

**AN ASSESSMENT OF THE CRIMINOLOGICAL SIGNIFICANCE OF MOTOR  
VEHICLE CRASH DATA WITHIN THE CRIMINAL JUSTICE CONTEXT**

**By**

**ANDRÉ ROETS**

Submitted in accordance with the requirements for the degree of

**MASTERS OF ARTS**

In the subject

**CRIMINOLOGY**

At the

**UNIVERSITY OF SOUTH AFRICA**

**SUPERVISOR: PROF J H PRINSLOO**

**February 2015**

## DECLARATION

Student number: 6193463

I, ANDRÉ ROETS, declare that “**An assessment of the criminological significance of motor vehicle crash data within the criminal justice context**” is submitted in accordance with the requirements for the MA degree in Criminology, at UNISA, and is my own work and has not previously been submitted to another institution of higher education. All the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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Andre Roets

Date: \_\_\_\_/\_\_\_\_/2015

## ACKNOWLEDGEMENTS

All the glory and honour to my saviour and heavenly father, Jesus Christ, who provided me with the strength, the knowledge and the ability to achieve this dream.

I would like to express my deepest gratitude to Professor Johan Prinsloo for his guidance and endless support. Thank you so much for serving as an exceptional role model over the past three years. I am truly honoured to have been your student and privileged in sharing your insight, knowledge and expertise in this exciting field of criminology.

I am grateful to my entire family – my parents and brothers for their endless support and inspiration in making a dream come true. To my sister in law, Elsabe – thanks for the “future academic vision” and laughter.

To my children André and Chante, this is the product of many hours behind the computer during your visits. Thank you so much, you are my life – I love you dearly.

A special thanks to the late Superintendent Hennie Roets of the Ekurhuleni Metropolitan Police Department for his expertise and assistance during this study. Hennie, “Hakkels” as he was known, was a friend, a former colleague and had a sincere passion for improving the road crash system.

Many thanks to the senior management of Ekurhuleni Metropolitan Police Department, in particular Deputy Chiefs Isaac Mapiyeye (Isaac, [sa]) and Johan Friedlander for allowing me to conduct the research at your premises. Thank you to the personnel of the Elsburg Accident Bureau for the assistance and advice. My sincere appreciation to all the officers of the Ekurhuleni Metropolitan Police Department who participated in this study, Col Rob Askew from the SAPS and Mr Wynand Pretorius, Manager of the Municipal Courts in Emfuleni.

A word of thanks to the management of Lyceum College for your understanding and support throughout the duration of my study.

Thanks to Ms L van Kradenburg for the editorial and technical care of the dissertation.

## ABSTRACT

This research assessed the criminological significance of motor vehicle crash data within the criminal justice context. The study was conducted at the southern region Accident Bureau of the Ekurhuleni Metropolitan Police Department (EMPD).

The objectives of this research are to:

- a. Explore and describe the extent and criminological impact of road traffic crashes on a macro level.
- b. Explore and describe the impact of road traffic crashes on a micro level.
- c. Explain the criminological significance of road traffic crash data in relation to effective road safety management.
- d. Evaluate and describe the attendance and recording procedure of road crashes.
- e. Evaluate and describe the supervisor's responsibility in relation to the quality of crash data recorded.
- f. Evaluate and describe the effectiveness of crash statistics accessed by management and/or officials.
- g. Evaluate and explain the current prosecution procedure as part of the CJS.
- h. Evaluate existing policy about the crash-recording process applicable to operational law enforcement practitioners of the EMPD.
- i. Explore and describe the current state of motor vehicle insurance and its necessity from a criminological perspective.

The researcher followed a mixed-methods approach, collecting quantitative data from recorded Accident Report Forms and qualitative data from interviews with participants active in their fields of expertise. Road crashes are characterised by injury and damage; victims suffer trauma and economic consequences, and the society and the economy as a whole are affected. The research suggests that accurate road crash data form a crucial component in the investigation, prosecution and development of road safety strategies in the quest towards improved road safety efforts. It also indicates that existing crash data are of such a sub-standard that traffic professionals

will not be able to develop effective and efficient road safety strategies in pursuit of road safety.

**Key terms:** road traffic crash; crash data; Accident Report Form (AR Form); law enforcement practitioners; injury severity; crash scene; crash attendance; crash referral; road safety management; prosecution; road safety

## **GLOSSARY**

AA	:	Automobile Association
APA	:	American Psychiatric Association
AR Form	:	Accident Report Form
cf.	:	compare other literature source(s)
CJS	:	Criminal Justice System
DA	:	Democratic Alliance
DHTS	:	Division of Highway Traffic Safety
DSM	:	Diagnostic and Statistical Manual of Mental Disorders
DUI	:	Driving under the influence (of drugs or alcohol having a narcotic effect)
EC	:	European Commission
e.g.	:	Example
EMPD	:	Ekurhuleni Metropolitan Police Department
ETSC	:	European Transport Safety Council
GPSTC	:	Georgia Public Safety Training Center
HAZLOC	:	Hazardous Location
IACP	:	The International Association of Chiefs of Police
IRTAD	:	International Road Traffic and Accident Database
ITSDA	:	International Traffic Safety Data and Analysis Group
ITF	:	International Transport Forum
MVC	:	Motor vehicle crash
NJDOT	:	New Jersey Department of Transportation
NRTA	:	National Road Traffic Act (Act 93 of 1996)
NRS	:	Nevada Revised Statutes, 2007
NSC	:	National Safety Council
OB	:	Occurrence Book
OECD	:	Organisation for Economic Cooperation and Development
PTSD	:	Post-Traumatic Stress Disorder
QOL	:	Quality of Life
RAFA	:	Road Accident Fund Act, 1996 (Act 56 of 1996)
RAF	:	Road Accident Fund
RSM	:	Road Safety Management

RTA	:	Road Traffic Act United Kingdom
RTC	:	Road traffic crash
RTCs	:	Road traffic crashes
RTMC	:	Road Traffic Management Corporation
SAPS	:	South African Police Service
SHA	:	State Highway Administration
SOs	:	Standing Orders
TDOT	:	Texas Department of Transportation
US	:	United States
vide	:	look at or refer to another section of the study
WHO	:	World Health Organization

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## CHAPTER 1

### GENERAL ORIENTATION AND RESEARCH DESIGN

#### 1.1 INTRODUCTION

Since the first self-propelled engine by Gottlieb Daimler in 1885, motor vehicle accidents have become inevitable due to the movement of automobiles and pedestrians every day (Kreml, 1940:3). Through the centuries, many motor vehicle accidents were directly attributable to the improper conduct, and usually unlawful conduct, of the drivers involved (Zajc, [sa]:4). The protection of all road users against each other, the loss of life, limb, property as well as other indirect losses, including the individual road user against him/herself, is an important aspect of effective road safety management (RSM) within the broader context of the Criminal Justice System (CJS).

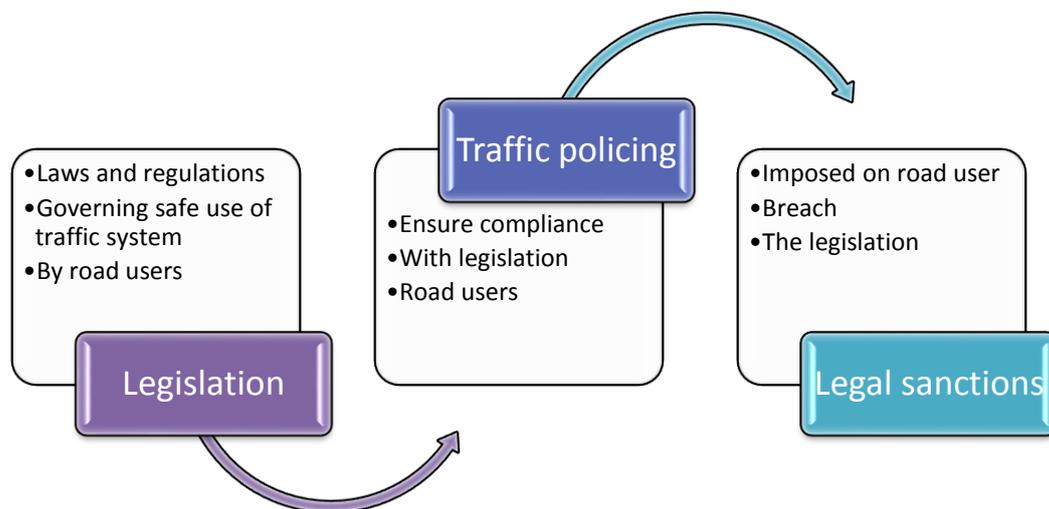
Road safety administrators are accountable to the public and the state to reduce road traffic crime through the rendering of an effective, efficient and speedy system of justice that is in the interest of a safer and healthier road system in South Africa (Schönsteich, 2002:41). Traffic policing is only a part of the enforcement process; legislation determines what behaviour can be enforced and how it can be enforced (ETSC, 1999). According to Safetynet (2009:4), fatal and long-term crash injury is predictable, and can be prevented through focused analysis and remedy in the form of interventions. According to the Organisation for Economic Cooperation and Development (OECD, 2008:72), general and targeted traffic enforcement of related traffic legislation and penalties forms a crucial aspect in pre-crash prevention because of the deterrence factor. In order to be beneficial to society, the total enforcement effort is dependent on how well traffic policing is managed and prioritised by management and staff.

The OECD (2008:194) states that “the existence of adequate legislation and enforcement to achieve high levels of road user compliance with behavioural safety regulations remains an important requirement”. To support this argument, the OECD (2008:162) refers to France where the road crash fatality rate fell from 7 655 in 2002 to 4 709 in 2005, because of intensified enforcement of traffic legislation. There is a

misconception about traffic law enforcement that the main objective of road law enforcement is to increase road users' perception of the risk of being caught. It should never be to maximise the number of infringement notices and serve as an income revenue functionary (ETSC, 1999). According to Bobevski, Hosking, Oxley and Cameron (2007:1) traffic law enforcement consists of three main steps:

1. Road traffic legislation.
2. Traffic policing.
3. Imposition of legal sanctions (punitive measures) [see figure 1.1]

**Figure 1.1: Three main steps of law enforcement**

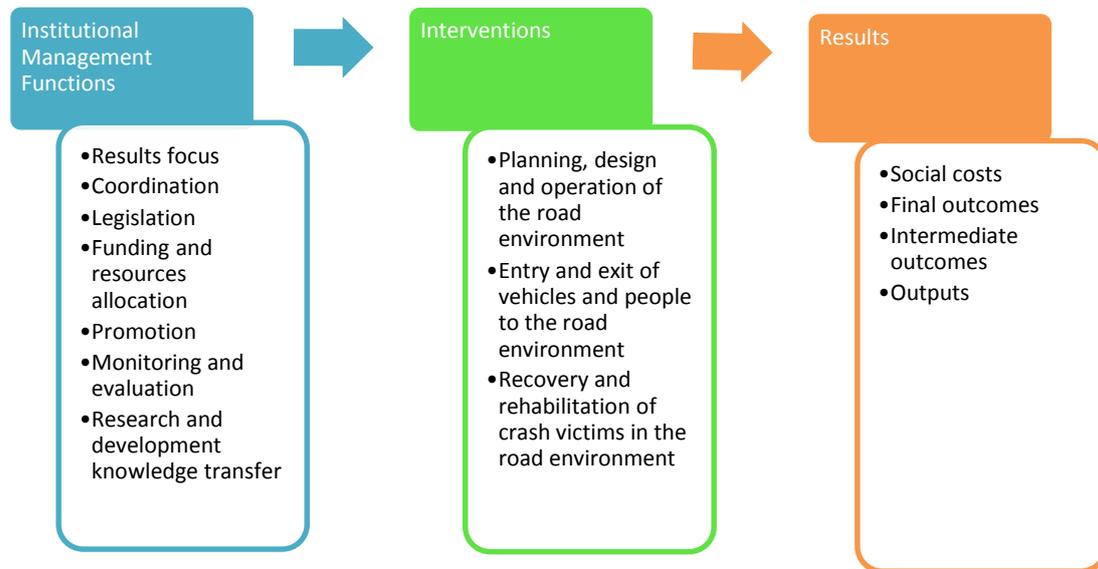


Enforcement in this context refers to the restoration of order to individualise the violation of the legal rules in a positive manner through the assembly and presentation of evidence to the judicature (Van Heerden, 1994:17). This implies that the enforcement component is not a standalone function that operates in isolation from road safety management; it forms part of the total approach towards road safety in general.

According to Bliss and Breen (2009:17) road safety management encompasses a holistic approach directed at the elimination of road deaths and serious injuries, rather than to chart a “fatalistic pathway that accepts these impacts as an inevitable price of economic progress”. The key aspect of road safety management is safety (SafetyNet,

2009:9). Figure 1.2, as adopted from Bliss and Breen (2009:9), indicates that a comprehensive road safety management system comprises three levels.

**Figure 1.2: Road safety management system**



The system illustrated in figure 1.2 is briefly reflected upon.

- (i) **Institutional management functions:** the seven identified management functions form the crux of the road safety management system; they produce the interventions that are required to achieve the desired road safety results. This is not an individual approach, but requires a partnership across national, regional and local levels. Without effective institutional management, there is little chance of implementing successful road safety interventions (Bliss & Breen, 2009:10).
- (ii) **Interventions:** seek to manage and expose the risk involved in crashes; how to prevent crashes; how to reduce crash injury severity; and the consequences of crash injury. These interventions include safety designs, standards, rules as well as a combination of activities to secure compliance such as information, publicity, enforcement and incentive (Bliss & Breen, 2009:12).
- (iii) **Results:** road safety results are expressed in the form of targets. Targets determine the desired safety performance that is endorsed by all three levels of government, stakeholders and the community. The level of safety is

determined by the quality of the delivered interventions, which in turn are determined by the institutional management functions (Bliss & Breen, 2009:12).

To achieve institutional partnership between the three levels of government, cooperation is a necessity. Role players involved in traffic policing at the different government levels, include:

- **National level** : South African Police Service (SAPS).
- **Provincial level** : Provincial traffic officers.
- **Local level** : Traffic and metropolitan police officers.

At national level, the National Traffic Police Unit (NTP) was established to intensify the policing of the national network. This unit is functioning at national level. Section 18(2) of the Road Traffic Management Corporation Act 20 of 1999 (South Africa, 1999a) prescribes that “a functional unit may be structured to best give effect to country-wide functioning”. Section 18(1) of the Road Traffic Management Corporation Act 20 of 1999 (South Africa, 1999a) prescribes that:

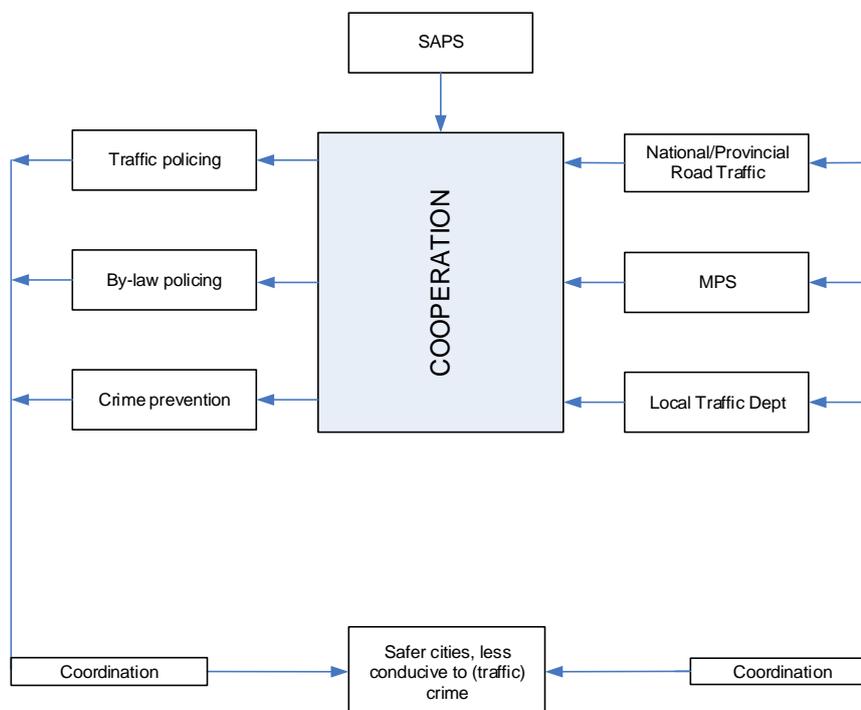
“(1) The Shareholders Committee must, as part of the organisational structuring of the Corporation, establish as many functional units as are required...to ensure effective management of, at least, the following functional areas:

- (a) Road traffic law enforcement.
- (b) Training of traffic personnel.
- (c) Vehicle registration and licensing.
- (d) Vehicle and roadworthiness testing.
- (e) Testing and licensing of drivers.
- (f) Road traffic information.
- (g) Accident investigations and recording thereof.
- (h) Communication and education.
- (i) Infrastructure safety audits.
- (j) Administrative adjudication of road traffic offences.”

When interpreting the true meaning of cooperation, it is clear that joint action or working together is emphasised. In figure 1.3 the researcher graphically explains the cycle of cooperation between the different institutions at the different levels of government. These institutions are constitutionally mandated to work in a coordinated fashion. Section 41 of the Constitution of the Republic of South Africa, Act 108 of 1996 (South Africa, 1996a), is clear in stating that:

- “(1) All spheres of government and all organs of state within each sphere must:
- (h) Co-operate with one another in mutual trust and good faith by:
    - (i) Fostering friendly relations.
    - (ii) Assisting and supporting one another.
    - (iii) Informing one another of and consulting one another on matters of common interest.
    - (iv) Co-ordinating their actions and legislation with one another.
    - (v) Adhering to agreed procedures.
    - (vi) Avoiding legal proceedings against one another.”

**Figure 1.3: Cooperation cycle**



According to Ronald (Iafrica, 2010), South African roads are “fast acquiring a reputation as being some of the most dangerous in the world”. This unfortunate situation is ascribed to a combination of factors such as poor law enforcement, blatant disregard for the law by drivers and the shocking inept systems that are currently in place when it comes to prosecuting offenders (Iafrica, 2010). Currently, motor vehicle crashes (MVCs) contribute directly to South African roads being compared to battlefields. According to the Minister of Transport, traffic offenders “were turning our roads into killing fields” (De Lange, 2012). The Minister of Transport indicated that 1 376 people died on the roads in 1 147 fatal MVCs between 1 December 2013 and 07 January 2014 (News24, 2014c). Furthermore, the Minister expressed his concern that MVCs in Africa have the potential to kill more people by the year 2020 than those who die from HIV and malaria combined (News24, 2010a). It is therefore the Minister’s view that traffic law enforcement remains one of South Africa’s biggest problems (News24, 2010b).

The setting of rules, such as Transport Minister Sibusiso Ndebele’s call for the drivers of motor vehicles involved in fatal crashes to be charged with murder (Dembovsky, 2011), *inter alia*, should not be seen as an end in itself. Mohan, Tiwari, Khayesi and Nafukho (2006:68) are of the opinion that over and above the necessity for rules, the focus should be directed at compliance through enforcement, training and information. To have an impact on road traffic crashes, the enforcement of road traffic legislation should be long lasting and not ad-hoc based (Mohan et al, 2006:68). According to The Road Traffic Management Corporation (RTMC) and the Department of Transport (News24, 2014d) the road death statistics for the previous years from December 2008 – December 2013 are indicated in Table 1.1.

**Table 1.1: Fatalities for periods December 2007 - December 2013**

<i>Period</i>	<i>Number of fatalities</i>	<i>% Increase / Decrease</i>
<b>December 2007</b>	1 142	-
<b>December 2008</b>	937	-17.95
<b>December 2009</b>	1 050	+12.06
<b>December 2010</b>	1 358	+29.33
<b>December 2011</b>	1 232	-9.28
<b>December 2012</b>	1 279	+3.81
<b>December 2013</b>	1 376	+7.58

If taken into account the December 2013 figure of 1 376, it is evident that road crash fatalities show a general increase of 17 per cent compared to the number of fatalities recorded for 2007, as indicated in table 1.1. To emphasise the extent of non-fatal road traffic injuries, Toroyan (2013:7) indicates that globally at least 20 people sustain non-fatal injuries for every road traffic fatality.

Road traffic crashes are unforeseen events that have immeasurable impact on the families affected and the communities in which they live and work. From an economic perspective, these families are severely affected by the unexpected medical costs and loss in income. Road traffic crashes bear a considerable financial burden on developing countries (including South Africa); approximately 1-2 per cent of the gross national product (Toroyan, 2013:1). The researcher will indicate in this study (vide chapter 2) that road traffic crashes are a major concern and a risk to the macro level (national health care and economic development) as well as the micro level (the victim and the family).

Road crashes could lead to large numbers of injuries, the causes of which are neglected, despite the fact that these crashes are preceded by offenses that are largely preventable (Toroyan, 2013:1). According to the OECD (2008:55), it is essential that comprehensive crash data be collected for developing and determining intervention priorities. To determine trends and/or patterns, management is dependent on data that provide scientific evidence, which is required to implement *ex ante* interventions. In addition, Cameron (1992:1) is of the opinion that data must be analysed to identify possible target groups and potential interventions in an endeavour to “break the road trauma chain” before a crash, injury or death can occur. In this study, the researcher seeks to evaluate the quality of the crash data within the southern area of the Ekurhuleni Metropolitan Police Department, situated in the Gauteng Province of South Africa, which had been recorded and interpreted for use by administrators for the purposes of operational management in relation to road safety management and traffic law enforcement.

This chapter leads off with an expose of important concepts used throughout this study.

## **1.2 CONCEPTUAL FRAMEWORK**

In this section the researcher identifies certain concepts, which are the building blocks of this research study. Hagan (2012:18) sees concepts as the starting point in all scientific endeavours, whilst according to Welman, Kruger and Mitchell (2012:20) concepts are the foundation of meaningful communication, which introduces a perspective on the empirical world. Therefore, a concept consists of words which allow for communication and clarification to other people (De Vos & Strydom, 2012:29).

Conceptualisation is a process where concepts are categorised and defined to ensure that clarification and precision of the concepts are achieved in the most simplistic and unambiguous manner possible, through careful thinking and reading what others have said (Kraska & Neuman, 2012:109; Kaniki, 1999:21; Babbie, 2010:130; Welman et al, 2012:20; De Vos & Strydom, 2012:29).

For the purpose of this research study and based on the above-mentioned, the following concepts will be elucidated:

- **Crash data** can be described as traffic crash information recorded by members of the South African Police Service (SAPS) or traffic practitioners, either in their personal capacity or through the reporting of a member of the public. According to Roads.Maryland.gov (2014), road traffic professionals use collected data to ascertain why specific crash patterns are occurring and how road safety needs can be addressed.
- **Database** refers to the collection of related data organised for storage, search and retrieval. The structure or architecture of the database directly affects users' ability to search and retrieve records quickly, and also the types of analyses that can be performed (Bliss, Krug, Pearce & Ward, 2010:73).
- **Data collection** is a process where crash data are recorded by members of the SAPS, local, provincial and metropolitan law enforcement practitioners at the scene of the reportable crash. Later, the data may be reviewed and edited (Maryland, 2014). In South Africa the current practice is that when the scene of a crash is not attended to by a law enforcement practitioner, the driver(s) involved in the crash report(s) it to the relevant SAPS office or traffic department, where the data are recorded.
- **Driver** means any person who drives or attempts to drive any vehicle; or who rides or attempts to ride any pedal cycle; or who leads any draught, pack or saddle animal or herd or flock of animals, as defined by the South African National Road Traffic Act (NRTA, South Africa, 1996b:s 1) (section 3.2.2).
- **Enforcement** refers to a range of procedures and actions implemented by a government, its competent authorities and agencies to ensure that persons (the motoring public) failing to comply with road traffic laws or regulations, are brought or returned to compliance and/or punished (prosecuted) through administrative or criminal action (Basel, 2012:10).
- **Fatal crash** refers to any road traffic crash that result in a person/s killed immediately or dying within 30 days as a result of the crash (Evgenikos, Holder, Ivers, Jacobs, Jan, Khayesi, Peden & Yannis, 2010:4).

- **Injury** refers to any physical damage that is the result when a human body is suddenly or briefly subjected to intolerable levels of energy. It can be in the form of a bodily lesion or the result from acute exposure to excessive energy or impairment of function due to a lack of vital elements (Evgenikos et al, 2010:4).
- **Injury crash** means any road traffic crash resulting in at least one person being injured or killed (Evgenikos et al, 2010:4).
- **Motor vehicle** means any self-propelled vehicle and includes:
  - (a) A trailer;
  - (b) A vehicle having pedals and an engine or an electric motor as an integral part thereof or attached thereto and which is designed or adapted to be propelled by means of such pedals, engine or motor, or both such pedals and engine or motor, but does not include:
    - (i) any vehicle propelled by electrical power derived from storage batteries and which is controlled by a pedestrian; or
    - (ii) any vehicle with a mass not exceeding 230 kilograms and specially designed and constructed, and not merely adapted, for the use of any person suffering from some physical defect or disability and used solely by such person (NRTA, South Africa, 1996b:s 1); (vide section 3.3.2).
- **Operate on a public road** or any like expression, in relation to a vehicle, means to use or drive a vehicle or to permit a vehicle to be used or driven on a public road, or to have or to permit a vehicle to be on a public road (NRTA, South Africa, 1996b:s 1).
- **Prosecution** concerning law enforcement refers to the institution and continuation of legal proceedings against alleged offenders (*Oxford* 1994, sv “prosecution”) and forms a crucial component of law and order in that not only does it promote respect for the law, it also discourages violations of the rule of law in general (Basel, 2012:8) (section 3.5).
- **Public road** means any road, street or thoroughfare or any other place (whether a thoroughfare or not) which is commonly used by the public or any section thereof or to which the public or any section thereof has a right of access, and includes:
  - (a) The verge of any such road, street or thoroughfare.

- (b) Any bridge, ferry or drift traversed by any such road, street or thoroughfare.
- (c) Any other work or object forming part of or connected with or belonging to such road, street or thoroughfare (NRTA, South Africa, 1996b:s 1) (section 3.4).
- **Road safety management** is a system, of which the effectiveness is determined through the collection of data, which provide a holistic picture of road safety. Although crash data provide important underlying factors in finding determinants, consequences and solutions, other road safety related data such as population size, number of vehicles on the road, risk factors (for example helmet use), strategies and interventions of all relevant institutions, form as a whole part of road safety management (Bliss & Breen, 2009:9; Evgenikos et al, 2010:8; Mohan et al, 2006:25; World Road Association - PIARC, 2007:7).
  - **Road traffic fatality** means any person who is killed immediately or dies within 30 days because of an injury crash, excluding motorised suicides (Evgenikos et al, 2010:4).
  - **Traffic crash** also refers in general to a road crash. From a national and international perspective, there is not a standardised single definition available. Definitions vary from country to country. In South Africa, the NRTA, Act 93 of 1996 (South Africa, 1996b) is silent about the definition or description of the term traffic crash (or accident). The Vienna Convention explains a traffic crash as a collision of a moving vehicle on a public road in which a road user (human or animal) is injured (Jacobs, Aeron-Thomas & Astrop, 2000:6). Mohan et al (2006:23) describe a traffic crash as the result from a combination of factors related to the components of the system comprising roads, the environment, vehicles and the road users as well as the way they interact.

These concepts will be discussed in-depth in the proposed empirical research to ensure that the study complies with research prescriptions regarding conceptual definitions, which will be translated into the operationalisation thereof.

### 1.3 PROBLEM STATEMENT AND RESEARCH RATIONALE

The purpose of this study is to assess the criminological significance of motor vehicle crash data from a criminal justice perspective, with reference to the Ekurhuleni Metropolitan Police Department. In this study, the researcher seeks to evaluate the quality of the crash data within the southern area of the Ekurhuleni Metropolitan Police Department (situated in the Gauteng province of South Africa) that had been recorded and interpreted for use by administrators for the purposes of operational management in relation to road safety management and traffic law enforcement.

According to Leedy and Ormrod (2010:48), the core of any research study is the “research problem”. Kerlinger and Lee (in Ellis & Levy, 2008:18) agree with this viewpoint and argue that an adequate statement of the research problem is one of the most important parts of research, as it offers the context that is necessary for addressing the *why* question. In other words, why is the research problem worth studying (Babbie, 2010: 119)? According to Welman et al (2012:14), the researcher studies the problem to obtain a solution for the situation that has been identified as problematic.

In his quest to assess the importance of motor vehicle crash data, the researcher as a law enforcement veteran of 22 years, was guided through personal experiences and passion to evaluate the management of data recorded regarding road crashes. As a lecturer and researcher employed at a higher education training institution, he realised that the management of road traffic crash data consists of various processes and that these processes have several shortcomings, be they policy deficiencies or human divergences.

The identified research problem is of social and scientific importance. In South Africa, over 12 000 people are killed annually in traffic crashes (Davis, 2013) and thousands of people suffer from injuries. With more than 33 deaths per day, it is no surprise that the International Transport Forum (ITF) (2009) ranked South Africa the worst out of 36 countries concerning road deaths (Davis, 2013). The transport minister stated that the South African economy staggers under an approximate loss of R306 billion per annum

due to road crashes and accompanying factors such as loss of skills, medical expenses, and so forth (Davis, 2013).

Traffic data, according to Pollack, Boodlal, Emery and Souleyrette (2010:3) are the primary source of our knowledge about the traffic safety environment, human behaviour and vehicle performance. In order to address road safety problems we require proper traffic safety data, which are timely, accurate, complete, consistent, integrated and accessible (Pollack et al, 2010:2).

In studying the research problem, the researcher's intention is to determine the magnitude of the problem in the research area through data collection and interpretation, thereby to evaluate the extent of crash data recording and how the statistical analysis thereof affects the operation of law enforcement managers (vide section 1.5).

Davis (2013) emphasises that a recent study conducted during 2012 revealed that 81 per cent of the respondents indicated that the answer to South Africa's road safety problem lies in improved law enforcement, and that a zero tolerance approach should be implemented against offenders committing serious offences. Too often police agencies fail to investigate traffic collisions due to a lack of proper and effective information. To confirm this statement, Coetzee (2007) stated that the Road Traffic Management Corporation (RTMC) was unable to investigate an accident at the R28/Pinehaven intersection close to Krugersdorp, because the Accident Report Forms had been destroyed at the local police station (Coetzee, 2007) [vide 1.1].

Although the Minister of Transport is of the opinion that road deaths can be stopped (Perthnow, 2011), Ruler (1999:7) emphasises that the causes should first be found; hence Kreml (1940: 20) states that law enforcement action (prosecution) can only be effective if it is characterised by a reasonable certainty of conviction.

The researcher also obtained the perceptions and interpretations of experts in the field of road crash management about the magnitude of the problem concerning crash data and the effect thereof on the prosecution of offending motorists involved in road

crashes. Their views and opinions are important, as they provide advice that may assist the researcher in understanding and clarifying the problem in question.

According to Babbie (2011:94), it is important to determine whether the current study will have practical significance. The researcher believes that research in the field of road crash management and all its processes is necessary and that the findings of this study will assist the Ekurhuleni Metropolitan Police management to improve on any shortcoming/s identified in its processes. It will also address negative perceptions and statements such as “road traffic management in South Africa is in a state of crisis” (Adams, 2001:5); “the extent of road traffic crashes is unclear”; and that “traffic law enforcement remains one of South Africa's biggest problems” (News24, 2010a). [Vide 1.1]

#### **1.4 RESEARCH QUESTIONS**

According to Fouché and De Vos (2012:79-80) there is no consensus amongst authors about how to term the identification of the researchable problem. Terms range from “focus of the project” and “getting started” to “problem formulation”. Fouché and De Vos (2012:80) though, are of the opinion that it should be termed either the “problem statement” or the “research question”. However, the researcher is of the opinion that the problem statement precedes the research question; Neuman (2011:170) concurs with this statement, indicating that the focus of a research *problem* [own italics] revolves around the ability to narrow it into a research question.

Bachman and Schutt (2014:22) explain that criminological research questions are those, which deal with some aspect of crime or offenders that the researcher seeks to answer through the collection and analysis of verifiable empirical data. In this study, the researcher seeks certain answers pertaining to motor vehicle crashes through empirical data.

The researcher discussed the problem statement in the preceding section 1.3. This section will focus on the research questions, which are divided into primary and secondary questions. The research questions posed were answered from a South

African context, based on the research undertaken in Ekurhuleni, Gauteng (section 1.10).

#### **1.4.1 Primary question**

According to Maree and Van der Westhuizen (2012:24) the primary research question is a mere reformulation of the statement of purpose into a question. The primary research question for this study is, therefore:

- a. What is the criminological significance of data pertaining to motor vehicle crashes, prosecutions, procedures and policies in relation to road safety management in the CJS?

#### **1.4.2 Secondary questions**

Secondary questions are used in addition to the primary question and are closely associated with the primary question. An important prerequisite for a secondary question is that it should be researchable (Maree & Van der Westhuizen, 2012:26). The secondary research questions for this study are:

- a. What is the extent and criminological impact of road traffic crashes on a macro level?
- b. What is the impact of road traffic crashes on a micro level?
- c. What is the criminological significance of road traffic crash data in relation to effective road safety management?
- d. Does the attendance and recording procedure of road crashes have an influence on the quality of crash data?
- e. Does the quality of crash data recorded have an influence on the institution of prosecutions against offending drivers?
- f. Have accident statistics been effectively accessed by administrators and/or officials?
- g. Has the effectiveness of the current prosecution procedure, as part of the CJS, been affected?

- h. Are policies in place to assist operational law enforcement practitioners of the EMPD in the crash-recording process?
- i. What is the current state of motor vehicle insurance and its necessity from a criminological perspective?

Research questions not only direct the researcher towards appropriate literature resources, but they also focus on data collection (Jansen, 2007:3). The research questions identified above assisted the researcher in formulating the objectives (purpose) of the research study.

## **1.5 RESEARCH OBJECTIVES (PURPOSE)**

According to Maree and Van der Westhuizen (2012:25), the first step in developing a research strategy is to decide on the focus of the research, which according to Fouché and De Vos (2012:94) denotes a more concrete, measurable and speedy conception of the plan to achieve. The research objectives are the goals the researcher wants to accomplish in this study; which according to Babbie (2010:119) specify exactly what the researcher wants to research.

The objectives inform the reader of what the researcher wants to achieve by the study (Hofstee, 2010:86); it is imperative to word the objectives clearly and specifically (Kumar, 2011:50). The author identified the following specific research objectives, namely to:

- a) Explore and describe the extent and criminological impact of road traffic crashes on a macro level.
- b) Explore and describe the impact of road traffic crashes on a micro level.
- c) Explain the criminological significance of road traffic crash data in relation to effective road safety management.
- d) Evaluate and describe the attendance and recording procedure of road crashes.
- e) Evaluate and describe the supervisor's responsibility in relation to the quality of crash data recorded.

- f) Evaluate and describe the effectiveness of crash statistics accessed by management and/or officials.
- g) Evaluate and explain the current prosecution procedure as part of the CJS.
- h) Evaluate existing policy about the crash-recording process applicable to operational law enforcement practitioners of the EMPD.
- i) Explore and describe the current state of motor vehicle insurance and its necessity from a criminological perspective.
- j) Make recommendations in ameliorating the recording of road crash data to enhance effective management of processed data to the benefit of the EMPD within the criminal justice context.

In light of the objectives stipulated above, a description of the worldviews, also known as research methodologies, will be embarked upon.

## **1.6 WORLDVIEWS**

Creswell (2009:6) explains that although many researchers use terminology such as paradigms, epistemologies, ontologies, approach and research methodologies, the term “worldview” is best suited, meaning “a basic set of beliefs that guide action”. In lieu of this explanation, the researcher will also use the term “worldview” in conjunction with the term “approach” for this study.

There are numerous worldviews that direct social sciences research. Creswell (2009:6) identifies the following four:

- Postpositivism.
- Advocacy/participatory.
- Constructivism.
- Pragmatism.

De Vos, Strydom, Schulze and Patel (2012:5-10) concur with Creswell (2009) and identify an additional five approaches:

- Positivism.
- Interpretivism.
- Critical approach.
- Feminism.
- Postmodernism.

The types of beliefs held by researchers often lead to embracing a qualitative, quantitative or mixed-methods approach (vide section 1.7.3) in their research studies. According to Kraska and Neuman (2012:51) crime and justice studies fall within the scope of social sciences and are often not acknowledged as real science, because of people's opinion that research consists only of the natural sciences (physics, chemistry and biology). Kraska and Neuman (2012:51) explain that a large part of epistemological discussions and debate by theorists such as Auguste Comte, Sigmund Freud, Emile Durkheim, Karl Marx and Max Weber, as well as contemporary thinkers such as Karl Popper, Anthony Giddens and others, has taken place in crime and justice studies.

Epistemology produces knowledge through issues such as "what constitutes legitimate knowledge" (Kraska & Neuman, 2012:51). Neuman (2011:93) concurs and sees epistemology inclusive of "what we need to do to produce knowledge and what scientific knowledge looks like once we have produced it". The successful conclusion of this study will adhere to this statement.

According to Kraska and Neuman (2012:52) crime and justice researchers generally choose from three epistemological alternatives:

- Positivist approach.
- Interpretive approach.
- Critical approach.

For this research study though, the researcher identified the following integrated worldview:

- Postpositivist worldview.
- Interpretivist (phenomenological) worldview.
- Constructivist worldview.
- Pragmatic worldview.

### **1.6.1 Postpositivist worldview**

According to Nieuwenhuis (2012b:65) and De Vos et al (2012:7), postpositivist researchers believe that reality is the creation of the individuals involved in the research and therefore that “reality” remains unattainable. The researcher is of the opinion that a postpositivist dimension allows for multiple quantitative measures and observations (Creswell, 2003:7; De Vos et al, 2012:7; Trochim, 2012). An additional advantage is the freedom that the researcher enjoys in creating measuring instruments (cf. De Vos et al, 2012:7).

### **1.6.2 Interpretive worldview**

Kraska and Neuman (2012:54) explain interpretive worldview as the *verstehen* (understanding) of the “everyday lived experience of people in specific cultural settings”. According to De Vos et al (2012:8) it is also referred to as the phenomenological approach, purely because the aim thereof is to understand people. Bachman and Schutt (2014:67) refer to the interpretive worldview as a philosophy because researchers do not want to determine how reality works, but are more interested to *verstehen* the meaning that people attach to reality.

A phenomenological (interpretive) approach to research implies that the researcher needs to provide insight into the way that people experience the phenomena they encounter. The focus of this kind of research is therefore people (human) driven and not systems, aggregates and trends (Denscombe, 2007:77; Nieuwenhuis, 2012b:60).

This worldview assisted the researcher to “see the things through the eyes of others” (Denscombe, 2007:78) by means of interaction (Henning, Van Rensburg & Smit, 2011:20). The interaction falls within the qualitative scope of this study; research participants were interviewed to assist the researcher in understanding the

phenomena under discussion, and as stated by Denscombe (2007:79), to literally “make sense of their personal experiences” (vide section 1.7.3.3).

### **1.6.3 Constructivist worldview**

Although participants are generally considered passive partners in the data-gathering process of a research study, constructivism propagates the absolute opposite, because participants are regarded as partners actively involved in the study (De Vos et al, 2012:7). The researcher relied a great deal on the views of the participants interviewed concerning the situation (problem) being studied (Creswell, 2009:8), which is typical of a constructivist dimension. The researcher used open-ended questions (Creswell, 2009:8), which resort within the scope of this study to inductively obtain information from the participants to better understand the environment they are functioning in.

The researcher furthermore argues that this study falls within the constructivist paradigm because he used his own experiences as a veteran to visit the participants in their setting to gather the required information on a personal level.

### **1.6.4 The pragmatic worldview**

Creswell (2009:10) posits pragmatism as a “worldview [that] arises out of actions, situations, and consequences rather than antecedent conditions”, which relates to postpositivism (vide section 1.6.1). Denscombe (2007:116) opines that pragmatism forms the philosophical “partner” of the mixed-methods research approach. For a discussion on this approach, refer to section 1.7.3. Instead of focusing primarily on methods, the researcher accentuates the research problem being studied and opts to use all available pluralistic approaches to understand the problem (Creswell, 2009:10).

Creswell (2009:10-11) summarises the pragmatic basis for research as:

- The use of both qualitative and quantitative methods, rather than one system of philosophy and reality.

- The freedom of an individual researcher to choose his methods, techniques and procedures to best suit his needs.
- The use of many approaches to collect and analyse data.
- The use of qualitative and quantitative data to provide the best possible understanding of a problem.

Whereas the preceding section focused on the worldviews (or better known as approaches), the next section will enlighten the reader on the design and methodology of the study.

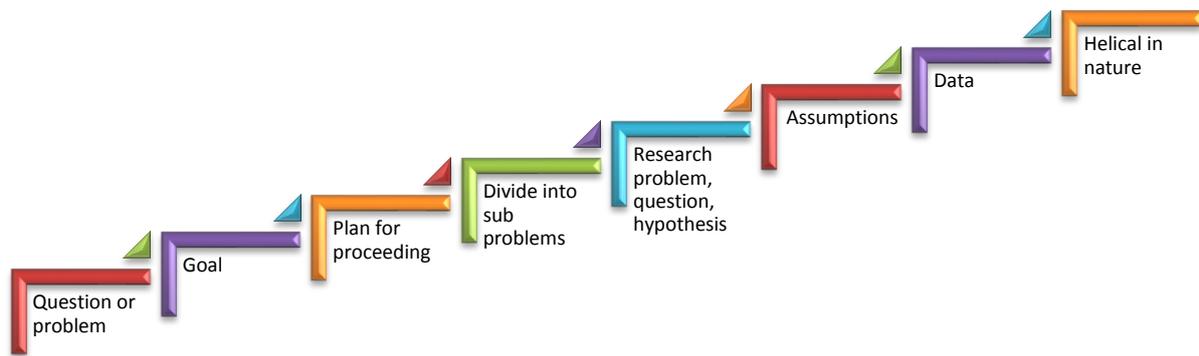
## 1.7 RESEARCH DESIGN AND METHODOLOGY

Babbie (2010:91) explains science as an initiative dedicated to “finding out” something of interest. Kraska and Neuman (2012:4) state that the word research is derived from the old French word *recerchier*, which means “an intense search for knowledge”. Williams (2007:65) explains research as the actual process of collecting, analysing and interpreting data to understand a phenomenon. Although research studies vary in complexity and duration, research consists of the following eight distinct characteristics (Leedy & Ormrod, 2010:2-3):

1. Research originates with a question or problem.
2. Research requires clear articulation of a goal.
3. Research requires a specific plan for proceeding.
4. Research usually divides the principle problem into more manageable sub-problems.
5. Research is guided by a specific research problem, question or hypothesis.
6. Research accepts certain critical assumptions.
7. Research requires the collection and interpretation of data in an attempt to resolve the problem that initiated the research.
8. Research is, by its nature, cyclical or, more exactly, helical.

The eight characteristics of research as listed in the aforementioned section are depicted in figure 1.4.

**Figure 1.4: Research characteristics**



Research can be divided into two categories, i.e. basic research and applied research (Neuman, 2011:26-27). An elaborative amplification of these two terms is as follows:

- (i) **Basic research** is also known as pure or academic research with the main purpose to obtain new knowledge in the field of social sciences, with the community as the primary audience (Bachman & Schutt, 2014:342; Hagan, 2012:12; Kumar, 2011:10; Neuman, 2011:26).
- (ii) **Applied research** addresses specific problematic concerns that are generally practical in nature (Goddard & Melville, 2012:3), and which originate from a question about policy, procedural or process deviations that have a direct bearing on the effectiveness of service delivery (Hagan, 2012:12; Neuman, 2011:27; Welman et al, 2012:26). According to Kumar (2011:10), research conducted in social sciences is primarily applied because the research techniques, procedures and methods used are applied to the phenomenon; it also provides an understanding of the phenomenon being studied.

Applied research (also known as evaluation research) has an impact on the future (Bachman & Schutt, 2014:315).

### **1.7.1 Evaluation research**

The term “evaluation” has different meanings to different people in different situations. Kumar (2011:324) defines evaluation research as:

...first and foremost, a process of applying scientific procedures to accumulate reliable and valid evidence in the manner and the extent to which specific activities produce particular effects or outcomes.

Evaluation research is not a data-collection method (survey research), nor is it a component of the research design (sampling) (Bachman & Schutt, 2014:315). Evaluation research is by far the most widely used type of applied research and suits this research study well, as the researcher intends to learn whether policies, procedures and processes applicable to various aspects of road crashes are effective – in other words: “Does it work?” (Neuman, 2011:28).

The combination of qualitative and quantitative elements (mixed methods) adds to effective evaluation research, which contributes positively to greater confidence in the validity of the findings. (Babbie, 2010:376; Hagan, 2012:338-339) (Vide section 1.7.3 concerning mixed methods and 1.9 on the data gathering process). In the next section 1.7.2, the researcher explicates on the design of this research study.

### **1.7.2 Research design**

Where epistemology refers to the science of knowing, research methodology (a subfield of epistemology) endorses the science of finding out (Babbie, 2010:4). Leedy and Ormrod (2010:12) differentiate between the terms “tools” and “methodology”.

- (i) **Tools** are those mechanisms or strategies that a researcher uses to collect, manipulate or interpret data.
- (ii) **Research methodology** refers to those **tools** the researcher will select to carry out the research project.

Leedy and Ormrod (2010:12) identify six general tools of research:

- The library and its resources.
- The computer and its software.
- Measurement techniques.

- Statistics.
- The human mind.
- Language.

