training programme should emphasise integrity rather than (corruption) bribery. Ethics education and training should become an integral part of the Academy and in-service training for newly-appointed and experienced traffic officers.

8.7.9 **Establishment of Community Traffic Policing Forums**

Community traffic policing should entail collaboration and voluntary involvement of the community. The creation of a Community Traffic Policing Officer (CPTO) who should act as a direct link between traffic police and the community should be highly prioritised. Community traffic policing forums should serve to combat deviant driving behaviour and to solve problems caused by deviant driving behaviour. Community traffic policing should be based on mutual trust between traffic police and (the driving population) community. It is, therefore, essential that community traffic policing should be introduced in the present study areas (Annexure B), KwaZulu-Natal in particular and South Africa in general.

Further, it might be essential for members of the public to register as road traffic observers. Members of the public report deviant driving behaviour to the call centre by using a toll free "mpimpa hotline". It appears that there is a need to extent the service to all major cities and towns in KwaZulu-Natal and of course, South Africa.

Traffic observers should be issued with "special" identity documents to eliminate hoax reporting and trained in road traffic management with the view to enhance the quality of traffic calls and reports.

8.7.10 **Establishment of Road Traffic Infringement Agency**

The Administrative Adjudication of Road Traffic Offices Act (South Africa 1998: Section 3) provides for the creation of a Road Traffic Infringement Agency. One national office must be established. It is further stated that the national office may establish sub-offices at provincial or municipal level (South Africa 1998: Section 3, sub-section 3).

It is, therefore, recommended that the uMhlathuze City Council should consider the establishment of a Road Traffic Infringement Agency for areas under its jurisdiction. The Agency should realise the objectives and functions as stipulated in the Act (South Africa 1998: Section 4). The Road Traffic Infringement Agency should implement the points demerit system as contemplated in the Act (South Africa 1998: Sections 24–29; Regulations 22 & 24). The points demerit system should ultimately attain the objectives pertaining to control and prevention of traffic offences (deviant driving behaviour).

8.7.11 **Road Engineering**

Road engineering was one of the contributory factors to fatal accidents in South Africa for the period 01 July 2002 – 30 June 2003 (Table 7.6). The following factors contributed to fatal accidents: poor street lighting, sharp bend, blind rise/corner, bad road surface, defective robot/poor road, narrow street, etc. It is recommended that road engineers should be concerned with proper planning of roads in order to prevent re-occurrence of (fatal) accidents. Role of the traffic engineer should be extended.

8.7.12 **Future Research**

The present study was undertaken with the objective that it might provide both the stimulus (thrust) and indications for further research in the field of deviant driving behaviour. Road traffic organisations should be encouraged to undertake research projects themselves or support research projects by making records available to researchers or participate in self-report surveys. Part of the effort to establish and promote a much more positive awareness, perceptions and analysis of deviant driving behaviour depends on (empirical) scientific road traffic research that should be undertaken. The image of the traffic officer should be actively enhanced. His or her sense of responsibility, loyalty, educational level, dedication, in-service training and ability to cope professionally with his or her tasks should receive top priority. Research in this direction should be prioritised. Research into deviant driving behaviour should be extended to other areas so as to ascertain a cross-multicultural picture. Further, future research in this area will greatly improve the availability of literature in (road) traffic management.

8.8 **SUMMARY**

An epidemiological study on deviant driving behaviour has been undertaken among respondents (drivers of motor vehicles) who are residents of areas under the jurisdiction of uMhlathuze City Council as well as other adjacent areas: Mtunzini, KwaMbonambi and Mtubatuba. The sample consisted of 722 respondents and a (questionnaire) self-report instrument was employed as a data collection tool (technique).

Four hypotheses were formulated for statistical testing. These hypotheses relate to:

- differential analysis of deviant driving behaviour (Chapter 4)

- correlational analysis of deviant driving behaviour (Chapter 5)
- differential analysis of aggressive and anxious driving behaviour in relation to the commission of traffic offences (manifestations of deviant driving behaviour) (Chapter 6) and
- differential rating of selected aspects relating to traffic policing (Chapter 7).

The most important findings of the present study are accordingly discussed in this chapter (paragraph 8.4). Paragraph 8.5 specifically deals with conclusions based on statistical evidence emanating from the study.

Four aims were formulated for the present study (Cf. Chapter 1: paragraph 1.4; Chapter 8: paragraph 8.6). In spite the problems and limitations highlighted in paragraph 8.2, the present study has achieved its aims especially with regard to "hidden" forms of deviant driving behaviour (Cf. paragraph 8.7).