For a researcher to “find out”, a research design (also referred to as a blueprint or detailed plan) is required to determine the answers to the research questions or problems (Babbie, 2010:4; Kumar, 2011:94; Mouton, 2001:55). The fact that this study encapsulates criminology and criminal justice, a proper definition for crime and justice research is necessary. Kraska and Neuman (2012:4) define crime and justice research as the collection of social science methods that are applied systematically to generate knowledge about the crime and justice phenomena. Research design consists of three types of research:

- Quantitative research (vide section 1.9.1).
- Qualitative research (vide section 1.9.2).
- Mixed-methods research (vide section 1.7.3) (Creswell, 2009:4; Williams, 2007: 65).

Where quantitative research is about numbers, qualitative research is looking at qualities that cannot be reduced to numerical values (Creswell, 2009:4; Leedy & Ormrod, 2010:94; Neuman, 2011:46). For Creswell (2009:3) the third design, mixed methods, lies in the middle of this continuum because it incorporates elements of both qualitative and quantitative approaches. During the planning phase, the researcher decided that the most adequate manner to answer the research questions (section 1.4) was to mix the paradigms. For a detailed discussion in this regard, refer to sections 1.7.3.3 and 1.7.3.4.

### **1.7.3 Mixed-methods research**

Teddlie and Tashakkori (2006:15) define mixed-methods research as:

...research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and

quantitative approaches or methods in a single study or program of inquiry.

A researcher uses mixed-methods research to obtain knowledge about real-world issues and presents it in an understandable format that is based on pragmatism (vide section 1.6.4). This emphasises the search on finding answers to the research questions (vide section 1.4) rather than the methods used (Ivankova, Creswell & Plano Clark, 2012:268). Kraska and Neuman (2012:330) emphasise that more thorough knowledge about the research question will be obtained when studying a crime and criminal justice phenomena, using mixed methods in crime and justice research. Denscombe (2007:118-120) identifies the following advantages and disadvantages of a mixed-methods approach:

**(i) Advantages**

- a. A more comprehensive or complete explanation of the phenomenon being researched.
- b. There is a clearer link between different methods and the different kinds of data.
- c. It provides sound use of triangulation.
- d. It provides a more practical, problem-driven approach to the research.

**(ii) Disadvantages**

- a. The time frame for research design and data gathering process may extend, which may increase the time and cost of the research study.
- b. The mixed-methods designs that are generally recommended do not allow for emergent research designs.
- c. The underlying philosophy of the mixed-methods approach (pragmatism) is open for misinterpretation.
- d. Findings from different methods might not corroborate one another.

Creswell (2009:207) explains qualitative research as primarily inductive in nature; considering that, the researcher generates themes in the qualitative approach of the study (vide section 1.7.3.2). According to Delpont and De Vos (2012:48), a quantitative

research study will be deductive in nature because the researcher investigates abstract generalisations with the aim of proving these generalisations (vide section 1.7.3.1). Using a mixed-methods approach, the researcher uses a combination of deductive and inductive reasoning, which relates directly to the claim of Neuman (2011:69) that “in practice, most researchers are flexible and tend to use both directions, perhaps at different points in a study”.

The proposed research study will follow a mixed-methods approach, also known as pluralism, mainly because the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, worldviews, concepts or language into a single study (Johnson & Onwuegbuzie, 2004:14-17). A discussion concerning qualitative and quantitative research follows in sections 1.7.3.3 and 1.7.3.4. A researcher may combine qualitative and quantitative research methods different ways, such as:

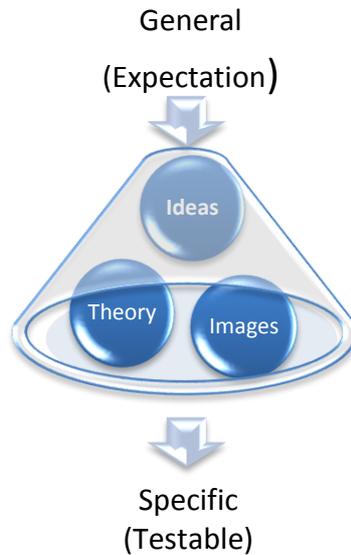
- Exploratory mixed-methods design.
- Explanatory mixed-methods design.
- Triangulation mixed-methods design.
- Embedded mixed-methods design (Delpont & Fouché, 2012:441-443; Ivankova et al, 2012:272-276).

Taking into account the different designs mentioned, the researcher opted for the embedded design as best suited for this study (vide section 1.7.3.5).

### **1.7.3.1 Deductive reasoning**

In deductive research, researchers use ideas, theory or mental images as concepts and draw a logical connection between these concepts toward observable empirical evidence (Neuman, 2011:69). According to Delpont and De Vos (2012:48), deduction does not add new knowledge; it plays an essential role in all “scientific and professional thought”. The researcher illustrates the deductive process in figure 1.5.

**Figure 1.5: The deductive process**

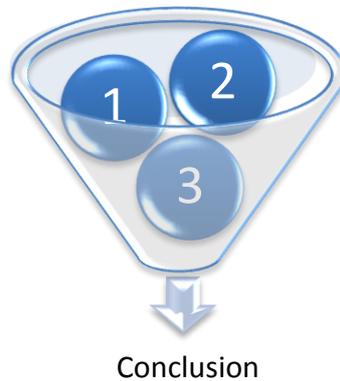


The researcher inductively investigates the quality of the crash data recorded by law enforcement practitioners to prove that the information has a bearing on road safety management as a whole.

### **1.7.3.2 Inductive reasoning**

Kraska and Neuman (2012:65) explain inductive reasoning as a process where the researcher starts with a general topic, which is refined into “more exact theoretical concepts”. Inductive reasoning is the process where the researcher observes participants and then draws conclusions about the population observed (Leedy & Ormrod, 2010:33). Figure 1.6 illustrates inductive reasoning as explained by Leedy and Ormrod (2010:34).

**Figure 1.6: The inductive process**

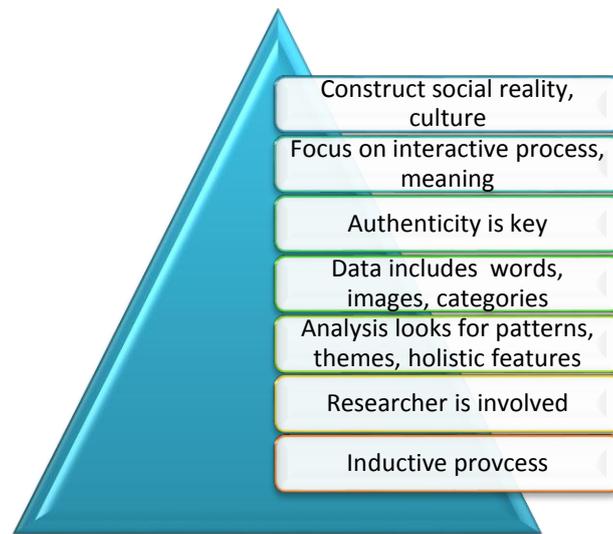


Bachman and Schutt (2014:37) are of the opinion that inductive explanations are more trustworthy when tested with deductive research; the researcher concurs with their view that “every phenomenon can...be explained in some way”. Therefore, the researcher used a reversed philosophy and inductively substantiated explanations pertaining to procedure, data quality and policy obtained from the deductive approach of this study.

### **1.7.3.3 Qualitative approach**

Qualitative research involves techniques including text, language or visually based data (Kraska & Neuman, 2012:10), a process which represents a certain freedom in the quest for depth rather than “quantity of understanding” (Henning et al, 2011:3). Hagan (2012:16) describes it as *verstehen* (understanding) the reality under investigation. In figure 1.7, the researcher illustrates the key aspects of a qualitative approach as summarised by Kraska and Neuman (2012:261).

**Figure 1.7: Key aspects of qualitative approach**



In this approach, the researcher used soft data (Kraska & Neuman, 2012:261) in the form of the spoken word (different kinds of interviews – vide section 1.9.2.4.1) to address the following objectives, namely to:

- Explain the criminological significance of road traffic crash data in relation to effective road safety management (c).
- Evaluate and describe the attendance and recording procedure of road crashes (d).
- Evaluate and describe the supervisor's responsibility in relation to the quality of crash data recorded (e).
- Evaluate and describe the effectiveness of crash statistics accessed by management and/or officials (f). **Participants are specialist practitioners whose experience and expertise uniquely qualify them to identify road safety problems, risk factors and hazardous priority areas significant to policy formulation and implementation, which is fundamental to the development of road safety strategies.**
- Evaluate and explain the current prosecution procedure as part of the CJS (g).

Secondary document sources were primarily used to address objectives (a) and (b), namely to:

- Explore and describe the extent and criminological impact of road traffic crashes on a macro level (a).
- Explore and describe the impact of road traffic crashes on a micro level (b).

In section 1.5, the researcher used these resources to complement the following objectives in the same section, namely to:

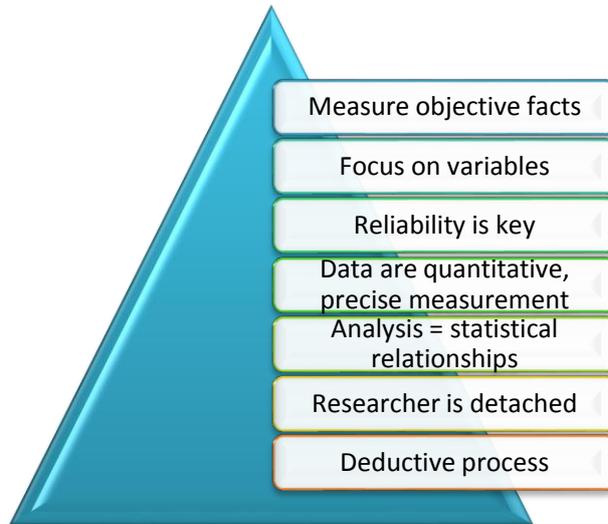
- Explain the criminological significance of road traffic crash data in relation to effective road safety management (c).
- Evaluate and describe the effectiveness of crash statistics accessed by management and/or officials (f).
- Evaluate and explain the current prosecution procedure as part of the CJS (g).

Documentary sources include articles, journals, books and periodicals in electronic and hard copy format. Secondary sources provide second-hand data (Kumar, 2011:139). For a detailed discussion on secondary sources, see section 1.8.2).

#### **1.7.3.4 Quantitative approach**

Quantitative research involves quantities where the researcher's aim is to "establish, confirm, or validate relationships and to develop generalizations that contribute to existing theories" (Leady & Ormrod, 2010:94-95). Neuman (2011:46) explains quantitative data-collection techniques simply as the collection of data in the form of numbers. In figure 1.8, the researcher indicates the key aspects of a quantitative approach to research as summarised by Kraska and Neuman (2012:261).

**Figure 1.8: Key aspects of quantitative approach**

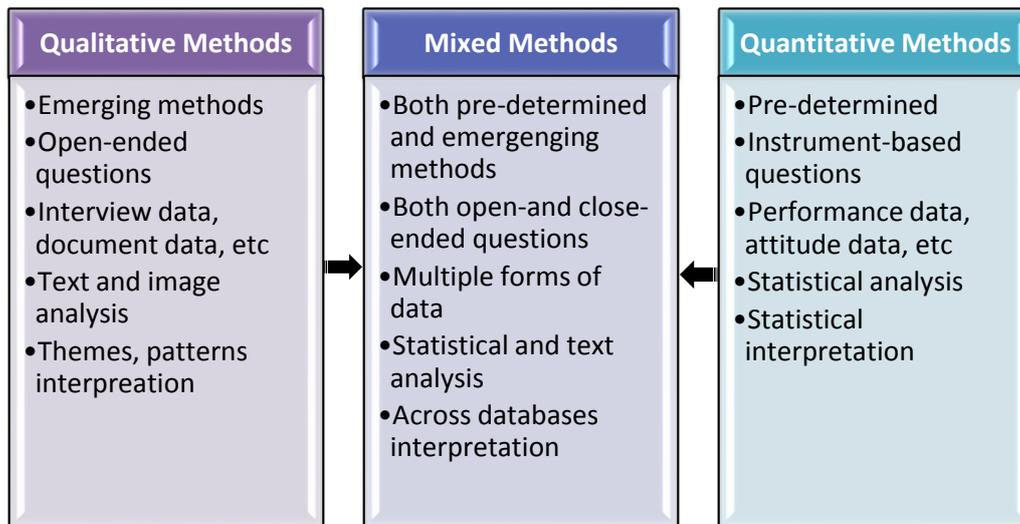


The researcher applied non-reactive research using existing statistics as secondary data source (Neuman, 2011:49). According to Kraska and Neuman (2012:261), the secondary data source consists of previously recorded AR Forms, which are used to measure the hard data in numerical (numbers) format. The following objectives (d and e) indicated in section 1.5, were addressed, namely to:

- Evaluate and describe the attendance and recording procedure of road crashes (d).
- Evaluate and describe the supervisor’s responsibility in relation to the quality of crash data recorded (e).

See section 1.9.2.4 for a detailed discussion on qualitative data-collection methods. Table 1.2 provides a succinct of qualitative, quantitative and mixed methods as discussed in sections 1.7.3, 1.7.3.3 and 1.7.3.4 (Creswell, 2009:15).

**Table 1.2: Succinct of qualitative, quantitative and mixed methods**



### 1.7.3.5 Embedded design

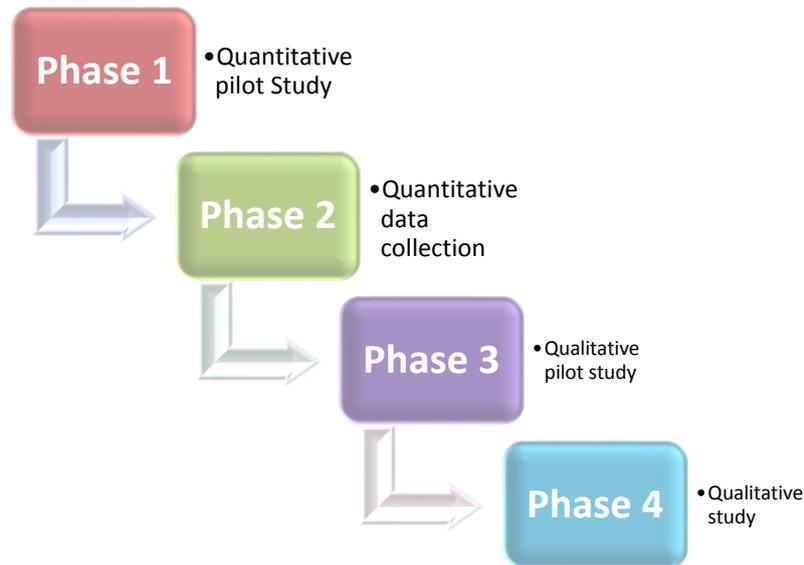
In terms of the embedded design in mixed-methods research, the primary method of data collection is either qualitative or quantitative (Bachman & Schutt, 2014:353), which according to Ivankova et al (2012:276) and Creswell (2009:214) is useful as the researcher is able to use additional questions to obtain answers from the data of the other method. The embedded design is attractive to researchers because of the following reasons (Creswell, 2009:215; Delport & Fouché, 2012:443; Ivankova et al, 2012:276):

- Both types of data can be collected simultaneously (concurrently), during a single data-gathering phase.
- The researcher gains perspectives from the different types of data or the different levels within the study.
- The study is based on a well-known and established design.
- It provides a study with the advantages of both quantitative and qualitative data.

The researcher has opted to collect the data sequentially in four phases. Figure 1.9 depicts a graphical illustration of the four phases. Although the entire data gathering process consists of four phases, the actual data collection was conducted in phases 2 and 4. The researcher followed a sequential approach because certain uncertainties

and questions emanated from the primary quantitative data-gathering process that was addressed in the subsequent qualitative data-gathering process.

**Figure 1.9: Phases of data-gathering process**



## 1.8 PRIMARY AND SECONDARY DATA

Kumar (2011:138) identifies two major approaches to gathering information about a situation, person, problem or phenomenon, which were used in this study:

- Primary data.
- Secondary data.

### 1.8.1 Primary data

As opposed to secondary data, primary data will refer to the collection of data obtained first-hand by the researcher (Kumar, 2011:163; Welman et al, 2012:149). According to Neuman (2011:479-479), primary data may also be obtained from sources such as letters, diaries, newspapers, movies, novels, and so forth of those who lived in the past and have “survived the present”, which according to Hagan (1997:228) refers to raw data that were not subjected to analysis or interpretation. In this study, the researcher

used both telephone and personal interviews where participants were asked questions about the problem under investigation.

### 1.8.2 Secondary data

Bachman and Schutt (2014:285) are of the opinion that secondary data analysis is not a new phenomenon, but has been in existence since the 17<sup>th</sup> century. Secondary data will refer to the statistical analysis of survey data collected by someone other than the researcher and compiled for other purposes (Hagan, 2012:240; Neuman, 2011:374). Secondary data sources include surveys, official statistics, official records and other historical documents (Bachman & Schutt, 2014:285; Kumar, 2011:163). Maxfield and Babbie (2008:347) emphasise that although the data are collected by others, current researchers use the data to “address new research questions”, as is the case with the current study.

Researchers use secondary data sources to collect data in both quantitative and qualitative studies (Kumar, 2011:163). According to Kumar (2011:164) researchers using secondary sources may encounter the following problems:

- **Validity and reliability:** the researcher should be wary as information from source to source varies markedly. Information obtained from a census, for example, will be more reliable than that obtained from a personal diary.
- **Personal bias:** writers of personal diaries and newspapers, and so forth will be less objective in research reports.
- **Availability of data:** novice researchers should not assume availability of data. It is strongly recommended that they determine availability prior to the start of the study.
- **Format:** novice researchers should first determine whether data are available in the required format prior to the start of the study.

Maxfield and Babbie (2008:347) identify the following advantages and disadvantages of secondary sources:

**(i) Advantages**

- It is more cost effective and faster than collecting original data.
- The researcher may benefit from the work of topflight professionals and esteemed academics.

**(ii) Disadvantages**

- Validity may be a problem, because the researcher has no assurance that the data will be appropriate for the study under investigation.
- Secondary data are not always useful for evaluation studies. This not applicable in this study; the researcher examines the secondary data recorded by law enforcement practitioners to determine the quality of the recorded data to ascertain cause and effect.

The researcher utilised AR Forms as quantitative data-collection method. This is in line with the opinion of Bachman and Schutt (2014:284) that “if a researcher goes to a police department and personally compiles information from police reports to examine a research question, she is still engaging in secondary data analysis because police records were originally collected prior to her own research” (vide section 1.9.1)

**1.9 DATA-GATHERING PROCESS**

Prior to the collection of data, it was imperative to obtain the approval from the Acting Chief of Police (COP), Ekurhuleni Metropolitan Police Department (EMPD), Mr Isaac Mapiyeye. The researcher required access to the premises of the Accident Bureau of the southern region of the EMPD. The quantitative part of the study involves completed AR Forms, which contain sensitive personal information of people involved in crashes. The researcher had to assure the COP that no such sensitive information would be utilised for any personal use and/or abuse. See attached the following applicable documentation.

- Annexure A: Approval from COP I Mapiyeye

Data are empirical evidence or information gathered by the researcher (Neuman, 2007:7) to address the questions asked in the study (Creswell & Plano Clark, 2011:171). According to Creswell and Plano Clark (2011:171) the gathering of data is more than simply collecting data; it involves components such as “sampling, gaining permissions, collecting data, recording the data, and administering the data collection”.

Maxfield and Babbie (2008:211) are of the opinion that the value of any data depends on the manner in which it is collected. Maxfield and Babbie (2001:211) point out that there are three basic ways of collecting data, especially in criminal justice research:

- Asking questions (surveys and interviews).
- Making observations (no verbal interaction, experiments, and so forth).
- Examining written records (records, journals, books, and so forth)

In following a mixed-methods approach (vide section 1.7.3), the researcher collected data from both a quantitative and qualitative perspective. This section will address the unit of analysis used by the researcher; sampling and its population; the instrument used to gather the information; the necessity of a pilot study; the manner in which the data were interpreted and analysed; as well as aspects surrounding validity and reliability.

### **1.9.1 Quantitative data-gathering process**

In order for the researcher to address the question whether the quality of recorded crash data will address the road crash problem, pre-recorded AR Forms were surveyed in phase 2 of this study (vide section 1.7.3.5). Road crash data are the basis of all road safety activity, which is essential for road safety management. The analysed data are crucial for traffic law enforcement (prosecution), as it could play an important role in reducing road crashes (The World Bank, 2014).

#### **1.9.1.1 Unit of analysis**

Fouché and De Vos (2012:93) draw a clear distinction between the unit of analysis, which refers to “the element about which data are collected and inferences made”,

and the “source from which data are collected”. The social world according to Neuman (2011:68) comprises many units, which include individuals, people, groups, organisations, movements, institutions, countries, and so forth.

Fouché and De Vos (2012:93) are clear in describing the unit of analysis as “people or things whose characteristics social researchers observe, describe and explain”. For Maxfield and Babbie (2008:90) it is important that the researcher will identify the unit of analysis, which occurs almost automatically at the problem identification stage (Fouché & De Vos, 2012:93).

The unit of analysis could also be a written document (Neuman, 2011:244). In this quantitative data-gathering process of the study, the unit of analysis comprised AR Forms that had been completed either by law enforcement practitioners or the driver involved in the crash (vide 1.9.1.2.2 & 1.9.1.2.3). The sample drawn from the large collection of cases (units) is known as sampling elements (Neuman, 2011:244) (vide section 1.9.2.1 for the qualitative data-gathering process).

### **1.9.1.2 Sampling**

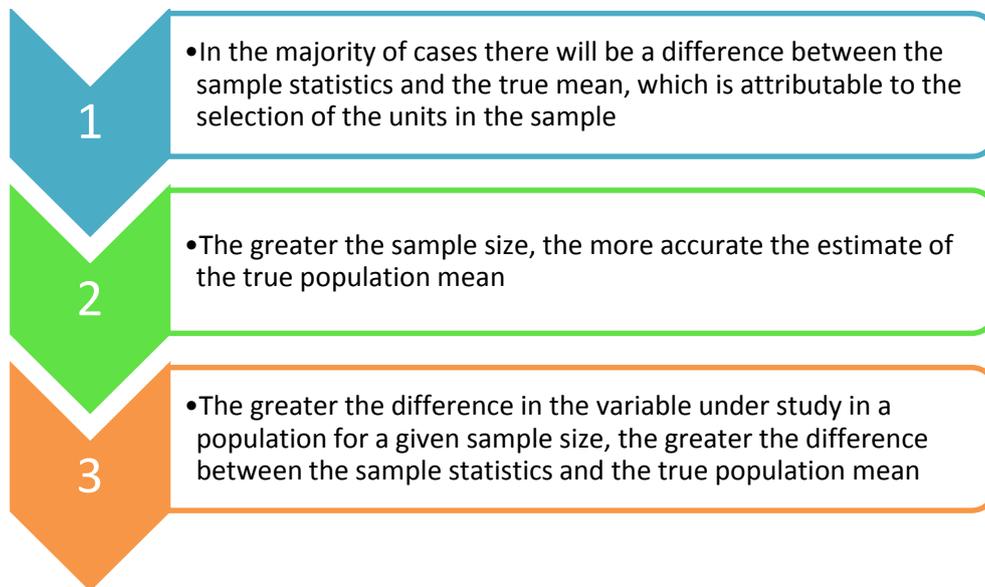
The concepts “sampling” and “population” do not function independently of one another, as Strydom (2012b:222) emphasises that the term sample “always implies the simultaneous existence of a population or universe of which the sample is a smaller section, or a set of individuals selected from a population”.

According to Kumar (2011:193) sampling refers to the process through which the researcher selects a few (a sample) from a bigger group (the population) to predict the prevalence of an “unknown piece of information...regarding the bigger group”. Sampling, on the one hand implies a saving of time and resources, while on the other hand it compromises accuracy (Kumar, 2011:194).

Neuman (2011:244) sees the population as the “large collection”, whilst Welman et al (2012:53) argue that the population covers the total collection of all the units of analysis that the researcher uses in his endeavours to reach certain conclusions.

There are three basic principles (vide figure 1.10), which the researcher should keep in mind when selecting a sample (Kumar 2011:195-197):

**Figure 1.10: The three principles of sampling**



The researcher opted to use the systematic sampling technique as quantitative data-collection method for this study (vide section 1.9.1.2.1).

#### **1.9.1.2.1 Probability sampling**

Sampling methods consist of two major classes – probability sampling methods and non-probability sampling methods (Maree & Pietersen, 2012:172). For the quantitative section of this study, the researcher used probability sampling. Maree and Pietersen (2012:172) refer to probability sampling as a theory that is used to “accurately generalise to the population”. Neuman (2011: 244) describes probability sampling as the “golden standard” when the researcher wants to create a representative sample. This means that each element of the population has an equal probability of being selected (Durrheim & Painter 1999:135; Hagan, 2012:125; Strydom, 2012b:226). No extrapolation to other areas outside the jurisdiction of the Ekurhuleni Metropolitan Municipality (vide 1.10) and populations can be inferred. Probability sampling consists of the following categories:

- Simple random sampling.
- Systematic sampling.
- Stratified random sampling.
- Cluster sampling (Hagan, 2012:124; Maree & Pietersen, 2012:172; Maxfield & Babbie, 2008:226-229).
- Panel sampling (Strydom, 2012b:231).

The researcher used the systematic sampling technique, as it is the best-suited data-collection method for this study.

#### **1.9.1.2.1.1 Systematic sampling**

For the quantitative element of the research study, the researcher applied the systematic-sampling method. According to Kumar (2011:208), systematic sampling also refers to a mixed-sampling design, because it consists of the characteristics of the random and non-random sampling designs.

Maree and Pietersen (2012:175) explain that systematic sampling is practicable, especially in cases where the population size is unknown and “the population elements arrive at a certain location over time”. Although the researcher is unable to calculate the sampling interval in the usual way, the researcher may be sensitised as to the number of elements over the given period, and then calculate the sampling interval in order to work with a specific sample size (Maree & Pietersen, 2012:175; Strydom, 2012b:230).

#### **1.9.1.2.2 Sampling frame**

The researcher selects the starting point at random to introduce randomness in the procedure (Maree & Pietersen, 2012:174). The sampling elements used in this study are recorded AR Forms (vide section 1.8.2 for a discussion on the secondary nature of the sampling elements). A sampling element is the name attached to each case or unit, which the researcher uses (Neuman, 2011:244).

The process followed was in line with the following procedure as identified by Maree and Pietersen (2012:174-175):

1. Calculate the sampling interval  $k$  as the nearest integer to the ratio  $N/n$ .
2. Get a random integer number between 0 and  $k$ , which is called  $s$ .
3. The sample therefore consists of the units  $s, s+2k, s+3k, \dots, s+(n-1)k$  in the sample frame.

The cases (completed AR Forms) that form part of the **target population** were filed per annum, according to month. Cases were filed according to day and not numerical sequence because the different authorities utilise different unique numbering systems. Although the researcher was not able to determine the exact population size (vide 4.2), an anonymous telephone interview (Roets, H. 2012) revealed that there are approximately 1 300 reported crashes per month for the southern area of the Ekurhuleni Metropolitan Municipality (EMM) (vide section 1.10 for the geographical demarcation of the proposed study). This figure provided the researcher with an opportunity to perform the necessary calculations to determine what sampling interval to use. The researcher calculated the sampling interval as follows:

$$\begin{aligned} 1. \quad k &= 1\,300/30^* \\ &= 43 \end{aligned}$$

\*30 represents the days in a month

During a pilot study conducted (vide section 1.9.1.3.1.1) the researcher determined that it takes approximately five minutes to capture the required information per AR Form without any distractions. Based on this premise, the researcher collected the data at an average of eight forms per hour. For the two-week period, the researcher recorded the data of approximately 64 cases per day.

Data collection started at number one and every subsequent 43<sup>rd</sup> element thereafter (vide section 1.9.1.2.3 for an explication of the research period). The researcher collected data from the AR Forms at a ratio of 4.92 per cent per month, resulting in a

sample of approximately 64 per month (1 300 x 4.92%) [Vide 4.2]. The formula used to determine how the researcher obtained the 4.92 per cent, is:

- $64/1\ 300 \times 100 = 4.92\%$

The correctness of the formula was verified using the following expression:

- $64/0.0942 = 1\ 300$

(Vide section 1.9.2.2 for qualitative sampling of the study).

### **1.9.1.2.3 Research period (time frame)**

The collection of the quantitative data was interpreted over a 12-month period, dating from 01 August 2012 to 31 August 2013. At the time of data gathering, the research period provided the most recent data available. The data gathering occurred over a two-week period, from 21 October 2013 to 01 November 2013.

Aspects, which influenced the research period, are explained in section 1.11.2.

### **1.9.1.3 Data collection**

The data collected in the quantitative phase of this study, resort under the category secondary data, primarily due to the nature of the cases used (vide section 1.8.2). The cases studied were recorded AR Forms. The researcher had to deviate from the generally used questionnaire and compiled an appropriate information schedule for the main investigation (vide section 1.9.2.3 for qualitative data collection).

#### **1.9.1.3.1 Quantitative information data schedule**

Secondary analysis refers to the empirical exercise of data that had already been collected (Strydom & Delpont, 2012b:383) and which researchers then use to address concerns in criminology and criminal justice (Hagan (2012:243). The actual recording of the data on the AR Forms was thus not the responsibility of the researcher, hence

the dataset (schedule) developed identified new variables to be investigated. Strydom and Delport (2012b:385) state that a critical analysis of secondary data is necessary; that being one of the reasons why the researcher is conducting this study – to critically analyse data that had been recorded on the AR Forms in order to determine the standard of quality (vide section 1.5).

According to Delport and Fouché (2012:447), quantitative researchers use various methods to collect data, which include measurement instruments, schedules, checklists, and so forth. The researcher compiled an information schedule as a data-collecting technique to record the data in a structured format to determine the quality of the data collected and the effect thereof (vide section 1.5). This type of data-collection method closely resembles a structured observation schedule. Delport and Roestenburg (2012:182) explain that structured observation requires a numerical scale (vide section 1.9.1.4.1) where the elements (AR Forms) are observed and the variables rated by using the schedule. For this study, the schedule used refers to an information schedule with the elements evaluated, rather than observed. The variables studied were rated according to a 5-point scale (vide section 1.9.1.4.1), which is according to Delport and Roestenburg (2012:184) also known as magnitude recording.

AR Forms were developed to provide extensive scientific evidence, which is required to implement *ex ante* interventions. Prior to the development of the information schedule, the researcher consulted a senior official from the Accident Bureau in an anonymous telephone interview (Roets, H. 2013) to ascertain what criteria are deemed important and **MUST** be recorded by law enforcement practitioners on the AR Form. Based on the information obtained from the interview, the researcher used the identified variables as well as newly created variables to compile the information schedule. The identified variables were codified and a code list developed to assist the researcher during the data-interpretation phase. Variables on the information schedule were categorised under numerous sections:

- Geographics.
- Demographics.
- Parties involved.
- Vehicle information.

- Conditions and visibility.
- Road surface.
- Crash information.
- Administrative information.
- Quality (vide 4.3.8).
- Mismatched information.

Each AR Form as identified in the sampling frame was studied by the researcher and the relevant elements allocated a subjective rating (vide section 1.9.1.4.1).

Prior to the collection of the data during the main investigation, the researcher collected and tested a sample of data in a pilot study (vide section 1.9.1.3.1.1). All flaws and improvements identified during this phase were incorporated into the final information schedule that was used during the data-gathering phase.

#### **1.9.1.3.1.1 Pilot study**

A pilot study is seen as the “field testing” of the instrument prior to the researcher using the final instrument in the actual study (Strydom, 2012c:240; Welman et al, 2012:148). Therefore, according to Strydom (2012c:240), a researcher conducts a pilot study with the intention to contribute to an improved main inquiry.

Strydom (2012c:240-241) is of the opinion that the researcher should select a few cases at random and expose them to the pilot study. Although it is of value to test certain sections of the instrument, it will be more advantageous to test the total instrument with a correctly selected “small sample from the cases” that will be subjected to the population of the main investigation (Strydom, 2012c:241).

The researcher used the same sampling frame (vide section 1.9.1.3.2) to determine the sampling interval. Data collection started with case number five during the pilot study, which differs from that of the main investigation. A sample of 20 cases was collected and numerous shortcomings were identified on the instrument. The researcher determined certain problem areas concerning the coding of the variables,

as certain responses were not catered for. These deficiencies were addressed on the data collection instrument (vide 1.9.1.3).

#### **1.9.1.3.2 Documentary study**

According to Strydom and Delport (2012b:379) the use of official documents (secondary documents) may from time to time be problematic due to the sensitive and confidential nature thereof, and for exactly that reason the researcher obtained approval to perform the necessary data collection (vide section 1.9) (vide Annexure A).

For the quantitative phase of the study, the researcher used official documents (AR Forms). Henning et al (2011:99) is of the opinion that the collection of documents is often neglected, and if it could provide valuable information in a format that relates to the study, it would definitely be of value to the researcher studying the problem.

#### **1.9.1.4 Data analysis and interpretation**

Quantitative data analysis is the process where the researcher uses different techniques to convert the data to a numerical format that is subjected to statistical analysis (Fouché & Bartley, 2012:249). Analysis, according to Fouché and Bartley (2012:249), provides data in an “intelligible and interpretable” format to enable the researcher to study relationships and to draw conclusions of the problem investigated.

Data analysis, from a quantitative perspective, does not provide the answers to the research questions; answers are provided through the interpretation of the data and the results (Fouché & Bartley, 2012:249). Therefore, to interpret means to explain and to find meaning (Fouché & Bartley, 2012:249).

##### **1.9.1.4.1 Quantitative data**

The quantitative data collected, as explained in section 1.9.1.3, must be coded i.e. raw data must be systematically reorganised into a format that is machine readable (Neuman 2011:510). In this study the coding procedure started with the compiling of

the information schedule as a data-collection method. The researcher intended to use the summated rating scale, which is also known as the Likert Scale (Kumar 2011:170). The Likert scale is widely used and commonly applied in survey research (Neuman 2011:226).

For Maree and Pietersen (2012:167) the Likert scale is a convenient method to measure a construct, and it provides an ordinal measure of a respondent's attitude. The reason why Likert scale measures are at ordinal level of measurement is that responses indicate a ranking only (Neuman 2011:162). The strength of the Likert scale lies in its simplicity and ease of use (Neuman 2011:162).

An electronic software package was used to capture and interpret the raw data. The data were presented in a format that is understandable to the reader. Using tables and graphs, the researcher used Microsoft Excel® 2013 (15.0.4649.1000) that forms part of the Microsoft Office Professional Plus 2013 package to obtain descriptive statistics for inferential analysis. Once analysed, the researcher was able to draw inferences from the sample of the population. Bullard (2006:35) explains that inferential statistics mean the ability to draw conclusions from the data.

#### **1.9.1.5 Reliability and validity: quantitative data-collection method**

##### **1.9.1.5.1 Reliability**

Golafshani (2003:598) defines reliability as "...the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable." Therefore, should the same variable be measured under the same conditions, a reliable measurement procedure will produce identical (or nearly identical) measurements. (Delport & Roestenburg, 2012:177; Golafshani, 2003:598; Pietersen & Maree, 2012:215). According to Golafshani (2003:587), reliability implies that for a measure to be reliable it should demonstrate consistency and repeatability.

According to Delpont and Roestenburg (2012:178), reliability is not as such concerned with *what* is being measured, but rather by *how well* it is being measured. Although valid results are not guaranteed by high reliability, there can be no valid results without reliability, meaning that an instrument can be reliable but not valid, whereas the instrument cannot be valid without first being reliable (Delpont & Roestenburg, 2012:178; Pietersen & Maree, 2012:215). The instrument of this study, i.e. the information schedule that will be used as the quantitative data-collection method, will be subjected to internal reliability.

Because it is rare to have perfect reliability, Delpont and Roestenburg (2012:177) listed numerous procedures to increase reliability of which the following are, according to the researcher, relevant to this study:

- Eliminate items that are unclear: this was done in the pilot study (vide section 1.9.1.3.1.1).
- Standardise instructions: this was done through the coding of the information schedule (vide section 1.9.1.3.1).
- Maintain consistent scoring procedures: this was confirmed with a senior official from the Accident Bureau (vide sections below).
- Use pilot studies (vide section 1.9.1.3.1.1).

Pietersen and Maree (2012:216) indicate that internal reliability is also known as internal consistency. With internal consistency, a number of items are formulated to measure a certain construct whereupon there should be a high degree of similarity among them (Pietersen & Maree, 2012:215).

Prior to the development of the information schedule, the researcher consulted a senior official from the Accident Bureau in an anonymous telephone interview (Roets, H. 2013) to ascertain what criteria are deemed important and **MUST** be recorded by law enforcement practitioners on the AR Forms. Based on the information obtained from the interview, the researcher used the identified variables as well as newly created variables to compile the information schedule and discuss the instrument prior to the start of data collection.

The researcher is of the opinion that the instrument used to collect the data contributed to the reliability of the information schedule.

#### **1.9.1.5.2 Validity**

According to Neuman (2011:208), it is impossible to have perfect validity; it is an idea that helps to “establish the truthfulness, credibility, or believability of findings”. The main idea of validity is truthfulness and by using the information data-collection schedule specifically compiled for this study, the researcher succeeded in analysing the “fit” between the social world and reality (Neuman, 2011:208), and ensured that it measures what it is supposed to measure (Pietersen & Maree, 2012:216).

A combination of both face and content validity is applicable to this study. To determine face validity, the researcher thoroughly discussed the compilation of the information schedule with an expert in the field (Anon, 2013b) to ensure a high degree of face validity (Pietersen & Maree, 2012:217).

To ensure the content validity of the instrument, the researcher presented the final version of the information schedule to an expert in the field prior to the start of the data collection process (Pietersen & Maree, 2012:217).

#### **1.9.2 Qualitative data-gathering process**

In phase 4 of this study (vide section 1.7.3.5) the researcher used interviews to address certain questions that emanated from the quantitative section of this study (vide section 1.9.1).

For the researcher to also address questions pertaining to attendance and recording procedures of road crashes, prosecution procedures and the current state of relevant policy documents, and to determine the effect thereof on the CJS, numerous industry role players were interviewed within the confines of qualitative academic research and accompanying ethics.

### **1.9.2.1 Unit of analysis**

According to Fouché and De Vos (2012:93) the unit of analysis can be described as “people or things whose characteristics social researchers observe, describe and explain”. For Henning et al (2011:32-71) the unit of analysis is used to direct the boundaries within which the researcher hopes to hear what people have to say about what they do.

Criminal justice research consists of a great deal of different units of analysis, ranging from individuals to groups (Maxfield & Babbie, 2008:91). Therefore, it is important that researchers identify the unit of analysis (Maxfield & Babbie, 2008:93).

In this study, the unit of analysis comprised individuals who are experts in the field of study (vide 1.9.2.2.1.1). Strydom and Delpont (2012b:390) explain that sampling is also used in qualitative research, but it is not as structured and strictly applied as in the case of quantitative research.

### **1.9.2.2 Sampling**

The qualitative nature of data collection for this phase of the research study is interviews. During the interviewing of participants, the emphasis will be on individual, detailed and in-depth information where the qualitative rather than the quantitative elements of the information are important (Strydom & Delpont, 2012c:391).

According to Strydom and Delpont (2012c:391) there are no rules applicable to sample size because sampling is not representative, it is limited and based on saturation. The researcher used the expert sampling technique as qualitative data-collection method for this study.

#### **1.9.2.2.1 Non-probability sampling**

Generally, qualitative research studies are subjected to non-probability sampling techniques because the units in a sampling frame do not have an equal chance of being selected (Strydom & Delpont, 2012c:391). The number of participants are not

crucial, but will be determined by whether the researcher has reached a point of saturation during the collecting of information (Greeff, 2012:350; Kumar, 2011:206). Saturation implies that a point is reached where researchers hear the same information repeatedly and no new information is being recorded (Greeff, 2012:350).

Non-probability sampling consists of the following five commonly used sampling techniques:

- Quota sampling.
- Accidental sampling.
- Purposive (judgemental) sampling.
- Expert sampling.
- Snowball sampling (Kumar, 2011:206).

The researcher used the expert sampling technique for the qualitative phase of this study.

#### **1.9.2.2.1.1 Expert sampling**

Expert sampling is primarily used in qualitative research studies. To be classified as expert sampling, the respondents must be known experts in the field of study that is of interest to you (Kumar, 2011:207).

The researcher identified role players with known expertise in the field of road traffic crashes, which is the area of interest for the researcher. Participants selected to participate in the study include:

- Non-ranking metropolitan police officers.
- Senior ranking metropolitan police officers and a senior commissioned officer from the SAPS.
- A member from the public.
- A person from the private industry within the field of law enforcement.
- Persons from the insurance industry.

Interviews were conducted on an individual basis as well as in group context. Information was collected after the consent of the participants was obtained.

#### **1.9.2.2 Delimitation of research period (time frame)**

The collection of qualitative data was conducted by means of interviews as data-collection method (vide section 1.9.2.3.1). The relevant interviews were scheduled according to successful appointments with the relevant role players. The researcher was not in a position to anticipate all the obstacles, which may have had an adverse effect on the study. Any out of the ordinary or unforeseen circumstances were dealt with accordingly.

#### **1.9.2.3 Data collection**

Qualitative data collection takes the form of words (Neuman, 2011:46); therefore non-numerical information is collected (Maxfield & Babbie, 2008:23) that represents flexibility and freedom in the way that the researcher structures the study (Kumar, 2011:159). According to Maxfield and Babbie (2008:26) qualitative data provide more “richness of meaning than do quantified data”.

Kumar (2011:159) is of the opinion that the collection of quantitative data is more methods-based, whereas on the contrary, Corbin and Strauss (2008:27) indicate that in qualitative research a researcher has many methods to his availability when collecting data, such as interviews, observations, videos, documents, and so forth. For the qualitative nature of this study, the researcher used interviews as the primary mode of data collection.

##### **1.9.2.3.1 Interviews**

Greeff (2012:342) defines qualitative interviews as “attempts to understand the world from the participants’ point of view, to unfold the meaning of people’s experiences, [and] to uncover their lived world prior to scientific explanations”. An interview is a social relationship where the participant and the researcher exchange information (Greeff, 2012:342). Researchers conduct interviews as part of an interactive process

because they are interested in the stories of other people. Stories are after all a way of knowing (Greeff, 2012:342).

There are many pitfalls, which may have a negative influence on the interviewing process. Greeff (2012:346) identifies numerous pitfalls, of which the following are important for the researcher:

- Interruptions.
- Stage fright, especially when using recording equipment.
- Being a senior official from a law enforcement background, the researcher should avoid teaching and preaching during interviewing.
- Revealing the researcher's own response.
- Treat confidential information with the relevant level of confidence required.
- Prevent interviewing in an unfamiliar environment (researcher's contribution).

Being familiar with the pitfalls, the researcher endeavoured to encourage a free rein, although always staying in control and promoting a user-friendly environment to obtain the required information.

The researcher used the following interview types as data-collecting methods:

- Telephone interview (1.9.2.3.1.1).
- Unstructured one-on-one interview (1.9.2.3.1.2).
- Semi-structured one-on-one interview (1.9.2.3.1.3).
- Focus group interview (1.9.2.3.1.4).

Participants are specialist practitioners whose experience and expertise uniquely qualify them to identify road safety problems, risk factors and hazardous priority areas significant to policy formulation and implementation, which are fundamental to the development of road safety strategies.

### **1.9.2.3.1.1 Telephone interview**

According to Greeff (2012:355) the considerable increase in the use of telephone interviews across the diverse fields of research, adds substantial value as data-collection method. The time span for telephone interviews is often shorter than in face-to-face interviews; also the conversation can be recorded with less intrusion than during a face-to-face interview (Greeff, 2012:356).

Greeff (2012:356-357) identifies the following advantages and disadvantages of telephone interviews:

#### **(i) Advantages**

1. Cost effectiveness is increased.
2. Travel costs are limited.
3. Participants are more likely to accept this method of data-collection.
4. All questions and answers can be clarified.
5. Physical appearance of both the participant and the researcher has no influence.
6. The researcher is in a better position to take more accurate notes.
7. Personal safety of both the participant and researcher is ensured.

#### **(ii) Disadvantages**

1. Detailed information may lack.
2. The nuances of face-to-face interviews may lack.
3. Finding telephone numbers may be problematic.
4. Participants may feel pressurised by the call.
5. Organising the interviews may be time consuming.
6. The duration of this kind of interview is shorter than face-to-face interviews.
7. Call line identification may indicate a “private number”, resulting in the call being ignored.

The researcher collected information from the following role players using the telephone interview:

- A senior official from the Accident Bureau in the southern region of the EMM. Anonymity was secured and only field notes were recorded. The interview was unstructured and no schedule was used.
- The Managing Director from a consultancy firm (name omitted for ethical reasons) was interviewed. This participant was utilised as she played a pivotal role in the drafting of the NRTA, Act 93 of 1996 (South Africa, 1996b) and applicable updates. The researcher was assured that anonymity was not required and the interview was conducted accordingly. Only field notes were recorded and no interview schedule was utilised.
- A senior manager from an insurance company, the anonymity of which was requested and assured.
- An employee responsible for claims from *Outsurance Insurance Company* was interviewed telephonically. Anonymity of the employee was secured prior to the interview.
- The researcher interviewed a senior official from the Accident Unit of the SAPS. Anonymity was requested and ensured. The interview was recorded with an electronic recording device with the knowledge and acceptance of the participant. The recording was transcribed afterwards.

The researcher used the telephone interview method to obtain information to address questions about attendance and recording procedures of road crashes, prosecution procedures, the current state of relevant policy documents as well as additional information that was obtained during the quantitative data-collection phase.

#### **1.9.2.3.1.2 Unstructured interview**

Unstructured interviews are also known as in-depth interviews (Greeff, 2012:348; Kumar, 2011:160; Welman et al, 2012:166). Researchers use this informal conversation method (Welman et al, 2012:166) to elicit information for a better understanding of the participants' view about the situation (Greeff, 2012:348). The

researcher conducted unstructured interviews with the following participants from the Accident Bureau of the southern region of the EMM:

- A senior official from the Accident Bureau in the southern region of the EMM. Anonymity was secured and proper notes recorded. The interview was unstructured and no schedule was used.
- Crash investigators from the Accident Bureau in the southern region of the EMM. Anonymity was ensured prior to the interview. This interview occurred after conclusion of the focus group interview with the crash investigators. Valuable information applicable to the study was obtained from the remaining investigators after the official interview session ended.
- The Manager, Municipal Courts of the Emfuleni Local Municipal Council. Anonymity was not required and the interview was conducted accordingly. The interview was electronically recorded with permission from the participant and thereafter transcribed.

The researcher used this specific method to obtain information about data management, statistical issues, attendance and recording procedures of road crashes, prosecution issues as well as additional information obtained during the quantitative data-collection phase.

#### **1.9.2.3.1.3 Semi-structured interviews**

Researchers use semi-structured interviews to gain a detailed picture of a particular topic relevant to the study (Greeff, 2012:351). Cohen and Crabtree (2006:1) elucidate that this type of interview provides participants with the necessary freedom to express their views to the extent that they are comfortable with, and it also provides reliable and comparable qualitative data.

The researcher made use of the semi-structured one-on-one interview method to engage with the selected participants to elicit the required information concerning the availability and utilisation of crash data. Greeff (De Vos et al, 2012:296) points out that the researcher should not be *dictated* by the schedule, but should rather be *guided* by it. A major advantage of this method is that the participants can introduce a topic the

researcher had not thought of (Greeff, 2012:352). Because of their positions and experience, the participants interviewed are often in a better position to provide rich information (Huysamen, 1994:176).

Prior to the start of each interview, the researcher read out the Informed Consent Form agreed upon to participate in the research, titled “An assessment of the criminological significance of road crash data within the criminal justice context” (Annexure B) aloud to the participants. The researcher conducted semi-structured interviews with the following participants:

- A follow-up interview with a senior official from the Accident Bureau, southern region of EMM. Anonymity was again assured with the focus on heading four (Procedures) of the informed consent form, that provides information concerning anonymity and the recording of procedures in stating, “the entire interview will be tape-recorded, but no one is to be identified by name during the recording”. A recording of the interview was transcribed after completion thereof. An interview schedule was used as guide by the researcher.
- An interview with a staff member from the Accident Bureau, southern region of EMM. Anonymity was guaranteed emphasising heading four (Procedures) of the informed consent form that provides information concerning anonymity and the recording of procedures in stating, “the entire interview will be tape-recorded, but no one is to be identified by name during the recording”. Although the interview was not recorded electronically, detailed notes were manually recorded by the researcher with the necessary permission.
- An interview with two precinct chief superintendents from the southern region of EMM. Anonymity was guaranteed emphasising heading four (Procedures) of the informed consent form that provides information concerning anonymity and the recording of procedures in stating, “the entire interview will be tape-recorded, but no one is to be identified by name during the recording”. A recording of the interview was transcribed after completion thereof. The researcher used an interview schedule as guide during the interview.
- An interview with a senior official from the Training Academy. Anonymity was again assured with the focus on heading four (Procedures) of the informed consent form that provides information concerning anonymity and the recording

of procedures in stating, “the entire interview will be tape-recorded, but no one is to be identified by name during the recording”. The researcher transcribed a recording of the interview after completion thereof. The researcher used an interview schedule as guide during the interview (vide section 1.9.2.5).

Semi-structured interviews were used to address questions about attendance and recording procedures of road crashes, prosecution procedures, the current state of relevant policy documents as well as additional information that was obtained during the quantitative data-collection phase, such as the quality of information recorded and the effect thereof on the CJS (vide section 1.5).

#### **1.9.2.3.1.4 Focus group interviews**

Greeff (2012:361) describes the focus group interview as “a research technique that collects data through group interaction on a topic determined by the researcher”. Deem (1997:1) points out that data arise from the interaction between the group members, rather than from interaction between the researcher and the group.

Welman et al (2012:203-204) identify the following advantages and disadvantages of focus group interviews.

##### **(i) Advantages**

1. Information is obtained rapidly and at low cost.
2. Uncertainty can be easily clarified.
3. Opinions and experiences about participants are discussed within the group to the extent that consensus about a research problem can be reached.
4. Participants unable to complete questionnaires can be successfully interviewed.
5. Focus group interviews can also be conducted by means of teleconferencing.

##### **(ii) Disadvantages**

1. The only disadvantage identified is the fact that responses from participants may be inhibited due to participants feeling intimidated by the presence of other respondents in the group.

Deem (1997:2) identifies the following pitfalls, which may affect the outcome of the interview.

- Group interaction.
- Participants may steer discussions in directions that are not relevant to the phenomenon being studied.
- Certain participants may dominate the discussion.
- The recruitment of participants may be difficult.
- Some participants may feel threatened (Nieuwenhuis, 2012c:90).
- Negative inputs may be contributed to “punish” the organisation (researcher’s input).

The researcher took cognizance of these pitfalls and endeavoured to encourage a free rein during the interview, however to remain in control and to promote a user-friendly environment in which rich qualitative information could be collected. Taking into account the nature of the participants selected for this study, the aim of using the focus group method was not to replace individual interviewing but to gather the information that would not easily be collectable by means of individual interviews (Welman et al, 2012:201). In focus group interviews, the researcher can obtain rich information of a group of people – the participants – who have experience in common with regard to the phenomenon under discussion (Kumar, 2011:160).

The researcher used the focus group interview for this study to investigate a multitude of perceptions that require multiple viewpoints and responses on a specific topic, in other words to obtain a better understanding how the participants feel or think about the issues under investigation (Greeff, 2012:360).

The researcher interviewed the group of crash investigators from the Eastern Region of the Ekurhuleni Metropolitan Police Department (EMPD) [vide 1.9.2.2.1]. Prior to the start of the interview, the researcher read out The Informed Consent Form agreed

upon to participate in the research, titled “An assessment of the criminological significance of road crash data within the criminal justice context” (Annexure B) aloud to the participants. Heading four (Procedures), which provides information concerning anonymity and the recording of procedures, stating that “the entire interview will be tape-recorded, but no one is to be identified by name during the recording” was emphasised. The researcher used electronic equipment to record the interview, which was transcribed after completion thereof. The researcher used an interview schedule as guide during the interview process (vide section 1.9.2.5).

The purpose of the interview was to obtain information about the experiences, perceptions, understandings and knowledge of the officials specialising in the field of road crashes. Questions pertaining to section 1.5 (c)–(g) were addressed in addition to those obtained from the quantitative data.

The Operational Director in control of the southern region of the EMM approved a second focus group interview with the operational Regional Commanders (Chief Superintendents) who are responsible for the sound functioning of the various precincts. The interview was scheduled for 02 April 2014 directly after their management meeting. After the management meeting, all the chief superintendents, but two, left the room. The researcher noticed serious hostility, especially with remarks such as: “not interested; no time; got other more important things to attend to; need to get a battery for my private vehicle.” The researcher then had to change the data-gathering method (focus group) to a semi-structured interview with the two remaining members (vide section 1.9.2.3.1.3).

#### **1.9.2.4 Case study**

Fouché and Schurink (2012:320) explain that the value of a case study lies within its “ability to draw attention to what can be learned from the single case”. A case study may involve a single individual (unit) with the focus on in-depth understanding of the phenomenon under study (Kumar, 2011:127; Neuman, 2011:42; Welman et al, 2012:193). Creswell (2009:13) refers to case studies as a strategy of inquiry in which the researcher explores in depth a programme, event, activity, process, or one or more individuals. There are a variety of data-collection methods available that allow

researchers to obtain detailed information about the subject being studied (Creswell, 2009:13). According to Neuman (2011:449), the interview conducted in the field is unstructured, non-directive and informal, where the researcher asks questions, listens and records what is said.

The researcher made use of an unstructured interview in the field to obtain the required information (Welman et al, 2012:193-194). Nieuwenhuis (2012c:75) explains a case study as “a systematic inquiry into an event...which aims to describe and explain the phenomenon of interest”.

During an unstructured interview on 16 October 2013 with a senior official from the Accident Bureau of the southern region EMM, a certain problem was identified concerning the obtainment of an Accident Register number from the SAPS in the event of a crash occurring outside the relevant SAPS jurisdiction, and the problematic encounters concerning insurance pay-outs. On 30 October 2013, whilst busy with data collection at the Accident Bureau, a member of the public who was experiencing the exact problem which was addressed in the interview on 16 October 2013, entered the Accident Bureau. The researcher, with the permission of the official in charge of the Accident Bureau, requested an interview with the relevant member of the public (hereinafter the participant). The purpose of the study was explained to the participant and permission requested to conduct an interview. After permission had been obtained, an unstructured interview was conducted; the interview was recorded by means of electronic equipment and transcribed afterwards.

This serves as an authentic case study highlighting the problem at hand, which accentuates Fouché and Schurink’s (2012:320) verdict that the value of a case study is encapsulated in its ability to capture the essence of what can be learned from the particular case.

#### **1.9.2.5 Interview schedule**

An interview schedule, also known as an interview guide, includes a list of topics or themes that have a bearing on the issue under investigation (Welman et al, 2012:166). Each theme involves a question or questions that the researcher reads out to the

participants, of which the responses are recorded (Neuman, 2011:312), either manually or electronically.

In this study, the researcher pre-developed the themes and the accompanying questions for each interview guide that was used during the interviews with each relevant role player (vide section 1.9.2.8).

#### **1.9.2.6 Pilot study**

A pilot study is as important in qualitative research as it is in quantitative research (Strydom & Delpport, 2012c:394). Although the pilot study is relatively informal in qualitative studies, it is important that the characteristics are more or less the same than those in the main investigation (Neuman, 2011:350; Strydom and Delpport, 2012c:394).

The researcher performed a pilot study to focus on specific areas that may have been unclear prior to the testing thereof (Strydom & Delpport, 2012c:395). The pilot study provides the researcher with the opportunity to refine the interview guide to ensure quality interviewing during the main investigation (Strydom & Delpport, 2012c:395). The researcher tested the relevant interview guides with respondents active in the field of criminal justice. All amendments, additions, and uncertainties were implemented and corrected prior to the main investigation.

#### **1.9.2.7 Documentary study**

Nieuwenhuis (2012c:82) explains that the use of documents as data-collection technique is inclusive of all types of written communications that may enlighten the phenomenon being studied. Mogalakwe (2006: 221) is of the opinion that the use of documentary sources enhances information about the phenomenon being studied. The use of documents in a research study poses definite advantages and disadvantages. Strydom and Delpport (2012b:382-383) identify a number of advantages and disadvantages, which the researcher has taken into cognisance.

**(i) Advantages**

1. It is relatively low in cost.
2. Non-reactivity.
3. It is relatively easy to obtain information about confessions.
4. The researcher does not have to make contact with a respondent/s.

**(ii) Disadvantages**

1. Documents may be incomplete.
2. The fact that documents are not intended for research purposes, may lead to bias.
3. The preservation of documents is not always secure.
4. Depending on the type of study, certain documents may not be readily available.
5. Linguistic skills may not always be of an acceptable standard.
6. Formatting of documents may be problematic.
7. It is not always possible to determine the origins of documents.
8. From time to time, the bulk of documents available may be problematic.

From a qualitative perspective, the researcher intends to use legislation in the form of Acts, as well as official documents such as policies to explore the operational responsibility of law enforcers in crash data recording at the scene of a road crash. Another advantage of using official documentation is that these official documents are compiled and maintained on a continuous basis (Strydom & Delpont, 2012b:379).

The researcher will furthermore use documents that fall within the mass media category in order to explore the criminological impact of road crashes on the community. Documents in this category include information that is freely available to the public, and thus to any individual (Strydom & Delpont, 2012b:379). Focus will also be directed at the World Wide Web and the printed mass media such as newspaper articles, magazines, journals, and so forth to obtain relevant information.

### **1.9.2.8 Qualitative data analysis and interpretation**

A researcher conducts a qualitative study for producing results, which are transformed into findings after the analysis of the data collected (Schurink, Fouché & De Vos, 2012:397). Qualitative data analysis is defined as “nonnumerical examination and interpretation of observations, for the purpose of discovering underlying meanings and patterns of relationships” (Schurink et al, 2012:399).

According to Basit (2003:143), data analysis is an extremely difficult but crucial aspect of qualitative research. It is not sufficient to only collect the data, it must also be analysed (Neuman, 2011:507). According to Neuman (2011:510), in qualitative research raw data are organised into conceptual categories and themes or concepts created. Although it is interesting to look at raw data, it (raw data) will not help the reader to understand the social world under scrutiny, and the way the participants view it, unless such data have been systematically analysed to illuminate an existent situation (Basit 2003:144). Though coding and analysis are not synonymous, coding forms a crucial aspect of analysis. Basit (2003:143) sees it as a dynamic, intuitive and creative process of inductive reasoning, thinking and theorising.

In this study, the researcher identified the themes prior to the collecting of the data in the main investigation. The data collected during the interviews (vide section 1.9.2.3) were analysed and interpreted to gain a deeper understanding of what had been studied. In analysing qualitative data, the goal of the researcher is to summarise what was seen, or heard in common words, phrases, themes or patterns, which would assist in understanding and interpreting what is emerging (Nieuwenhuis, 2012a:100). This means that the aim of the researcher is not to measure, but to interpret and to make sense of what is in the data.

The researcher used selective coding to scan through all the data and pre-identified themes searching selectively for additional cases that may illustrate themes not already recorded (Neuman, 2011:514). Data analysis and interpretation are contained in chapter 5, section 5.3.

## **1.9.2.9 Reliability and validity: qualitative data**

### **1.9.2.9.1 Reliability**

According to Golafshani (2003:601), validity and reliability are two factors, which any qualitative researcher should be concerned about when designing a study, analysing results and judging the quality of the study. Babbie (2011:339) is of the opinion that researchers should not fear for errors, as “there is no such thing as research without error”. He states that the “only way to avoid error is to do no research at all”.

Nieuwenhuis (2012c:80) is of the opinion that reliability and validity in qualitative research are interlinked to the extent that the one cannot exist without the other, and therefore it is sufficient to demonstrate validity because reliability is then established.

When referring to “validity and reliability” researchers usually refer to research that is credible and trustworthy (Nieuwenhuis, 2012c:80). According to Creswell and Plano Clark (2011:211) reliability is of minor significance in qualitative research, whilst Neuman (2011:208) is of the opinion that reliability refers to dependability and/or consistency, which together with credibility, applicability and conformability is included in the term trustworthiness (Golafshani 2003:602; Nieuwenhuis, 2012c:80). Trustworthiness forms a parallel to the conventional criteria of inquiry of internal and external validity, reliability and neutrality respectively (Golafshani 2003:602; Nieuwenhuis, 2012c:80).

The researcher did not code the data obtained from the interviews. Themes were pre-determined in line with the objectives of the study (vide section 1.5) and relevant questions formulated for each theme. Data would be scrutinised and any new themes identified, would be interpreted accordingly. This is common practice where the categorisation of data into themes serves to assist the researcher in reducing large quantities of data into manageable categories based on the meaning that the research participants attach thereto (Schurink et al., 2012:410).

### **1.9.2.9.2 Validity**

Validity means truthfulness, which means that researchers are more interested in achieving authenticity. Authenticity in this context means “offering a fair, honest, and balanced account of social life from the viewpoint of the people who live it every day” (Neuman, 2011:214). It is important that the emphasis is directed at capturing the inside view and to provide a detailed account of how the participants understand the problem that the researcher is studying (Neuman, 2011:214).

The researcher used a mixed-methods approach to answer the research question in this study, and by using triangulation of the different methods, authenticity was added to the study, which is described as an alternative to internal validity (Schurink et al, 2012:420). Although traditionalists label external validity as a weakness, Schurink et al (2012:420) make it clear that the theoretical parameters (vide section 1.7.3) of the study counter the traditionalist challenges and in addition, the generalisability of the study is enhanced using triangulation, which is applicable to this study.

To improve the validity of the qualitative nature of the study, the researcher subjected the interview guides to a pilot study where relevant role players active in the field scrutinised the guides. All relevant proposals, amendments and uncertainties were implemented and incorporated in the final product.

## **1.10 GEOGRAPHICAL (SPATIAL) DEMARCATION**

The Ekurhuleni Metropolitan Municipality (EMM) consists of nine previously disestablished local municipalities, which are divided into three regions. See image 1.1 for an illustration of the Ekurhuleni Metropolitan Municipality. This study is limited to the southern region of the EMPD, which consists of Alberton, Boksburg and Germiston. See image 1.1 where the southern region is indicated on the left lower corner of the map.

The quantitative collection of the data was performed at the Accident Bureau, situated in Elsburg. For the qualitative nature of the study, information was collected at the following sites:

- Interviews with a senior official from the Accident Bureau – Elsburg.
- Interview with a senior member of the Accident Bureau staff – Elsburg.
- Focus group interview with the crash investigators – Elsburg.
- Interview emanating from the case study – Elsburg.
- Interview with the operational Chief Superintendents – Vosloorus, Boksburg.
- Interview with a senior official from the Training Academy – Springs.

**Image 1.1: Southern region of the Ekurhuleni Metropolitan Municipality**



(Permission was obtained to use the image - see Annexure C)

## 1.11 LITERATURE REVIEW

The literature review forms an integral part of every researcher’s research process and it provides valuable information to every “operational step” (Kumar, 2011:31). Neuman (2011:124) is of the opinion that the value of a literature study lies therein that it accumulates knowledge and that we learn from what others have already done. According to Fouché and Delport (2012:134) a researcher uses a literature review to

get a clearer understanding of the nature and the meaning of the problem that has been identified. Review of literature is a creative exercise, and not a “mechanical chore”; it is an activity that “calls for judgement and insight on the part of the researcher” (Fouché & Delport, 2012:135). A researcher is often confronted with the dilemma of having to decide when a literature review is completed. Fouché and Delport (2012:135) argue that a researcher has probably reviewed enough literature when “you find that you are already familiar with the references cited in the most recently published articles”.

A literature study is beneficial to a researcher as it assists the researcher in the following ways:

1. It brings clarity and focus to the problem being studied.
2. It improves the research methodology of the researcher.
3. It broadens the knowledge base in the research area of the researcher.
4. It contextualises the findings of the researcher (Kumar, 2011:32).

In this study the researcher embarked on a comprehensive literature study, which was three-fold in purpose:

- To gather relevant data applicable to the study.
- To determine what is already in existence in an endeavour to point out possible inconsistencies or disagreement.
- To solve identified ambiguities.

The researcher conducted an extensive study of the literature applicable to this study. Chapter 2 provides the reader with knowledge about road traffic crashes and the impact thereof on macro and micro levels, and chapter 3 introduces the reader to the operational and legislative variables of road traffic crashes.

## **1.12 RESEARCH ETHICS**

Hagan (2012:45) is of the opinion that criminal justice researchers support the objective of research ethics to enhance the effectiveness of the CJS. According to

Hagan (2012:60) the Code of Research Ethics of the Academy of Criminal Justice Sciences (ACJS) states that criminal justice researchers must take personal responsibility to:

- Avoid procedures that may harm respondents.
- Honour commitments to respondents and respect reciprocity.
- Exercise objectivity and professional integrity in performing and reporting research.
- Protect confidentiality and privacy of respondents.

Throughout this study, the following ethical guidelines would guide the researcher:

### **1.12.1 Voluntary participation**

A key aspect of voluntary participation is not to coerce people into participating in research (Rayner, 2008:1; Trochim, 2002). Strydom (2012a:117) emphasises that participation is at all times voluntary and that no participant should be forced to participate in a project. In this study, the researcher ensured that all participants were properly informed about the study, and that all participants were offered the opportunity to retract at any time, prior to or during the project (vide paragraph 7 of Annexure B).

### **1.12.2 Informed consent**

According to Principle 2.1 of the Human Sciences Research Council (HSRC, [sa]) it is imperative that the researcher clearly briefs participants on the aims and implications of the proposed study as well as possible outcomes and benefits of the research. Participants should also be informed of any additional factors that might reasonably be expected to influence their willingness to participate.

Principle 1.3 prescribes that it is important for the researcher to respect the autonomy of the participants and to protect the welfare of all participants, and that the consent of participants must be obtained (HSRC, [sa]). The researcher informed participants about the study by reading out aloud The Informed Consent Form agreed upon to

participate in the research, titled “An assessment of the criminological significance of road crash data within the criminal justice context” (Annexure B) to the participants. The participants agreed to participate, either by signing the Certificate of Consent or verbally agreeing and providing their blessing. Participants who refused to participate were excused from the project.

### **1.12.3 Risk of harm**

Researchers should never put participants in a situation where they may be at risk of physical and/or psychological harm (Trochim, 2002). The Social Research Association (2003:27) argues that it is important to respect the values and sense of privacy of participants. Participants were properly informed that there are no direct risks in participating in the study (vide paragraph 5 of Annexure B).

### **1.12.4 Confidentiality and anonymity**

It is important to assure participants that no information will be available to anyone who is not directly involved in the study (Trochim 2002). Wiles, Crow, Heath and Charles (2006:3) are of the opinion that confidential research is not always possible because researchers have a duty to report on the findings of their research, which means that it will be impossible if the data they collected are confidential (i.e. cannot be revealed). Hence, it is imperative to ensure that researchers do not disclose identifiable information about participants. Researchers should always endeavour to protect the identity of research participants through numerous processes that are designed to anonymise those (Wiles et al, 2006:3). The researcher guaranteed participants’ confidentiality and anonymity (vide paragraphs 4 & 8 of Annexure B) prior to the start of the study.

### **1.12.5 Plagiarism**

In the opinion of Neuman (2011:144) plagiarism is fraud if the researcher steals the ideas or writings of another, or uses them without citing the source. Hofstee (2010:211) points out that in order to prevent plagiarism, the researcher must always credit the work of others when incorporated in his or her work by means of referencing the source

of information. Strydom and Delport (2012a:293) concur but indicate that even to paraphrase another person's words or ideas as one's own, will fall in the definition of plagiarism. Taking into account the aspects discussed under 11.1 to 11.4 of the Policy on Research Ethics, the researcher undertook to adhere to the Policy as approved by the Unisa Ethics Review Committee.

The researcher also undertook to adhere to The Code of Conduct for Criminologists, Victimologists, other Scholars or Practitioners Aligning Themselves with the Criminological Sciences, as amended and approved by the Criminological, and Victimological Society of Southern Africa (CRIMSA), as amended and approved at the Annual General Meeting dated 27 August 2004.

### **1.13 LAYOUT OF CHAPTERS**

Chapter 1: General orientation and research design.

Chapter 2: Psychological and economic implications of road traffic crashes.

Chapter 3: Operational and legislative variables of road traffic crashes.

Chapter 4: Analysis and interpretation: Quantitative data.

Chapter 5: Analysis and interpretation: Qualitative data.

Chapter 6: Findings, recommendations, limitations and conclusion.

## CHAPTER 2

### PSYCHOLOGICAL AND ECONOMIC IMPLICATIONS OF ROAD TRAFFIC CRASHES

#### 2.1 INTRODUCTION

The researcher embarked on an academic study to contribute to the clarification and understanding of aspects relating to the criminological perspective of road traffic crashes (RTCs). In this review of existing literature, the researcher explores the criminological perspective on traffic crashes and introduces the reader with the current status quo of RTCs on South African roads (vide section 2.2).

The purpose of this review is to show that the researcher is aware of current occurrences in the field of study; to bear evidence that the researcher's work is well within context; and to confirm that the study has significance (Goddard & Melville 2012:19; Hofstee 2010:91; Huysamen 1994:205; Maree & Van der Westhuizen 2012:31; Neuman 2011:89). According to Kumar (2011:32) the literature review serves the following purposes:

- It lays the foundation of the theoretical background to the study.
- It provides connection between what the researcher intends to study and what has already been studied.
- It assists the researcher in integrating the research findings into the existing body of knowledge.

RTCs are manifested with injury and damage and for this reason the researcher explains the severity index (vide section 2.3.1) to contextualise the different concepts within the environment of RTCs. Although the concepts "traffic crash" and "traffic accident" differ in essence, they are used synonymously. A detailed explanation of the concept "traffic crash" is provided in section 2.3.2 and the international use of the term "crash" as opposed to "accident" will be compared against the South African context.

The impact of a traffic crash has both traumatic and economic effects on the victim, the society and the economy (Bliss, 2014:23). The researcher discusses the symptomatic result from a psychological perspective that a RTC may have on the individual involved and the resultant effect thereof on the victim and the society (vide section 2.3.3). The impact of RTCs on the healthcare system, the victim, the society, and the economy are objectives that the researcher identified in chapter 1 (vide section 1.3).

## **2.2 A CRIMINOLOGICAL PERSPECTIVE ON ROAD TRAFFIC CRASHES**

### **2.2.1 The evolution of the traffic crash phenomenon**

In 1869, Mary Ward fell under the wheels of an experimental steam car built by her cousins, and she is credited as the world's first motor vehicle accident fatality (Lucas & Cina 2012). Image 2.1 is a photographic illustration of Mary Ward, which was reproduced from Wikimedia Commons, a freely licensed media file repository (cf. [http://en.wikipedia.org/wiki/Mary\\_Ward\\_%28scientist%29](http://en.wikipedia.org/wiki/Mary_Ward_%28scientist%29))

**Image 2.1: Mary Ward (1827-1869).**



According to Duncan and Meals (Lucia, 2011) the first known reference to a vehicle crash is reported to be Carl Benz, in 1885, who forgot to steer his vehicle and crashed

into a wall. The first officially **recorded** crash in the United States occurred only in 1896 when a car crashed into a bicyclist (Lucia, 2011). In Great Britain, the first two deaths due to RTCs were recorded in 1896 (Norman, 1962:9). Bridget Driscoll was the first pedestrian victim of an automobile accident to die on 17 August 1896 in the United Kingdom (McFarlane, 2010).

South Africa's first recorded RTC happened on the evening of 1 October 1903 in Maitland, Cape Town (Botha, 2005:1). The vehicle entered a level crossing and was struck by the Johannesburg Express (train) at full speed. Image 2.2 is a photograph depiction of the first accident in South Africa (Botha, 2005:2), which has been reproduced from Arrive Alive (cf. <http://www.arrivealive.co.za/pages.aspx?i=1670>).

**Image 2.2: First accident in South Africa, Maitland.**



*Early Motoring in South Africa, R.H. Johnston, C. Struik Publishers, 1975.*

Ever since the first “accident” in 1903, South African road traffic legislation has been silent about the concept and no definition is provided. The next section provides an explanation as to what qualifies as a traffic crash.

### **2.2.2 What qualifies as a traffic crash?**

Deplorably, the NRTA, Act 93 of 1996 (South Africa, 1996b) does not provide a definition of an accident, motor vehicle accident or a traffic crash. Attention will therefore be directed to international literature in this respect. Baguley (2001:6) defines

an accident as a rare, random, multi-factor event, which is always preceded by a situation in which one or more road users have failed to cope with their environment.

Accidents are defined as **rare** events because of the passage of time and the number of traffic movements at a particular place on the road network (Baguley, 2001:6). Accidents are also classified as **random** events due to the inability to predict event specifics, such as the exact time, date and place when an accident will occur (Baguley, 2001:6). Should crashes be completely random, it is impossible to prevent them. However, research has indicated that the tendency of crashes to cluster at particular points provides sufficient evidence for administrators to study multi-factoral elements (Baguley, 2001:6).

Ruller (1999:4) defines an accident as an unintended event, which produces injury or damage. Lehoula (2009:2) states that a traffic accident is any vehicle accident, which occurs on a public highway or a public road.

The Queensland Police Department (2011) defines traffic crash as follows:

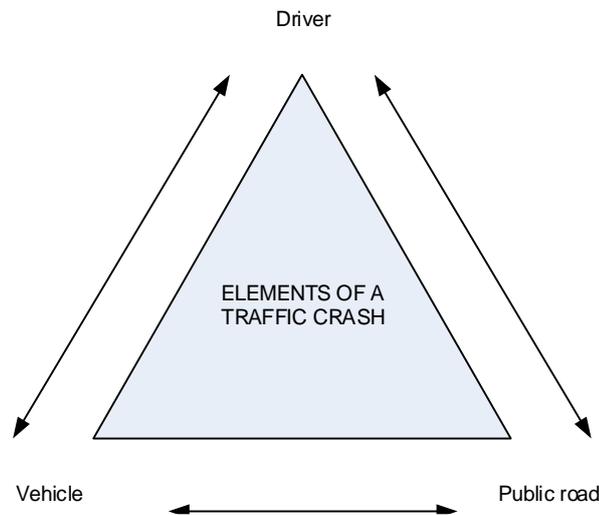
- (i) A collision between two or more vehicles.
- (ii) Another crash or incident involving a vehicle in which a person is killed or injured, property is damaged, or an animal in someone's charge is killed or injured.
- (iii) Incidents in which personal injury is caused by, through or in connection with a motor vehicle if the injury is as a result of:
  - (a) the driving of a motor vehicle;
  - (b) a collision or action taken to avoid a collision with the motor vehicle;
  - (c) the motor vehicle running out of control; or
  - (d) a defect in the motor vehicle causing loss of control of the vehicle while it is being driven.

The Texas Department of Transportation (TDOT, 2012:4) explains a crash as an event that produces death, injury, or damage. According to the Georgia Public Safety Training Center (GPSTC, 2008:19) and Cerrelli (1997:1) every RTC involves three elements:

- People (including the driver).
- The road.
- Vehicles (which form part of the environment).

These elements as identified by the GPSTC (2008:19) and Cerrelli (1997:1) are illustrated in figure 2.1.

**Figure 2.1: Traffic Crash Triangle**



### 2.2.2.1 Differentiation between crash and accident

On 16 July 1997, the New Jersey National Safety Council (NSC) replaced the word “**accident**” with the word “**crash**” in the *Police guide for preparing reports of motor vehicle crashes* (Vercammen, 2014). According to the New Jersey Department of Transport the primary reason was to change the way that people think about crashes (NJDOT, 2011:4). The TDOT (2012:4) points out that highway safety specialists tend to replace the term “accident” with “crash”, due to the more accurate reflection it provides in relation to the potential and the seriousness of incidents (crashes).

Vercammen (2014) concurs with the TDOT and adds that the term crash is actually a reinforcement of the philosophy that crashes do not just happen, there must be causes, which are preventable. Table 2.1 provides a summary of the differences between the terms “crash” and “accident”.

**Table 2.1: Differentiation between accident and crash**

<i>ACCIDENT</i>	<i>CRASH</i>
An unexpected or undesired event, chance or fortune.	To cause a vehicle to have a collision, to be involved in a crash

In perusing the differences between the two terms (table 2.1), it is clear that a crash does not just happen; it has causes and can be prevented (TDOT, 2012:4). A similar view is held by Jacobs et al (2000:3), who are of the opinion that the term “crash” is commonly used in the transport sector and it prevents possible deceptive connotations about the unavoidable. Jacobs et al (2000:3) point out that the past decade showed an increase in the use of the word “crash” over that of “accident”. In New Zealand the term “crash” is used rather than the term “accident” (Deuchrass, 2012). For the purposes of this study, this trend in terminology will be followed.

In spite of the fact that there is no formal recognition or definition for the term “traffic crash” in the NRTA, Act 93 of 1996 (South Africa, 1996b), it is still used on a regular basis in the media, official documents, and so forth. To illustrate this point, the following examples are utilised:

- Arrive Alive (2011) states that: “The Road Traffic Management Corporation [RTMC] has been tasked with compiling and researching **crash statistics** in South Africa” [own emphasis].
- Letsoalo (2011:5) states that: “It is going to take a collaborative effort internationally, regionally and domestically to attain the efforts of this cross cutting socio-economic epidemic of **road crashes**” [own emphasis].
- Ronald (2009) states that: “In almost every case, a **crash** is preceded by a traffic violation” [own emphasis].

Furthermore, the term “incident” is often used in the same context as “accident” or “crash”. Anon (2005:6) draws a distinction between the terms, showing that an incident is an **event that gave rise to an accident** or has the potential to lead to an accident.

### **2.2.2.2 When is a crash a crime?**

When does the action of the driver of a motor vehicle involved in a crash, constitutes a crime? According to Bartol and Bartol (2011:18) a crime is any intentional act in violation of the criminal law, which is committed without a defence or excuse and that is penalised by the state as a felony or misdemeanour. It is intentional because it did not occur accidentally or under any form of duress. For a person to be held criminally responsible, such a person must know that what he or she had done during a criminal act was wrong.

From a South African perspective, a felony represents a category of crimes that are often classified as the most serious types of offences, such as murder, rape, and so forth, whilst a misdemeanour refers to less serious crimes that usually result in a small fine and/or jail time, such as driving under the influence, vandalism, and so forth (LaMance 2012:1), which includes minor traffic violations.

South African drivers convicted of driving under the influence (DUI) of drugs or alcohol having a narcotic effect, face fines of more than R2 000, or a prison sentence, or both as well as a possible suspension of the driver's licence (Breytenbach, 2007; Hollard [sa]; SAPS [sa]b). Any RTC draws attention, and for Bartol and Bartol (2011:1) it is important to understand the reason why it occurs and what to do about it. Politicians, public officials and experts continuously endeavour to hedge the severity of traffic crashes through simple and incomplete solutions such as increased law enforcement efforts, visible traffic patrols, stiff penalties, imprisonment, and so forth (Bartol & Bartol, 2011:1).

Rikhotso (2012) concurs and states that “we do have [a] precedent that people can be charged and successfully convicted with murder if negligence can be proved”. The [then] Minister of Transport, S’bu Ndebele reported that “if you jump the robot or overtake others (and your actions result in people dying), and you thought about what you are doing, you have to be charged with murder, and that is what we are going to be pushing for” (Molosankwe, 2012).

A case in point is the “Jub Jub” Maarohanye incident that occurred in Soweto, Gauteng. Molemo “Jub Jub” Maarohanye and his co-accused, Themba Tshabalala, were convicted on four accounts of murder and two of attempted murder at the Protea Magistrate's Court in Soweto on Tuesday 16 October 2012 (Bauer, 2012). According to Bauer (2012), Maarohanye and Tshabalala were drag-racing when one of their Mini Coopers ploughed into a group of schoolchildren on 8 March 2010. On Wednesday, 8 October 2014, Judge George Maluleke in the High Court in Johannesburg reduced the murder conviction of Maarohanye to culpable homicide (News24, 2014a). According to Grant, a law professor (News24, 2014a), the courts are “flip-flopping” between murder and culpable homicide, because of the illogical definition of *dolus eventualis* (indirect intention).

To charge offending drivers involved in fatal crashes with murder, will according to the author, not have the desired outcome, mainly because the focus is on **certain** crashes only that are identified by senior politicians, such as the Minister of Transport. The researcher is furthermore of the opinion that only high profile cases, which enjoy extensive media coverage, are selected based upon publicity and political gain. Swanepoel (2012) concurs and argues that senior politicians should not bias the prosecution of offenders because the next of kin of all victims of fatal traffic crashes should enjoy equal intervention.

## **2.3 CRIMINOLOGICAL IMPACT OF MOTOR VEHICLE CRASHES**

Motor vehicle crashes have a strenuous effect on the economic climate of a country (vide section 2.3.4), and are a recognised health issue impacting devastatingly on the human and the health system of a country (Chan, 2009:iv; Peden, Scurfield, Sleet, Mohan, Hyder, Jarawan & Mathers, 2004:3), thereby re-emphasising the unique process of victimisation, which road crash victims are exposed to (vide 2.2).

### **2.3.1 Explaining the severity index**

The type of motor vehicle crash determines the operational action that is required from a law enforcement practitioner. According to the Texas Department of Transportation (TDOT, 2012:5) RTCs are classified as:

- **Fatal crash:** a motor vehicle crash that results in one or more fatal injuries.
- **Non-fatal crash:** a motor vehicle crash that results in any other injury than fatal injuries.
- **Non-injury crash:** a motor vehicle crash other than a crash involving injuries. This type of crash (non-injury) is also known as a property-damage only crash.

Within a South African context, the NRTA, Act 93 of 1996 (South Africa, 1996b) is silent about the classification of RTCs. The prescribed AR Form, which is completed in the event of a crash, classifies only the severity of injuries as “killed”, “serious”, and “slight or no injury”. No description or definition is available; however, it shall be further explored through research in this study. In the researcher’s opinion, the injury severity classification, as provided by both the Texas Department of Transportation (TDOT, 2012:10-11) and the New Jersey Department of Transportation (NJDOT, 2011:24) can be combined to accommodate the South African context in the following way:

- **Injury:** within the context of a traffic crash, refers to any bodily harm to a human.
- **Killed (fatal injury):** refers to any traffic crash effecting any injury that results in death, immediately or within 30 days thereafter.
- **Serious (incapacitating) injury:** is any injury, other than a fatal injury, which prevents an injured person from walking, driving or normal continuing of the activities such as the person was capable of performing prior to the injury occurring. This includes severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconscious at or when taken from the crash scene, and unable to leave the crash scene without medical assistance.
- **Slight (non-incapacitating) injury:** refers to any injury, other than a fatal or serious injury, which is evident to observers at the scene of the crash in which the injury was sustained. This includes a lump on the head, abrasions, bruises, and minor lacerations. Care should be taken when a person is limping and it should rather be recorded as serious, because the injury is not visible.
- **No injury:** refers to a motor vehicle crash in which there is no reason to believe that any person received any bodily harm from such a crash. This usually happens when only property is damaged.

- **Property:** With reference to a motor vehicle crash, refers to any physical object other than a person, which includes inter alia real property, personal property, animals (wild or domestic), signs, guardrails, impact attenuators, trees, fences, traffic control devices, shrubs, and so forth.

Many road traffic crashes are dangerous with disastrous results, which in many of the cases have long-term effects.

### 2.3.2 How dangerous is a road traffic crash?

According to the European Transport Safety Council, traffic crashes happen in a fraction of a second, although their consequences may last for days, months, years or even the rest of someone's life (ETSC, 2007:18). James (2007) is of the opinion that a vast majority of motor vehicle drivers are inexperienced and/or ill-trained to cope with an emergency behind the wheel of a motor vehicle. The result – a crash!

James (2007) uses the following example of a motor vehicle traveling at 55 mph (91.3 km/h) that collides with a solid stationary object to illustrate that a fatal crash happens in less than a second, especially if the occupant is without a safety belt:

- 0:00.1 s :** At point of impact the grill and bumper of the car collapse.
- 0:00.2 s :** The front of the car starts to crumble. Although the car frame is halted, the human body is still travelling at the same speed (91.3 km/h).
- 0:00.3 s :** The steering wheel starts to disintegrate with the chest travelling towards the steering column. The airbag deploys.
- 0:00.4 s :** Two feet of the car's front end is wrecked. The body is still travelling at 91.3 km/h.
- 0:00.5 s :** The torso now slams into the airbag. The impact thereof causes the internal organs to "slam" around inside the body.
- 0:00.6 s :** The impact still builds with the frame of the car now disintegrating. The body is now bouncing off solid objects.
- 0.007 s :** Death.

The ETSC (2007:18) points out that a large number of road users involved in RTCs do recover from their injuries, although some never recover fully and suffer from some

kind of permanent disability. Chan (2009:iv) points out that over and above the enormous suffering caused by road traffic crashes, families may be driven into poverty as crash survivors and their families struggle to cope with the long-term consequences of the accident, which include the cost of medical care, rehabilitation, funeral expenses and the loss of the family breadwinner (vide section 2.3.4). The ETSC (2007:18) concurs with this view and indicates that in addition to loss of life or reduced quality of life, traffic crashes carry numerous additional consequences for survivors, which include legal implications, economic burden, home and vehicle adaptations as well as psychological effects.

Evans (2004:1) explains that approximately 16.3 teenagers are killed per typical day in the United States (US) traffic and approximately 120 million people injured globally in traffic crashes annually. When dividing the world population of approximately six billion by this number (120 million), the average human being has a near two per cent chance of being injured in traffic each year (Evans, 2004:1).

The South African context is worse and according to Ronald (SADD [sa]:3): "Your chance of being in a crash in SA is one in 101. In other parts of the world the chance is one in 5 000."

The driver of a motor vehicle, an occupant in a motor vehicle, or a pedestrian, will experience different feelings at the time of a crash (Beck & Coffey, 2008). Some identified feelings include:

- Shock.
- Anger.
- Disbelief that it really happened.
- Nervousness.
- Fear.
- Uneasiness.
- Guilt.

### 2.3.3 Traumatic impact of traffic crashes

Trauma, according to Briere and Scott (2012:3) refers to the event and not the reaction, and should consequently be reserved for events that are psychologically overwhelming for the individual. Rowell and Thomley (2013) explain trauma as:

An emotional response to a terrible event like an accident, rape or natural disaster. Immediately after the event, shock and denial are typical. Longer term reactions include unpredictable emotions, flashbacks, strained relationships and even physical symptoms like headaches or nausea. While these feelings are normal, some people have difficulty moving on with their lives.

Briere and Scott (2012:16) are of the opinion that any event, which is upsetting and overwhelming to the individual's internal resources (psychological), results in trauma. According to Briere and Scott (2012:16), certain traumatic events such as traffic crashes produce a much greater likelihood of post-traumatic stress disorder (PTSD) than others do. PTSD occurs at any age, including childhood (First, 2013:271), which according to Hassan Abu Hassan (2010:31), is regarded as a serious disorder amongst young children.

Apart from the fact that traffic accidents are considered modern problems that cause enormous human and material losses to many people (Al Raheem Ghoneem, 2012:77), a proportion of the people involved in traffic crashes develop a manifestation of a behavioural, psychological or biological dysfunction in the form of inter alia PTSD (First, 2013:271).

PTSD is characterised by symptoms following exposure to an extreme traumatic stressor that involves a direct personal experience of a traumatic event such as a traffic crash (First, 2013:273).

*The Diagnostic and Statistical Manual of Mental Disorders* (DSM) published by the American Psychiatric Association (APA) does not provide an operational definition for

mental disorder. Stein, Phillips, Bolton, Fulford, Sadler and Kendler (2011) define mental disorder as:

A clinically significant behavioural or psychological syndrome or pattern that occurs in an individual and that is associated with present distress (e.g. a painful symptom) or disability (i.e. impairment in one or more important areas of functioning) or with a significantly increased risk of suffering, death, pain, disability, or an important loss of freedom.

Although PTSD is a useful indicator for mental disorder, it has its own unique definition. PTSD is a psychiatric condition, which can develop following an extremely traumatic event, such as a car accident (Salters-Pedneault, 2008). DiMaria (2011) believes that although the physical effects of a car crash have the tendency to be long lasting, so too have the mental effects.

First (2013:271-274) identified the following diagnostic criteria for PTSD:

### **1. Symptoms that must be present**

The person exposed to the traumatic event must have both the following symptoms:

- 1.1. "The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.
- 1.2. The person's response involved intense fear, helplessness, or horror.

**Note:** In children, this may be expressed instead by disorganized or agitated behaviour."

### **2. Re-experiencing the event**

The traumatic event is persistently re-experienced in one or more of the following means:

- 2.1. Recurring recollections of the event, which include images, thoughts, or perceptions.
- 2.2. Recurring and deplorable dreams of the event.
- 2.3. Feeling as if the traumatic event is recurring, such as illusions, hallucinations, flashback episodes, and so forth.
- 2.4. Psychological distress when an internal or external cue resembles the event.
- 2.5. Physiological reactivity when an internal or external cue resembles the event.

### **3. Avoidance of stimuli associated with the trauma and numbing of responsiveness**

Stimuli associated with the traumatic event as well as numbing (insensitivity) of responsiveness that was not present before the trauma, are usually indicated by at least three of the following:

- 3.1. Thoughts, feelings or conversations associated with the event are avoided.
- 3.2. People, activities or places that arouse recollection of the event are avoided.
- 3.3. The inability to recall important aspects of the trauma.
- 3.4. Diminished interest or participation in activities.
- 3.5. The person feels estranged or detached from others.
- 3.6. Affections are restricted.
- 3.7. The person does not see a future anymore (e.g. no career, marriage, normal life span, and so forth).

### **4. Increased arousal**

Persistent symptoms of increased arousal that were not present before the trauma had been experienced, are indicated by the following emotions:

- 4.1. The person affected finds it difficult to fall asleep or to stay awake.

- 4.2. Outbursts of anger or high levels of irritability.
- 4.3. Difficulty in concentrating at work, school or home.
- 4.4. Hypervigilance.
- 4.5. Exaggerated startle responses.

## **5. The duration of the symptoms exceeds one month**

- 5.1. Should the symptoms be less than three months, they are categorised as **acute**.
- 5.2. Should the symptoms be in excess of three months, they are categorised as **chronic**.

## **6. Social, occupational or other important areas of functioning are impaired or affected**

The treatment of PTSD is important as it may play a role in deviant road behaviour, which may emanate into criminal behaviour in two primary ways:

- Firstly, it can incidentally lead to criminal behaviour (for example road rage, reckless driving, and so forth).
- Secondly, offences can be directly linked to a specific trauma that an individual had experienced, for example driving under the influence, aggressive driving patterns, and so forth (Baker & Alfonso [sa]:1).

Brooks (2001) believes that although the majority of crashes are injury related, even the minor ones cause long-term anxiety, which includes fears and phobias about driving or riding in a car. First (2013:271-274) concurs with Brooks and confirms that a person affected by the traumatic event has persistent symptoms of anxiety and that the risks of panic disorder and numerous other phobias are increased. According to First (2013:265) symptoms do not start instantaneously, but they usually begin within the first three months after the trauma. First (2013:271-274) furthermore explains that the duration of symptoms varies from full recovery within three months to persisting

symptoms in excess of twelve months. Gallo, Barton and Jones (Hassan Abu Hassan, 2010:32) are of the opinion that severe post-traumatic stress symptoms experienced during and immediately after a crash, include inter alia intense fear, helplessness and loss of control. Hassan Abu Hassan (2010:32) argues that there is a possibility that victims can lose both their meaning for life and attachment to their surrounding environment.