Recommendations have been put forward by the researcher and are based on the statistical findings of the present study. Some recommendations are related to road traffic educational matters on which road traffic management has a bearing. These recommendations are by no means prescriptive and are aimed at the prevention of traffic offences (deviant driving behaviour) and setting forth suggestions for improving road traffic management.

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ANNEXURE "A"

QUESTIONNAIRE ON DEVIANT DRIVING BEHAVIOUR

Dear Respondent,

- This questionnaire requires only a few minutes of your precious time.
- Rest assured that, without your **NAME** and **ADDRESS** reflected on this questionnaire, it will be impossible to link you personally to any of the findings emanating from this study. You are, therefore, in good hands when filling in this questionnaire.
- All information supplied by you is strictly confidential and will under no circumstances be disclosed to unauthorized persons.
- Please answer all questions as they apply to you personally by making a cross (X) in the box of your choice next to each question.
- Your co-operation in answering **ALL questions** is indeed highly appreciated.

FOR OFFICIAL USE ONLY:

Questionnaire Number:

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SECTION A: DEMOGRAPHIC INFORMATION/THE DRIVING POPULATION

(NB: This information about yourself will enable us to effect meaningful cross-correlations with the rest of the data contained in this questionnaire).

Q.1 Your sex

Male	1	
Female	2	

Q.2 To which **race** group below, do you belong?

Black	1	
White	2	
Coloured	3	
Asian	4	

Q.3 To which **age category** below, do you belong?

18 – 20 years	1	
21 – 30 years	2	
31 – 40 years	3	
41 – 50 years	4	
51 – 60 years	5	
61 – 70 years	6	
71 years +	7	

Q.4 Your present **marital status**?

Married	1	
Single (never married)	2	
Widowed	3	
Divorced	4	
Separated	5	

Q.5 What is your **highest educational qualification**?

Uneducated	1	
Standard 8 (Grade 10 and below)	2	
Matric (Grade 12)	3	
Diploma	4	
Technical	5	
Degree	6	

Q.6 Your present occupation?

Tick ONE only

Professional driver (taxi, bus)	1	
Skilled or semi-skilled worker	2	
Unskilled worker	3	
Professional (e.g. educator, doctor, lawyer, etc.)	4	
Executive	5	
Managerial (e.g. supervisor)	6	
Unemployed	7	

Q.7 Your **monthly income**?

R500 or less	1	
R501 – R1 000	2	
R1 001 – R2 000	3	
R2 001 – R3 000	4	
R3 001 – R4 000	5	
R4 001 – R5 000	6	
R5 001 or more	7	
No income	8	

SECTION B: ASPECTS RELATING TO YOUR DRIVING EXPERIENCE

Q.8(a) Do you possess a valid driver's licence?

Yes	1	
No	2	

Q.8(b) If **NO** to Question 8(a), please ignore the rest of the questions in this questionnaire.

Q.9 Did you learn to drive at a driving school (i.e., formal driver-training)?

Yes	1	
No	2	

Q.10 If your answer to question 9 above is **NO**, indicate below who taught you to drive a motor vehicle.

Friend	1	
Relative	2	
Employer	3	
Self	4	
Other (specify)	5	
Not Applicable	6	

Q.11 Did you pass the driving test at first attempt?

Yes	1	
No	2	

Q.12 If **NO** to question 11 above, indicate below at which attempt did you pass your driving test?

Second attempt	1	
Third attempt	2	
Fourth attempt	3	
Fifth attempt	4	
Not Applicable	5	

Q.13 Do you drive a motor vehicle regularly?

Tick ONE only to indicate the predominant driving activity

For pleasure	1	
During weekends	2	
For holiday purposes	3	
To go to work	4	
As an employed driver	5	
For shopping purposes	6	
In your work	7	
Other (specify)	8	

Q.14 How long have you been driving a motor vehicle?

Less than 1 year	1	
1 – 3 years	2	
4 – 6 years	3	
7 – 9 years	4	
10 – 12 years	5	
13 – 15 years	6	
16 years +	7	

Q.15 What type of motor vehicle do you **normally** drive?