### **2.3.3.1 The effect on quality of life (QOL)**

Calman (Katschnig, 2006) defines QOL as “the gap between a person’s expectations and achievements”, which according to Angermeyer and Kilian (Olatunji, Cisler & Tolin, 2007:573) refers to those aspects of life that make it fulfilling and worthwhile (life satisfaction). This gap is sustained in two ways – living up to one’s expectations or lowering the expectations (Calman, in Katschnig, 2006).

According to Gladis, Gosch, Dishuk, Crits-Christoph, Mendlowicz and Stein (Olatunji et al, 2007:573) the QOL of a victim is severely affected by anxiety disorders. According to Rapaport et al (Olatunji et al, 2007:579) research indicates that 59 per cent of victims suffering from PTSD have severe impairment in QOL. Steinberg (Brooks, 2001) concurs and states that car accidents cause long-term stress that affects the work as well as the relationships of those involved, which may eventually lead to depression, anxiety, and sleep disorders. The Canadian Resource Centre for Victims of Crime (2005:1) reports that over and above the fact that victims suffer physically, emotionally, psychologically, socially and financially from their trauma, they are also frequently burdened by the complexity of the CJS.

Therefore, it is clear that victims of traffic crashes are vulnerable to numerous psychological conditions. According to Briere and Scott (2012:10) numerous studies have indicated that victims who suffer from interpersonal traumas (PTSD, anxiety, and so forth) are considerably more likely to experience re-victimisation. Victims of lifestyle, environment, behaviour, personality and/or social issues have an increased likelihood of being repeatedly victimised. Children who are subjected to trauma because of traffic crashes experience the world as a frightening and dangerous place, which carries over into adulthood if not treated (Robinson, Smith & Segal 2012). DiMaria (2011) explains

that according to research previously conducted, approximately 15 per cent to 25 per cent of children involved in car accidents develop symptoms of depression, even months after the accident.

According to a study conducted in July 2003 by Caspi and colleagues (DiMaria, 2011), some children with preceding episodes of depression are at a higher risk for developing depression again. First (2013:271-274) reports that children, who suffer from PTSD as a result of a crash, will exhibit disorganised or agitated behaviour in response to the event. Children relive the trauma, rather than the past, through repetitive play; for example, a child who was involved in a serious road traffic crash will repeatedly act out a car crash with toy cars (First, 2013:271-274).

Families are considered hidden victims of road traffic accidents because they (families) can be affected both psychologically and socially from their children's involvement in road traffic accidents (Hassan Abu Hassan, 2010:32). Livingston and Brooks (Hassan Abu Hassan, 2010:33) reveal that a study conducted in the United Kingdom (UK) indicates that the sudden change in family life has a direct bearing on interpersonal relationships, which has the ability to threaten living or working conditions.

In the aforementioned section, the reader was sensitised to the fact that interpersonal relationships of traffic crash victims are influenced by numerous emotional reactions. In the majority of traffic crashes, victims are also financially "injured" and experience additional emotions of anger and frustrations because they are unable to recover from the financial losses incurred (The Canadian Resource Centre for Victims of Crime, 2005:4).

#### **2.3.4 The impact of road crashes on the development of a country**

According to the World Health Organization, road transport is a crucial aspect of the development of a country (WHO, 2010:3). Each year billions are invested to build and repair road networks in low- and middle-income countries, thereby generating economic growth and employment (WHO, 2010:3). The road infrastructure is used to

facilitate the movement of people and goods, which improves access to education, health care, employment and economic markets (WHO, 2010:3).

The development of a country is severely affected by road traffic crashes, because they are the leading cause of death among young people between the ages of 15-29 years (Toroyan, 2013:1). This places a heavy toll on those young people entering their most productive years (Toroyan, 2013:1).

It is imperative to prevent road traffic injuries and deaths because according to the then Minister of Transport, Jeff Radebe (Engineering News, 2006) the country is not only paying an expensive price concerning the skills of many economically active citizens, but the economic growth of the country is negatively affected, which will have a direct impact on the development of the country. Vasconcellos (2005:6) explains the built environment in developing countries as inherently dangerous for the majority of the population, because it is constructed to allow greater mobility for vehicles, resulting in people sharing the space with vehicles.

According to Vasconcellos (2005:1) road crashes are a major public health problem placing an enormous strain on the health system of a country. Financial resources are consumed, which the vast majority of countries can ill afford to lose, primarily because development is negatively affected (Mohan et al, 2006:11). The above-mentioned factors implicitly form part of the broader economy and their (economic) impact on it.

## **2.4 ECONOMIC IMPACT OF TRAFFIC CRASHES**

Road crashes and the consequences thereof have an adverse effect and place the economy of a country, the victim and the society under immense pressure.

### **2.4.1 Road traffic crashes: a global and international perspective**

Globally, 1.24 million people are killed annually in road crashes, which represents only a fraction of the total waste of human and societal resources due to road injuries (Toroyan 2013:4).

Mohan et al (2006:14) emphasise that road traffic injuries cause economic harm and from an economic perspective, it is important that road crash deaths be reduced, as they consume massive financial resources that countries can ill afford to lose. According to Mohan et al (2006:11) road traffic crashes contribute globally to an estimated US\$ 518 billion annually. Table 2.2 represents an analysis of the US\$ 518 billion.

**Table 2.2: Road crash costs by region**

Region <sup>a</sup>	GNP, 1997 (US\$ billion)	Estimated annual crash costs	
		As percentage of GNP	Costs (US\$ billion)
Africa	370	1	3.7
Asia	2 454	1	24.5
Latin America and Caribbean	1 890	1	18.9
Middle East	495	1.5	7.4
Central and eastern Europe	695	1.5	9.9
<b>Subtotal</b>	<b>5 615</b>		<b>64.5</b>
Highly motorised countries	22 665	2	453.3
<b>Total</b>			<b>517.8</b>

GNP: gross national product

<sup>a</sup> Data are displayed according to the regional classification of the TRL Ltd. United Kingdom

From Table 2.2 it is alarming to note the effect of road traffic crashes on the African continent. Table 2.2 shows the cost to be:

- US\$ 518 billion globally.

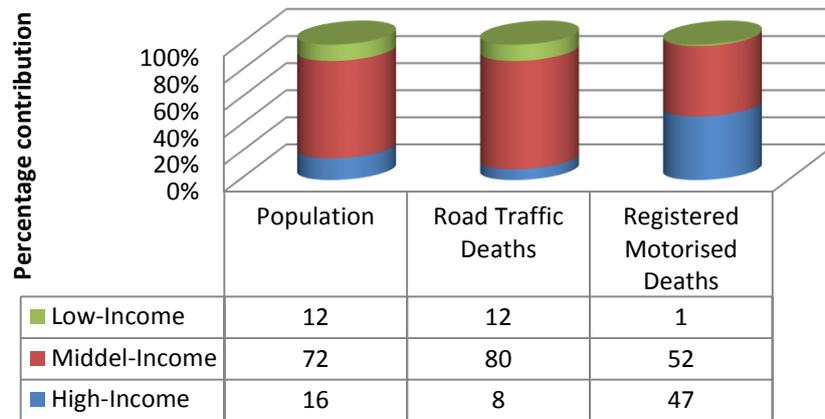
- US\$ 65 billion in low-income and middle-income countries, exceeding the total amount received in development assistance.
- Between one per cent and 1.5 per cent of gross national product in low-income and middle-income countries.
- Two per cent of gross national product in high-income countries.

Toroyan (2013:4-5) provides the following global statistics about traffic crashes. Data were collected during 2009:

- Approximately 1.24 million people die in 2010 because of road traffic crashes, which implies that an average of 3 242 people are killed daily on the world's roads.
- Altogether an estimated 20-50 million people are injured or disabled in traffic crashes every year. According to Peden et al (2004:3) the 50 million people represent the combined population of five of the world's largest cities.
- In 2010 road traffic crashes were the 8<sup>th</sup> leading cause of death worldwide and accounted for 2.1 per cent of all deaths globally. Furthermore, these road traffic deaths accounted for 23 per cent of all injury deaths worldwide (vide figure 2.3).
- The overall global road traffic fatality rate in 2010 was 18 per 100 000 of the population, with middle-income countries having the highest rate of 20.1 per 100 000, followed by low-income countries with a rate of 18.3 per 100 000 of the population.
- In 2010 altogether 12 per cent of road traffic deaths occurred in low-income countries, where 12 per cent of the world's population live and own about one per cent of the world's registered motorised vehicles (vide figure 2.2).

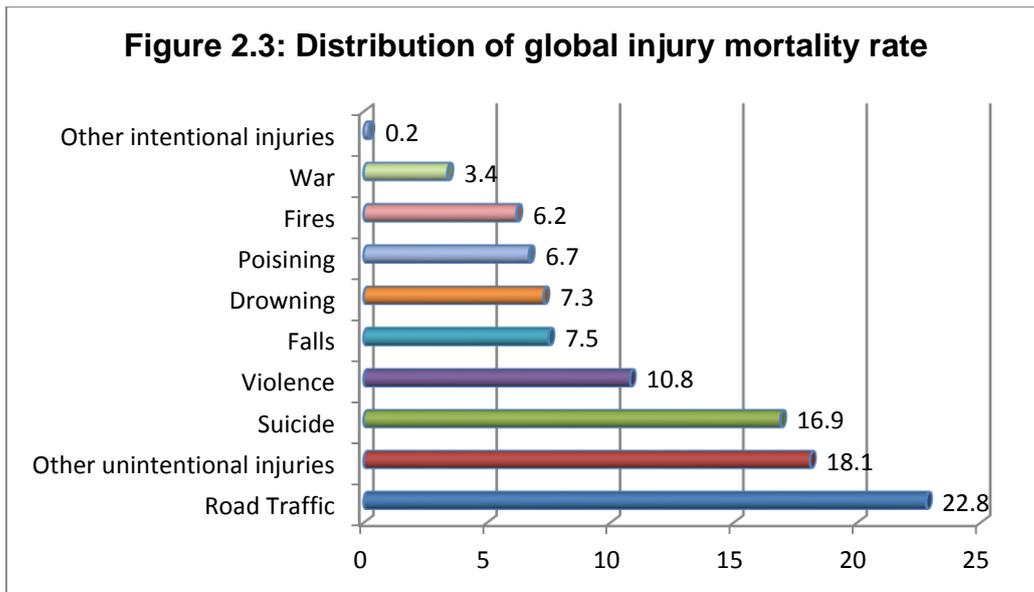
Figure 2.2, adapted from Toroyan (2013:5) compares the population, road traffic deaths, and registered motorised vehicles, by country income status and indicates the contribution of each in percentage per category.

**Figure 2.2: Population, road traffic deaths, and registered motorised vehicles by country income status**



From figure 2.2, it is alarming that low-income countries contribute to 12 per cent of the world's road crash fatality rate and represent only one per cent of the world's registered motor vehicle population. Although middle-income countries show a higher fatality rate of 80 per cent in comparison to the 12 per cent of low-income countries, it should be kept in mind that the population rate of the middle-income countries is six per cent higher than that of the lower-income group. High-income countries also have a higher population rate than low-income countries and represent only eight per cent of the world's fatality rate.

Figure 2.3, adapted from Mohan et al (2006:11), illustrates the position of the global injury mortality rate in 2002. In figure 2.3 the researcher compares the position of road crash deaths against the other global causes of injury deaths to indicate that road crash deaths exceed the other causes of death by far.



According to Mohan et al (2006:34), road crash fatalities accounted for 2.1 per cent of all global deaths in 2002. The interpretations in figure 2.3 illustrate that road crashes accounted for 23 per cent of all **injury**-related deaths worldwide.

Injuries sustained in traffic crashes put significant strain on families. Every person killed, injured or disabled has an adverse effect on others. Many families are driven into poverty because of the cost of prolonged medical care, the loss of a breadwinner, or the additional funds required caring for people with disabilities (Mohan et al, 2006:15).

According to the National Highway Traffic Safety Administration (NHTSA, [sa]:4-5) in the United States of America, **employers** pay for the injuries sustained by their employees both on and off the job. They also pay for injuries or harm caused to non-employees involved in commercial crashes, i.e. crashes involving a vehicle on employer business. In the USA an estimated 2 114 people were killed in motor vehicle crashes while they were working and another 353 000 injured (NHTSA, [sa]:4-5) during the period 1998-2000. To put this into perspective, Table 2.3 shows that the period 1998-2000 cost USA employers approximately \$60 billion per annum for motor vehicle crash injuries. Approximately \$41.5 billion of that comprised fringe and non-fringe benefit costs and another \$18.4 billion was in the form of wage-risk premiums (NHTSA [sa]:4-5).

**Table 2.3: Costs to employers (in millions of \$2000)**

	<b>Crash Injury</b>		
	<b>On duty</b>	<b>Off duty</b>	<b>All</b>
Health fringe benefit costs	\$3 400	\$12 900	\$16 300
Non-fringe costs	\$18 600	\$6 000	\$25 200
<b>SUB-TOTAL</b>	<b>\$22 000</b>	<b>\$19 500</b>	<b>\$41 500</b>
Wage-risk premiums	\$18 400	\$0	\$18 400
<b>TOTAL</b>	<b>\$40 400</b>	<b>\$19 500</b>	<b>\$59 900</b>

The National Safety Council (NSC, 2012) of the USA emphasises the importance in determining the average costs of road crashes involving fatal and non-fatal injuries, because it is used to illustrate their impact on the nation's economy. The calculable criteria that contribute to the costs of traffic crashes, are:

- Wage and productivity losses.
- Medical expenses.
- Administrative expenses.
- Motor vehicle damage.
- Employers' uninsured costs. (NSC, 2012).

The average cost per death, injury or damage only for the United States is displayed in Table 2.4.

**Table 2.4: Average cost per fatality, injury or damage only crash**

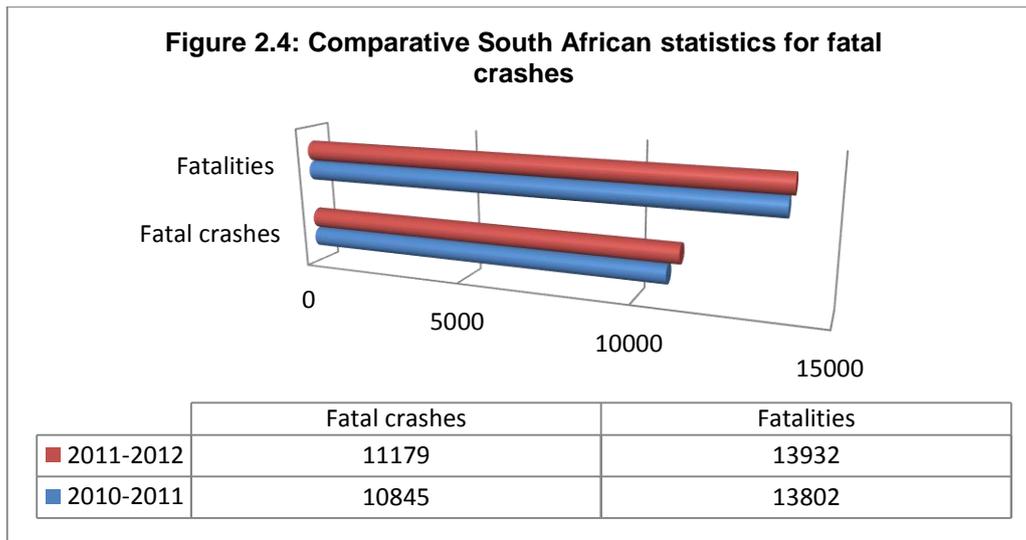
Fatality	\$1 410 000
Nonfatal disabling injury	\$70 000
Property-damage only (including non-disabling injuries)	\$8 900

The observations of Table 2.4 illustrate the fact that crashes involving fatal injuries in the USA contribute to 95 per cent of all the costs involved in crashes, in comparison to the 4.70 per cent of disabling injury crashes. Crashes involving property damage and slight injuries contribute to one per cent of the costs. From the interpretation of table 2.4 it is obvious that the effect of crashes involving fatal injuries has an enormous effect on the economy of the USA.

The cost of road traffic crashes also bears a heavy burden on the South African economy, which requires urgent attention from road traffic administrators.

#### **2.4.2 Road traffic crash statistics: the South African context**

Gainewe (2011:30) reports that 10 845 fatal crashes were recorded with 13 802 fatalities for the period 2010-2011 and 11 179 fatal crashes with 13 932 fatal injuries sustained for the 2011-2012 period. The researcher is unable to present the 2012/2013 South African road crash statistics due to the unavailability thereof. Only seasonal statistics for the said period are available. In figure 2.4, the researcher compares the number of fatal crashes against the number of fatal injuries sustained for the periods 2010-2011 and 2011-2012.



According to figure 2.4, the number of fatal crashes for the period 2011-2012 shows an increase of 3.08 per cent with a one per cent (0.94%) increase in the fatality rate when compared with the 2010-2011 period.

Table 2.5 reflects the number of fatalities per user group for the periods 2009/10 to 2011/12. The 2009/10 to 2010/11 figures were provided by Gainewe (2011:44) and the 2011/12 figures by Letsoalo (2012:6-7). Table 2.5 also provides the number of fatalities per day.

**Table 2.5: Number of fatalities per user group**

User group	2009/10	P/day	2010/11	P/day	2011/12	P/day
Drivers	4 148	11.37	3 983	10.92	3 762	10.3
Passengers	5 022	13.76	5 205	14.26	4 458	12.2
Pedestrians	4 717	12.93	**4 614	12.65	5 712**	15.7
<b>TOTAL</b>	<b>13 923</b>	<b>38.06</b>	<b>13 802</b>	<b>37.83</b>	<b>13 932</b>	<b>38.2</b>

\*\* The 2011/2012 numbers for the pedestrians are a combination of pedestrians (37%) and cyclists (4%).

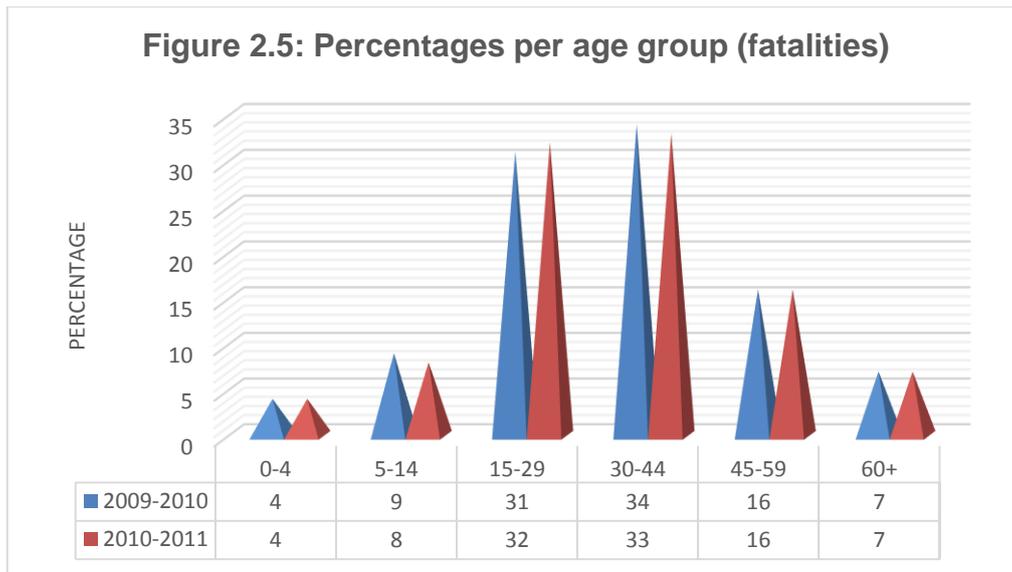
The numbers show that the average fatalities per day for all three groups are 38 if rounded off. For the period 2009/2010 – 2011/2012, pedestrians reflect the highest average of 14 fatalities per day, with passengers suffering a fatality rate of 13 per day, which is a great deal higher than the 11 per day for the drivers of motor vehicles. It is assumed that this phenomenon is ascribed to the larger percentage of passengers carried in vehicles. Figure 2.4 supports this assumption when the number of fatal injuries sustained is compared against the number of fatal crashes.

The data show a one per cent reduction in the fatality rate for all three user groups for 2010-2011, but then a one per cent increase again for all three user groups for 2011-2012. Table 2.6 reflects a breakdown of the different age groups in percentages for the periods 2009-2010 and 2010-2011. Alas, the data for the period 2011-2012 are unavailable.

**Table 2.6: Percentage of fatalities per age group**

Age group	2009/10	2010/2011
0-4	4	4
5-14	9	8
15-29	31	32
30-44	34	33
45-59	16	16
60+	7	7

The synthesis of the fatalities per age group reflected in Table 2.6, is graphically illustrated in figure 2.5.



The data provided in figure 2.5 show that the age group 30-44 depicts the highest crash risk at 33 per cent of all crashes for the period 2010-2011. The fatality rate for the age group 15-29 is 32 per cent, which is in line with the data analysed and interpreted in section 4.3.2.2. The reason for this high percentage can be ascribed to the inexperience of young drivers to interpret and handle dangerous at risk situations. The crash risk for the 60+ age group is in line with the research findings in section 4.3.2.2. It is, however, a concern that the contribution to the fatality rate in both interpretations is seven per cent. Japan implemented a new database, which integrated the licence data of all drivers with road crash data for the period 1995 to 2007. The study reflected that drivers in the age group 65-74 years with multiple violation records had the highest crash involvement rate (Nishida, 2009:103).

In Table 2.7, Joubert and Tanta (2006:430) provide an estimated number of law enforcement practitioners that were responsible to attend to traffic crashes on South African roads for the period 2006. It is extremely difficult for the researcher to draw any inference from the statistics provided, because of the unavailability of road crash data.

**Table 2.7: Law enforcement practitioners in relation to motor vehicle accidents on South African Roads for 2006**

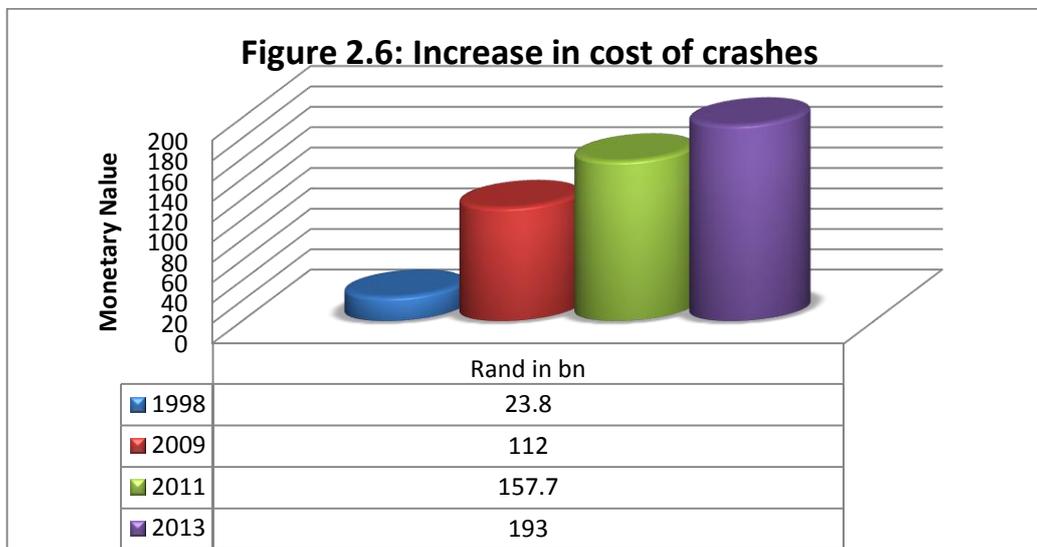
<b>South African perspective: officials attending to motor vehicle accidents (estimated)</b>		
<b>SAPS</b>	12 000	
<b>Traffic officers</b>	5 000	
<b>Number of motor vehicle accidents by injury category</b>		
<b>Accident category</b>	<b>Annually</b>	<b>P/day</b>
<b>Fatal</b>	14 560	40
<b>Serious</b>	38 000	104
<b>Minor</b>	84 000	230
<b>No injury</b>	620 000	1 698

According to the figures provided in Table 2.7, in 2006 an estimated 17 000 law enforcement practitioners were responsible for attending to 756 560 crashes on the South African road network.

### **2.4.3 The cost of road traffic crashes: a South African context**

Ronald (2013) illustrates in figure 2.6 that the cost of road traffic crashes showed a sharp increase of 370.58 per cent from 1998 to 2009. In 2011, road traffic crashes cost the South African economy R157.7 billion (Ronald in Roets, A. 2013). This includes the cost of emergency services, hospital care, and loss of earnings, future claims against the Road Accident Fund (RAF) and care for the disabled. Democratic Alliance (DA) spokesperson, Greg Krumbock, estimates the cost of crashes to rise to

R193 billion by the end of March 2013 (Ensor & West, 2013). This represents an increase of 72.32 per cent from 2009 and an astonishing 710.92 per cent from 1998.



From a South African perspective it is estimated that fatal crashes cost approximately R1.23 million per incident and that damage only crashes cost approximately R74 000 per crash (Ronald, 2013).

#### **2.4.3.1 Non-fatal injuries**

According to Toroyan (2013:7), at least 20 people sustain non-fatal injuries for every single road traffic fatality. Non-fatal injuries are poorly documented, which can be ascribed to insufficient training of law enforcement practitioners (vide section 5.3.7.1 of qualitative study, which is in support of this statement) concerning the categorisation of injuries (Toroyan, 2013:7) (vide section 2.3.1). The unsatisfactory condition of recorded crash data is confirmed in section 4.3.9.1 of the quantitative study. According to Peden et al (2004:3), crashes involving road traffic injuries are neglected. It is estimated that globally approximately 20 to 50 million people are injured or disabled each year in road traffic crashes (Toroyan, 2013:4). Peden et al (2004:3) furthermore expect road traffic injuries to rise by approximately 65 per cent between 2000 and 2020. From a South African perspective, statistics released by the RTMC from 2009 onwards indicate fatalities only (seasonal bound). Accurate national statistics in relation to all categories of traffic crashes i.e. fatal, serious, minor and no injuries (vide

section 2.3.1) are unknown and do not depict a true reflection of the total picture of road traffic crashes in South Africa.

From a global perspective, the European Commission (EC, 2012) warns against the excessive focus of traditional road safety strategies where too much emphasis is directed towards the reduction of fatalities. This unfortunately results in injury-related crashes being overlooked, which poses a serious health problem and furthermore suppresses the real picture concerning road traffic crashes. In 2010, approximately 1 500 000 people were **injured** on EU roads with enormous economic cost to society (EC, 2012).

## **2.5 CONCLUSION**

In this chapter, the researcher discussed relevant literature surrounding the impact of road traffic crashes on the healthcare system, which is regarded as much more than the pyramid of publicly owned facilities that deliver personal health services. A detailed differentiation was provided between the terms “accident” and “crash” with proper reasoning why the term crash should be used. It was highlighted that current South African legislation does not provide for the exclusive use of the term “crash”.

A criminological perspective about the nature and psychological impact on the victims of road crashes was presented, as well as the accompanying economical effect a crash may have on the family of the victim and the economy of the country. The researcher also studied numerous international legislative interpretations, which were compared and inferences drawn against the South African context. Although the concept “road traffic crash” is a comprehensive topic, the focus of the study is limited to the objectives as determined in chapter 1. The literature review (chapter 2) has shown that statistics pertaining to traffic crashes are problematic and that mostly figures concerning fatalities are available. This inadequacy complicates the task of South African law enforcement administrators, as they are in no position to compare statistics with that of international counterparts, due to this weakness. This matter will further be pursued during the collection phase of this study.

## **CHAPTER 3**

### **OPERATIONAL AND LEGISLATIVE VARIABLES OF ROAD TRAFFIC CRASHES**

#### **3.1 INTRODUCTION**

In this chapter, the researcher explores the conceptual, operational and legislative variables of road traffic crashes (RTCs) to add academic clarification and substance to the relevant field of RTCs. The researcher starts by explaining the concepts “driver”, “motor vehicle” and “public road”, as all three these concepts must be present to constitute a RTC. The reporting of RTCs includes both an operational and legislative component (vide chapter 1); it is the start of the process after the crash occurred and forms an important element of the way in which a database is assembled (Baguley, 2001:8). The discussion continues with legislative requirements applicable to the driver and the law enforcement practitioner in the event of a RTC (vide sections 3.2.1 and 3.2.2 below). Thereafter aspects relating to data, the prosecution of offending drivers and concepts that form an inseparable part of RTCs, are explicated (vide chapter 1, section 1.3). The researcher also discusses international legislation and draws a correlation with South African road traffic legislation.

#### **3.2 DRIVER**

The driver is the person who takes control of the vehicle and as such forms an important aspect of the road and the transport system. The driver resorts under the road user as one of the three analogous factors - road user, the vehicle and the road. Norman (1962:19) is of the opinion that the driver, as a road user, has the ability to manipulate driver factors and vehicle factors to a considerable extent, which may contribute greatly to crash reduction. According to the Georgia Public Safety Training Center the identification of the driver of a motor vehicle involved in a RTC is of great importance (GPSTC, 2008:20). The driver is the source of information and without information, road traffic administrators and relevant role players would not be in a position to study and analyse road traffic crashes in the quest to develop and implement applicable interventions that are required to improve road safety (Norman, 1962:19).

### 3.2.1 International legislative interpretation

Section 196 of chapter 20 of the Road Traffic Act (RTA) of 1972 of the United Kingdom defines a driver as: “[W]here a separate person acts as steersman of a motor vehicle, [it] includes that person as well as any other person engaged in the driving of the vehicle, and ‘drive’ shall be construed accordingly.”

According to Business Insurance Brokers (2011) it is necessary for the courts to consider whether a person was driving a motor vehicle or not, because the RTA of 1972 (United Kingdom) does not provide a clear-cut definition of the term “driver”. In *McQuaid v Anderton (1980)*, the defendant, who was disqualified from holding a driving licence, was in the driver’s seat of a car which was being towed along the public highway by means of a rope (Business Insurance Brokers, 2011). The braking system of the vehicle was operational but the vehicle was not at the time capable of self-propulsion. The defendant’s argument was that he was not a driver for the purposes of the RTA of 1972 (United Kingdom). The court referred to the case of *Wallace v Major (1946)*, where the late Lord Goddard stated that in his view a person in the driving seat of a towed vehicle could not fittingly be described as a driver. Three judges of the Queen’s Bench sitting as a divisional court found that the defendant was, in fact, properly convicted of “driving” whilst disqualified (Business Insurance Brokers, 2011).

In *Tyler v Watmore (1976)*, a woman, seated in the front passenger seat leaned across the driver to put both her hands on the steering wheel. She had the ignition switch and the handbrake within her reach. She was held to be “actually driving” the car, whilst the driver retained simultaneous control over speed and propulsion (Business Insurance Brokers, 2011).

In the Scottish case of *Ames v MacLeod (1969)* the Court concluded that a person was “driving” his car when he steered it by placing his hand on the wheel while walking besides it as it coasted down a slight incline in the road. That procedure was adopted because the “driver” had run out of petrol (Business Insurance Brokers, 2011).

### 3.2.2 The South African context

Section 1 of the National Road Traffic Act (NRTA), Act 93 of 1996 (South Africa, 1996b), defines a driver as “any person who drives or attempts to drive any vehicle or who rides or attempts to ride any pedal cycle or who leads any draught, pack or saddle animal or herd or flock of animals, and ‘drive’ or any like word has a corresponding meaning” [own emphasis].

An assessment of the above-mentioned definition renders the inclusion of the term “drive”. Deplorably, the term “drive” is not defined or clearly explained in the NRTA, Act 93 of 1996 (South Africa, 1996b), although referred to in the definition.

Section 20(1) and (2) of the Road Accident Fund Act (RAFA), Act 56 of 1996 (South Africa, 1996c) prescribe that:

- “(1) For the purposes of this Act a motor vehicle which is being propelled by any mechanical, animal or human power or by gravity or momentum shall be deemed to be driven by the person in control of the vehicle.
- (2) For the purposes of this Act a person who has placed or left a motor vehicle at any place shall be deemed to be driving that motor vehicle while it moves from that place as a result of gravity, or while it is stationary at that place or at a place to which it moved from the first mentioned place as a result of gravity.”

A case in point is *Aeschliman v Road Accident Fund* where the vehicle of the plaintiff (Aeschliman) was towed by another vehicle by means of a towrope. The driver of the tow vehicle allegedly exceeded the prescribed 30km/h speed limit applicable to a vehicle being towed by a rope. The driver of the tow vehicle changed direction of travel, which resulted in an accident. Judge Kroon found that the plaintiff was indeed driving the vehicle because the facts are that “the drive shaft of the vehicle being towed was not disconnected, its steering mechanism was fully operational, and all four wheels remained on the road surface at all times. It was not attached to the tow vehicle by a rigid metal bar. It was connected to the tow vehicle by means of a towrope or chain.

Forward propulsion was provided by the tow vehicle”. The plaintiff was not a passive passenger but in the driver's seat of the towed vehicle for a purpose, which was to steer the towed vehicle. She was able to apply its brakes, if necessary, to slow it down or stop it, and she was able to operate its gears.

Judge Kroon furthermore stated that the Supreme Court of Appeal in the *Road Accident Fund v Mkhize* 2005 (3) SA 20 (SCA) laid down a test, which in terms of section 20 of the RAFA, Act 56 of 1996 (South Africa, 1996c) is “**control**”. The court in *Mkhize supra* concluded that the driver of the tow vehicle was the person in control of the vehicle being towed, and hence he was its driver as well. The person behind the steering wheel of the towed vehicle was a passenger. Judge Kroon also referred to *S v Ekstraal* 1981 (4) SA 406 (C) where it was held that a person who finds himself at the steering wheel of a car, which is being towed by another car and who controls the steering mechanism of the towed car, is actually driving that car (in *Aeschliman v Road Accident Fund*).

### **3.3 MOTOR VEHICLE OR VEHICLE – IS THERE A DIFFERENCE?**

A vehicle is one of the key elements of a traffic crash (GPSTC, 2008:19; Cerrelli 1997:1). The researcher deems it is necessary to explain that the terms “vehicle” and “motor vehicle” differ substantially, although used interchangeably.

#### **3.3.1 Vehicle**

The inclusion of the term “vehicle” in national and international acts requires an explanation of the term. From an international perspective, article 16, s8-1602(a) of the Kansas Statutes of 2009 prescribes that “the driver of any vehicle involved in an accident...shall immediately stop such vehicle...”; section 46.2-894 of the Code of Virginia of 1950 stipulates that “the driver of any vehicle involved in an accident ...shall immediately stop...”; and NRS 484E.020(1) of the Nevada Revised Statutes of 2007 prescribes that “the driver of any vehicle involved in an accident...shall (1) immediately stop his or her vehicle”.

From a South African perspective, section 61(1) of the NRTA, Act 93 of 1996 (South Africa, 1996b) clearly stipulates that “the driver of a vehicle...shall (a) immediately stop the vehicle...”.

In Table 3.1 the author differentiates between national and international definitions of the term “vehicle”.

**Table 3.1: Differentiation between national and international definition of vehicle**

<i>SECTION</i>	<i>ACT</i>	<i>DESCRIPTION</i>
s1	NRTA, Act 93 of 1996 (South Africa, 1996b)	<i>“a device designed or adapted mainly to travel on wheels or crawler tracks and includes such a device which is connected with a draw-bar to a breakdown vehicle and is used as part of the towing equipment of a breakdown vehicle to support any axle or all the axles of a motor vehicle which is being salvaged other than such a device which moves solely on rails”.</i>
s8-126	Kansas Statutes of 2009	<i>“every device in, upon or by which any person or property is or may be transported or drawn upon a public highway, excepting electric personal assistive mobility devices or devices moved by human power or used exclusively upon stationary rails or tracks”.</i>
s320	Nevada Revised Statutes of 2007	<i>“every device in, upon or by which any person or property is or may be transported or drawn upon a highway, except:</i>  <i>1. Devices moved by human power or used exclusively upon stationary rails.</i>  <i>2. Electric personal assistive mobility devices as defined in NRS 482.029”.</i>

The data in Table 3.1 show that both national and international legislation provides for a device with wheels and which is used to transport people. The difference in interpretation is that nationally a device operated or used by a human falls within the ambit of the definition as opposed to international legislation. Both nationally and

internationally the legislation is clear that any device that uses rails, will fall outside the scope of a vehicle.

### 3.3.2 Motor vehicle

From an international perspective, section 25(1) of the RTA of 1972 (United Kingdom) stipulates that “if in any case, owing to the presence of a motor vehicle on a road, an accident occurs...the driver of the motor vehicle shall stop...”. According to s169.09, subdivision 1 of the Minnesota Statutes of 2011, the “driver of any motor vehicle involved in an accident...shall immediately stop the vehicle...”.

International definitions of the term “motor vehicle” include inter alia:

- Article 16, s8-126(b) of the Kansas Statutes of 2009, which states that a motor vehicle is “every vehicle, other than a motorized bicycle or a motorized wheelchair, which is self-propelled”.
- According to s168.274(b) of the Minnesota Statutes of 2011, a motor vehicle “means and includes all vehicles propelled otherwise than by muscular power, excepting such vehicles as run only upon rails or tracks”.
- The Nevada Revised Statutes of 2007 in terms of NRS 484A, s130 defines a motor vehicle as “every vehicle which is self-propelled but not operated upon rails”.

From a South African context, the definition of a motor vehicle, according to section 1 of the NRTA, Act 93 of 1996 (South Africa, 1996b):

“...means any self-propelled vehicle and includes:

- (a) a trailer; and
- (b) a vehicle having pedals and an engine or an electric motor as an integral part thereof or attached thereto and which is designed or adapted to be propelled by means of such pedals, engine or motor, or both such pedals and engine or motor, but does not include:

- (i) any vehicle propelled by electrical power derived from storage batteries and which is controlled by a pedestrian; or
- (ii) any vehicle with a mass not exceeding 230 kilograms and specially designed and constructed, and not merely adapted, for the use of any person suffering from some physical defect or disability and used solely by such person”.

From the above-mentioned national and international definitions of the term “motor vehicle”, the researcher is of the opinion that the key focus is on the concept “**self-propelled**”. A vehicle propelled by its own power is self-propelled (*Oxford* 1994, sv “self-propelled”), or when a vehicle is propelled by its own engine (*Free Dictionary* 2013, sv “self-propelled”). It is therefore derived that all motor vehicles **must** be self-propelled, and that all motor vehicles must in the first instance be a **vehicle** prior to it being a motor vehicle (vide section 3.3.1).

All vehicles propelled by human (muscular) power are excluded from the definition of motor vehicle. A further distinction is drawn in that South African legislation explicitly excludes a wheelchair from the definition, irrespective whether motorised or not, whilst it is included in the stated international legislation, except for that of Kansas. The NRTA, Act 93 of 1996 (South Africa, 1996b) deplorably fails to exclude a device that moves on rails from the definition of motor vehicle, whereas the majority of international legislation excludes it explicitly. Such a device that moves on rails is hence included in the definition of “vehicle” (vide section 3.3.1).

### **3.4 PUBLIC ROAD**

The fact that all crashes happen on a road, albeit a public road or a private road, necessitates an explanation, because the type of road will determine whether a crash will be attended to and recorded or not.

#### **3.4.1 Historic overview of roads**

Since the early days, the operation of cars necessitated the development of roads (*Kreml* 1940:1), which form a major key of any country’s road transport system

(Rodrigue & Slack, 2009). Roads became available by the 18<sup>th</sup> century, prior to the development of rail technology (Rodrigue & Slack, 2009).

Trails are considered the first roads because they were used primarily for hunting (Rodrigue & Slack, 2009). The first road system was developed in 3 000 BC in Mesopotamia with asphalt being used for the first time from 625 BC, primarily to pave roads in Babylon (Rodrigue & Slack, 2009). According to Bryce (Sadler-Altena, 2010) the first roads (trails) in South Africa revert back to 1897 to the period where ox wagons were used as the preferred vehicle for long journeys.

According to the European Union Road Federation (ERF), existing roads and the development of new roads are an undeniable source of the socio-economic welfare of a country and will continue to play a dominant role in the transportation of goods and people well into the 21<sup>st</sup> century (ERF, 2014). The role of law enforcement practitioners is crucial in ensuring that roads are efficient to promote economic and social benefits.

### **3.4.2 Public road explained**

The movement of people and goods has always been a fundamental component of human societies (Rodrigue & Slack, 2009). The researcher is of the opinion that the extension of the road infrastructure through the development of new roads and the improvement of automobiles, brought about an increase in road crashes and the accompanying side effects affecting the economy, the victim and society.

Law enforcement practitioners are dispatched on a daily basis to attend to traffic crashes on our road infrastructure. They must be knowledgeable and have the ability to differentiate between public roads and private roads, as the approach towards each is different. Edmonton (Tchir, 2012) uses the following examples to illustrate the complicated decisions that law enforcement practitioners have to take from time to time:

- In a shopping centre parking lot, does the stop sign have any force in law?
- What happens in the event of a fender bender on private property? Do the police attend the call, adjudicate who is to blame and lay charges accordingly?

In studying international legislation, it is clear that a public road or road (some international countries define road in the same context as public road) has one linear similarity – **any place to which the public has access**. The researcher illustrates this similarity in Table 3.2.

**Table 3.2: Similarity in legislation of international countries**

COUNTRY	LEGISLATION	DESCRIPTION
New Zealand	S2(d) of the Land Transport Act no 110 of 1998	<i>“a place to which the public has access, whether as of right or not”.</i>
New South Wales	S4(a) of the Roads Act no 33 of 1993	<i>“any road that is opened or dedicated as a public road, whether under this or any other Act or law”.</i>
United Kingdom	S192(1)(a) of the RTA chapter 52 of 1988	<i>“Road in relation to England and Wales, means any highway and any other road to which the public has access, and includes bridges over which a road passes...”.</i>
Scotland	S151(1) of the Roads (Scotland) Act chapter 54 of 1984	<i>“road means, subject to subsection (3) below, any way (other than a waterway) over which there is a public right of passage (by whatever means)...”.</i>

From a South African perspective, it is clear that the public must commonly use any public road, or that the public has a right of access to such road. Section 1 of the NRTA, Act 93 of 1996 (South Africa, 1996b), defines a public road as:

“...any road, street or thoroughfare or any other place (whether a thoroughfare or not) which is commonly used by the public or any section thereof or to which the public or any section thereof has a right of access, and includes:

- (a) the verge of any such road, street or thoroughfare;
- (b) any bridge, ferry or drift traversed by any such road, street or thoroughfare; and

- (c) any other work or object forming part of or connected with or belonging to such road, street or thoroughfare.”

The court in *S v Kriel 1968 (3) SA 451 (T)*, held that a road may be a public road even though a sign erected at its entrance indicates that it is a “private road”, provided members of the public fairly commonly use the road without obtaining permission from anyone and without wishing to do business with the owner or without wishing to visit someone on the owner’s property.

In *S v Papenfus 1970 (1) SA 371 (R)* the court held that a road could be regarded as a public road if persons use the road fairly regularly without the knowledge, consent or invitation of the owner. Section 69(1) of the NRTA, Act 93 of 1996 (South Africa, 1996b) prescribes that: “Where in any prosecution in terms of this Act it is alleged that an offence was committed on a public road, the road concerned shall, in the absence of evidence to the contrary, be presumed to be a public road.”

The fact that law enforcement practitioners attend to traffic crashes on a daily basis requires knowledge concerning the type of road used, i.e. a public road or a private road. This knowledge is crucial when a law enforcement practitioner needs to determine whether to **record** a crash or not. From the above discussion, it is evident that the one requirement for a public road is that it must be accessible and used by the public as such.

### **3.5 ROAD TRAFFIC CRASH RECORDING**

Ung Chun Hour (2007:1) opines that worldwide traffic crashes are a growing problem with grave consequences (vide section 2.3.4). In order to take effective measures, it is necessary to be knowledgeable about what factors are associated with (cause) traffic crashes (Ung Chun Hour, 2007:3). Legislative initiatives provide important information to law enforcement administrators in detecting best practices and enforcement strategies and *vice versa* (European Commission for the Directorate-General Energy and Transport [sa]:5). The requirements for the reporting of traffic crashes are encapsulated in national and international road traffic legislation (vide section 3.2.2), even though these requirements vary from country to country because

the police in some countries are not obliged to record details on minor crashes, according to the International Road Traffic and Accident Database (IRTAD, 2009:14).

### **3.5.1 The recording of traffic crashes**

Crash scenes vary from calm, organised and collected to hectic, chaotic and in many cases extremely difficult to manage, especially with the movement of people at the scene (Roets, A. 2013), hence the recording of crash data may be impeded. The recording of crash data by law enforcement practitioners is crucial to improve road safety and is executed on one of three levels (Roets, A. 2013):

#### **a) The recordist**

Usually the first responder who arrives at the scene, will be recording the details. These practitioners have formal training in the basic recording of traffic crashes.

#### **b) The investigator**

In the event of serious or fatal crashes, the investigator is generally requested to attend the scene for a proper detailed recording of facts. These practitioners also have formal training in the investigation of traffic crashes.

#### **c) The reconstructionist**

This is a specialist specifically trained in the field of reconstruction to determine the cause of a crash. This level of expertise requires a high level of training and practitioners must have a sound knowledge of mathematics.

From an international perspective, the recording of crashes in rural areas is problematic because law enforcement officials may never hear of a crash (IRTAD, 2009:14). According to a study in Japan, the underreporting of crashes distorts any evaluations of preventive measures (Nakahara & Wakai, 2001). The researcher is of the opinion that the situation regarding underreporting in South African rural areas is similar. This statement is supported by a research study that was conducted in Pretoria and Cape Town, emphasising that the level of underreporting in rural areas is much higher than in other areas (De Beer, Van Niekerk & Vermaak, 2002:iv). Generally, the SAPS are regarded as the only institution responsible for the crash reporting system, because of their role as custodians of personal safety of all citizens. In the majority of

cases, the primary objective of the police officer when collecting data at a road traffic crash will not be to generate data to improve road safety (Evgenikos et al, 2010:11).

Nationally and internationally, information on road traffic crashes and injuries is recorded on a daily basis in the majority of the countries. Pre-determined forms are used to collect the information and from time to time law enforcement practitioners are requested to write reports on reported road traffic crashes (Evgenikos et al, 2010:7).

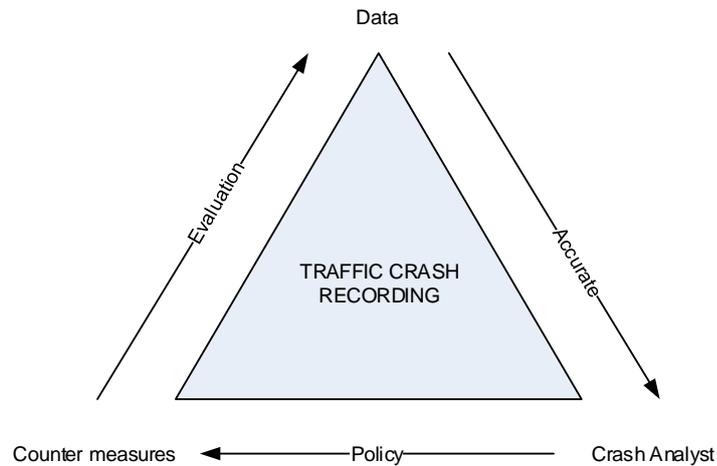
### **3.5.2 The method to record road traffic crashes in South Africa with emphasis on the research area**

The introduction of standardised accident report forms will simplify crash recording (Forster, 1940:199). AR Forms must be complete and accurate in order to provide the foundation for:

- Planning by the department.
- Information that is required for administrative purposes.
- Legal requirements.
- Proper accident investigation and/or reconstruction (Forster, 1940:199-200).

The more data available, the better the problems can be identified and the more precise the analysis will be in assessing the magnitude of road safety in order to determine accurate national priority (Derriks & Mak, 2007:11). The author visualises these basic elements as reflected in figure 3.1 below.

**Figure 3.1: Traffic crash recording triangle**



Road crash data will form the backbone of every institution concerned with road safety. An effective road crash database is dependent on accurate information recorded at the scene of the crash and should be able to process the information in such a way that it allows for analysis that facilitates data-driven action (Evgenikos et al, 2010:7).

The main purpose of documenting this important information is to allow road traffic authorities to carry out their specific functions, being:

- Crash investigation.
- Law enforcement.
- Improved road safety in general (Evgenikos et al, 2010:7).

In order for law enforcement practitioners to provide accurate and useful information, knowledge about the process, procedure and responsibilities is not negotiable.

### **3.5.3 The duty of the driver in the event of a traffic crash**

The duties of the driver of a vehicle that was involved in a traffic crash, are specified in section 61(1) of the NRTA, Act 93 of 1996 (South Africa, 1996b):

- “(1) The driver of a vehicle at the time when such vehicle is involved in or contributes to any accident in which any person is killed or injured or suffers damage in respect of any property, including a vehicle, or animal shall:
- (a) Immediately stop the vehicle and report the accident on the prescribed form and in the prescribed manner, the officer concerned shall deal with the report in the prescribed manner and the chief executive officer must ensure that the accident is recorded in the register of accidents in the prescribed manner and within the prescribed period.
  - (b) Ascertain the nature and extent of any injury sustained by any person.
  - (c) If a person is injured, render such assistance to the injured person as he or she may be capable of rendering.
  - (d) Ascertain the nature and extent of any damage sustained.
  - (e) If required to do so by any person having reasonable grounds for so requiring, give his or her name and address, the name and address of the owner of the vehicle driven by him or her and, in the case of a motor vehicle, the licence number thereof.
  - (f) If he or she has not already reported the accident to a police or traffic officer at the scene of the accident, and unless he or she is incapable of doing so by reason of injuries sustained by him or her in the accident, as soon as is reasonably practicable, and in the case where a person is killed or injured, within 24 hours after the occurrence of such accident, or in any other case on the first working day after the occurrence of such accident, report the accident to any police officer at a police station or at any office set aside by a competent authority for use by a traffic officer, and there produce his or her driving licence and furnish his or her identity number and such information as is referred to in paragraph (e).
  - (g) Not, except on the instructions of or when administered by a medical practitioner in the case of injury or shock, take any intoxicating liquor or drug having a narcotic effect unless he or she has complied with the provisions of paragraph (f), where it is his or her duty to do so, and has been examined by a medical practitioner if such examination is required by a traffic officer.”

International legal prescriptions are alike, although not identical. The following two examples illustrate this statement:

- (i) Chapter 169.09 of the Minnesota Statutes of 2011 (subdivision 1) prescribes the duty of drivers to stop when bodily injury or death is caused by the driver of any motor vehicle that is involved in an accident, to exchange information. Subdivision 2 has similar prescriptions, with the emphasis on the damage to property. Subdivision 3 prescribes the manner in which information and documentation should be available to the affected as indicated in subdivisions 1 and 2 herein above.
- (ii) Section 170 of the RTA of 1988 (United Kingdom) states that any driver involved in an accident that caused personal injury or damage must stop and give information and documents to such other person affected in the accident.

#### **3.5.4 The responsibilities of the law enforcement practitioner at the scene of a traffic crash**

The NRTA, Act 93 of 1996 (South Africa, 1996b) is an Act (law) by parliament that places a legal duty upon a law enforcement practitioner (PMG [sa]) to operate within the auspices of the relevant Act. For the purposes of this study, it refers to all aspects relating to road traffic crashes and related matters. Standing Orders are developed and approved to assist administrators in the discipline of law enforcement practitioners. Standing Orders in conjunction with s64C(2) of the South African Police Service (SAPS), Act 68 of 1995 (South Africa, 1995), which prescribe that “the executive head shall, subject to this Act, national standards and the directives of the chief executive officer, exercise control over the municipal service, and shall –

- (d) Be responsible for the discipline of the municipal police service”.

Roets, H. (2013) states that the purpose of Standing Orders is to establish a formal framework of control and internal discipline to promote professionalism amongst law enforcement practitioners. Through his experience in the field of law enforcement, the researcher concurs and is of the opinion that Standing Orders are developed to regulate the conduct of members. The development and implementation of Standing

Orders is not a legal requirement, but according to Dhamapada (2013) a general order to be obeyed if some future condition comes into existence.

**Image 3.1: Ekurhuleni Metropolitan Municipality**



Image obtained with approval from <http://www.sleeping-out.co.za/images/Ekurhuleni.gif>. See annexure attached

According to the researcher, the responsibilities of law enforcement practitioners concerning traffic crashes are divided into two categories that are depicted in figure 3.2.

**Figure 3.2: Categories of the responsibilities of law enforcement practitioners**



The two categories stated in figure 3.2 are explained in sections 3.2.5.1 and 3.2.5.2.

#### **3.5.4.1 Legal responsibility**

According to Roets, A. (2013) numerous local and provincial traffic practitioners do not attend to crash scenes, for the apparent reason that in terms of s205(3) of the Constitution of the Republic of South Africa, Act 108 of 1996 (South Africa, 1996a) the investigation function is situated with the SAPS. This is indeed a skewed approach because this “traffic” function is indirectly shifted to the SAPS. The problematic encounters experienced by EMPD officers will be discussed in section 5.3.1.1. (see also 6.2.4.1, 6.3.4 & 6.4)

As indicated in section 3.2.3, the NRTA, Act 93 of 1996 (South Africa, 1996b), places a legal obligation on a law enforcement practitioner concerning a road traffic crash. Section 61(1) of the NRTA, Act 93 of 1996 (South Africa, 1996b) prescribes that:

- “(1) The driver of a vehicle at the time when such vehicle is involved in or contributes to any accident in which any person is killed or injured or suffers damage in respect of any property, including a vehicle, or animal shall:
  - (a) immediately stop the vehicle and report the accident on the prescribed form and in the prescribed manner, the officer concerned shall deal with the report in the prescribed manner and the chief executive officer must ensure that the

accident is recorded in the register of accidents in the prescribed manner and within the prescribed period.”

The legal burden that section 61(1) places on a law enforcement practitioner, is that s/he is not allowed to refer those involved in the so-called “minor crashes” to the nearest police station, traffic department or metropolitan police office for registration purposes. This legal “burden” is furthermore supported by section 61(1)(f), which prescribes that “if he or she has not already reported the accident to a **police or traffic officer at the scene of the accident...**in paragraph (e)”. Roets, A. (2013) is of the opinion that if a crash were of such a minute nature that the services of a law enforcement practitioner are not required, it would have been stipulated in the relevant legislation.

International legislation though, prescribes the action by a law enforcement officer in the event of a minor crash. Chapter 8, s8-1611 of the Kansas Statutes (2009) prescribes that:

- “(a) Every law enforcement officer who:
- (2) otherwise...when such accident ...results in...total damage to all property to an apparent extent of \$1 000 or more, shall forward a written report of such accident to the department of transportation within 10 days after investigation of the accident.”

Section 550.062. of the Texas Department of Transport (TDOT, 2012:5) prescribes that:

- “(a) A law enforcement officer who in the regular course of duty investigates a motor vehicle accident shall make a written report of the accident if the accident resulted in injury to or the death of a person or damage to the property of any one person to the apparent extent of \$1 000 or more.”

Once again, the NRTA, Act 93 of 1996 (South Africa, 1996b), is silent about the failure of a practitioner to record a road traffic crash. It is therefore imperative that law

enforcement agencies develop a policy to address the actions of practitioners when attending to the scene of a crash.

### **3.5.4.2 Administrative responsibility**

According to the International Association of Chiefs of Police (IACP, 2010:1) they regard the first priority of the practitioner as getting to the scene quickly, however safely. The practitioner should furthermore ensure that s/he is familiar with national legislation and departmental policy concerning responses and actions at a crash scene. The practitioner is responsible for the safety of individuals on the road. The duties of a law enforcement practitioner are generally explained in policies and procedural manuals (Highway Safety Committee, 2004:24-25; King County Sheriff's Office, 2010:499; Seattle Police Department, 2012:657-660).

The duties of a law enforcement officer attending a traffic crash may differ from department to department, due to different policy and procedural manuals. After perusing the policy and procedural manuals of the King County Sheriff's Office (2010:499); the Seattle Police Department (2012:657-660) and the Highway Safety Committee (2004:24-25), the duties of law enforcement practitioners at the scene of a traffic crash, are summarised as follows:

- Basic first aid.
- Protection of the scene.
- Request for assistance and/or equipment, should it be required.
- Identification of hazards or dangerous situations.
- Identification and interviewing of witnesses.
- Secure safe traffic flow.
- Check driver(s) for intoxication.
- Collection of physical evidence.
- Detailed drawing, including measurements.
- Completion of the traffic collision report.
- Encourage and assist drivers with the exchange of information.
- Protect the property of the injured.

- The clean-up of spills and debris.
- Law enforcement action (the issue of citations or arrests when appropriate).

Roets, H. (2012) concurred with the above-mentioned duties, but pointed out that the current orders used by the EMPD, are as follows:

- Upon arrival at the scene of the crash, observe the scene to determine:
  - possible hazards or dangerous situations;
  - any vehicle fire(s);
  - downed power lines;
  - any person(s) lying around;
  - any vehicle(s) carrying dangerous goods;
  - any other hazard or dangerous situation;
  - the traffic flow situation.
- Protection of the scene.
- Basic first aid and request emergency services, if so required. *[practitioners are sensitised to the fact that when in doubt with regards to the severity of the injury, obtain professional medical assistance].*
- Identification and interviewing of witnesses.
- Check driver(s) for intoxication.
- All officers that attend traffic crash scenes shall first record the relevant information in a departmentally approved accident recording book and thereafter on the prescribed AR Form. The AR Form must be completed prior to completion of the officer's shift (Roets, H. 2012).
- Rough sketch of the crash scene in the event of slight injuries and/or damage only, but a detailed drawing, including measurements in the event of serious injuries.
- Collection of physical evidence.
- Encourage and assist drivers with the exchange of information.
- Protect the property of the injured.
- The clean-up of spills and debris.
- The arrest of intoxicated or reckless drivers (currently the only form of law enforcement at the scene).

The author is of the opinion that law enforcement practitioners should be sensitised to the fact that the recording of information at the scene of a crash is important and to be taken down with care. Dubious personal information is a growing concern, which affects the integrity of the total CJS. To affirm this concern, Hofmeyer found in an investigation of 350 licensing offices that 91 596 licences (7%) of 1.4 million issued, were invalid (false) (Van der Merwe, 2014). Watson of the Department of Transport (Van der Merwe, 2014) sketches a much darker picture in suspecting that up to 50 per cent of all drivers' licences issued are "suspect". The Star (Wheels24, 2011) reported that "fake" drivers' licences could be obtained from "fly-by-night" driving schools that work with centre examiners. The cost of a licence at Langlaagte is R4 500, at Randburg R2 500 and in Sandton R2 700. This is seen as the proverbial "tip of the iceberg". This holds serious consequences for road safety in totality.

In addition to section 61(1) of the NRTA, Act 93 of 1996 (vide section 3.2.3.1), Roets, H. (2013) stated that Standing Order 18.28 that was approved by the Ekurhuleni Metropolitan Municipal Council (EMMC) at the 7<sup>th</sup> Ordinary Council Meeting (Item PS 41-2002), prescribes that "an officer dispatched to, or arriving at the scene of an accident shall take the particulars of such accident. An officer shall under no circumstances refer the participant/s to the SAPS". From the personal experience of the researcher in the field of law enforcement, failure to comply with the prescriptions of SOs will result in disciplinary action taken against the transgressing practitioner.

According to Roets, A. (2013) the collection and recording of crash scene information by law enforcement officials in terms of their mandate (see legal and administrative responsibility) will only be possible if the scene is attended to timeously to ensure that conditions have not changed. The registration of recorded crashes is necessary to enable administrators to take corrective measures about crash causation, trends and patterns.

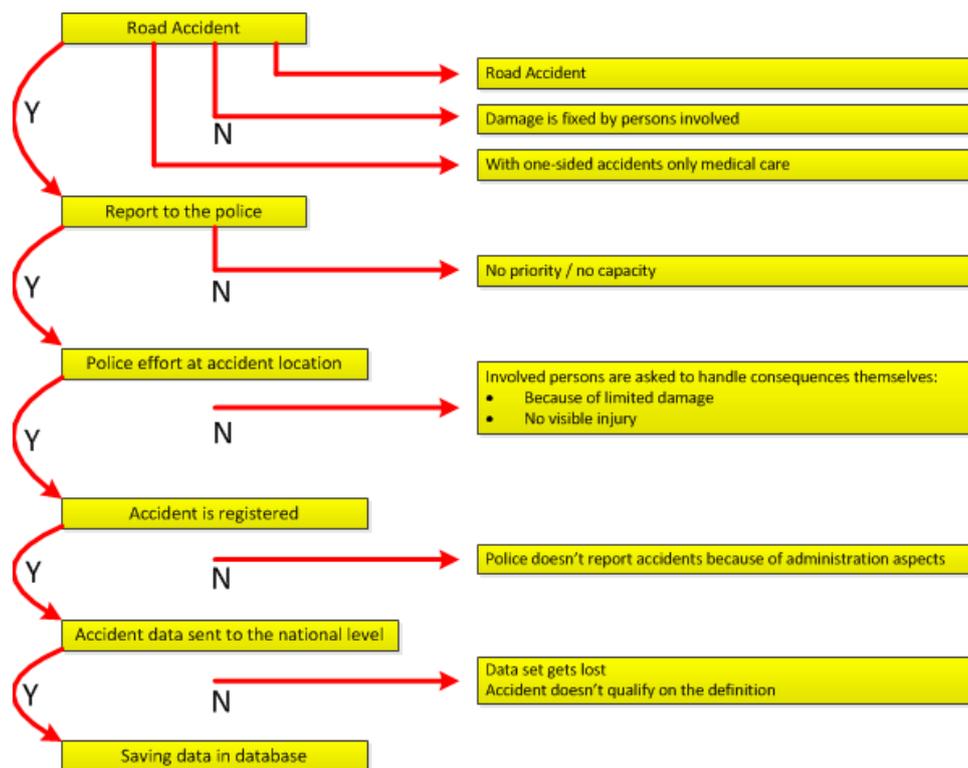
### **3.6 REPORTING AND REGISTRATION OF TRAFFIC CRASHES**

According to Roets, A. (2013) the collection of data from the scene of the crash to the collection point (capturing authority) is a challenging process. The registration of traffic crashes can only materialise if they are reported. According to Nantulya and Reich

([sa]:3) the reduction of traffic injuries in developing countries is not that effective, because of the underestimation of road traffic injuries. This underestimation is the result of underreporting and the consequent lack of reliable data (Noble, [sa]:13). Toroyan (2013:8) reasons that data obtained from law enforcement practitioners in low- and middle-income countries are inclined to have higher levels of underreporting, because of the difficulty to follow up on crash victims.

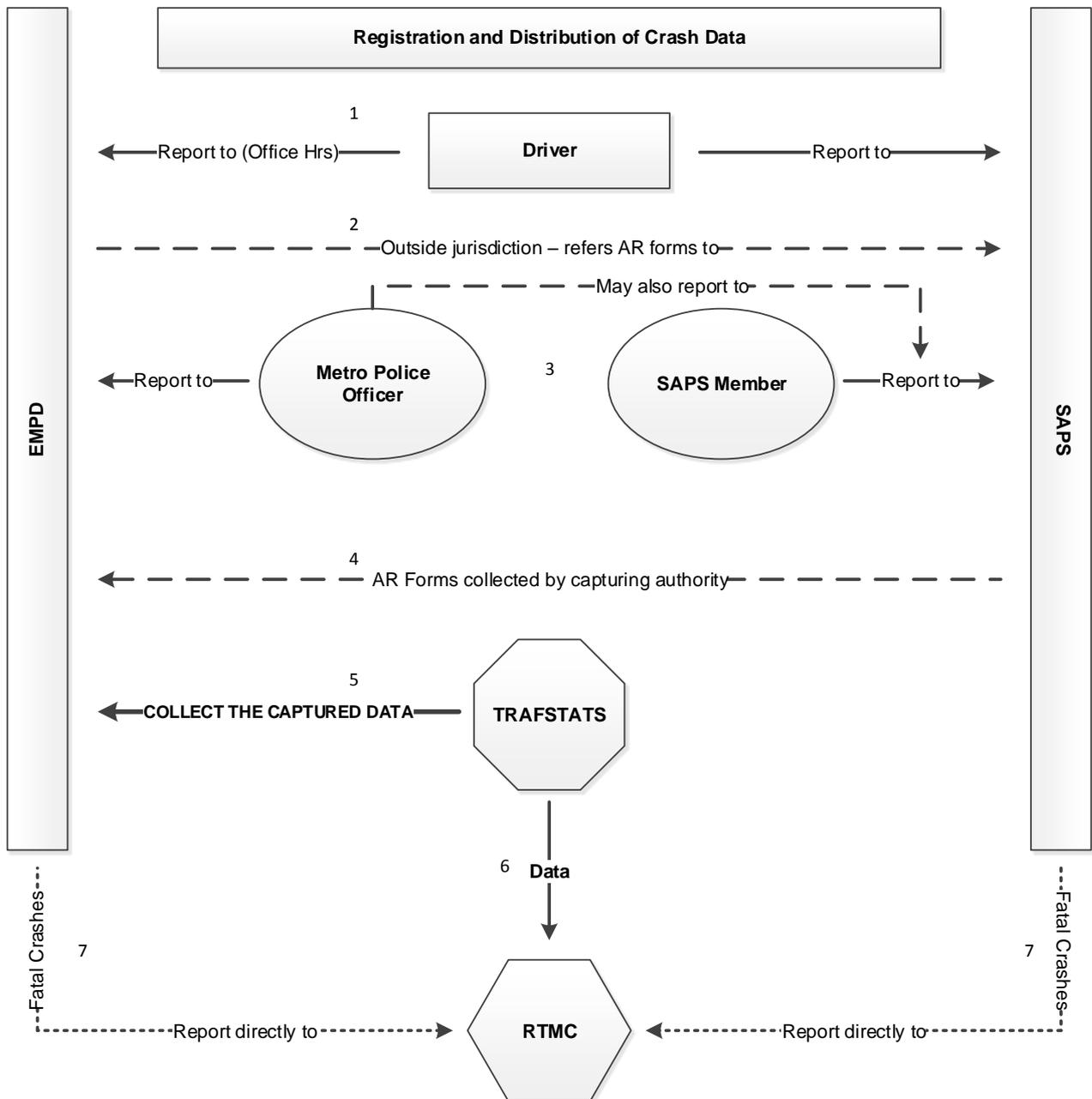
The process of registering traffic crashes is an intricate process and may differ from country to country, depending on the legislative and/or prescribed policy requirements. Figure 3.3 is adapted from Derriks and Mak (2007:15) and illustrates a generic international traffic crash registration process.

**Figure 3.3: Generic international traffic crash registration process**



According to the Department of Transport ([sa]: 2-29) and Roets, H. (2012) a South African interpretation of the registration process is illustrated in figure 3.4.

**Figure 3.4: South African registration process of traffic crashes**



An explanation of figure 3.4 is as follows:

1. The driver of a motor vehicle involved in a crash may report the crash to either the SAPS or the metropolitan police office or the relevant traffic department. A crash can only be reported within office hours, or in the event of the crash

occurring over a weekend or public holiday, on the first working day after the occurrence of the crash.

2. A crash occurring outside the area of jurisdiction of the relevant SAPS or EMPD office can be reported to such office. The EMPD will forward the AR Form to the closest SAPS office, which allocates a temporary AR or Occurrence Book (OB) number. If reported directly to the SAPS office, a temporary AR or Occurrence Book (OB) number is allocated. The SAPS will then forward the AR Form to the SAPS office in whose area the crash occurred. This process creates an unnecessary time delay at insurance companies due to the temporary AR number or OB number allocated. A claim will only be processed when an original AR number is provided (Roets, H. 2012).
3. An EMPD officer attending to the scene of a traffic crash reports it directly to the relevant EMPD office; however, it may also be reported to the SAPS office. SAPS members though must report traffic crashes directly to their respective offices.
4. The EMPD collects the AR Forms weekly from the SAPS for capturing on the databases.
5. Captured data are downloaded on a monthly basis by the Traffic Information Statistics (TRAFSTATS), formerly known as Gauteng Traffic Information Centre (GTIC). Roets, H. (2012) states that the change from the GTIC to TRAFSTATS occurred approximately two years ago. There was no change in functionality. The purpose of TRAFSTATS is to assist the RTMC in maintaining statistics and to generate management reports.
6. The RTMC collects the processed data from the Gauteng Traffic Information Centre (GTIC) for statistical purposes.
7. Information regarding accidents resulting in fatal injuries is sent to the RTMC immediately after the crash was recorded.

This cumbersome process is necessary to eliminate any doubt in the minds of law enforcement practitioners concerning the registration of road traffic crashes, after they have been recorded. This process is not applicable to the EMPD officers only, it is the current process being followed nationally. Failure to comply with the prescriptions of this process is problematic for the person responsible for the database (vide section 5.3.1.4).

According to the researcher the registration of traffic crashes are categorised into two categories:

- The report by the driver to any police station or traffic or metro police office.
- A law enforcement official attending such scene.

### **3.6.1 Report by the driver**

The NRTA, Act 93 of 1996 (South Africa, 1996b) prescribes that:

- In the absence of a police or traffic officer and where there are damages [and] or injuries [and] or any person killed, to exchange information at the scene of the crash, when required to do so.
- If the driver is unable to report the crash to a practitioner at the scene due to injuries sustained, s/he must report it as soon as is reasonably practicable.
- If not reported to a practitioner at the scene of a crash where another person is killed or injured, to do so within 24 hours after the occurrence of the crash, or the first working day after the occurrence of the crash to any police officer at a police station or a traffic officer at any authorised office (vide section 3.2.2).

### **3.6.2 An officer attending the scene of a crash**

The NRTA, Act 93 of 1996 (South Africa, 1996b) states that a practitioner at the scene of a crash shall record the crash “on the prescribed form and in the prescribed manner” (vide section 3.2.2). It is assumed that the form refers to the AR Form. The AR Form currently in use holds no legal ground because the NRTA, Act 93 of 1996 (South Africa, 1996b) failed to include the prescribed AR Form in Schedule 2: names of the forms referred to in these regulations (vide 6.2.1.3.2 & 6.3.1). The NRTA, Act 93 of 1996 (South Africa, 1996b) furthermore neglected to develop regulations specifying the prescribed manner (vide 6.3.1).

Roets, H. (2013) confirmed that a practitioner attending to the scene of a traffic crash is obliged to record the required information in the terms of an approved policy, which has not yet been developed since the implementation of the Standing Orders. Roets,

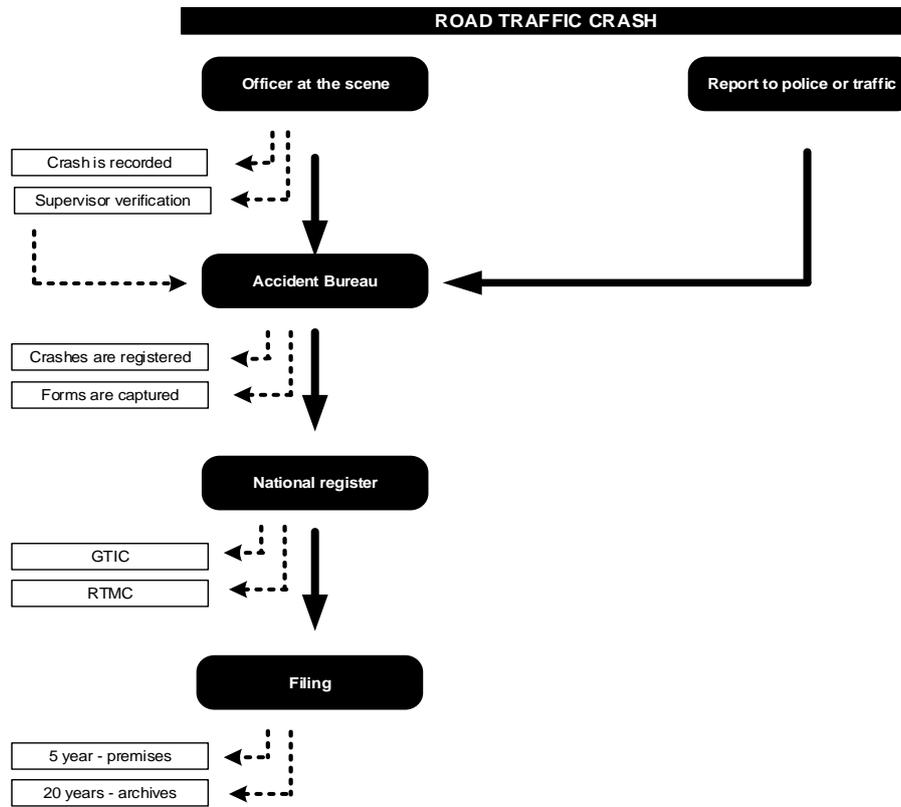
H. (2013) explained that the absence of the policy is covered through the internal training of members about the procedure currently utilised by the EMPD.

A practitioner attending to the scene of a traffic crash, records the information in the prescribed Accident Recording Book. The AR Form is completed prior to the finalisation of the practitioner's shift and handed to the relevant shift supervisor who is responsible to verify it for completeness and accuracy (Roets, H. 2013). See figure 3.5 for an illustration of the process followed by the EMPD after submitting the AR Form to the supervisor. The supervisor submits the verified AR Form to the Accident Bureau for recording in an Accident Register Book, and the allocation of a unique Accident Register Number. The Accident Bureau is the division responsible for the capturing and processing of completed AR Forms. Forms are captured on a computer system and allocated an Accident Capturing Number where after they are filed for a period of five years at the Accident Bureau. After the lapse of the five years, the AR Forms are kept for an additional 20 years in an archive to comply with the prescriptions of the National Archives and Record Service of South Africa Act 43 of 1996 (South Africa, 1996d).

All crashes reported to the SAPS are recorded in the prescribed Accident Recording book and an Accident Report number allocated. Members collect the recorded accident forms on a weekly basis from the Accident Bureau of the EMPD and the same registration process followed as explained in the previous section (Roets, H. 2013).

The captured data files of **non-fatal crashes** are downloaded on a monthly basis by TRAFSTATS where after the data files are forwarded to the Road Traffic Management Corporation (RTMC) for inclusion in the national register. The registration process of fatal crashes is slightly different because specially designed forms are used to immediately forward the information electronically to the RTMC. The registration process of the crash is followed as explained above. The researcher illustrates the registration process for the southern region of the EMPD in figure 3.5.

**Figure 3.5: Registration process at EMPD (Southern Region)**



### 3.7 DATA MANAGEMENT

The recording of road traffic crash data is a universal phenomenon. Crash data refer to traffic accident information recorded by law enforcement agencies (Pollack et al, 2010:3; State Highway Administration [SHA], 2012). The collection of information (data), the interpretation and storage thereof, and the utilisation of this data provide useful information for traffic safety interventions. Different databases are used to compile a traffic safety information system. According to Pollack et al (2010:3) these databases that comprise the traffic information system are crashes, drivers, vehicles, the roadway environment, injuries and traffic violations. To be effective and efficient,

these databases are interlocked and operate in a relationship with one another (vide figure 3.6)

**Figure 3.6: Databases comprise a traffic information system**



Pollack et al (2010:3) are of the opinion that the databases reflected in figure 3.6 centre around the crash data, especially with the focus on traffic safety; while the remaining databases are integrated and linked in a relationship with the crash data.

Traffic safety professionals and administrators use the information provided by the traffic information system to identify traffic safety problems, to select countermeasures and intervention programmes and to evaluate the performance of the safety programmes (Pollack et al, 2010:3; SHA, 2012). According to Mikulik (2006:4) road crash data are not solely used by traffic administrators. He identifies the following users of crash data:

- Citizens.
- Politicians.
- Decision makers.
- Responsible bodies.
- Professionals.

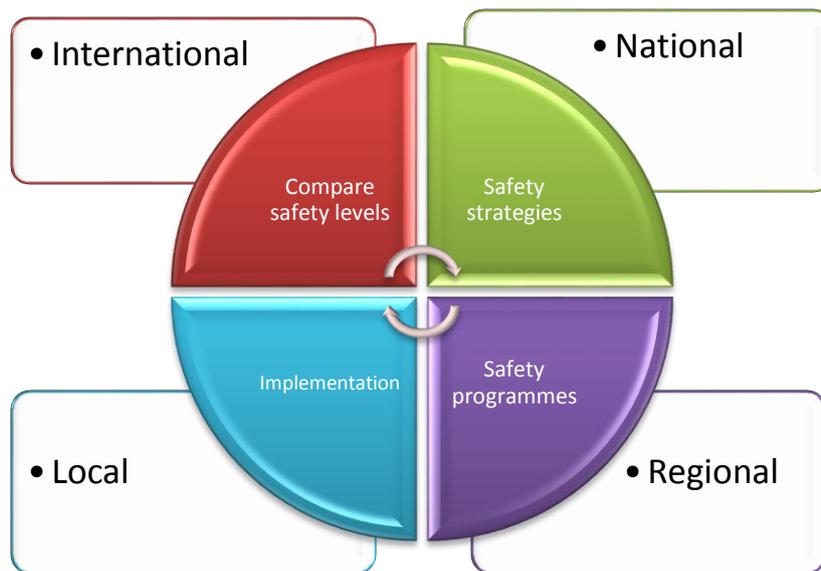
- Researchers.

Through his experience, and in addition to the identified users, the researcher includes the following as frequent users of road crash data:

- Lawyers.
- Insurance companies.
- The courts.

Mikulik (2006:5) is of the opinion that the scope of data depends on the level of users thereof (vide figure 3.7 for an illustration).

**Figure 3.7: Scope of data**



The International Traffic Safety Data and Analysis Group (ITSDA, 2014) explains that crash information was traditionally collected from the police to study road traffic injuries. Lujic et al as well as Clark (IRTAD, 2009:16) are of the opinion that no single database is capable of providing sufficient information to depict a complete picture of traffic crash injuries, because it provides a one sided dimension of the overall road safety situation. Although the collection of crash information by the police and traffic officials is naturally detailed and complete, there is to a certain extent a lack of reliable

data about the nature and severity of injuries (Clark in IRTAD, 2009; Lujic et al in IRTAD, 2009:16).

Although traffic crashes are recorded in most countries (Derriks & Mak, 2007:5), road crash data are not available in many African countries (Jacobs et al, 2000:5). Where data are available, it will often be several years out of date (Jacobs et al, 2000: 5).

Even though statistics are recorded in South Africa, it is not without controversy. Statistics released by the RTMC from 2009 onwards indicate fatalities only. The national picture in relation to all categories of traffic crashes, i.e. fatal, serious, minor and no injuries (vide section 2.3.1) is unknown and does not depict a true reflection of the total picture of road traffic crashes in South Africa. A case in point is discussed by Van der Merwe (2012), who points out that according to several former RTMC officials, data on non-fatal accidents became unusable during a migration process of the data to a new database due to the failure of being backed up first.

### **3.7.1 Collation of traffic crash data**

Data will be effective if the “Where, When, Who, What, Why and How” is provided (Roets, A. 2013). In this age of decreasing resources and increasing needs, the provision of accurate data becomes increasingly important as indicated in 3.4.2 below (DHTS, 2004:3).

According to Roets, A. (2013) data are categorised into three (3) categories:

- **Volatile data:** data usually available for only a few minutes after the crash, such as vehicle rest positions, debris, and so forth.
- **Data available for 2-3 days:** this type of data may be reliably collected for several days after the crash, such as traffic signs, skid marks, and so forth.
- **Semi-permanent data:** can be collected for weeks or even months after the crash. These data include road dimensions, injuries, and so forth.

The collation of traffic crash data is based on the successful registration of crashes by law enforcement practitioners on a prescribed standardised form (Derrick & Mak, 2007:12).

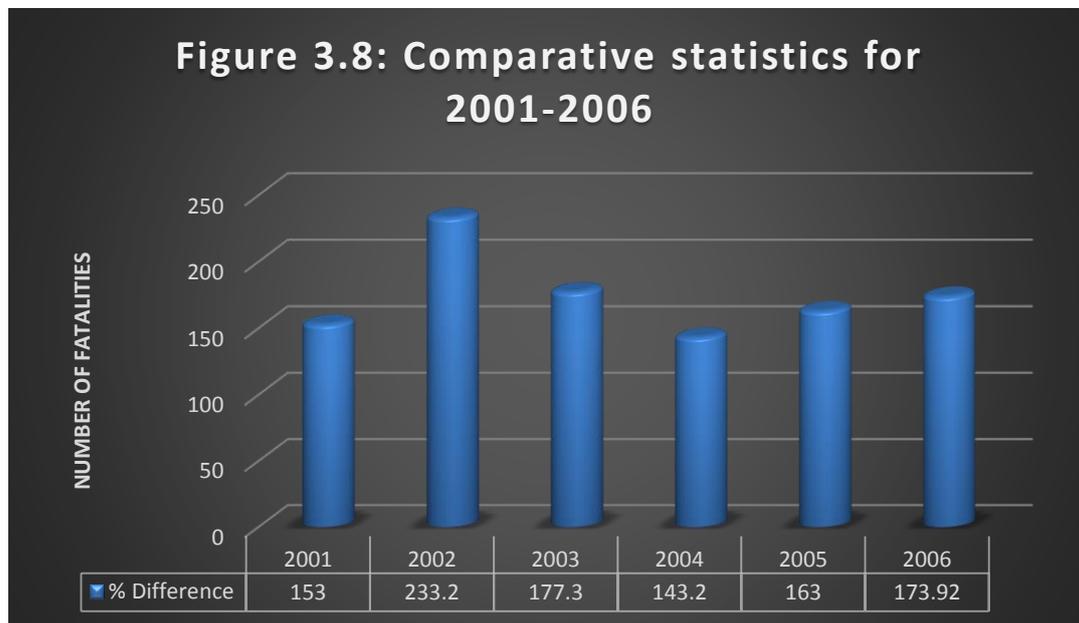
### 3.7.2 Integrity of crash data

In an endeavour to compile or to compare national crash statistics (vide section 2.3.4.1), the researcher had to consult numerous sources because of the unavailability of reliable sources. The Democratic Alliance (DA) in 2010 “has slammed the country’s road accident statistics as not reflecting the crisis on South African Roads” (Ndaliso, 2010). In South Africa, the RTMC is tasked with compiling crash statistics (Arrive Alive, 2011), which according to Van der Merwe (2012) are available only from the 1990s onwards. Enquiries on the database provided controversial information, such as crashes that took place as early as the 1940s and well into the future – 2017 (Van der Merwe, 2012). A comparison between statistics obtained from Statistics South Africa (Lehohla, 2009:12) and the RTMC (Arrive Alive, 2011) for the period 2001-2006 revealed huge disparities between the fatality rates (vide Table 3.3).

**Table 3.3: Comparisons in fatality rate for 2001-2006**

<i>Year</i>	<i>SA Stats</i>	<i>RTMC</i>	<i>Difference</i>	<i>Difference in %</i>
2001	4 433	11 201	<b>6 768</b>	<b>153</b>
2002	3 661	12 198	<b>8 537</b>	<b>233.2</b>
2003	4 455	12 354	<b>7 899</b>	<b>177.3</b>
2004	5 234	12 727	<b>7 493</b>	<b>143.2</b>
2005	5 443	14 317	<b>8 874</b>	<b>163</b>
2006	5 664	15 515	<b>9 851</b>	<b>173.92</b>

Figure 3.8 is a graphical illustration of the comparative data that are collated in Table 3.3 above.



From the graph, it is clear that there are huge disparities between the official statistics released by Statistics South Africa and that of the RTMC. On average, the figures provided by the RTMC show a 147 per cent variance from those provided by SA Statistics. At face value, these statistics are insignificant with no possibility of any statistical inferences drawn thereof.

### 3.7.3 Necessity for traffic crash data

Recorded traffic crash information is generally stored on a database. This information is primarily based on reports from police officers and traffic officers (Derrick & Mak 2007: 5). A record system is critical as it enables law enforcement managers and administrators to understand the criteria that make a road unsafe, and to develop relevant and effective countermeasures (Derrick & Mak, 2007: 5). These databases provide valuable insight on the number of accidents, injuries and casualties (Derrick & Mak, 2007: 5). Mikulik (2006:3) concurs with Derrick and Mak and highlights that road crash data are needed to:

- Know the scope of the problem.

- Evoke a public awareness.
- Discover causes of crashes.
- Explore ways to prevent crashes.
- Develop measures to reduce the severity of crashes.

The quality of data (vide the objectives in section 1.3) is compromised by aspects such as:

- Incorrect classification of injuries and/or type of crash.
- Underreporting of crashes and/or injuries, which is exacerbated by referring drivers to report crashes themselves.
- Incomplete AR Forms – missing data
- Erroneous recording of AR Forms.

Government is spending billions of rand each year to make our roads safe and efficient. This is confirmed by the National Treasurer (Gordhan, 2013) indicating that the South African National Roads Agency Limited (SANRAL) was allocated R1.4 billion for road construction and maintenance for the 2013 fiscal year. Analysing crash data creates the foundation which is necessary to determine trends, patterns and hazardous locations that are required by law enforcement administrators to improve safety (SHA, 2012). The recording of crash data should be accurate to prevent implementing incorrect or improper measures that may have an ineffective or deteriorating effect on the situation (SHA, 2012).

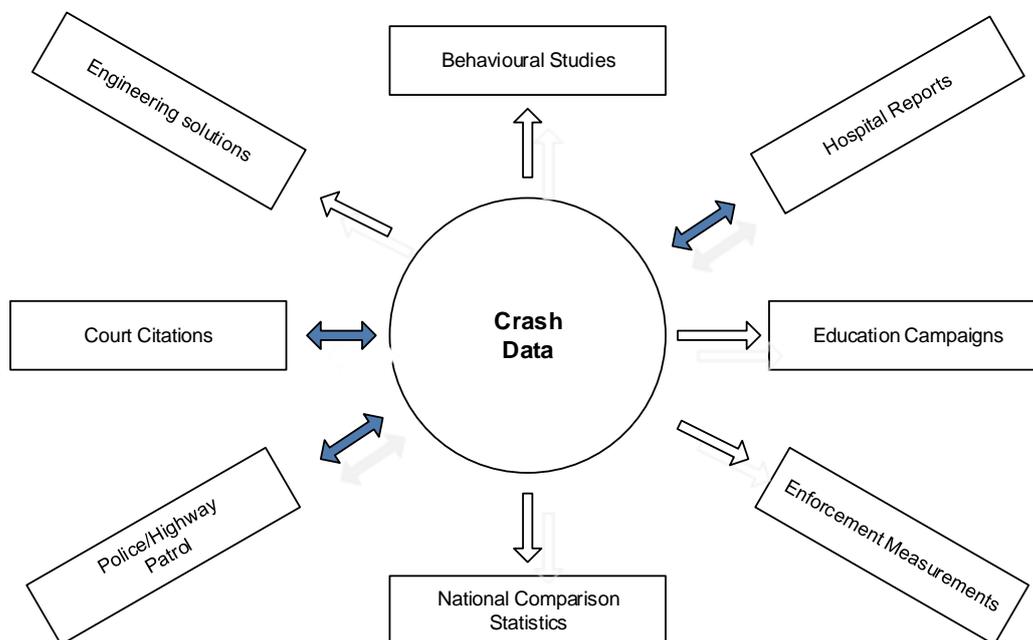
The Mid-Ohio Regional Planning Commission (MORPC, 2009) as well as Nakahara and Wakai (2001:244) concur with SHA and explain that the accuracy and reliability of crash data furthermore contribute:

- To major decisions regarding how money is spent to improve safety.
- To identify crash patterns and to determine strategies on how to address the issues.
- To prioritise high accident locations.
- To determine educational needs.

- Towards improved targeted educational programmes to reduce accidents.
- To assist law enforcers in concentrating on identifying aspects through selective law enforcement.
- To pinpoint problem areas through accurate information.

Figure 3.9 provides a self-explanatory illustration of how crash data are obtained and utilised (MORPC, 2009).

**Figure 3.9: Use of crash data**



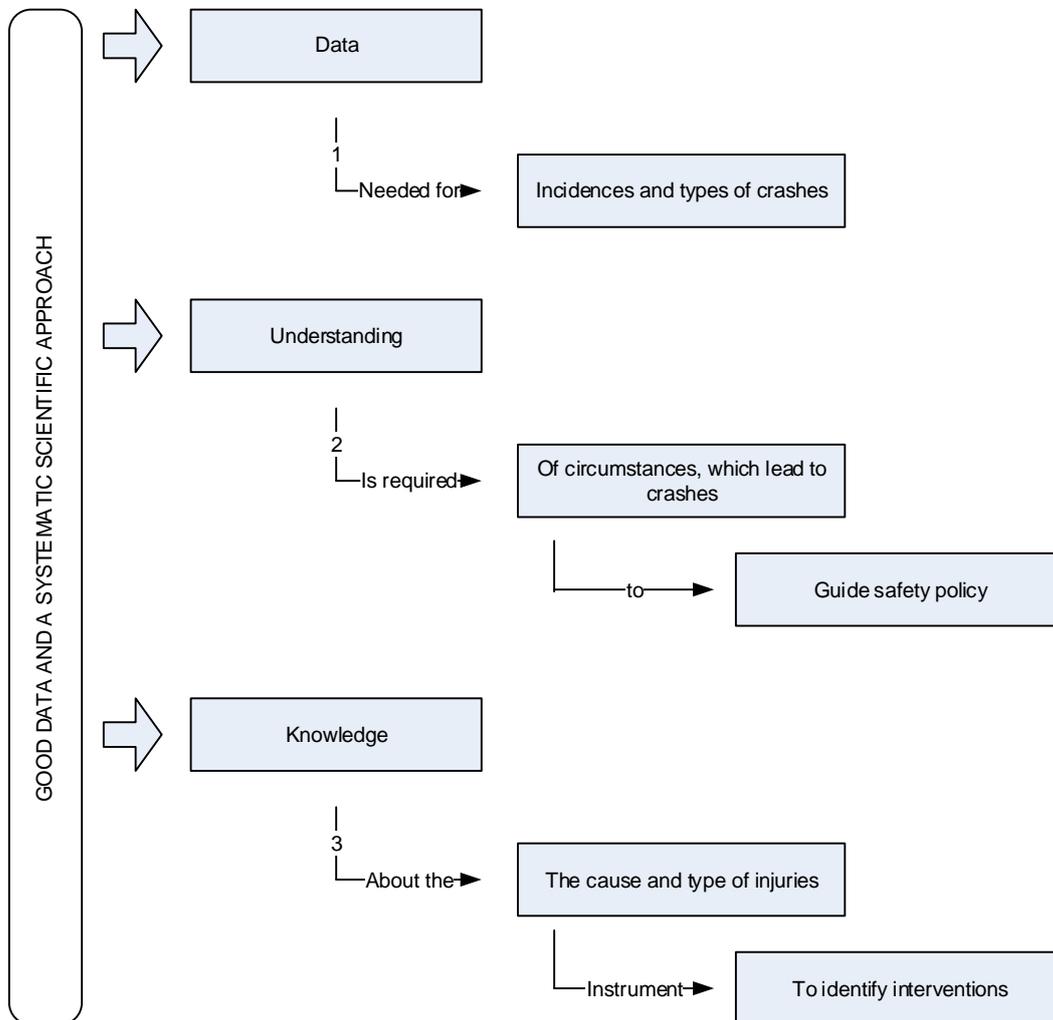
In figure 3.9, the blue arrows indicate the institutions that data are obtained from.