Privately-owned motor vehicle	1	
Privately-owned light delivery van (LDB)	2	
Public sedan motor vehicle: taxi motor car	3	
Public motor vehicle: minibus taxi	4	
Motorcycle	5	
Goods delivery vehicle	6	
Passenger bus	7	
Tractor	8	
Payloader	9	
Other (specify)	10	

SECTION C: DEVIANT DRIVING BEHAVIOUR (SCALE 1)

Questions 16 – 40 and 54 – 69 deal with DEVIANT DRIVING BEHAVIOUR. This refers to those driver actions which do not conform to normal expected driver behaviour. Deviant driver behaviour, therefore, refers to the disregard or violation of the ROAD TRAFFIC ACT and REGULATIONS.

NB: Please answer all these questions by making a cross (X) in the appropriate box as it applies to you personally.

Q.16 People tend to learn bad driving behaviour because of their exposure to such driving behaviour by others.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.17 Nobody seems to trust me when I am driving a motor vehicle.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.18 I have been tagged a "bad driver" by other persons.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.19 Law-abiding citizens (including the driving population) tend to avoid me due to my driving behaviour.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.20 If I am having trouble in learning proper driving behaviour, I do not hesitate to ask exemplary drivers for help.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

SECTION D: AGGRESSIVE DRIVING BEHAVIOUR (SCALE 2)

How do you rate the following statements?

NB: Please answer all these questions by making a cross (X) in the appropriate box as it applies to you personally.

Q.21 I like to chase drivers who annoy me on the road.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.22 If I find myself in the wrong traffic lane, I do not hesitate to cut across all the lanes regardless of prevailing traffic conditions.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.23 I usually get impatient when driving during peak/rush hours.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.24 Driving is a "continuous battle" with other drivers on the road.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.25 If one is to arrive on time, one has to take chances on the road.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.26 I like driving fast.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.27 I like competing with other vehicles on the road.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.28 I like to pass slower moving motor vehicles in front of me.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.29 I would rather accelerate than brake to get out of a difficult traffic situation.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

SECTION E: ANXIOUS DRIVING BEHAVIOUR (SCALE 3)

How do you rate the following statements?

NB: Please answer all these questions by making a cross (X) in the appropriate box as it applies to you personally.

Q.30 I feel anxious when I am tailing a minibus taxi.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.31 Overtaking makes me nervous.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

Q.32 When driving behind large slow moving vehicles (payloaders, trucks, tractors) carrying wooden logs/timber/sugar cane, I will endeavour to pass them regardless of the prohibitions, e.g., solid white lines (no overtaking permitted).

Always	Often	Uncertain	Sometimes	Never
1	2	3	4	5

Q.33 I feel anxious when I am followed by a **minibus** taxi.

Always	Often	Uncertain	Sometimes	Never
1	2	3	4	5

Q.34 I feel apprehensive when I notice a traffic officer's vehicle following me.

Always	Often	Uncertain	Sometimes	Never
1	2	3	4	5

Q.35 I get quite tense when I am driving in dense traffic.

Always	Often	Uncertain	Sometimes	Never
1	2	3	4	5

Q.36 Women are more anxious (nervous) drivers than men.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

Q.37 Night driving scares me.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

Q.38 I apply breaks more often than is necessary when driving in cities or big towns.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

Q.39 I overtake a motor vehicle only if I am absolutely certain I can get past it safely.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.40 I worry about doing the wrong thing when driving in cities or big towns.

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

SECTION F: ASPECTS RELATING TO TRAFFIC POLICING (SCALE 4)

How do you rate the following statements?

NB: Please answer all these questions by making a cross (X) in the appropriate box as it applies to you personally.

Q.41 Absence (i.e., non-visibility) of traffic police officers causes people to drive in a deviant manner.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.42 Seat belts are a nuisance to wear whilst driving.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.43 Traffic police officers are susceptible to bribery.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.44 Too much emphasis is being placed on tracking down drunken drivers.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.45 Too much emphasis is being placed on speed checks.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.46 Deviant driving behaviour conforms to the culture of disregarding the Road Traffic Act and Regulations.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.47 There are enough traffic police officers in KwaZulu-Natal (KZN) to ensure traffic order and safety on our roads.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.48 Traffic police officers in KZN are **doing a good job** in promoting traffic order and safety on our roads.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.49 The South African Police Service should play a greater role in traffic control in KZN.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.50 Traffic police officers should more regularly track down drunken drivers.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.51 Existing traffic laws and regulations should be enforced more strictly.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.52 Deviant drivers should be speedily prosecuted in traffic courts.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.53 Proper driver education by traffic police officers would contribute towards road safety.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

SECTION G: OFFENSIVE DRIVING BEHAVIOUR (SCALE 5)

How do you rate the following statements?