The white arrows indicate role players that utilise the data once analysed and interpreted. Peden et al (2004:8) expound on the view, explaining that data of all incidences and types of crashes are needed to obtain knowledge about:

- The circumstances that lead to crashes – that will assist law enforcement administrators to develop safety policies.
- The way in which injuries are caused – to enable law enforcement administrators to identify interventions.

This viewpoint is illustrated in figure 3.10.

**Figure 3.10: Scientific approach with regards to data**



According to Pollack et al (2010:6) the basic characteristics for data quality are timeliness, accuracy, completeness, consistency, integration and accessibility, which are not negotiable, as Toroyan (2013:1) points out that road traffic injuries are preventable through concerted efforts such as law enforcement in the form of prosecution of offenders.

### 3.8 PROSECUTING OFFENDING MOTORISTS

The Delhi Traffic Police [sa] points out that in 1895, John Henry Knight was the first motorist to appear in court and to be convicted and fined for using a motor-tricycle on

a highway. The first traffic citation in the United States was issued on 20 May 1899 to a New York City cab driver for an alleged speeding offence of 12 miles per hour (E Notes, 2012).

Ever since the 1800s until modern society, the institution of prosecutions forms part of the duties of law enforcement practitioners. The Crown Prosecution Service ([sa]) explains that the concept “prosecution” is not only vital to the enforcement and promotion of road safety and the protection of the public, but is also a fundamental component of public confidence with regards to victims and their families in the CJS.

Driving is a privilege and not a constitutional right – a privilege that can and should be withdrawn if it endangers others (Norman, 1962:11). Enforcement, according to Bobevski et al (2007:26) is an important deterrence process because potential offenders are influenced against committing offenses through the fear of detection and the concomitant consequences. A survey done in the United Kingdom indicated that 53 per cent of drivers think there is a less than one in four chance of being caught drink-driving, whilst 31 per cent think there is a less than one in 10 chance of being caught (Townsend, 2011). Offending motorists in South Africa believe that they can perform illegal acts, because they have the money to pay for such illegal behaviour (Kockott, 2005:60). The former Transport Minister, S’bu Ndebele (SA News, 2010) pointed out that those offending drivers, who compromise the safety of other motorists and pedestrians, will be dealt with harshly.

### **3.8.1 Prosecution as a legal imperative**

Zhang, Yau and Chen (2013:18) concur with Nishida (2009) and are of the opinion that driving violations such as speeding, drunk-driving, and so forth are closely related with traffic crash incidences. A study that was performed in China over a four-year period found the role of traffic violations to be one of the major risks threatening road safety. The study also found that if the traffic violation rate were reduced, the rate of serious injuries and fatalities would be reduced (Zhang et al, 2013).

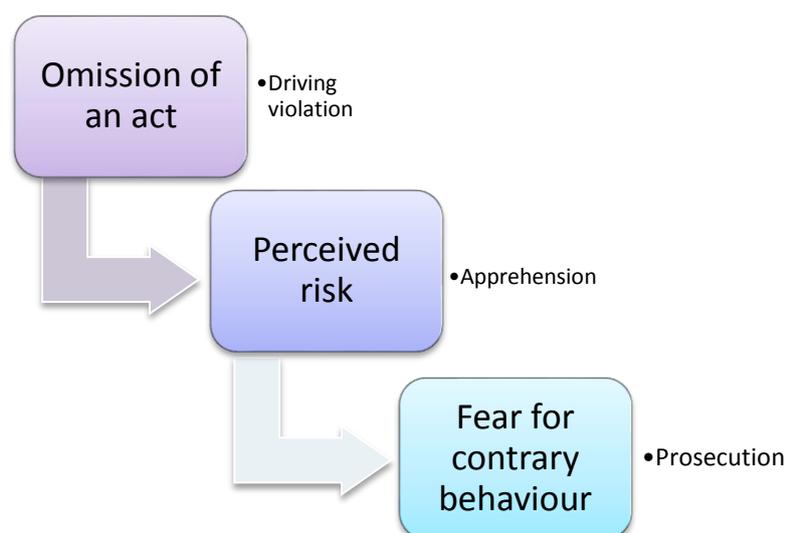
It is an absolute certainty that driving violations are the primary cause of road traffic crashes. Mandated law enforcement practitioners receive their legal imperative to

deter prospective offenders and re-offenders in s89(1) of the NRTA, Act 93 of 1996 (South Africa, 1996b):

Any person who contravenes or fails to comply with any provision of this Act or with any direction, condition, demand, determination, requirement, term or request thereunder, shall be guilty of an offence.

Traffic policing and more specific an operational approach towards prosecution, is necessary to remedy non-compliance to traffic laws with a specific view to create, promote and maintain a safe environment in an endeavour to ensure voluntary adherence to traffic laws and regulations (Zaal, 1994:6). For an offender to voluntarily comply with the traffic laws, a behavioural change is necessary (Zaal, 1994:6), which is closely related to the chance of being apprehended for driving violations. This process of behavioural change refers to deterrence, which according to Zaal (1994:7) means the omission of an act (driving violation) in response to the perceived risk (apprehension) and the fear for contrary behaviour (prosecution). The researcher visualises the process explained in this paragraph in figure 3.11.

**Figure 3.11: Deterrence process**



It is imperative that offenders be deterred, especially first-time offenders. Emons (2002:1-2) is of the opinion that harsh penalties instituted against first-time offenders

increase deterrence and decrease the number of offences. Emons (2002:1-2) warns against penalty escalation, i.e. a higher penalty for second-time offenders, because it does not have the expected effect on deterrence. Palmer (Bobevski et al, 2007:26) points out that prosecutions are based on the rational choice theory, which implies that if law-abiding actions are greater than the expected negative consequences of committing offences, drivers will revert to law abidance.

Systems should, however, be in place to remove offenders from the road traffic environment. Because of the impossibility to monitor regular offenders all the time, administrators should use traffic information systems to focus on intensified and targeted law enforcement campaigns in selected problem areas, also known as hazardous locations (HAZLOCS) (Kockott, 2005:60).

### **3.8.2 The procedure to institute prosecutions**

Roets A. (2013) states that law enforcement agencies are able to institute prosecutions against offending drivers involved in traffic crashes, in one of the following two ways:

- Active (at-the-scene) prosecution.
- Passive (administrative) prosecution.

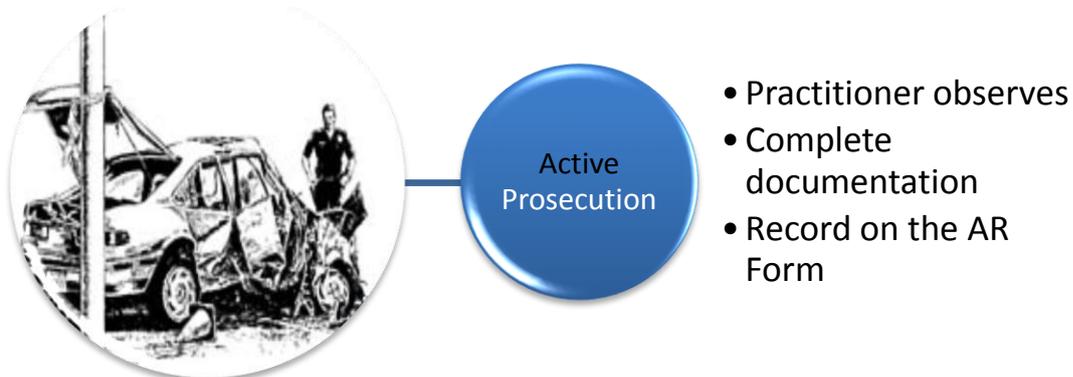
#### **3.8.2.1 Active (at-the-scene) prosecution**

Upon the arrival of the law enforcement practitioner at the scene of the crash:

- The practitioner is in the best possible position to observe and obtain information that is required for the successful institution of a prosecution, because of the ability to observe at the scene.
- The practitioner issues a s56(1) notice to appear in court, that is issued in terms of the Criminal Procedure Act (CPA), Act 51 of 1977 (South Africa, 1977), or an Infringement Notice issued in terms of the Administrative Adjudication of Road Traffic Offenses Act 48 of 1998 (South Africa, 1998).
- Any prosecution/s instituted should be recorded on the AR Form.

Roets, H. (2012) confirms that in limited instances law enforcement practitioners institute prosecutions at the scene of a crash, but fail to record it on the AR Form. Figure 3.12 is an illustration of the active prosecution procedure.

**Figure 3.12: Active (at-the-scene) prosecution**



Picture obtained from [http://www1.free-clipart.net/cgi-bin/clipart/directory.cgi?action=view&link=clipart/Transportation/Cars\\_And\\_Trucks&image=Accident\\_3.jpg&img=](http://www1.free-clipart.net/cgi-bin/clipart/directory.cgi?action=view&link=clipart/Transportation/Cars_And_Trucks&image=Accident_3.jpg&img=)

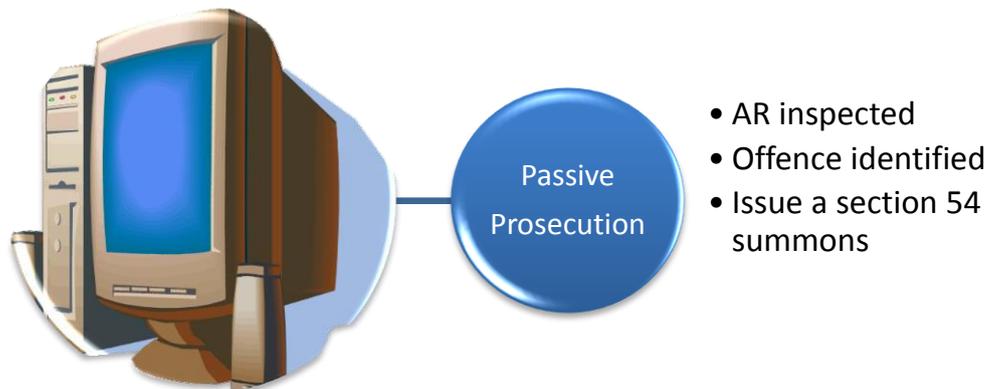
### **3.8.2.2 Passive (administrative) prosecution**

Where no prosecution is instituted at the scene of the crash, the completed AR Form is registered at the relevant capturing authority (vide section 3.3.2). It is the responsibility of the supervisor to inspect and to verify the AR Form for accuracy and completeness. Roets, H. (2012) confirms that supervisors often fail to inspect AR Forms. During the inspection phase:

- Supervisors should identify any offense/s that the official at the scene of the crash might have overlooked.
- The supervisor requests a clerk of the court to issue a section 54 summons in terms of the Criminal Procedure Act (CPA), Act 51 of 1977 (South Africa, 1977), as a method to secure the attendance of the accused at the relevant court.
- In larger departments, the clerk of the court is an employee of the relevant local municipality, who is trained and appointed by the magistrate of the district as prescribed in the Magistrates Court Act 32 of 1944 (South Africa, 1944).
- Departments that do not have the luxury of appointed clerks of the court, request the issue of the s54 summons in cooperation with the relevant prosecutor.

Figure 3.13 illustrates the passive (administrative) prosecution process that is used to institute prosecutions.

**Figure 3.13: Passive (administrative) prosecution**



### **3.8.3 The National Road Traffic Act (NRTA), Act 93 of 1996 and prosecutions**

The NRTA, Act 93 of 1996 (South Africa, 1996b) is silent about prosecuting offending drivers of vehicles that were involved in traffic crashes resulting in death, injury and/or damage. A mere reference to prosecution is included in s61(4) of the NRTA, Act 93 of 1996 (South Africa, 1996b), which prescribes that “in any prosecution for a contravention of any provision of this section it shall be presumed, in the absence of evidence to the contrary, that the accused was aware of the fact that the accident had occurred, and that he or she did not report the accident or furnish the information as required by subsection (1) (f)”.

The legislature did, however, provide for a presumption in s73(1) of the NRTA, Act 93 of 1996 (South Africa, 1996b) where “in any prosecution in terms of the common law relating to the driving of a vehicle on a public road, or in terms of this Act, it is necessary to prove who was the driver of such vehicle, it shall be presumed, in the absence of evidence to the contrary, that such vehicle was driven by the owner thereof”.

International legislation on the contrary, provides specifically for the prosecution of offending drivers involved in traffic crashes resulting in the injury to or death of any

individual or bodily harm and/or damage to any individual. Table 3.4 provides a summary of the legislative prescriptions of Minnesota and Virginia.

**Table 3.4: Summary of international legislative prescriptions**

COUNTRY	LEGISLATION	DESCRIPTION
Minnesota	S169.09 of the Minnesota Statutes of 2011	<p>“(1) if the accident results in the death of any individual, the driver is guilty of a felony and may be sentenced to imprisonment for not more than three years, or to payment of a fine of not more than \$5 000, or both;</p> <p>(2) if the accident results in great bodily harm to any individual, as defined in section 609.02, subdivision 8, the driver is guilty of a felony and may be sentenced to imprisonment for not more than two years, or to payment of a fine of not more than \$4 000, or both; or</p> <p>(3) if the accident results in substantial bodily harm to any individual, as defined in section 609.02, subdivision 7a, the driver may be sentenced to imprisonment for not more than one year, or to payment of a fine of not more than \$3 000, or both.”</p>

Virginia	S46.2-900 of the Code of Virginia of 1950	<p>“Any person convicted of violating the provisions of §§ <a href="#">46.2-895</a> through <a href="#">46.2-897</a> shall, if such accident results in injury to or the death of any person, be guilty of a Class 6 felony. If such accident results only in damage to property, the person so convicted shall be guilty of a Class 1 misdemeanor; however, if the vehicle or other property struck is unattended and such damage is less than \$250, such person shall be guilty of a Class 4 misdemeanor. A motor vehicle operator convicted of a Class 4 misdemeanor under this section shall be assigned three demerit points by the Commissioner of the Department of Motor Vehicles”.</p>
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According to the South African Insurance Institute (SAIA, 2014:36), approximately 80 per cent of all motor insurance claims in South Africa are crash related. SAIA (2014:37) is also of the opinion that road users should all share the risk on South African roads, as it will bear positively on road safety.

### **3.8.4 Motor vehicle insurance**

From a South African perspective, approximately 75 per cent of an estimated 10 million motor vehicles using the road network are uninsured (SAIA, 2014:37). The burden this places on the economy and the consumers, is unacceptable and should be addressed (Smith, 2001). He emphasises that this places a huge financial burden on the insured public, the economy and consumers (Smith, 2001). SAIA (2014:37) warns against this unsatisfactory situation, as it creates a feeding ground for vehicle crime and insurance fraud. The researcher is of the opinion that this situation also

contributes to the underreporting of road traffic crashes, especially where drivers involved in crashes are referred to report the crashes themselves. Another problem identified by the researcher during the course of this research is the fact that motor vehicles involved in crashes are not always repaired by accredited panel repair companies, which increases the risk of road traffic crashes (vide 5.3.8 & 6.3.10).

It is an offense to drive a motor vehicle without a certificate of insurance in international countries. In the United Kingdom, the magistrate court treats driving without insurance as a very serious offense (The Driver Defence Service [sa]). It is viewed as such a serious offense that the penalty is 6-8 points against the accused's licence, a possible discretionary ban and a fine of up to £5 000.

NRS 485.185 of the Nevada Revised Statutes of 2007 prescribes that:

Every owner of a motor vehicle which is registered or required to be registered in this State shall continuously provide, while the motor vehicle is present or registered in this State, insurance provided by an insurance company licensed by the Division of Insurance of the Department of Business and Industry and approved to do business in this State.

NRS 485.187 of the Nevada Revised Statutes of 2007 prescribes further that the owner of a motor vehicle, who fails to comply with these prescriptions, is liable to a fine of \$1 000 upon conviction.

Section 46.2-900 of the Code of Virginia of 1950 prescribes that:

Any law-enforcement officer present at the scene of a motor vehicle accident as to which a law-enforcement officer is required by § **46.2-373** to file an accident report with the Department may require the operator of any motor vehicle involved in such accident to furnish proof that the vehicle he was operating at the time of such accident was either (i) **an insured motor vehicle** as defined in § **46.2-705** or (ii) a vehicle for which the fee required by § **46.2-706** for registration of an uninsured vehicle had been paid as to that vehicle [own emphasis].

Again, the NRTA, Act 93 of 1996 (South Africa, 1996b) is silent about any form of insurance applicable to the owner of the motor vehicle.

Smith (2001) states that “in many First World countries, like the United Kingdom, Germany and Australia, compulsory third party insurance exists. Since it’s not compulsory in this country [South Africa], our uninsured pool is large [own insertion]”. SAIA (2014:36) concurs with Smith and argues that South Africa is one of a few countries that do not impose third-party insurance and they are of the opinion that compulsory third-party vehicle insurance is a necessity. Traffic crashes cost insurance companies in South Africa approximately R35 billion per annum (Dante 2012). According to Nel (Pongoma, 2013) crashes in South Africa resulted in the taxpayer-funded RAF (2011) paying out R12.5 billion for 149 467 claims received in 2011-2012. Schutte, Page and Dehlen (1999:1) point out that the situation is unacceptable, and that all role players, including the government, should not only get involved, but also remain involved.

According to Pather (2009) motor vehicle owners have the tendency to cancel insurance the moment their financial responsibility for the motor vehicle ends. This is due to the legal absence requiring owners of registered motor vehicles to insure their motor vehicles. Blaauw (2014) warns that uninsured motorists contribute vastly to the rising cost of insurance. Smith (2001) and Pather (2009) agree that the financial burden for both the uninsured and the insured could be ruinous, especially in the event of a traffic crash.

### **3.9 CONCLUSION**

In the previous chapter (chapter 2), the impact of road traffic crashes on the health system was discussed. In this chapter (chapter 3), the body of literature surrounding the operational aspects of road crashes was analysed.

The researcher discussed the concept “driver” from a legal perspective and referred to case law to explain when a person is legally the driver of a motor vehicle. Although the terms “motor vehicle” and “vehicle” are used interchangeably, the researcher compared national and international legislation and indicated the differences between

the terms, both from a national and international perspective. Reference to case law was also utilised to substantiate the case in point. The fact that law enforcement practitioners are from time to time expected to decide whether a road is a public or private road, was discussed at the hand of national legislation with case law in support. Compared to international legislation, the researcher indicated that the characteristics of the term are very similar.

This literature study indicated that there are legal anomalies about the recording and reporting of road crashes. The legal duties placed upon the driver and the practitioner were explained to *au fait* the reader with the importance of crash reporting. As retrieved from this chapter, it was established that recorded road crashes must be registered. Once again, it was emphasised that there are certain shortcomings in the system, which challenge the integrity of the data.

The proper and accurate recording of data is the cornerstone of effective data management. The collection of data is subject to a crash either being recorded by a law enforcement official at the scene, or by a driver reporting it to an authorised (capturing) office. The literature in this chapter indicates a lack of effective control measures to monitor and evaluate captured information. The NRTA, Act 93 of 1996 (South Africa, 1996b) is furthermore restricted in prescribing a proper punitive system about offending motorists involved in crashes resulting only in injury and/or damage. The shortcomings identified in this chapter need further investigation and are pursued within the aims and confinements formulated in chapter 1.

## CHAPTER 4

### QUANTITATIVE ANALYSIS AND INTERPRETATION OF INFORMATION RECORDED IN ACCIDENT REPORT FORMS

#### 4.1. INTRODUCTION

In this study the researcher set out to assess the criminological significance of road crash data from a criminal justice perspective. The researcher opted for an evaluative approach (vide section 1.7.1) to fulfil the qualities of this study. Chapters 2 and 3 saw the researcher embarking on a literature and documentary quest in an endeavour to enrich the reader in this interesting, though intriguing conquest concerning road traffic crashes.

As explained in chapter 1 (vide section 1.7.3), a mixed-methods approach was applied by the author to facilitate the following objectives identified in section 1.5 of the research study, namely to:

- Explain the criminological significance of road traffic crash data in relation to effective road safety management (c).
- Evaluate and describe the supervisor's responsibility in relation to the quality of crash data recorded (e).
- Evaluate and explain the current prosecution procedure as part of the CJS (g).

Creswell and Plano Clark (Delpont & Fouché, 2012:435) define mixed-methods research as:

...a method, it focuses on collecting, analysing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone.

For the quantitative data-collection method of this study, the researcher used an information schedule to collect and record data contained in traffic crash reports (AR Forms) at various traffic departments (vide section 1.8.2). The raw data collected were analysed and converted into an interpretable format to enable the researcher to obtain understandable results (Fouché & Bartley, 2012:249).

This implies the use of mathematical interpretations to convert the data to numerical format (Chambliss & Schutt, 2013:154) that would allow the researcher to explain and find meaning of the collected data (Fouché & Bartley, 2012:249). This chapter (chapter 4) incorporates both the analysis of the data and the interpretation of the analysed data. The aim of this chapter is to determine the level of accuracy by law enforcement practitioners in completing the AR Forms.

## **4.2 INFORMATION SCHEDULE AS DATA-GATHERING TECHNIQUE**

The researcher used an information schedule (IS) as the data-collection method, which is according to Delport and Fouché (2012:447) one of various quantitative methods available to collect data in a structured format (vide section 1.5). According to Delport and Roestenburg (2012:182), this data-collection method closely resembles a structured observation schedule, which requires a numerical scale (vide section 1.9.1.5.1). The elements evaluated were completed AR Forms (vide 1.9.1.1) from which the variables were obtained and rated using Likert and nominal scaling techniques.

Depending on the completeness and accuracy of the data recorded concerning the variable measured, the researcher used the following scales (vide 1.9.1.3.1):

- (i) 1 = Totally unsatisfactorily completed.
- 2 = Unsatisfactorily completed.
- 3 = Fairly completed.
- 4 = Satisfactorily completed.
- 5 = Thorough.
- (ii) 1 = Yes.
- 2 = No.

In numerous circumstances, the composition of the AR Form required that the researcher used a normal numerical system to capture certain variables that are profession specific. In such circumstances, non-completion of criteria was reflected as “Totally unsatisfactorily completed”. The researcher evaluated 503 completed AR Forms during the data-gathering process (vide section 1.9.1.2.2), at which point the researcher realised that data saturation had been reached.

According to the researcher quantitative generalisability for the purposes of this study has been reached, because different AR Forms were used that were completed by different people. Although the findings might not be fully statistically generalisable to the total universum comprising all reported traffic accidents in the research area, it provides according to (Bachman & Schutt, 2014:193) a thorough indication of the study’s general applicability, which is in line with the follow-up studies done to the 1984 Sherman and Berk study.

The argument in point is that during the information-gathering phase, an anonymous telephone interview (Roets, H. 2012) revealed that both the SAPS and the metropolitan police practitioners in the southern region of the Ekurhuleni Metropolitan Municipality (EMM) report approximately 1 300 crashes monthly. This total was applied as the basis for the quantitative phase of this study. During the data-gathering process in 2013, the researcher realised that the provided number of crashes is notably smaller in quantity than had been filed in the registers. Roets, H. (2013) confirmed an enquiry into this concern and indicated that the error had occurred because such statistics are available only in hard copy format. Roets, H. (2013) also stated “...statistics are inaccurate and worthless” (vide section 5.3.6.3).

### **4.3 QUANTITATIVE EVIDENCE GATHERED FROM INTERVIEWS**

Data were gathered using an information schedule – a known method to collect especially secondary data (Delport & Fouché, 2012:447). The researcher utilised completed AR Forms to collect the data (vide section 1.9.1.3.1). Thereafter the researcher utilised Microsoft ® 2013 (15.0.4649.1000) that forms part of Microsoft Office Professional Plus 2013 package, to interpret the data in graphical format.

In cooperation with a senior official of the Accident Bureau (vide section 1.9.1.3.1), certain categories of observation were identified with numerous variables, which must be completed by the law enforcement practitioners at the scene of a crash. This information is a requirement for the production of accurate and sensible statistical information that is used by administrators to assist in the improvement of road safety. The pre-identified categories and variables are summarised in Table 4.1.

**Table 4.1: Summary of quantitative categories analysed and interpreted**

<b>Main categories</b>	<b>Sub-categories</b>
<b>4.3.1 Geographical information</b>	4.3.1.1 Crash location 4.3.1.2 Speed limit 4.3.1.2 Road type 4.3.1.3 Junction type
<b>4.3.2 Demographical information</b>	4.3.2.1 Gender 4.3.2.2 Comparison: age and gender
<b>4.3.3 Parties involved</b>	4.3.3.1 Driver information 4.3.3.2 Substance abuse 4.3.3.3 Severity index
<b>4.3.4 Vehicle information</b>	4.3.4.1 Vehicle 4.3.4.2 Vehicles recovered 4.3.4.3 Type of vehicle 4.3.4.4 Damage to vehicle
<b>4.3.5 Traffic control type</b>	4.3.5.1 Traffic control type
<b>4.3.6 Crash information</b>	4.3.6.1 Driver action 4.3.6.2 Type of crash 4.3.6.4 Crash description
<b>4.3.7 Administrative responsibility</b>	4.3.7.1 Reporting of crashes and completion of AR Forms 4.3.7.2 Verification of the completed AR Forms 4.3.7.3 Institution of prosecutions
<b>4.3.8 Quality of information</b>	4.3.8.1 Quality of the information recorded 4.3.8.2 Correlation between driver action, crash type and crash description

Throughout this section and unless otherwise stipulated, the number of cases used was 503, at which point saturation had been reached. The following sections comprise

analyses and interpretations about the data collected during the collection phase. Sub-categories are methodologically discussed as identified in table 4.1. The data elements explained in section 4.3.1 describe the characteristics of the road and associated infrastructure relevant to the place and the time of the crash. The significance of the data forms an important part of an effective road safety management approach.

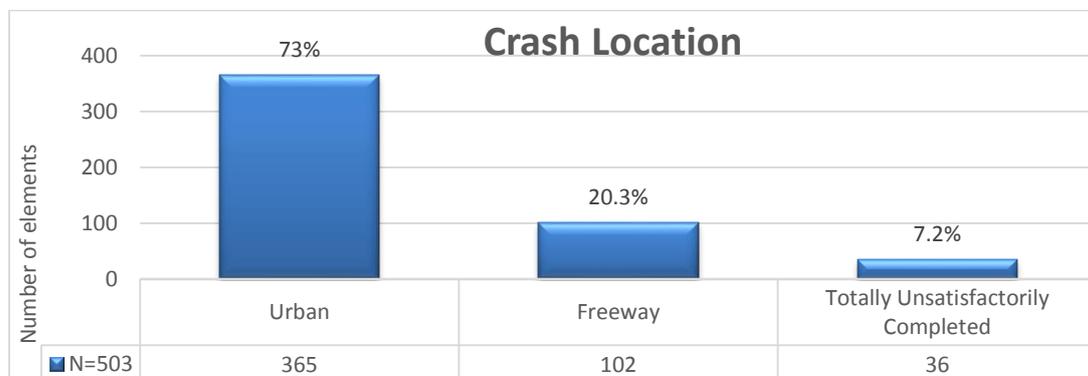
### 4.3.1 Geographical Information

In this category the researcher intended to determine whether the geographical areas (aspects surrounding the road, the type of road, junction type and speed limit of the road) were accurately completed. In doing so, the researcher reflects on the criminological significance of road traffic crash data in relation to effective road safety management. All the information recorded on the AR Form contributes to the quality of the crash data recorded, which forms part of the responsibilities of the supervisor in ensuring accurate and usable data (vide 1.5).

#### 4.3.1.1 Crash location

The aim of this variable was to determine whether law enforcement practitioners correctly indicated the type of road where the crashes occurred. Graph 4.1 depicts the relevant processed data obtained during the data-gathering phase.

**Graph 4.1: Crash location**

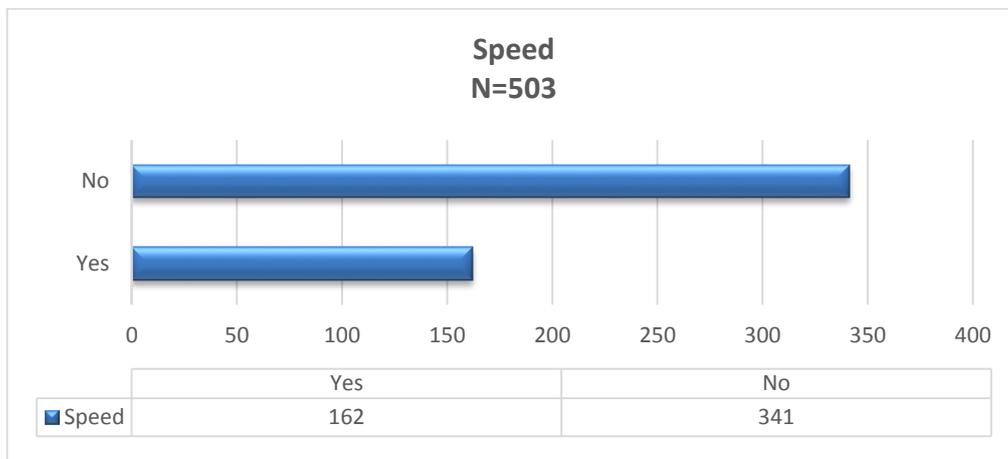


Data collected indicated that 72.56 per cent (365) of all the crashes occurred in urban areas, with 20.08 per cent (102) on freeways. It is considered unacceptable that 7.16 per cent (36) of all the AR Forms were incorrectly completed. This means that such forms will render ineffective statistics. Administrators and engineers will therefore not be in a position to determine whether crashes occurred at high risk areas within urban boundaries or not. A comprehensive and detailed report will thus not be possible, because seven per cent of the AR Forms were incomplete or not completed at all.

#### 4.3.1.2 Speed limit

The aim of this question was to determine whether law enforcement practitioners indicated the speed limit of the particular road on which the crashes occurred. The processed information concerning the speed limit is reflected in graph 4.2.

**Graph 4.2: Speed limit**

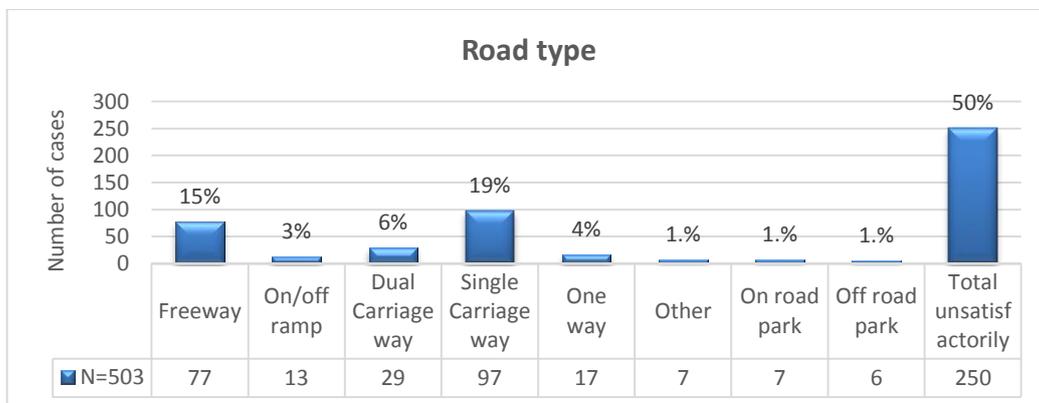


In 67.79 per cent (341 cases) of the AR Forms studied, law enforcement practitioners failed to indicate what the speed limit of the specific location was. A mere 32.21 per cent (162 cases) did indeed indicate the speed limit. It will therefore be impossible for administrators and engineers to determine whether a comprehensive speed study is required to ascertain whether the correct speed for a specific location had been determined.

### 4.3.1.3 Road type

The aim of this interpretation is to determine whether the type of road that the crashes had occurred on, were clearly identified by law enforcement practitioners. When a law enforcement practitioner indicates the type of road, the name of the specific road is immediately following. The information processed from the data collected is depicted in graph 4.3.

**Graph 4.3: Road type**



It is clear that in half of all the crashes recorded, i.e. 250 cases (50%), the types of roads where the crashes had occurred were not indicated. In 77 of the cases (16%), it was indicated that crashes had occurred on freeways; however, in section 4.3.1.1 above, law enforcement practitioners indicated in 20.28 per cent of the cases (102) that crashes had occurred on freeways.

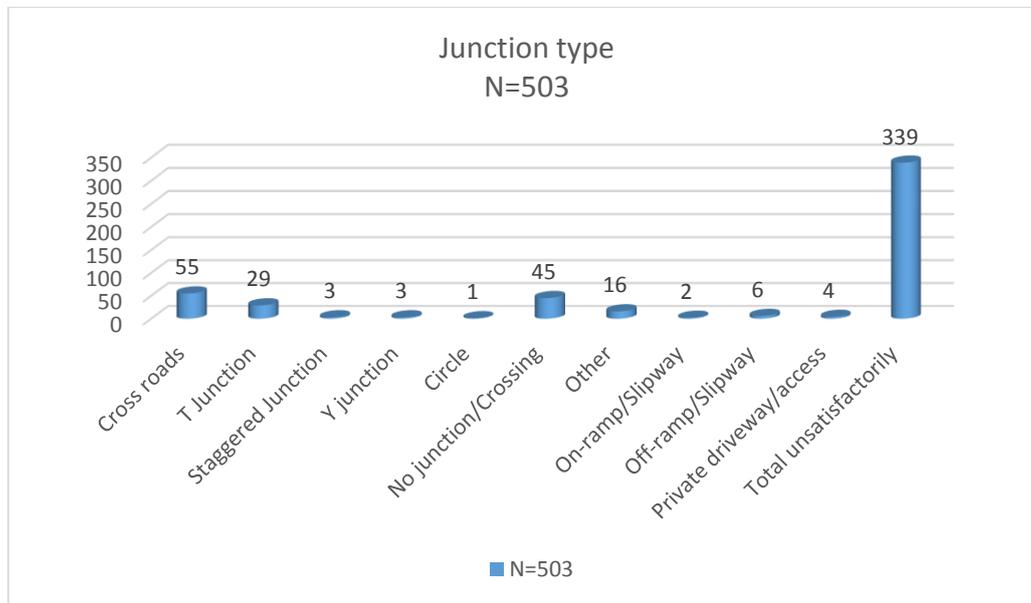
The fact that half of the AR Forms were incomplete, makes it impossible to provide accurate statistics concerning the exact location of crashes. Crashes recorded on freeways and single carriageways seem to be overrepresented in terms of remaining cases, compared to the other road types recorded.

### 4.3.1.4 Junction type

The researcher aimed to determine whether law enforcement practitioners indicated at what type of junction the crashes had occurred. Statistically administrators will not

be able to determine trends and/or patterns if the information is not completed. The results of this variable are visually presented in graph 4.4.

**Graph 4.4: Junction type**



This specific variable is problematic for law enforcement practitioners. A staggering 67.40 per cent or 339 cases were not indicated. This is represented as “totally unsatisfactorily”. The problem identified is that the law enforcement practitioners and drivers are uncertain where to indicate a freeway on the AR Form. The fact that a freeway is not a junction, led to information being recorded as “other” on the form. The 3.18 per cent of the “other” category clearly supports this statement, because 50 per cent of the forms were not completed in this category. Those not indicated as such, are merely not completed. This matter is further addressed in section 6.2.2.3.

#### **4.3.2. Demographical information**

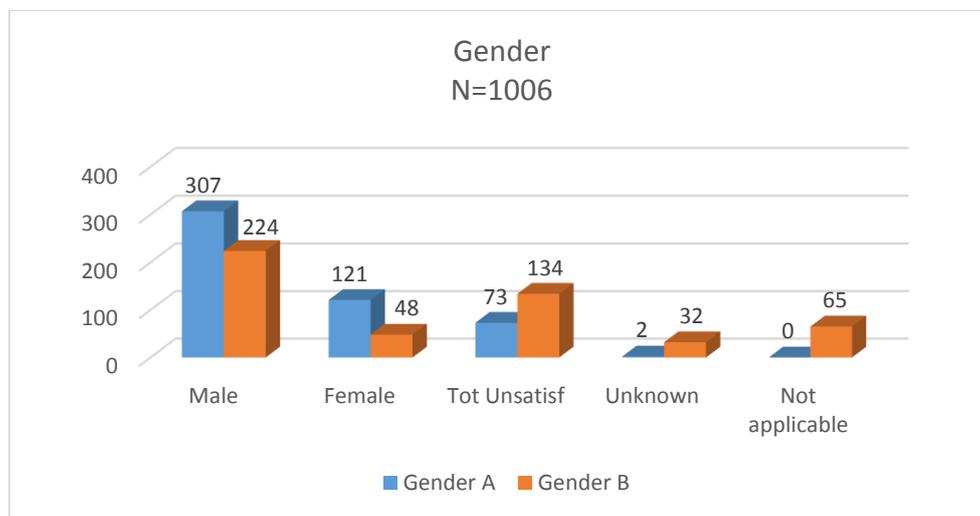
This category contains the information applicable to gender, age and race. The AR Form provides for an A section and a B section to differentiate between the two parties involved in the crash. It is standard practice that the information of the driver at fault be completed in the A section. In this section then, the researcher compares the different variables. In doing so, the researcher reflects on the criminological significance of road traffic crash data in relation to effective road safety management.

All the information recorded on the AR Form contributes to the quality of the crash data recorded, which forms part of the responsibilities of the supervisor in ensuring accurate and usable data (vide 1.5).

#### 4.3.2.1 Gender

A depiction of the gender variable is presented in graph 4.5.

**Graph 4.5: Gender**



It is clear that of the 700 known driver cases, between 32 per cent (gender B) and 44 per cent (gender A) represent males involved in crashes. Females contributed between seven per cent (gender B) and 17 per cent (gender A) of these crashes. A concern is the fact that the relevant information of 10 per cent of the cases in gender A was not completed. Concerning gender B, 19 per cent of all cases were incomplete. Based on the available demographics, more males than females were involved in traffic crashes (vide graph 4.6).

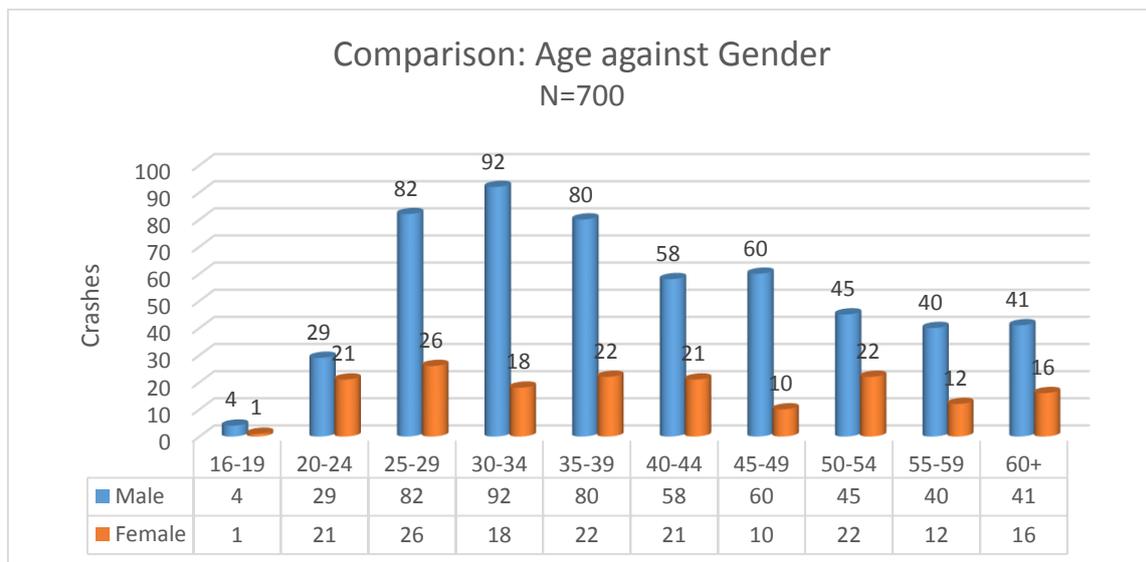
A possible explanation for the incomplete information may be that parties were directed to report the crash in person, or that law enforcement practitioners were not attending the scene where the crash had occurred. In such cases, parties would report the crash at different times with limited information regarding the other driver available, or only one party would report the crash. This is confirmed by the nearly five per cent

unknown factor reflected for gender B. The “Not applicable” variable reflects a combined nine per cent factor, which is ascribed to instances where a driver omitted to stop after a crash, popularly known as hit-and-run crashes, or crashes with fixed objects.

#### 4.3.2.2 Comparison: age and gender

In this section, the aim is to compare the different age groups against gender, concerning road crashes. Graph 4.6 reflects the totals for each age group against the gender.

**Graph 4.6: Totals per age group and gender**

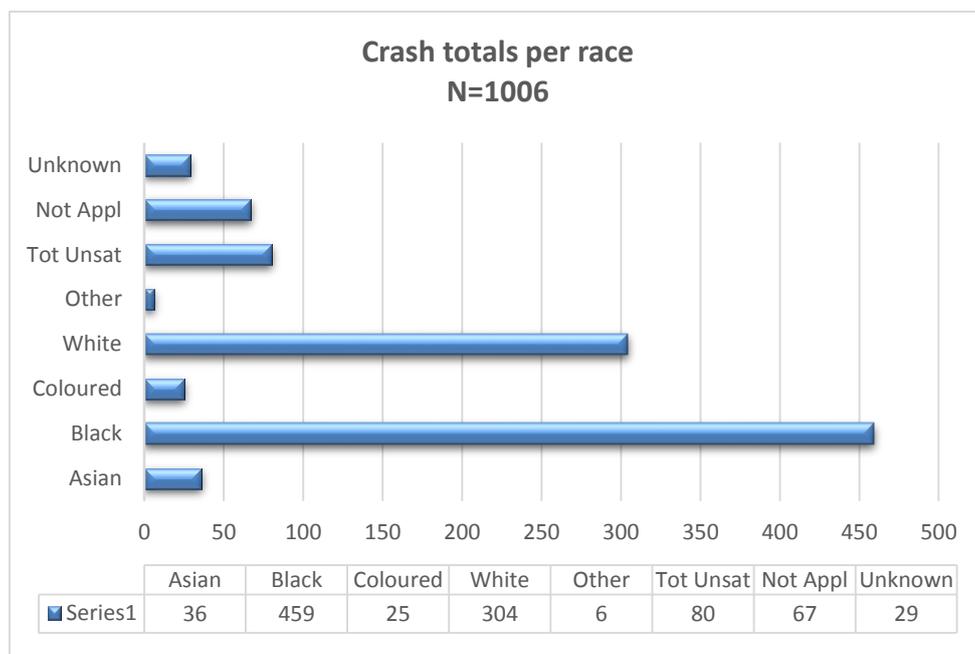


Based on the complete cases of 700 in all age categories, males reflect a higher contributing factor towards crashes than females. Males show a high crash risk tendency between the ages of 30-34 (13%), whereas females reflect a high crash risk tendency between the ages of 25-29 (3.7%). The exception is the age category 20-24 where both males and females show a relatively close contributing factor of between three to four per cent. This appears to be contrary to the popular expectation that younger persons with less driving experience would be responsible for more traffic crashes.

However, a concern is the high level of crashes reflected for the age group 60+ (8.1%); both males and females. Male drivers in this age group show a much higher crash risk tendency (5.85%) than female drivers (2.20%) in the same age group. The difference between male and female drivers of this age group is 3.38 per cent. The drivers in this age group show a higher risk factor than the 20-24 age group. This is a clear indication that drivers in the 60+ age category should be subjected to more frequent driver's licence examinations.

In graph 4.7, the researcher compares the relevant percentages between the different races.

**Graph 4.7: Crash totals per race**



It emerges from the available data that blacks have the highest crash risk tendency at 46 per cent of all the crashes, with whites the second highest at 30 per cent. Asians contributed to four per cent and coloureds to 2.5 per cent of all crashes. In combining all the sub-categories that render incomplete information, 18.1 per cent of the AR Forms were incomplete and therefore this makes it impossible to provide accurate statistics concerning the race of drivers.

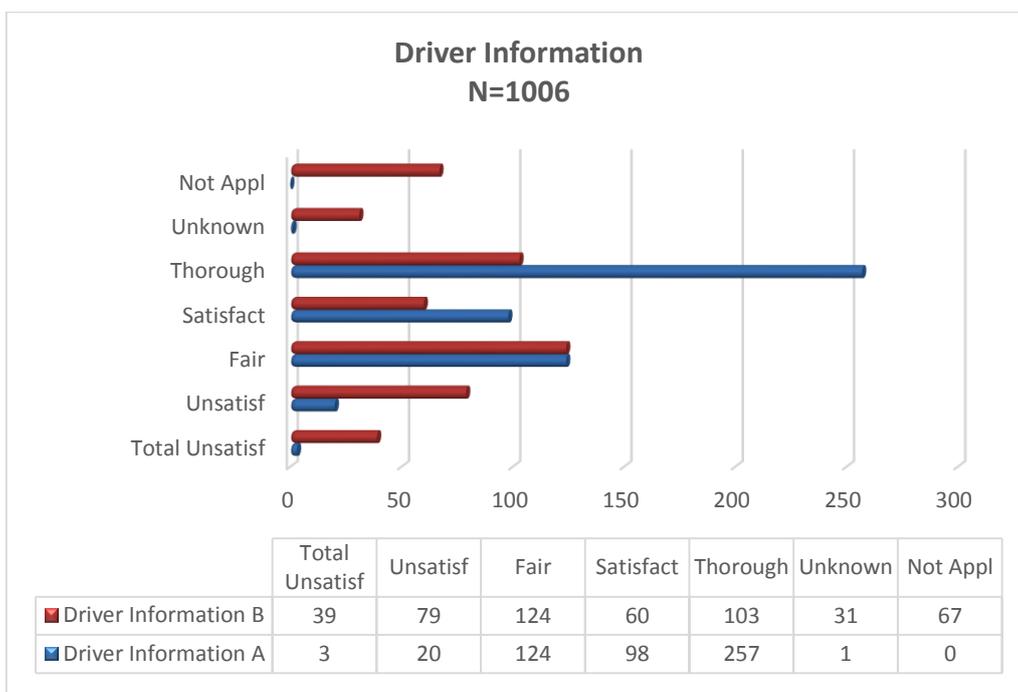
### 4.3.3 Identification of the parties involved

The positive identification and capturing of personal information of the parties involved in a crash are crucial for the administration of a law enforcement institution. The institution uses this information to inter alia institute prosecutions. Numerous role players (vide chapter 3, section 3.4) use this data for various different reasons. Certain comparisons will also be made. In doing so, the researcher reflects on the criminological significance of road traffic crash data in relation to effective road safety management. All the information recorded on the AR Form contributes to the quality of the crash data recorded, which forms part of the responsibilities of the supervisor in ensuring accurate and usable data (vide 1.5).

#### 4.3.3.1 Driver information

The aim of this category is to determine the level of recording of the driver information for both sections A and B. Graph 4.8 illustrates the information captured in table 4.6 in graphical format.

**Graph 4.8: Driver information**



The information recorded at the scene of a crash shows acceptable levels at 76 per cent completion rate. Hence, attention should be directed at the 14 per cent unsatisfactory rate. In essence, 14 per cent of the data recorded cannot be used, thus affecting statistics overall and the possibility of prosecutions immensely (vide section 5.3.2). The 9.9 per cent reflected as “unknown” and “not applicable” is the result of underreporting, hit-and-run crashes as well as single vehicle crashes.

#### **4.3.3.2 Substance abuse**

According to Cairney, Collier, Klein, Quimby, Shuey, Styles and Taylor (2007:5) “between 26% and 31% of non-fatally injured drivers in South Africa have BAC levels exceeding the country’s limit of 0.08 g/100 ml (2)”. It should be noted that in terms of section 265(1) of the NRTA, Act 93 of 1996 (South Africa, 1996b), the current blood alcohol concentration (BAC) level is 0.05 g/100 ml. In this section, the aim is to determine whether law enforcement practitioners perform breathalyser tests on drivers who were involved in crashes.

Drivers involved in crashes are subjected to a breathalyser test based on the subjective opinion of law enforcement practitioners regarding the use of alcohol. Law enforcement practitioners merely have to indicate whether the use of alcohol is suspected; if the official then indicates positive on the form, it is indicated by a simple “yes” or “no”. In 99 per cent of the crashes recorded, law enforcement practitioners indicated that no use of alcohol was **suspected**, which is doubtfully low.

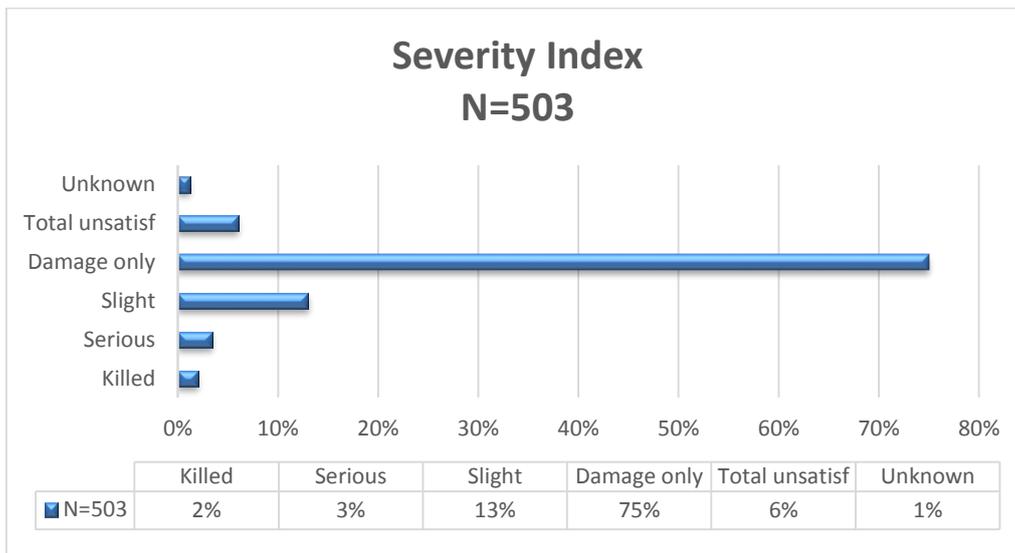
The researcher has no national statistics available to measure this against, as according to the Minister of Transport “Another shortcoming with the country’s road safety statistics is that they measure fatal crashes only. Other accidents or causes of accidents go unrecorded and unreported” (Smith, 2014). If measured against the statement in paragraph one of this section, these statistics are unreliable.

#### **4.3.3.3 Severity index**

The degree of severity, injuries and/or damages determines the level of action by law enforcement practitioners (vide section 2.3.1). It is crucial that the degree of severity

is recorded accurately, to prevent any follow-up action by the institution or the law enforcement practitioner. In this section, the researcher will indicate in graph 4.9 the accuracy completion rate of AR Forms.

**Graph 4.9: Severity index**

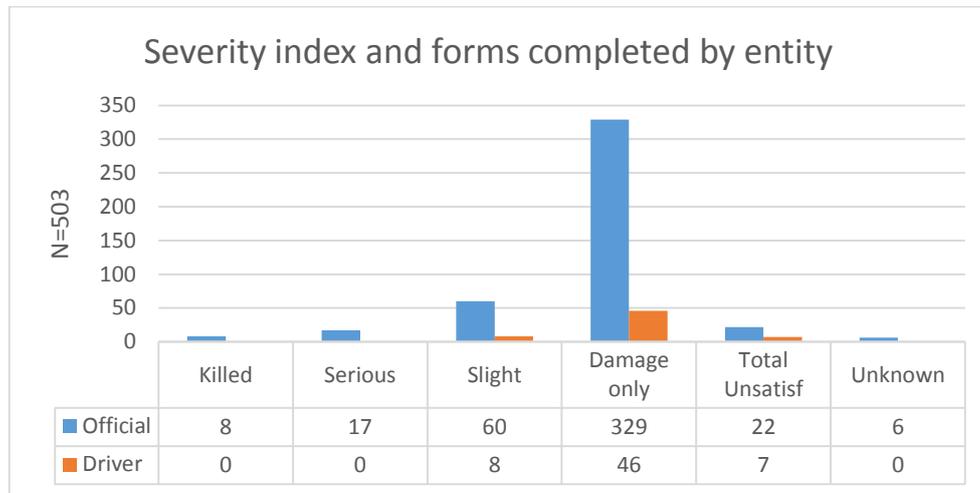


Twenty nine of the AR Forms, or 5.77 per cent of the total number of forms completed, reflect a total unsatisfactory result. The unknown factor (99) resulted in a 1.19 per cent, which can be ascribed to unforeseen circumstances such as hit-and-run. According to the data collected, 375 AR Forms (74.55%) reflected damage only crashes.

Only 13.52 per cent indicated slight injuries, with the bottom part of the table reflecting that 17 (3.38%) crashes resulted in serious injuries with a small number of 1.59 per cent (8) resulting in death. Taking into account the analysis and interpretation of the qualitative process of this study, participants were all in agreement that law enforcement practitioners intentionally reduce the degree of injuries sustained by involved parties, primarily to escape the tedious administrative processes involved in opening a criminal case docket at the SAPS office (vide section 5.3.3.2).

In graph 4.10 the researcher illustrates the percentage of forms completed by each entity, i.e. law enforcement practitioners or drivers.

**Graph 4.10: Comparison: severity index and forms completed by entity**



It is interesting to note that 61 (12%) of the forms were obviously completed by the driver of the vehicle, which is based on the forms that were signed by the driver completing the form. This relates to the fact that the drivers were either being referred to report crashes, or that for crashes where the seriousness was of such a lesser degree, drivers agreed amongst themselves to report it at the SAPS. Law enforcement practitioners completed 442 (88%) of the AR Forms.

The researcher was furthermore interested to compare what the quality level of the recorded information between the law enforcement practitioners and the private drivers was. The researcher evaluated the quality of the information recorded according to the Likert scale, where 1=Totally Unsatisfactorily, 2=Unsatisfactorily, 3=Fair, 4=Satisfactorily and 5=Thorough. For every variable that appeared on the schedule, the researcher allocated a rating based on the level of completeness that was coordinated with a senior official from the Accident Bureau (vide section 1.9.1.4.1).

The aim of performing the calculations was to draw a comparison between law enforcement practitioners' completing the form and drivers involved in crashes completing the forms themselves. The researcher used the following calculation to determine the percentages:

- Number of forms completed/weighted average of the forms completed.

- **Law enforcement practitioners**

723/321

= 2.3

- **Drivers**

378/182

= 2.1

Based on the mentioned averages, both the law enforcement practitioners and drivers fall within the “unacceptable” bracket. The conclusion to be drawn from this is that the drivers and the law enforcement practitioners are on the same standard, the only difference being that the drivers did not receive training on how to record information on an AR Form. Nevertheless, the fact that private persons are allowed to complete official forms may have tremendous ramifications in terms of insurance claims as well as private and state induced litigations resulting from the crash.

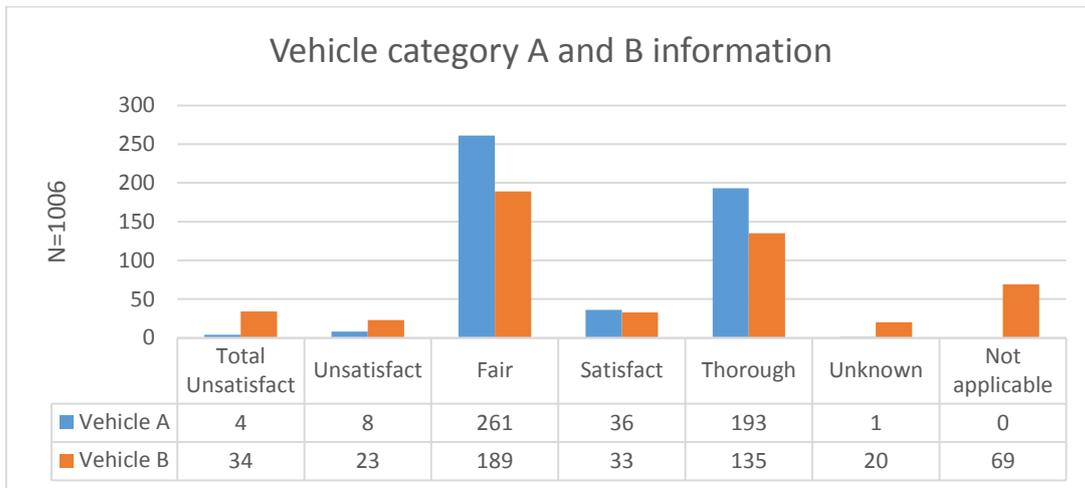
#### **4.3.4 Vehicle information**

Vehicle information in this context includes the type of vehicle, registration number, make, colour, licence disk number, and so forth. This information is necessary, not only to identify the owner or titleholder of the vehicle, but also to identify the vehicle and to determine whether the vehicle is registered and licensed. In doing so, the researcher reflects on the criminological significance of road traffic crash data in relation to effective road safety management. All the information recorded on the AR Form contributes to the quality of the crash data recorded, which forms part of the responsibilities of the supervisor in ensuring accurate and usable data (vide 1.5).

##### **4.3.4.1 Vehicle information**

The aim of this section is to determine whether law enforcement practitioners completed the requested information on the AR Form. The processed data are displayed graphically in graph 4.11 and reflect the data for both vehicle categories A and B.

**Graph 4.11: Vehicle information**

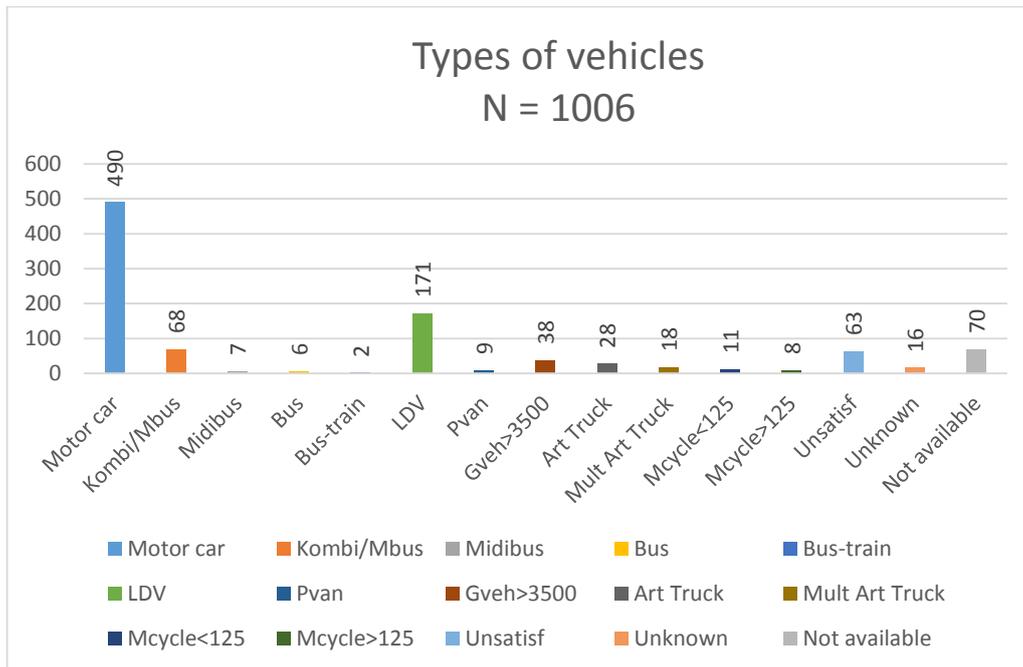


In this category, the information was recorded at a combined 84.2 per cent for categories A and B respectively, which falls within the “thorough” bracket. The seven per cent, which resorts in the “unsatisfactorily completed” category, are primarily due to criteria such as model and colour of the vehicle not recorded, as well as drivers reporting the crash in person at either the SAPS or office set aside for such purpose.

#### **4.3.4.2 Type of vehicle**

The vehicle data elements describe the characteristics of the vehicles involved in the crash. When interpreting data, administrators compare numerous events against the vehicle characteristics. Administrators will not be able to implement any corrective interventions or enforcement action, because of a lack of information concerning the vehicles involved in road crashes. For the purposes of this study, the researcher combined all the vehicles (categories A and B) to determine a holistic picture of vehicles involved (vide graph 4.12).

**Graph 4.12: Types of vehicles**



A total of six per cent of the AR Forms were unsatisfactorily completed. From the data of the remaining cases, 49 per cent of the vehicles involved in crashes were motor cars (sedans). The data reflect that closest to sedans were light delivery vans (LDVs) at a rate of 171 (17%). Confirmed taxis using minibuses and kombis contributed to seven per cent (68) of crashes, with midi-buses contributing to one per cent (7). This is a reflection that the vast majority of the taxi public transport mode in the EMPD is still in the form of the kombi or minibus. Although not reflected in this graph, the author assumes that the midi-bus is the preferred mode of transport for long distance travel.

The category for heavy motor vehicles, including goods vehicles, articulated motor vehicles and multiple articulated motor vehicles of which the gross vehicle mass (GVM) exceeds 3 500kg, contributed in total to eight per cent of road crashes.

An interesting phenomenon indicated by the data is the fact that crashes involving motorcycles smaller than 125cc contributed to 1.1 per cent of the crashes in comparison to the approximately one per cent (0.79%) against the larger engine capacity motorcycles. The researcher believes that it is because of the inexperience

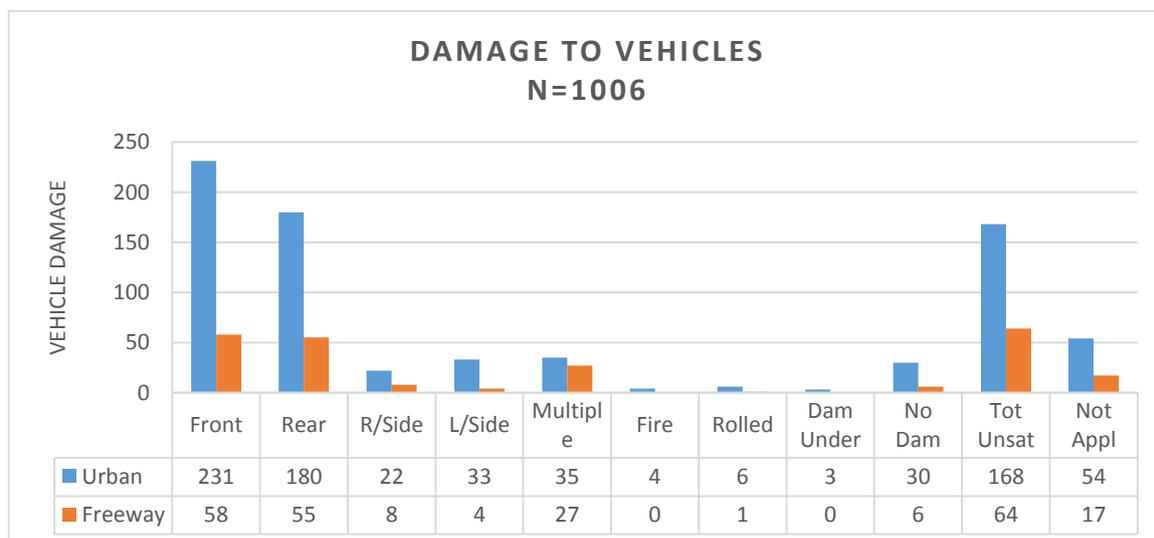
of the younger drivers who use these types of motorcycles to commute generally short distances.

The data within the “unknown” and “not available” brackets reflected that nine per cent of the forms indicate incomplete information, which can be ascribed to vehicles being removed from the scene of the crash prior to the arrival of the officer at the scene, or hit-and-run incidences where a person involved in a crash refuses to stop at the scene.

#### 4.3.4.3 Damage to the vehicle

The aim of this section is to draw a parallel between the damage to the vehicle and the location where the damage was sustained. This type of information is paramount, especially to assist administrators in road safety strategic planning. Graph 4.13 is a depiction of this information.

**Graph 4.13: Comparison – damage in relation to area on vehicle**

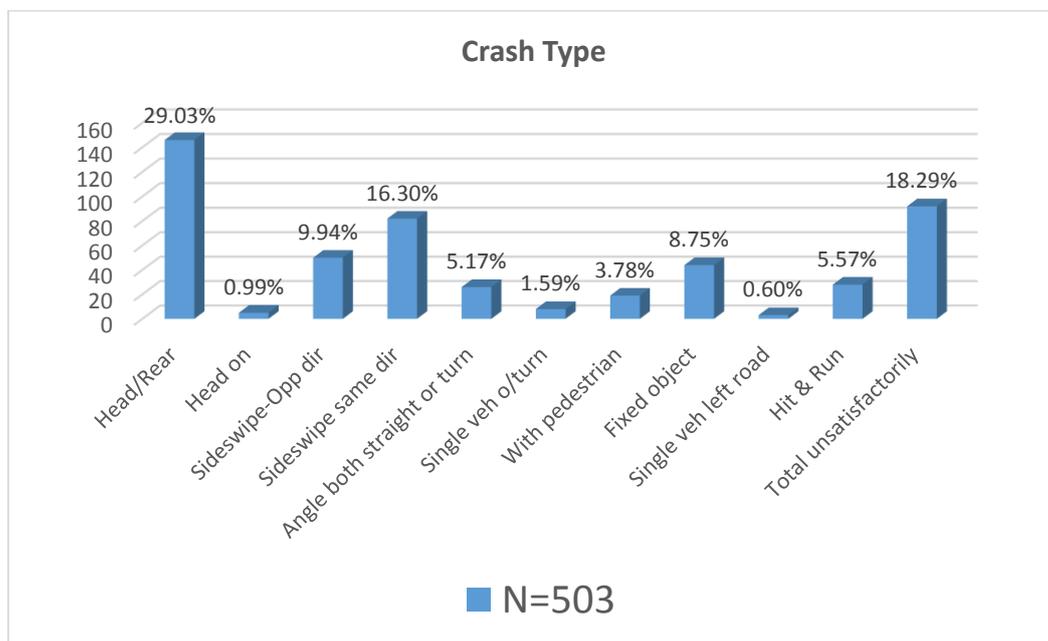


The majority of crashes where damage was sustained to the front of vehicles, represent 23 per cent in urban areas and nearly six per cent on freeways. The situation is very similar regarding damage to the rear of vehicles. In urban areas 18 per cent of vehicles sustained damage to the rear with six per cent on freeways. This can be ascribed to congestion patterns of our freeways and the sudden stop of vehicles. A confusing statistic is the variable “no damage”, which represents three per cent of the

crashes. A crash where there is no damage does not resort in the definition of a crash (vide section 1.2) and it cannot be accepted that two colliding vehicles or a vehicle and an object will not cause even the slightest damage. An apparent 23 per cent of the forms were therefore incorrectly completed. The data indicated that seven per cent is indicated as “not applicable”, which can be explained as vehicles being removed from the scene of the crash prior to the arrival of the officer at the scene; hit-and-run incidences where a person involved in a crash refuses to stop at the scene; or the single vehicle crash.

Figure 4.14 illustrates the different types of crashes that drivers could be involved in. The information contained in this variable is pivotal in determining intervention strategies. Engineers may use this information when road design and improvement strategies are required.

**Graph 4.14: Types of crashes**



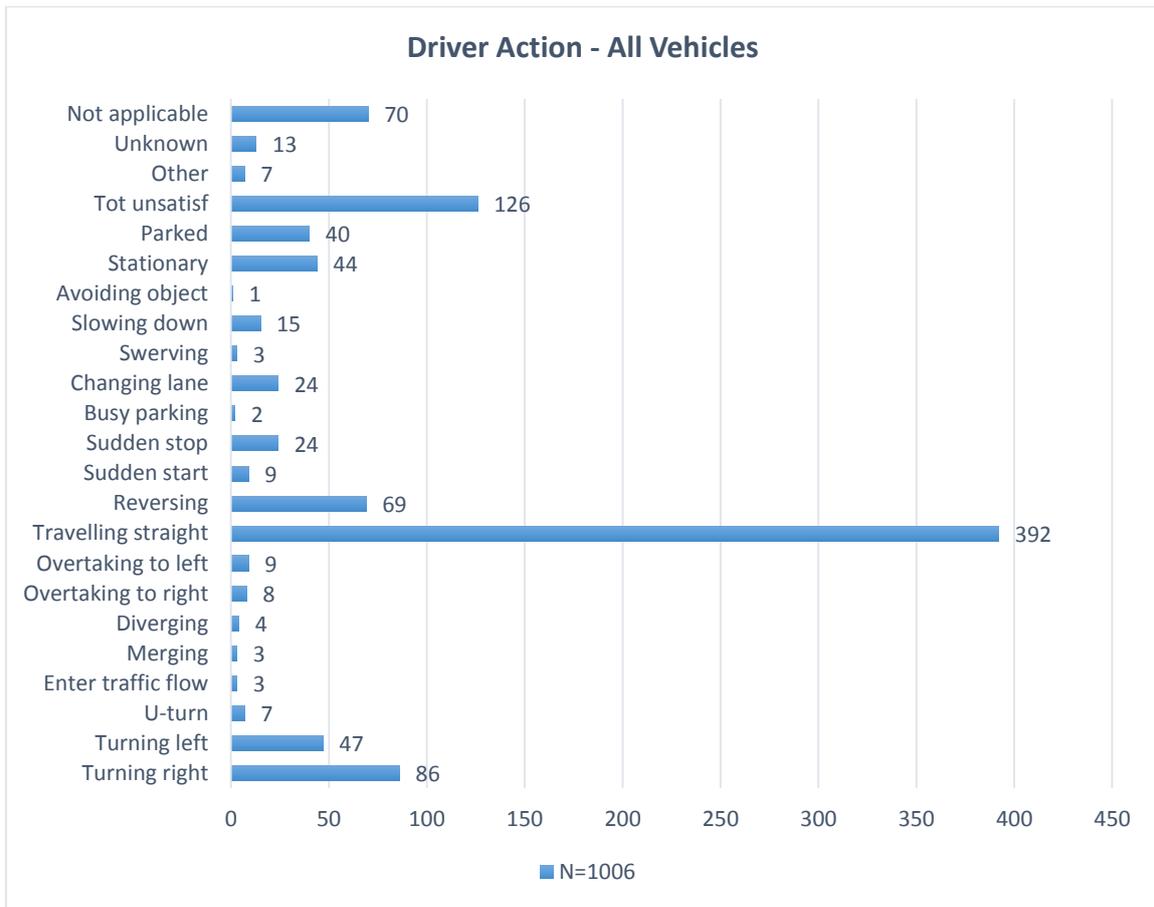
The graph reflects that 29.03 per cent of crashes happened because of head/rear crashes, which is in line with the front/rear damage as indicated in graph 4.13 and with the “travelling straight” element in graph 4.15. Sideswipe crashes between cars travelling in the same direction contribute to 16.30 per cent of the crashes. When interpreting figure 4.13, this compares to the left and the right side damage of the

vehicles. Head/rear crashes can be ascribed to motorists travelling at speeds not conducive to the circumstances or motorists failing to keep proper observation of vehicles traveling in front of them. The majority of crashes hold the potential to aggravate the situation, especially sideswipe crashes, which may cause vehicles to move across solid white lines or to cross medians in the face of oncoming traffic. Sideswipe crashes also have the tendency to cause a driver to lose control of the vehicle with disastrous results, especially when the vehicle starts “spinning” out of control or because of evasive action from the driver, which results in the so-called figure-8 movement where the driver faces approaching traffic. The unfortunate result of these types of crashes is the serious risk of potentially serious and/or fatal injuries.

All other types of crashes recorded on the AR Form range from between one per cent to 9.94 per cent. The erroneous recording of this category on the form was in the “total unsatisfactorily” column, which amounts to 18.29 per cent, which means that for 18 per cent of all crashes recorded, inaccurate statistics will be provided.

In figure 4.15, the researcher indicates the actions that were being performed by the drivers during the crash. For the purposes of this study, the information of all the drivers (categories A and B) was combined to show a holistic clear picture.

**Graph 4.15: Driver action – all categories**



The data collected show that in 39 per cent of the cases, the drivers were travelling straight. This is in line with the damage to the front or the rear of the vehicles as reflected in graph 4.13. To prevent any confusion, the action “travelling straight” is an element that is internationally recognised and included on both the national and international crash-recording forms. In saying this, it means that at the point of impact both drivers or one of the drivers was travelling straight – with no change in approach direction. It is worth mentioning that the elements reversing (7%), stationary (4%) and parked (4%) are usually linked to one another because the vast majority of these crashes occur in parking areas at malls and shopping centres.

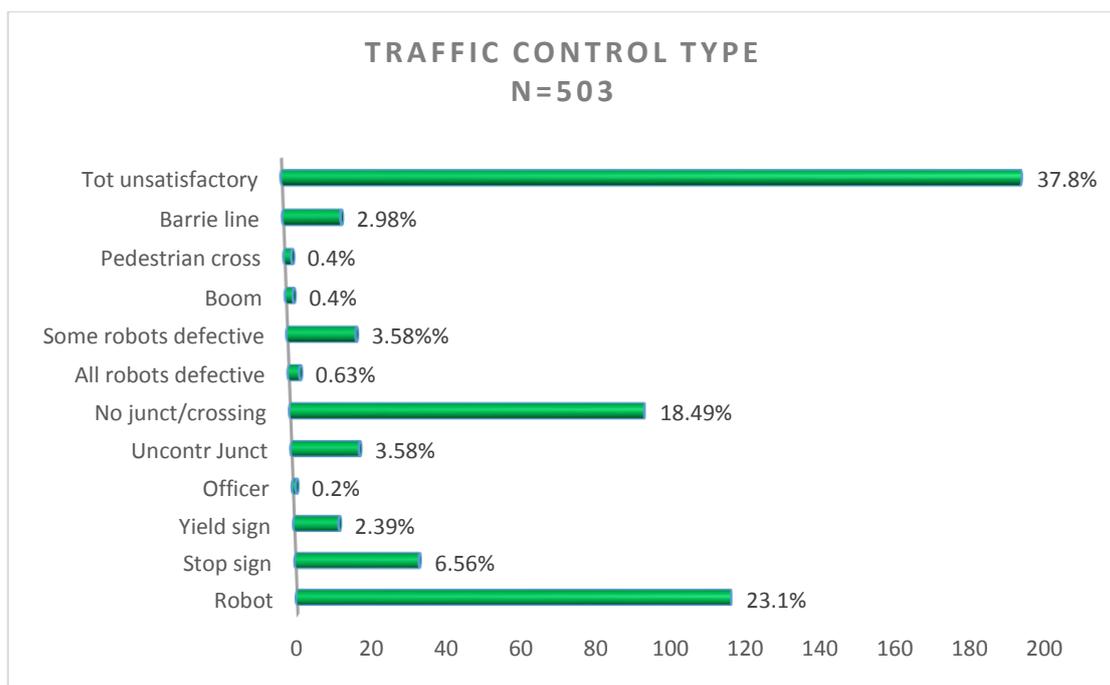
The data show that 13 per cent of the information recorded is unreliable and cannot be used in any form of planning or intervention development.

### 4.3.5 Traffic control type

#### 4.3.5.1 Traffic control type

This section consists of numerous variables, of which the traffic control type needs special attention. It is imperative that an analyst is able to draw inferences from such data to develop much-needed interventions. Graph 4.16 produces a depiction of the data collected (N=503) from the traffic control type variable. In doing so, the researcher reflects on the criminological significance of road traffic crash data in relation to effective road safety management. All the information recorded on the AR Form contributes to the quality of the crash data recorded, which forms part of the responsibilities of the supervisor in ensuring accurate and usable data (vide 1.5).

**Graph 4.16: Traffic control type**



From the onset, it is important to emphasise that this specific statistic represents a near 38 per cent total of unsatisfactory valuation due to information not being completed by law enforcement practitioners and drivers. This renders it unreliable to the point that no analyst will be able to draw sensible inferences from it. No quality interventions are possible and law enforcement professionals will find it difficult to

determine accurately the junctions where road crashes had occurred. Planning towards corrective intervention strategies in the pursuit of improved road safety strategies will be affected.

The data show that 23 per cent of the remaining crashes are assigned to robot-controlled intersections, which clearly indicates that there is a lack of effective law enforcement and/or serious offending behaviour by drivers of motor vehicles. A concern is the 4.2 per cent of crashes, which happen at defective robot-controlled intersections. This is a clear indication that defective robot-controlled intersections lack visible law enforcement presence and/or temporary road signage to control the intersections. Another type of junction that requires urgent attention from law enforcement administrators, is the type “uncontrolled junctions”, i.e. intersections that are not controlled by one or other type of road sign, and which were indicated in this research as contributing to 18 per cent of road crashes.

#### **4.3.6 Crash information**

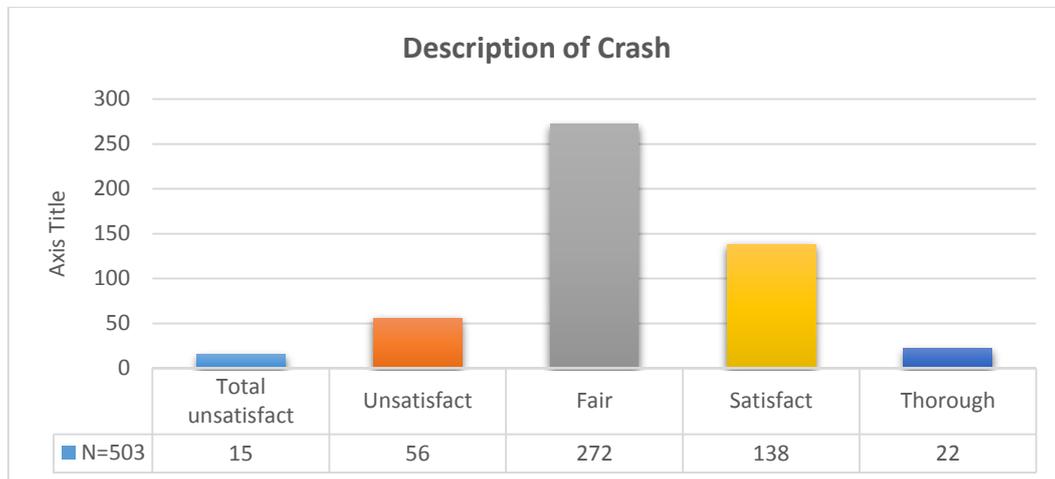
This section comprises crucial crash data elements that describe the overall characteristics of the crash, which are vital for the purposes of road safety strategies. The significance of the intervention strategies to improve road safety will be influenced by statistical interpretations of data recorded at the scene. In doing so, the researcher reflects on the criminological significance of road traffic crash data in relation to effective road safety management. All the information recorded on the AR Form contributes to the quality of the crash data recorded, which forms part of the responsibilities of the supervisor in ensuring accurate and usable data (vide 1.5).

##### **4.3.6.1 Crash description**

The AR Form makes provision for a description of the events that transpired immediately prior to the crash. This section is important as it serves as a verification process for other important information captured on the form. A properly written description provides a clear indication of the type of violation committed (for example moving violation or not). In the event where law enforcement practitioners fail to prosecute offending drivers at the scene, or where the driver reports the crash, criminal

accountability can be determined and a prosecution instituted administratively (vide section 3.5.2). Processed data are displayed in graph 4.17.

**Graph 4.17: Description of the crash**



The top bracket of the graph reflects the required information regarding a variable, which has been thoroughly and accurately completed, and adheres to the criteria of crash data efficacy. The researcher evaluated the quality of the information recorded according to the Likert scale, where 1=Totally Unsatisfactorily, 2=Unsatisfactorily, 3=Fair, 4=Satisfactorily and 5=Thorough. The researcher allocated a rating based on the level of completeness that was coordinated with a senior official from the Accident Bureau (vide section 1.9.1.3.1).

Administrators tasked with managerial, interpretive and decision-making responsibilities would be able to apply the data towards the attainment of these objectives. Simply put, this category implies that 32 per cent of the data captured on this section are good data, which can be utilised towards the improvement of road safety management. The bottom section of the graph reflects that 14 per cent of the information was not captured at all. Altogether 54.1 per cent of the data captured fall in the fair bracket, which means that it is usable to some extent. If put in perspective, law enforcement practitioners will be able to use 32 per cent of the data recorded towards their administrative, managerial, investigative and prosecutorial responsibilities. As much as 54 per cent of the recorded data may be applied towards some of these objectives, although not in a satisfactory way, and may give rise to

wrong interpretations, doubt, uncertainty and inaction as a consequence of which a dangerous environmental condition or cause of a crash may have been overlooked and/or prolonged, with even more severe consequences.

An interesting point is that the AR Form on page 1(b), paragraph 24, prescribes that “When a person, who reports an accident, prefers to write the description, and/or draw an accident sketch, h/she should sign next to the relevant item.” In section 4.3.3.3 above it was explained that 12 per cent of drivers completed the AR Forms. The researcher found that, contrary to this requirement, not one single AR Form had been signed next to the description and/or sketch plan by the driver. It is paramount that the information of the reporting driver can be verified at the relevant SAPS office or other office set aside for such purpose. Circumstances may arise that cause someone to “cover” for the original driver because of several dubious reasons, such as no driver’s licence, outstanding warrants of arrest, a suspended sentence due to previous traffic offenses, unlicensed and unregistered motor vehicle, and so forth. The fact that the relevant supervisors did not verify these forms, leads us to assume that no supervisor or person responsible for the verification thereof did verify the specifics on these forms. The verification of AR Forms will be further reflected on in section 4.3.8.2.

#### **4.3.7 Administrative responsibilities**

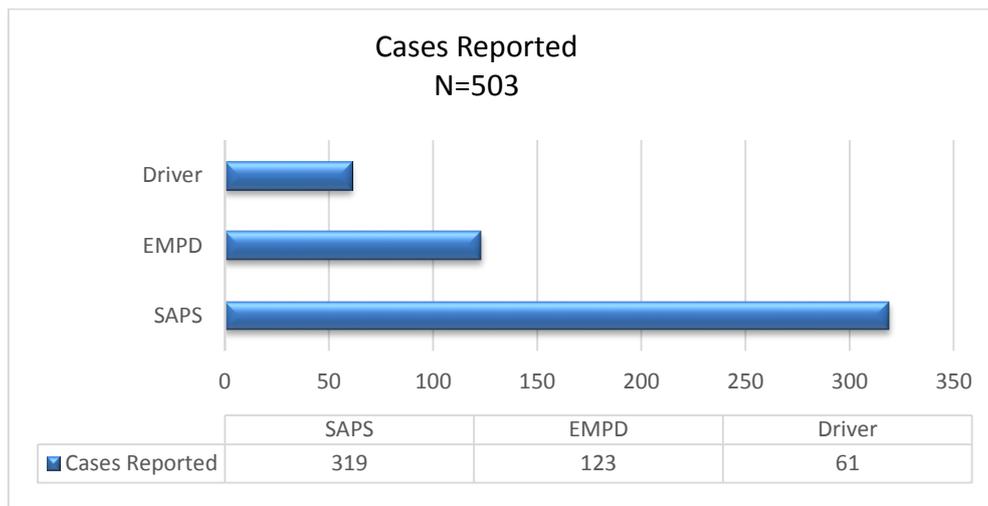
This section contains all the information that may be categorised as administrative. This will include aspects concerning the completion of the forms, verification processes and potential institution of prosecutions. Here the researcher reflects on the criminological significance of road traffic crash data in relation to effective road safety management. All the information recorded on the AR Form contributes to the quality of the crash data recorded, which forms part of the responsibilities of the supervisor to ensure accurate and usable data (vide 1.5). The researcher also investigates whether law enforcement practitioners deem the institution of prosecutions as important.

##### **4.3.7.1 Reporting of crashes and completion of AR Forms**

In this section, the researcher aims to indicate the rate at which the different institutions report crashes to the official Accident Bureau of the SAPS office. For the purpose of

this section, institutions refer to metropolitan police officers, members of the SAPS and the drivers of motor vehicles involved in crashes. The researcher will furthermore compare the rate at which the different entities report the crashes. Graph 4.18 reflects on the entities that report the crashes.

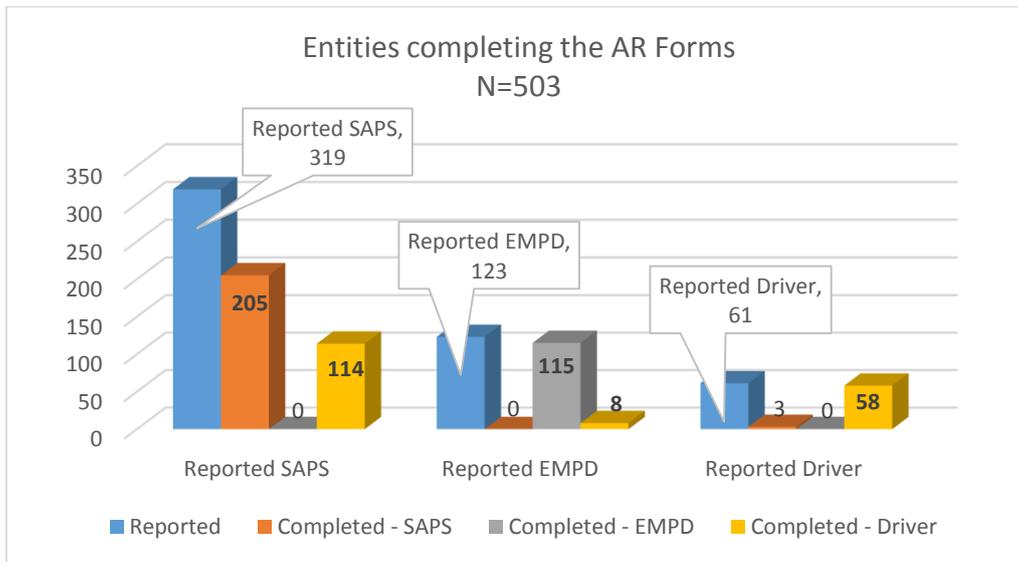
**Graph 4.18: Cases reported by entity**



In 63 per cent of the crashes reported, the reporting entity was the SAPS, with the EMPD reporting 25 per cent of the crashes at the EMPD office. The drivers reported 12 per cent of the cases at either the SAPS or the EMPD. The large percentage of crashes reported by the SAPS, is ascribed to the fact that in many instances drivers are referred to the nearest SAPS office. Participants from the quantitative study clearly indicated that law enforcement practitioners are not allowed to refer parties involved in a crash to the nearest SAPS, because the SAPS will subsequently refer the parties to the EMPD again (vide section 5.3.1.5).

In graph 4.19, the researcher indicates the rate at which the drivers complete the AR Forms when reported to the different law enforcement institutions.

**Graph 4.19: Completion of AR Forms by the different entities**



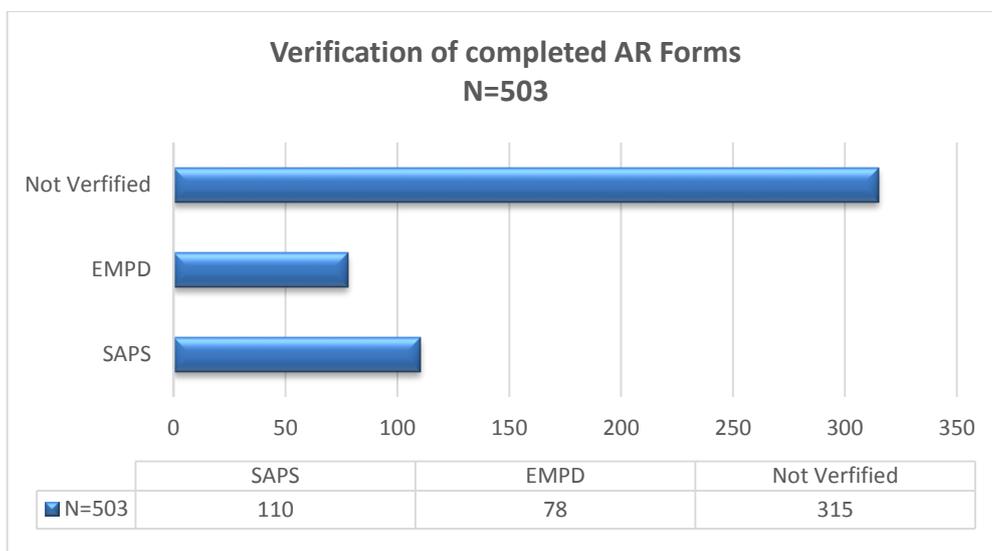
The AR Form (page 1a, paragraph 2) states that: “This form can/may be completed by a driver of a vehicle involved in an accident...**only** if s/he is in a condition to do so.” In 114 cases (56%) of the 205 reported at the SAPS, the driver was requested to complete the form. The researcher noted during the data-collection phase that a vast majority of the forms completed by the driver were signed by the SAPS as the completion authority. The fact that private persons are allowed to complete official forms may have tremendous ramifications in terms of insurance claims as well as private and state induced litigations resulting from the crash.

The data recorded show that in 61 of the cases the drivers reported the crashes, of which 58 (95%) were actually signed by the reporting driver. The remainder of the AR Forms (4.91%) reported by the driver, were completed by the law enforcement institutions. In 115 cases reported by the EMPD, the driver was requested to complete the forms in eight of these cases (7%). The fact that 63 per cent of all the cases were dealt with by the SAPS, compared to 24 per cent by the EMPD, is a reflection that a vast majority of the crashes are being referred to the SAPS. Those data also reflect that crashes being attended to by the EMPD are primarily completed by the EMPD, in contrast to 56 per cent of crashes where the SAPS requested the driver to complete the form. This is a highly “irregular” practice, which should be abolished with immediate effect.

### 4.3.7.2 Verification of the completed AR Forms

The aim of this section is to determine whether supervisors of the different law enforcement entities verify completed AR Forms to determine accuracy and quality thereof, as they are compelled to do. Graph 4.20 depicts the verification by the supervisors of the recorded information that was collected during the crash-recording process.

**Graph 4.20: Verification of completed AR Forms**



In 62 per cent of all AR Forms recorded, the supervisors did not attempt to verify the forms completed by subordinates or drivers. Although the SAPS verified only 22 per cent of AR forms completed by SAPS members and the public, the EMPD verified only 16 per cent of the forms completed by their members. Based on this analysis, it is obvious that supervisory personnel from both law enforcement institutions do not perform supervisory functions as they are compelled to do. This dereliction of official duty most definitely holds potentially far-reaching consequences for the public, but also for the EMPD and the state.