NB: Please answer all these questions by making a cross (X) in the appropriate box as it applies to you personally.

Q.54 I do not see anything wrong with driving around with a fraudulently obtained driver's licence.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

Q.55 If I wanted to overtake a slower moving motor vehicle in front of me, I would do so even if the view ahead of me was obstructed.

Always	Often	Uncertain	Sometimes	Never
1	2	3	4	5

Q.56 When I am **in a hurry**, I would take a chance and overtake a whole line of traffic which is moving slowly along a main, road, nose to tail.

Always	Often	Uncertain	Sometimes	Never
1	2	3	4	5

Q.57 When I am **in a hurry**, I would go through a traffic light on the amber when it is changing from green to red.

Always	Often	Uncertain	Sometimes	Never
1	2	3	4	5

Q.58 When I am **in a hurry**, would cross a solid white line to overtake a slow moving vehicle in front of me.

Always	Often	Uncertain	Sometimes	Never
1	2	3	4	5

Q.59 I would slow down if I notice a sign indicating "road works ahead", "sharp bend", "stray animals" or "pedestrian crossing".

Always	Often	Uncertain	Sometimes	Never	
1	2	3	4	5	

Q.60 Sixty (60) km/h is a safe speed in towns/cities.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.61 One hundred and twenty (120) km/h is a safe speed on freeways.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.62 Pedestrians constitute a serious traffic safety concern.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.63 Speeding above the legal limits constitutes a serious traffic offence.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.64 If one is to get anywhere, one should be considerate to other drivers on the road.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

**SECTION H: ASPECTS RELATING TO TRAFFIC LAW VIOLATIONS
(DOCUMENT OFFENCES) (SCALE 6)**

How do you rate the following statements?
NB: Please answer all these questions by making a cross (X) in the appropriate box as it applies to you personally.

Q.65 Driving a motor vehicle without a valid driver's licence.

Very Serious	Serious	Uncertain	Less Serious	Not Serious at All	
1	2	3	4	5	

Q.66 Possessions of a fraudulent driver's licence.

Very Serious	Serious	Uncertain	Less Serious	Not Serious at All	
1	2	3	4	5	

Q.67 Driving an unlicensed motor vehicle.

Very Serious	Serious	Uncertain	Less Serious	Not Serious at All	
1	2	3	4	5	

Q.68 Clearance certificate not displayed.

Very Serious	Serious	Uncertain	Less Serious	Not Serious at All	
1	2	3	4	5	

Q.69 Passenger overloading.

Very Serious	Serious	Uncertain	Less Serious	Not Serious at All	
1	2	3	4	5	

SECTION I:**MOTOR VEHICLE DEFECTS (SCALE 7)**

To what extent do you agree or disagree with the handing down (imposition) of severe penalties for the following motor vehicle defects.

NB: Please answer all these questions by making a cross (X) in the appropriate box as it applies to you personally.

Q.70 Defective brakes.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.71 Defective tyres.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.72 Defective rear mirror(s).

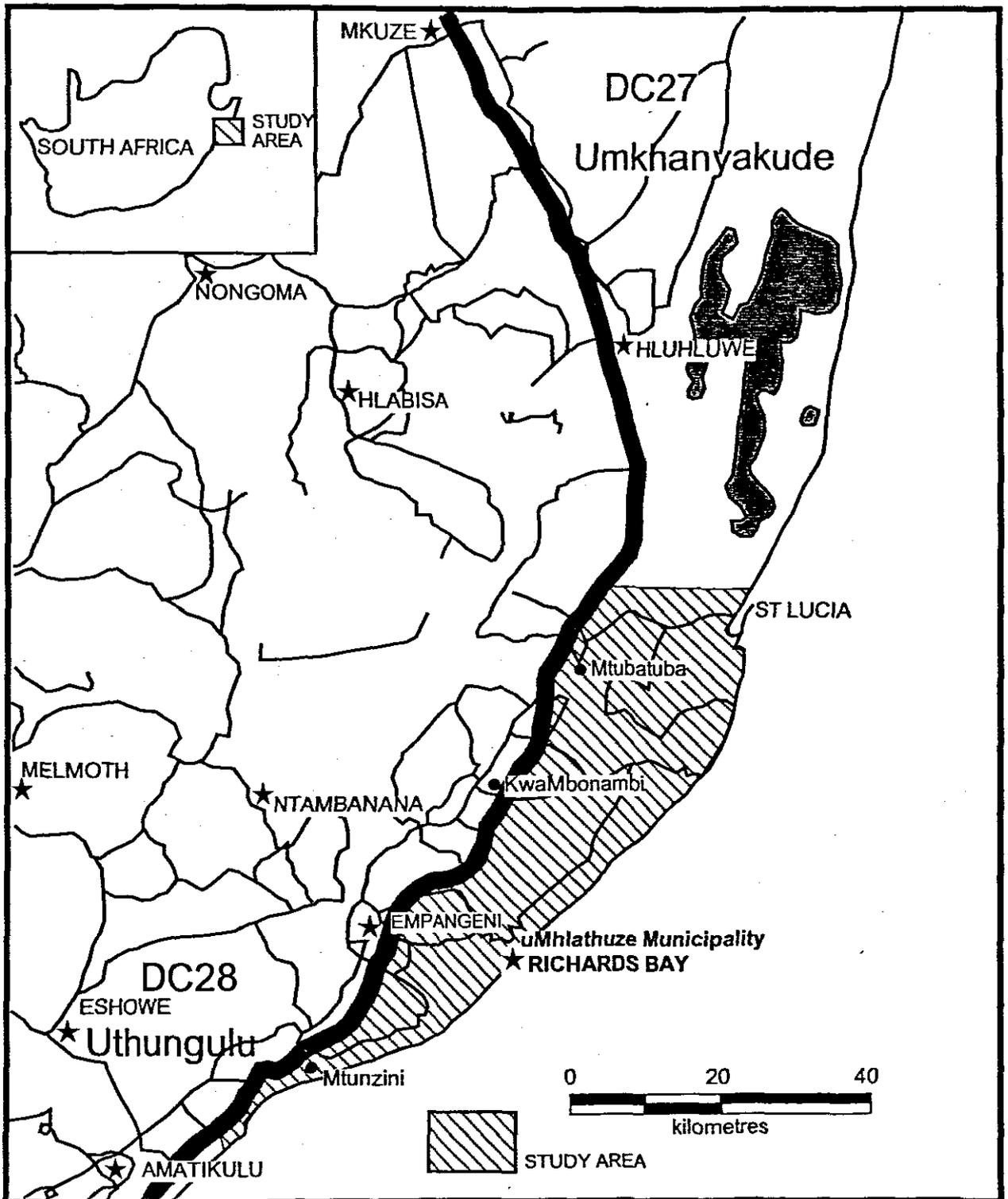
Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Q.73 Defective speedometer.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
1	2	3	4	5	

Thank You

ANNEXURE B: The Map of uMkhanyakude and Uthungulu Districts showing the Study Area



ANNEXURE "C"

FORMULAE

1. ANALYSIS OF VARIANCE (ANOVA)

One way ANOVA F-ratio:

$$F = \frac{ns \frac{2}{X}}{s^2_{pooled}} = \frac{MS_B}{MS_W}, df_w = J - 1, df_w = N - J$$

2. F-TEST

$$F = \frac{MS_{bg}}{MS_{wg}}$$

MS_{bg} = mean squares between groups

MS_{wg} = mean squares within groups

3. CHI-SQUARE TEST

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

f_o = observed frequency

f_e = expected (null-hypothetical) frequency

\sum = is taken over all categories

4. **CRONBACH'S COEFFICIENT ALPHA**

$$\alpha = \frac{K}{K-1} \times \frac{S^2_{\sum 1} - \sum S^2_1}{S^2_1}$$

$S^2_{\sum 1}$ = is total variance of the sum of the items

S^2_1 = is the variance of an individual item

K = is number of items

5. **SPEARMAN'S RANK-ORDER CORRELATION COEFFICIENT (rho)**

$$r_{ho} = 1 - \frac{6(\sum D^2)}{N(N^2 - 1)}$$

$\sum D^2$ = sum of squared differences between ranks

N = number of pairs of ranks

6. **CONTINGENCY COEFFICIENT (C)**

$$C = \sqrt{\frac{X^2}{N + X^2}}$$

X^2 = Chi-square

N = frequencies

6. **CONTINGENCY COEFFICIENT (C)**

$$C = \sqrt{\frac{X^2}{N + X^2}}$$

X^2 = Chi-square

N = frequencies

7. **MEAN SQUARES**

$$MS_B = \frac{SS_B}{J-1} \quad MS_W = \frac{SS_W}{N-J}$$