A case study in point is that the researcher interviewed a member of the public at the Accident Bureau, who emphasised the problem under discussion. The participant reported a crash of which a sergeant at the SAPS charge office completed the AR Form. Upon completion thereof, the participant was handed a piece of paper (the

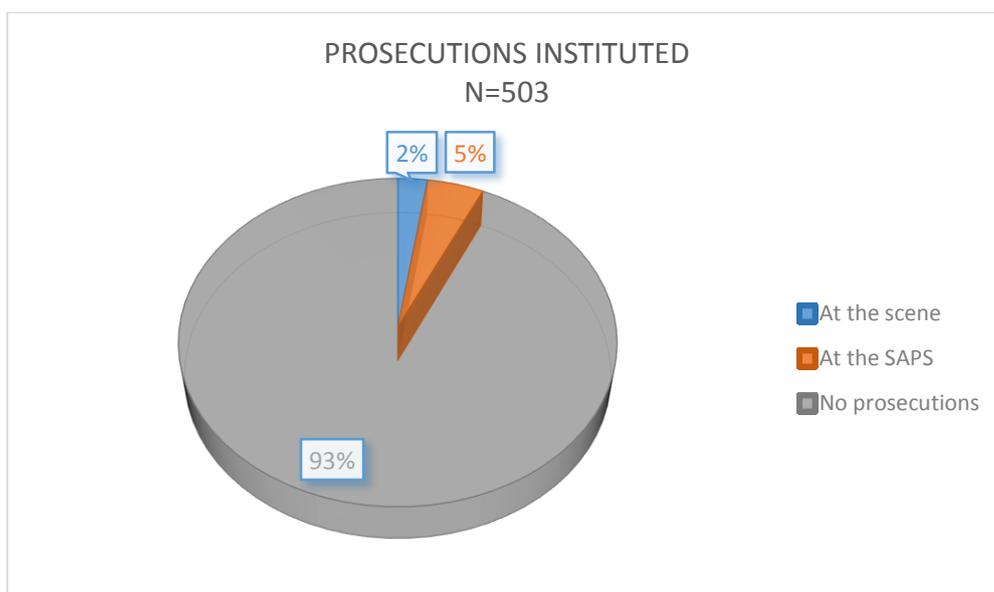
researcher actually viewed the paper) that contained the much required accident number, only to be informed that it was an “outside” AR number, which is not accepted by the participant’s insurance company. After approximately three months of driving back and forth between the SAPS office, completing the AR Form, the EMPD and other SAPS offices, the respondent requested a copy of the AR Form. A member of the SAPS office informed him that the completed form would have to be searched for. He was also informed that due to “the huge work load of the SAPS”, they are necessitated to “take the forms home to complete them there”. This is a clear indication of the dereliction of the supervisor not verifying the completed forms, which is but one instance where it had serious consequences for the public.

This lack of verification of the completed AR Forms was affirmed in the qualitative process of the study in section 5.3.4.1.

#### 4.3.7.3 Institution of prosecutions

In this section, the aim of the researcher is to determine whether law enforcement entities investigate and institute prosecutions against offending drivers who were involved in crashes. Graph 4.21 illustrates the processed data collected during the data-collection phase (vide 5.3.2, 6.2.1.3.2 & 6.2.7).

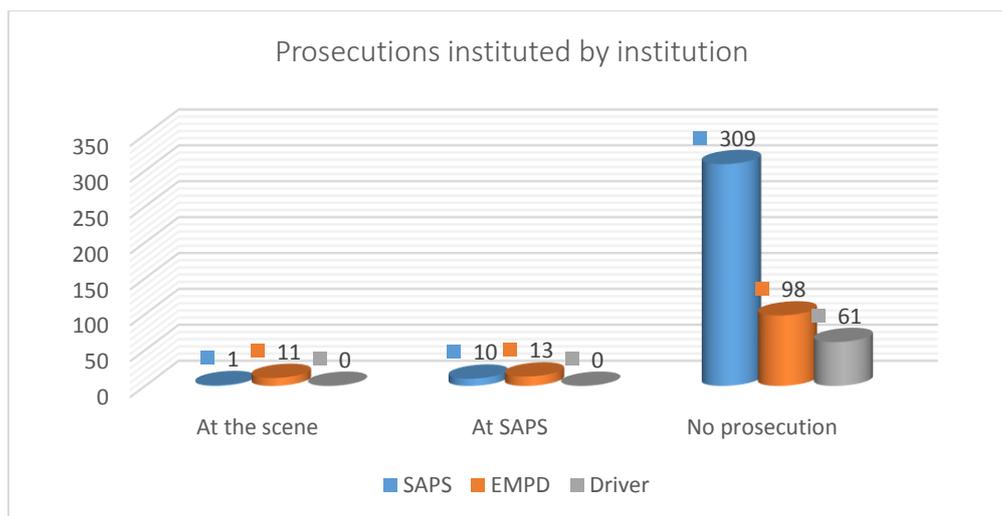
**Graph 4.21: Prosecutions instituted**



According to the data collected, no prosecutions were instituted in 93 per cent of the crashes reported, whilst a mere two per cent of prosecutions were instituted against offending drivers at the scene. This is questionable because the law enforcement practitioner is present at the scene and in the best possible position to determine possible driving violations that could have contributed to the crash. This is done through own observation (investigation), witnesses and driver statements. The SAPS instituted only five per cent prosecutions. These prosecutions are generally criminal case dockets opened for crashes involving fatal injuries.

In graph 4.22, the researcher illustrates the percentage of prosecutions instated by the relevant law enforcement entities.

**Graph 4.22: Prosecutions instituted by institution**

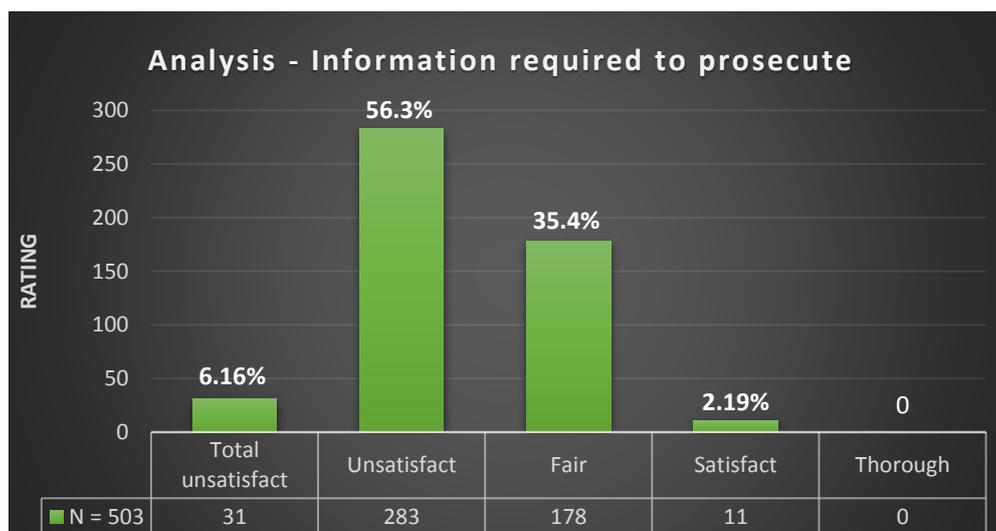


In terms of the data collected, 97 per cent (319) of the crashes reported at the SAPS resulted in no prosecution. In 80 per cent (122) of the crashes attended to by the EMPD, no prosecution was instituted, despite the strong ability to determine driving violations that could have contributed to the crash, which is done through own observation (investigation), witnesses and driver statements. The 61 crashes reported by the drivers at the SAPS or EMPD offices, resulted in no prosecutions at all, because no follow-up investigations took place.

It is clear that the chances for an offender to be prosecuted when involved in a crash, are extremely slim, unless there were serious or fatal injuries sustained by a person involved in the crash. Data collection during the qualitative process affirmed that law enforcement practitioners institute prosecutions to a certain point, predominantly in the event of a crash with fatal injuries (vide section 5.3.2.3).

In graph 4.23, the researcher analysed the information concerning the drivers, vehicles, action by the drivers and the crash description, to determine whether the information recorded is sufficient to consider and make a decision to institute prosecutions as required by s89(1) of the NRTA, Act 93 of 1996 (South Africa, 1996b), which places a legal duty on the mandate of law enforcement practitioners (vide section 3.5.1).

**Graph 4.23: Information required instituting prosecutions**



In 6.16 per cent of all the crashes recorded, the information is such that no analyst will be able to make any sensible inference thereof. In 56.26 per cent of the crashes recorded, law enforcement practitioners will not be able to institute administrative prosecutions (vide section 3.5.2) due to the unsatisfactory state of the information recorded. Therefore, in only 36 per cent of the crashes observed, the quality of the data recorded made it possible to consider the institution of prosecutions or not.

In order to institute administrative prosecutions, the researcher evaluated information recorded about the drivers, the vehicles involved, action by the drivers and the crash description. The quality of the information was evaluated according to the Likert scale, where 1=Total Unsatisfactorily, 2=Unsatisfactorily, 3=Fair, 4=Satisfactorily completed and 5=Thorough. The researcher allocated a rating based on the level of completeness that was coordinated with a senior official from the Accident Bureau (vide section 1.9.1.3.1).

#### **4.3.8 Quality of the Information**

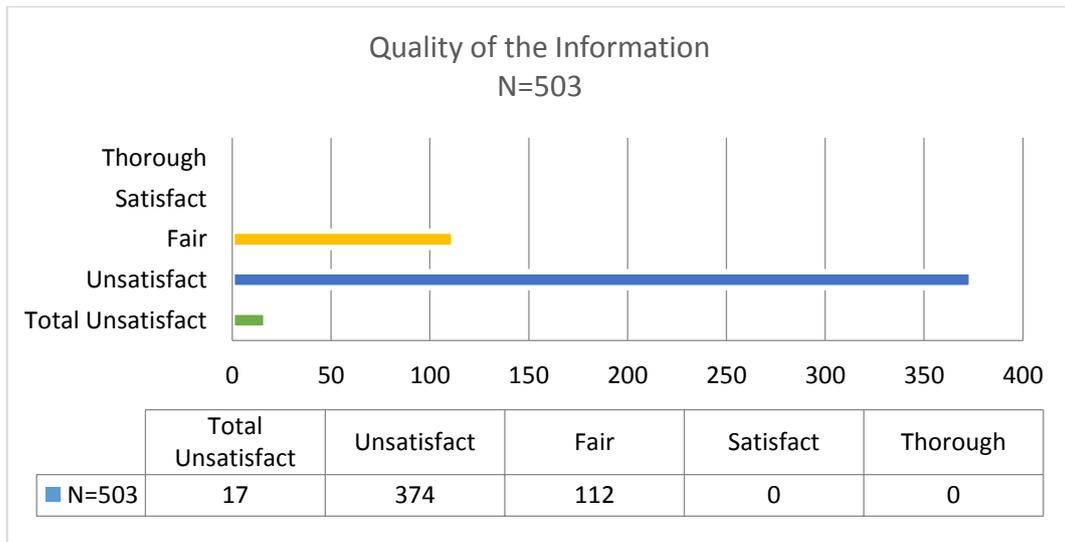
This category forms the crux of the study. In this category, the aim of the researcher is to determine the quality of the information recorded on the AR Forms. This information determines the quality and accuracy of statistics that are provided to administrators in a processed, reliable and valid format. Here the researcher reflects on the criminological significance of road traffic crash data in relation to effective road safety management. All the information recorded on the AR Form contributes to the quality of the crash data recorded, which forms part of the responsibilities of the supervisor to ensure accurate and usable data (vide 1.5).

##### **4.3.8.1 Quality of the information recorded**

The aim of this section is to determine the quality of the information that is captured by law enforcement practitioners as well as drivers. Graph 4.24 provides an explanation of the quality of the information captured.

In determining this section, the researcher analysed all the variables and calculated the weights allocated to each variable during the data-collection phase to determine the average weight. The weight is then allocated a rating between 1 and 5, where 1=Totally unsatisfactorily, 2=Unsatisfactorily, 3=Fair, 4=Satisfactorily and 5=Thorough. These weights are then electronically computed.

**Graph 4.24: Quality of information recorded**



Holistically and according to the assessment criteria applied, 22 per cent of the AR Forms were fairly completed, 74 per cent were unsatisfactorily completed and four per cent totally unsatisfactorily. This implies that four per cent of crashes recorded in the EMPD render unreliable and therefore unusable information. In combining the “unsatisfactorily” categories, around 78 per cent of all information recorded will provided inaccurate and unreliable statistics. Analysts will have a difficult time to quantify information into some form of statistics that are of value to administrators, especially when developing intervention programmes. The level of the information recorded on AR forms is therefore unacceptable and needs urgent remedy from management. Data obtained during the interview process confirmed the unacceptable quality of the information that is recorded on the AR Forms (vide section 5.3.6.2).

Toroyan (2013:7) agrees and opines that non-fatal injuries are poorly documented, especially the categorisation of injuries, because of insufficient training that law enforcement practitioners are subjected to (vide section 5.3.7.1).

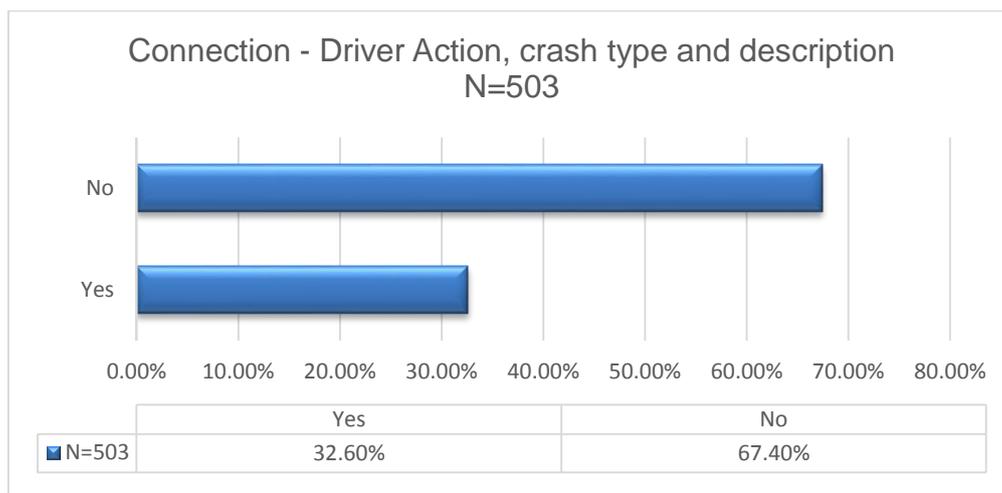
#### **4.3.8.2 Correlation between driver action, crash type and crash description**

The aim of this section is to determine whether there is a relationship between the action of the driver prior to the crash, the type of crash and the description tendered

on the AR Form. Should there not be a connection, i.e. the information does not correspond in terms of the objectives for which it has been recorded, statistical use is adversely affected.

In determining this category, the researcher analysed applicable variables (driver action, crash type and crash description) and calculated with the aid of Microsoft Excel® 2013 the weights allocated to each variable during the data-collection phase to determine the average weight. The weight is then allocated a rating between 1 and 5, where 1=Totally unsatisfactorily, 2=Unsatisfactorily, 3=Fair, 4=Satisfactorily and 5=Thorough. These weights were then electronically computed. The processed data are depicted in graph 4.25.

**Graph 4.25: Connection between driver action, crash type and crash description**



Although 33 per cent of the statistics indicate a positive connection, 67 per cent indicate that there is no connection, which renders the statistics ineffective. This is only one of the derelictions of supervisors not verifying completed AR Forms. Verification of the completed AR Form is crucial in ensuring that errors like this may be corrected.

#### **4.4 PRÉCIS OF RESEARCH RESULTS PERTAINING TO INFORMATION RECORDED IN ACCIDENT REPORTS**

A précis of the results is presented, as observed in the data that were collected with the information schedule and subsequently analysed and interpreted according to the pre-identified themes (vide section 4.3).

The following findings emerged from the data that were captured on the information schedule during the data-gathering process (vide 4.1 to reflect the objectives addressed).

##### **4.4.1 Geographical information**

- Information regarding the location of crashes was recorded acceptably at a 73 per cent completion rate.
- Recording of the speed limit applicable to the street and area where the crash occurred was incomplete in 70 per cent of the cases.
- Altogether 50 per cent of the information recorded on the road type was incomplete.
- In 67 per cent of the cases, AR Forms did not reflect the junction type, which renders the utility value of the information inadequate.
- The number of crashes recorded regarding the crash location and the road type, does not correlate.
- The junction type category does not provide for a “freeway”, which results in 3.2 per cent of the entities completing the AR Form indicating a crash on a freeway as “other”, which points toward a required correction on the prescribed AR Form.

##### **4.4.2 Demographical information**

- In 44 per cent of the crashes recorded, the drivers of the vehicles are males, with females contributing to 17 per cent of these crashes.
- In 30 per cent of the cases, the gender of the driver was not reflected.

- The majority of males (13%) are involved in crashes between the ages of 30-34, whilst the crash risk factor for the majority of females is the age group 25-29 (4%).
- Blacks contribute to 46 per cent of crashes and whites to 30 per cent.
- This research indicates that drivers in the 60+ age groups must be subjected to frequent drivers' licence testing.
- Males show a six per cent crash tendency in the 60+ age group with females a 2.2 per cent.

#### **4.4.3 Parties involved**

- In 76 per cent of the cases information recorded concerning the parties involved is complete, with 14 per cent of the data recorded being unreliable, therefore affecting statistics overall as well as the possibility of prosecutions.
- Altogether 10 per cent of the data concerning "parties involved" were recorded as "unknown" and "not applicable", which could be the result of underreporting, hit-and-run crashes as well as single vehicle crashes.
- The research indicates that damage only crashes contribute to 75 per cent of all crashes, which cannot be evaluated in terms of national figures, because of the unavailability of comparable crash statistics.
- In 61 per cent of all cases law enforcement practitioners failed to indicate whether vehicles were recovered by towing services.
- The B category on the AR Form will always reflect a lower completion rate, because of hit-and-run crashes; single vehicle crashes; or the "illegal" practice to refer drivers to report the accident at SAPS or EMPD offices. This is also due to cases where only one driver complies, with no or limited information of the other party, and no follow-up investigation by the relevant authorities.
- In 99 per cent of all crashes law enforcement practitioners indicated that no alcohol was suspected because of non-attendance of a significant number of crash scenes, which is in contrast to international statistics. Once again, no national data are available.
- Altogether 75 per cent of all crashes recorded reflect damage only crashes.

#### **4.4.4 Vehicle information**

- Information about the vehicles involved was recorded at a combined 84.2 per cent for both categories A and B, which falls within the “thorough” bracket.
- Altogether 49 per cent of vehicles involved in crashes are sedan motor vehicles, as compared to the seven per cent of minibus taxis and kombis.
- In six per cent of crashes on the freeway, vehicles sustained damages to the rear of the vehicle, which can be ascribed to congestion patterns where vehicles perform a lot of start-stop action and where speed is not conducive for the circumstances.
- Taxis contribute to six per cent of crashes, of which 58 per cent of these crashes consist of unsafe lane changes (16%) and 42 per cent occur where taxis entered a street unsafely.
- Altogether 3.6 per cent of the crashes were recorded as “no damage caused”. It is unbelievable that not even the slightest damage is caused by two colliding vehicles or a vehicle and an object, which implies incorrect recording of information, because no damage relates to no crash.

#### **4.4.5 Traffic control type**

- Altogether 27 per cent of crashes recorded occurred at robot-controlled intersections, which indicates a lack of effective and visible policing and/or dangerous driving practices.
- In 38 per cent of all recorded crashes the traffic control type was not reflected, which implies that no quality interventions are possible and law enforcement professionals will find it difficult to accurately determine the junctions where road crashes frequently occur. Planning towards corrective intervention strategies in the quest towards road safety strategies will be affected.

#### **4.4.6 Crash information**

- Altogether 29 per cent of recorded crashes involved head/rear type of crashes.
- Sideswipe crashes between cars travelling in the same direction contribute to 16.30 per cent of the crashes, which holds the potential to aggravate the

situation with disastrous results and a serious risk of potential serious and /or fatal injuries.

- In 86 per cent of the recorded cases, the description of the crash (what happened) was recorded on the form. Law enforcement institutions will be able to institute prosecutions if required, subject to the completion of the vehicle type and the particulars of the driver.

#### **4.4.7 Administrative responsibility**

- The SAPS recorded 63 per cent of all crashes, which is an indication that numerous drivers are unnecessarily and “illegally” referred to the SAPS.
- In 56 per cent of the crashes reported at the SAPS, the driver was requested to complete the form.
- In 62 per cent of the completed forms it is evident that supervisors did not verify the completed forms.
- In 93 per cent of all the crashes recorded, no remedial actions, including prosecutions, were instituted.
- In 56 per cent of all crashes registered, the institution will not be able to institute administrative prosecutions. In order to institute administrative prosecutions, the researcher evaluated information recorded about the drivers, the vehicles involved, action by the drivers and the crash description. The quality of the information was evaluated according to the Likert scale, where 1=Totally Unsatisfactorily, 2=Unsatisfactorily, 3=Fair, 4=Satisfactorily and 5=Thoroughly completed. The researcher allocated a rating based on the level of completeness that was coordinated with a senior official from the Accident Bureau.

#### **4.4.8 Quality of information**

- The quality of the information recorded by both law enforcement practitioners and drivers is unsatisfactory.
- Law enforcement practitioners and the untrained motoring public are on the same standard concerning the completion of AR Forms.

- In combining the “unsatisfactory” categories, around 78 per cent of all information recorded provides inaccurate and unreliable statistics. The quantification of information into some form of statistics that are of value to administrators, especially when developing intervention programmes, will be negatively affected.
- In 67 per cent of all the recorded crashes, there is no parallel between the action of the driver, the type of crash and the description of the crash.
- In 62 per cent of the completed forms, it is evident that supervisors do not verify the completed forms, which compromises the objectives of recording crash data in the first place.

#### **4.5 CONCLUSION**

In this chapter, the researcher analysed and interpreted the data that were collected with the information schedule developed for this purpose. Analysed data are presented in graphical format followed by the interpretation thereof. The main findings of the quantitative nature of the study were reflected upon. In chapter 6, the researcher provides a detailed discussion on the findings of this chapter, which will be incorporated with the findings of the qualitative nature of this study in chapter 5.

## CHAPTER 5

### ANALYSIS AND INTERPRETATION: QUALITATIVE DATA

#### 5.1 INTRODUCTION

In this study the researcher endeavoured to assess the criminological significance of road crash data from a criminal justice perspective. The researcher employed an evaluative approach (vide section 1.7) to fulfil the qualities of this study. As explicated in chapter 1 (vide section 1.7.3), the researcher used a mixed-methods approach to substantiate the following objectives identified in section 1.5, namely to:

- Explain the criminological significance of road traffic crash data in relation to effective road safety management (c).
- Evaluate and describe the attendance and recording procedure of road crashes (d).
- Evaluate and describe the supervisor's responsibility in relation to the quality of crash data recorded (e).
- Evaluate and describe the effectiveness of crash statistics accessed by management and/or officials (f).
- Evaluate and explain the current prosecution procedure as part of the CJS (g).
- Evaluate existing policy about the crash-recording process applicable to operational law enforcement practitioners of the EMPD (h).
- Explore and describe the current state of motor vehicle insurance and its necessity from a criminological perspective (i).

The researcher used interviewing as the primary qualitative data-collection tool, where respondents who are experts in the field of road traffic management, shared their views and real life experiences about data management in relation to road traffic crashes. Collected data were transformed into findings through a systematic process of analysis (Schurink et al, 2012:397). Babbie (Schurink et al, 2012:399) explains qualitative analysis as:

“...the...non-numerical examination and interpretation of observations, for the purpose of discovering underlying meanings and patterns of relationships.”

This implies that mathematical interpretations were not the focus, but the transcription of collected data in the form of word processing files. The responses of the respondents were reflected verbatim, accepting that the information tendered took precedence over grammatical proficiency. Figure 5.1 illustrates the basic steps that the researcher used in the analysis and interpretation of the data collected, as identified by Creswell and Plano Clark (2011:204).

**Figure 5.1: Basic steps in the analysis and interpretation of qualitative data**



The researcher opted to incorporate the data analysis and interpretation of the collected data into the current chapter as a whole.

## **5.2 ADMINISTERING INTERVIEWING AS DATA-COLLECTION TECHNIQUE**

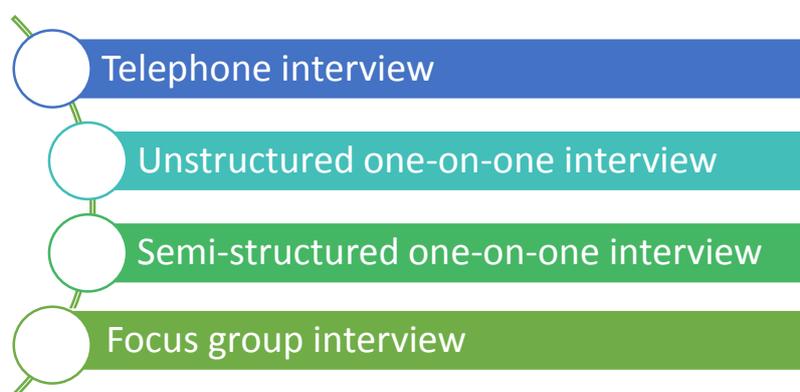
The researcher used the interviewing technique as the primary mode of information collection through direct interaction between the researcher and the participants (Greeff, 2012:342). This exchange of information between the researcher and the participants, is considered a social relationship where the researcher records the experiences of the participant in the form of raw data, which are then interpreted into knowledge and understanding (Greeff, 2012:342).

Expert sampling (vide section 1.9.2.3.1) was used to cover several aspects concerning road traffic crashes. Although participants were culturally diverse, no objections were raised against the interviews being conducted in English. Prior to the collection of the data, the researcher determined the categories (themes), which contributed to the careful selection of the participants. Approval to interview participants was obtained in advance from the EMPD (vide section 1.9). The sensitive nature of the information, and the fear of being critical against the institution, necessitated the researcher to guarantee participants' anonymity through an Informed Consent Form (vide Annexure B). The researcher used the Informed Consent Form (Annexure B) to also guarantee the anonymity of the participants in telephone interviews. Only after clear consent from the participant, did the researcher proceed with the interview.

The researcher is familiar with the vast majority of the participants, as they were previous colleagues from within the law enforcement sector. Taking into account the operational responsibility of participants, interviews were scheduled via telephone, and the dates and times were arranged well in advance. The researcher and the participants agreed upon an environment well known to them (Greeff, 2012:350). Confirmation about the arrangements occurred close to the respective dates of the interviews.

Figure 5.2 highlights the different interview techniques used by the researcher to collect the data. A detailed discussion in this regard can be seen in section 1.9.2.3.1.

**Figure 5.2: Interview techniques**



### 5.2.1 Analysis of data

The researcher identified the themes prior to collecting the data during the interview phase (vide section 1.9.2.5). The researcher collected the data through electronic recording devices and transcribed the information when collected. The data collected were analysed and interpreted to gain a deeper understanding of what had been studied. The researcher scanned through the data and pre-identified themes, searching selectively for additional cases not already recorded (vide table 5.1).

## 5.3 QUALITATIVE EVIDENCE GATHERED FROM INTERVIEWS

Evidence was gathered using different qualitative data-collection techniques in the form of interviews (vide section 1.9.2.3.1). This section examines the observations of the participants as experienced in their lived environment. The researcher interviewed numerous participants, ranging from different law enforcement environments as well as private individuals, hence a wide range of questions had to be utilised to accommodate the scope of interviewees (1.9.2.3.1.1 – 1.9.2.3.1.4). Participants are specialist practitioners whose experience and expertise uniquely qualify them to identify road safety problems, risk factors and hazardous priority areas significant to policy formulation and implementation, which are fundamental to the development of road safety strategies. Pre-identified categories and new factors (sub-categories) as discovered by the researcher, are summarised in Table 5.1.

**Table 5.1: Summary of categories and sub-categories**

Main categories	Sub-categories
<b>5.3.1 The road crash scene</b>	5.3.1.1 Obligation to attend a crash scene 5.3.1.2 Responsibilities at the crash scene 5.3.1.3 Recording process of a crash 5.3.1.4 Reporting of crashes 5.3.1.5 Referral of parties to SAPS 5.3.1.6 Breakdowns and private ambulances
<b>5.3.2 Prosecution</b>	5.3.2.1 Conviction rate of dockets 5.3.2.2 Importance to prosecute offenders 5.3.2.3 Do officers institute prosecutions? 5.3.2.4 Post-crash roadworthiness of vehicles 5.3.2.5 Testify in court

<b>5.3.3 Injury severity</b>	5.3.3.1 How is injury severity determined? 5.3.3.2 Seriousness of injuries intentionally reduced
<b>5.3.4 Administrative responsibility</b>	5.3.4.1 Verification of completed AR Forms
<b>5.3.5 Departmental policies</b>	5.3.5.1 Availability of departmental policies
<b>5.3.6 Data management</b>	5.3.6.1 Availability of crash data 5.3.6.2 Quality of officer-recorded crash data (AR Forms) 5.3.6.3 Quality of management statistics
<b>5.3.7 Training</b>	5.3.7.1 Basic and in-service training in crash attendance and recording 5.3.7.2 Specialist training
<b>5.3.8 Insurance</b>	5.3.8.1 Is vehicle insurance necessary?
<b>5.3.9 Additional information</b>	

The following section comprises analyses and interpretations concerning the information collected during the collection phase from the various participants. It is important to note that additional information obtained during the data-gathering phase is also incorporated into the analysis and interpretation process. Sub-categories are discussed as identified in table 5.1.

### **5.3.1 The road crash scene**

Many people associate the scene of a crash with emotions, death, injury and financial losses, whilst for a law enforcement practitioner the scene of a crash is the place where data are gathered in an endeavour to determine why specific crash patterns occur and what is necessary to address road safety needs (Roads.Maryland.gov, 2014). In this category, the researcher endeavours to ascertain the approach of law enforcement practitioners towards crash scenes and to determine whether procedures and prescriptions as explained in chapter 3 (vide sections 3.2 to 3.4) are followed (vide 1.5, objective d). The researcher also addresses the criminological significance of road traffic crash data in relation to effective road safety management (vide 1.5, objective c).

In Table 5.2, the researcher provides a synopsis of the obligation to attend to a crash scene, which is followed by an interpretation thereof.

### 5.3.1.1 Obligation to attend to a crash scene

It is important to note that some of the quotations emanated from the probe for further information from the researcher, but nevertheless relate directly to the main question. The main question asked to respondents was:

- Which law enforcement entity(ies) is/are responsible for attending to crash scenes?

**Table 5.2: Obligation to attend to a crash scene**

Reflection	Interview	Participant	Extraction
1	IV1	1 + 2	"...and at this stage it is a very vague area, ja well I say a grey area, because there is this new people that popped up at the e-tolls with their new uniforms and new cars. So we do not know if they are appointed or not and if they are allowed to take accidents."
2	IV2	1	"Ja, it's just the EMPD and SAPS."
3	IV2	3	"The old TPA what do they call them – Gauteng... [Researcher – Gautrans ja]. They as well ja. I have been to an accident where they take the particulars."
4	IV7	1	"According to the police only police officers can take an accident scene...We have requested SAPS to provide us with that documentation where it actually states that only SAPS is responsible to take accidents. Till date they couldn't provide us with that."
5	IV7	1	"My opinion is traffic policing is as important as the South Africa Police Services policing and we need to capacitate traffic departments to do that."
6	IV12	1	"According to the SAPS if a crash is of such a serious nature that it requires a criminal docket, then it should be the SAPS, and if it is a fender-bender the police, metro police or traffic can do it."
7	IV12	1	"A lot of stuff go below the radar so the whole system in the country is totally unsatisfactory at the moment..."

8	IV13	1	"We received an instruction that SAPS only are allowed to attend to the serious and fatal crashes. We are only allowed to protect the scene and to see to traffic control."
9	IV13	1	"This is problematic, because "at the scene they request us to assist them because they don't know how to measure the scene, or to draw the plan. In many of the cases we even have to assist them at the SAPS station with the completion of the documents."
10	IV13	1	"I have called their office after which I was referred to their legal department. Apparently they know about the instruction but is unable to provide me with a copy thereof."

In answering this question, respondents were not sure who is responsible to attend to crash scenes. One respondent commented that "...at this stage it is a very vague area, ja well I say a grey area" (reflection 1) and another indicated that "...it's just the EMPD and SAPS" (reflection 2).

Concerning the role of the SAPS in attending to crash scenes, there seems to be confusion. As one respondent commented: "According to the police only police officers can take an accident scene" (reflection 4). Another acknowledged this statement by confirming that: "According to the SAPS if a crash is of such a serious nature that it requires a criminal docket, then it should be the SAPS, and if it is a fender-bender...the police, metro police or traffic can do it" (reflection 6). A respondent from the Cape Town traffic police stated: "We received an instruction that SAPS only are allowed to attend to the serious and fatal crashes. We are only allowed to protect the scene and to see to traffic control" (reflection 8).

Two of the respondents acknowledged that the current system "...in the country is totally unsatisfactory at the moment..." (reflection 7) because "at the scene they request us to assist them because they don't know how to measure the scene, or to draw the plan. In many of the cases we even have to assist them at the SAPS station with the completion of the documents" (reflection 9).

Whether formal documentation exists to this affect, is unsure, as a respondent noted: "I have called their office after which I was referred to their legal department.

Apparently, they know about the instruction but is unable to provide me with a copy thereof” (reflection 10). Another respondent confirmed this in stating: “We have requested SAPS to provide us with that documentation where it actually states that only SAPS is responsible to take accidents. Till date they couldn’t provide us with that.” The SAPS ([sa]) (cf. <http://www.saps.gov.za>) posted a document on their website, which is the apparent only document available to this extent. This document states inter alia that:

A road accident will be criminally investigated by the SAPS in the following instances:

- When a person has been killed (culpable homicide).
- When a person has been seriously injured.
- When a vehicle of a national or provincial government department has been involved in an accident or contributed to an accident.
- When it appears that a serious offence has been committed.
- When a written complaint is made by either a victim of the *road accident*, an eye-witness or a member of the community that an offence has been committed.

### **5.3.1.2 Responsibilities at the crash scene**

The main question put to respondents was:

- What is the responsibility of the MPO at the scene of a crash?

Again, some of the information obtained was at the request for additional information by the researcher. Table 5.3 provides a summary of the findings from the study. The questions in this sub-category were posed to the operational officials only, as it has a direct bearing on their day-to-day duties.

**Table 5.3: Responsibilities at the crash scene**

Reflection	Interview	Participant	Extraction
11	IV1	1	“Firstly he must safeguard the scene and then (...) he must attend to injuries, make sure all the injuries are attended to and ambulance are on its way and he must take particulars down at the scene. Make a decision whether it is serious and get people out to come and take pictures and ... expert people that must take the pictures”.
12	IV12	1	“I think they must do it at the scene, they must fill out everything at that scene”
13	IV2	1	“Taking of photos, measurements and compiling of sketch plans and then compiling everything into a photo album with a statement.”
14	IV2	2	Liaising with the SAP investigators”
15	IV3	3	“If you were not on scene you cannot investigate”

The researcher sought to ascertain whether the operational officers are *au fait* with the procedures as highlighted in chapter 3 (vide section 3.2.3). Both respondents had an explanation concerning the functions that a metropolitan police officer (MPO) should perform at the scene of a crash. One respondent replied that: “Firstly he must safeguard the scene and then...he must attend to injuries, make sure all the injuries are attended to and ambulance are on its way and he must take particulars down at the scene” (reflection 11). Another respondent was of the opinion that: “I think they must do it at the scene; they must fill out everything at that scene” (reflection 12).

Metropolitan police departments use trained crash investigators to attend to serious and fatal crashes. The responsibilities of these investigators include: “Taking of photos, measurements and compiling of sketch plans and then compiling everything into a photo album with a statement” (reflection 13) as well as “liaising with the SAP investigators” (reflection 14). According to one of the operational respondents it is required from metro police officers to: “Make a decision whether it is serious and get people out to come and take pictures and...expert people that must take the pictures.”

One respondent from the SAPS implied that in the event of a docket that needs to be registered, only the SAPS should undertake it.

Roets, H. (2013), a senior EMPD official explained that, because of the fact that some of the EMPD officers are trained as crash investigators, and also to assist the SAPS, an informal cooperation agreement (“gentlemen’s agreement”) exists in the southern area of Ekurhuleni between the EMPD and the SAPS; whenever a crash gets investigated by an EMPD investigator, close cooperation between such officer and the detective investigating the docket will be in place.

Although respondents reflect some knowledge concerning certain aspects of the responsibilities, it is obvious that they lack knowledge (uncertainty) about the process that should be followed at the scene of a crash.

### 5.3.1.3 Recording process of a crash

The main question directed at operational personnel was:

- There is a formal process when recording a crash scene. What is this process?

Table 5.4 provides a synopsis of the study applicable to this sub-category.

**Table 5.4: Recording process of a crash**

Reflection	Interview	Participant	Extraction
15	IV1	1 + 2	“There is two processes. There is a book that some of the people use. It is an old book. If you haven’t got an accident form with you to take down all the particulars, then there is a book that they normally use to take down the particulars and in that book is mostly all the particulars that you need on the accident document, otherwise they do it on the accident document.”
16	IV12	1	“I don’t believe in them filling in that AR at the scene, because the AR itself is not a very user friendly document and it should never be filled in at the scene itself. So what the officer needs to do is that the department he works for should develop forms, which are uhh can take... what they call speed writing”

This sub-category excludes the physical recording of the law enforcement practitioner as discussed in chapter 3, section 3.2.1. The researcher endeavoured to determine whether this is a formal procedure in place for officers to follow when they do the actual administrative recording at the scene.

Respondents indicated that the recording of information on the AR Form is a tedious process because the AR Form itself “is not a very user friendly document and it should never be filled in at the scene itself” (reflection 16). Reference was made to a book, the Accident Recording Book, which is a departmentally issued document and used by officers to record all the “particulars that you need on the accident document”. A respondent from the SAPS made use of the term “speed writing” when referring to such a book. The advantage of such a book is that the officer recording the crash is able to write in his mother language and that he is able to “write quickly”, especially during the hours of darkness when visibility is usually not good. The AR Form can then later be completed in the safety of the vehicle or the office, eliminating errors.

#### 5.3.1.4 Reporting of crashes

In this sub-category, the question was directed at the personnel of the Accident Bureau responsible for the capturing of recorded AR Forms. To ensure the anonymity of the participants, the part of the question indicating their position was removed. The main question posed was:

- The whole issue pertaining to the reporting of the crash seems to be problematic. As...Accident Bureaus for many years, how do you experience it?

Table 5.5 provides a summary of the findings during this interview.

**Table 5.5: Reporting of crashes**

Reflection	Interview	Participant	Extraction
17	IV5	1	“Currently we do not have a 24-hour service allowing people to report accidents at our offices. We are not yet prepared for it.”
18	IV6	1	“Problematic. Officers don’t care to hand in the forms. Sometimes the public phone us or they come here to the office and we cannot help them.

			<p>We then have to call the officer's supervisor to get the form. The supervisors don't care either. They always have the one or other reason.</p> <p>Let me show you the Road Traffic Collision Register. We have the following number of crashes still outstanding:  01/06/2012 – 30/06/2012: 30 outstanding  01/06/2013 – 30/06/2013: 24 outstanding</p> <p>This is only two examples. There are many more like this."</p>
19	IV5	1	<p>This is problematic as the reporting of crashes is region bound. "Because we allocate it a unique number... Germiston office can only take accidents that happen in Germiston, Alberton can only take accidents that happen in Alberton, because we do not have a 24-hour service. What we do is that we refer it directly to our relevant office, we do not refer it to the police."</p> <p>The fact that a crash needs to be reported within 24-hours to a police station, result in people that were involved in crashes outside of their area of residence, report these crash to their nearest police station. Other police stations, if it is not in their area, they still make use of the uhh uhh what do you call it, they still make use of the SAP 176 register, uhh uhh the one is the outside AR number and the one is the inside AR number. The outside AR uhh are always forwarded to the relevant police stations and that is where there are many AR forms lost.</p> <p>The time factor with this system is problematic, which is ascribed to the fact that "We have actually received forms that travelled the country for two and a half years, before it arrives here at us." The reason being that a police officer in Cape Town does not know where, for example, Voortrekker Street in Alberton is. This form is passed from the one SAPS office to the other, until it reaches the correct destination"</p>
20	IV10	1	<p>"I was requested to complete the accident form. He then took the form and hand me a piece of paper with a number on it." This situation resulted in the insurance</p>

			company “refusing to settle my claim, because they want a copy of the completed form. That form is now gone. The police can’t find it. For two weeks now I am being sent to and fro between Alberton SAPS, Germiston SAPS and the metro office.”
21	IV8	1	Even if an AR Form was not completed, the received claim will be handed to an investigator and the “claim is investigated to determine whether the claim is indeed authentic. Only after the claim is verified then we will pay.”
22	IV9	1	“...when the claim is received, it is referred to an assessor who will investigate the matter to determine the extent of the damage/s sustained. The accident must be reported to the SAPS within the 24-hour prescribed period, otherwise the claim will not be settled.”

It is clear from the interviews that there are two methods to report crashes. These methods include:

1. **Within boundaries:** people involved in a crash report the crash to the nearest police station or metro or traffic office set aside for that purpose.
2. **Outside boundaries:** a person involved in a crash, for example in the southern area of Ekurhuleni, but whose abode is in Cape Town, may report the crash within 24-hours at the SAPS nearest to his abode. In this case the crash can only be reported to the SAPS.

The transfer of collected data from the scene of the crash to the collection point, i.e. the capturing authority, is a challenging process. The registration of traffic crashes can only materialise once reported (Roets, A. 2013) (vide chapter 3, section 3.3). A respondent commented that they “do not have a 24-hour service allowing people to report accidents at our offices” (reflection 19). This not only creates undue pressure, but also delays the reporting of crashes within the southern area of Ekurhuleni. The reporting of crashes is region bound, meaning that: “Because we allocate it a unique number...Germiston office can only take accidents that happen in Germiston, Alberton can only take accidents that happen in Alberton...” (reflection 19). The respondent was quite clear that such crash reports are handed “directly to our relevant office, we do not refer it to the police”. This study is limited to the southern region of the EMPD,

which consists of Alberton, Boksburg and Germiston. Although these regions fall under the administration of Ekurhuleni, their respective Accident Bureaus are not yet synchronised.

The respondents claim that operational officers “don’t care to hand in the forms”, which result in the public being delayed in submitting their claims. The problem is further aggravated when lawyers representing clients request copies of the AR Forms, just to be informed that they had not yet been received (reflection 19). “We then have to call the officer’s supervisor to get the form”, and even then forms take a while to be handed in. To prove the point in discussion, the respondent opened the Road Traffic Collision Register. Two samples were drawn to indicate “the following number of crashes still outstanding”:

- 01/06/2012 – 30/06/2012: 30 outstanding.
- 01/06/2013 – 30/06/2013: 24 outstanding” (reflection 19).

Some serious concerns were raised about the registration of crashes at “outside” police stations, mostly because the AR number allocated at such an outside police station “is not the original accident number but a temporary one, an outside AR number.” In essence, this means, “many people wait for their cars”, primarily because insurance companies “want the original AR numbers”. A respondent indicated that an Accident Number (AR) could only be issued by the SAPS office in whose area the crash occurred.

Whilst busy with the collection of data, the researcher was fortunate enough to interview a member of the public at the Accident Bureau, who emphasised the problem under discussion: “I was requested to complete the accident form. He then took the form and handed me a piece of paper with a number on it. This situation resulted in the insurance company refusing to settle my claim, because they want a copy of the completed form. That form is now gone. The police can’t find it. For two weeks now I am being sent to and fro between Alberton SAPS, Germiston SAPS and the metro office”, was how the respondent confirmed this problem (reflection 20).

One respondent explained further that the time factor concerning this “outside SAPS” system is problematic, because “We have actually received forms that travelled the country for two and a half years, before it arrives here at us” (reflection 19). The SAPS that issued the “outside AR” always forward these forms “to the relevant police stations

and that is where there are many AR Forms lost”. This problem is associated with the reality that a police officer from the outside police office is unfamiliar with the area, and the forms are “passed from the one SAPS office to the other, until it reaches the correct destination.”

To ascertain whether insurance companies operate in a standardised manner concerning the receipt and settlement of claims, two of the “big” companies were telephonically contacted. From the interviews conducted, the researcher concluded that each company operates under its own standard procedure. Respondents were ensured that their companies will remain anonymous. The responses from the respondents are:

Even if an AR Form was not completed, the received claim will be handed to an investigator and the claim is investigated to determine whether the claim is indeed authentic. Only after the claim is verified then we will pay (reflection 21)

...when the claim is received, it is referred to an assessor who will investigate the matter to determine the extent of the damage/s sustained. The accident must be reported to the SAPS within the 24-hour prescribed period, otherwise the claim will not be settled (reflection 22).

### 5.3.1.5 Referral of parties to SAPS

Respondents were asked:

- When attending to the scene of a crash, is the MPO allowed to refer the parties involved to the nearest SAPS/Metro police office?

A summary of the research conducted in this sub-category is indicated in table 5.6.

**Table 5.6: Referral of parties to SAPS**

Reflection	Interview	Participant	Extraction
23	IV1	1 +2	“No”
24	IV1	1	“If it is a very small bumper basher, like very very small and there is a shortage of officers or there is other functions that must be attended to, then a officer can take

			his discretion and ask the people to hand their information and report it to the nearest police station, but he must make note and give it through to the control room so that they know the reason why he cannot take the accident because he is on his way to a riot or something like that....But even if it a small one they must attend to it.”
25	IV2	1,2,3,4,5	“No”
26	IV2	2,4	“...it happen especially if when they attend to the scene they find one party and the other party is gone...”
27	IV2	4	“...and normally also if the parties have already started giving details they stop there and say can we help and they say no it’s fine they say they have to report it within 24 hours.”
28	IV5	1	“There is a new tendency out there. When metro police officers refer drivers involved in crashes to the SAPS, they refer these motorists again to report the accident at the metro police.”
29	IV12	1	“It depends on the severity of the accident. If people are injured, seriously injured or killed they may not, then they must take the accident, but if it is a light bumper bashing that kind of thing, they do do that.

This is currently a contentious issue, whether a law enforcement practitioner who attends to a crash scene is allowed to refer the parties involved to the SAPS. Chapter 3, section 3.2.3.1 deals with the legal responsibility concerning the referral of parties in detail.

The respondents all agree that an officer is not allowed to refer the parties to the nearest SAPS or office authorised to register crashes, especially when attending to the scene of a crash or when arriving at the scene. However, there are mitigating circumstances when an officer may refer a person/s to the SAPS; only if “there is a shortage of officers or there is other functions that must be attended to” (reflection 24). A respondent emphasised the fact that it should only be applicable in the event of “a very small bumper basher, like very very small” (reflection 24). It was stressed that in any such event, the officer “must make note and give it through to the control room so that they know the reason why he cannot take the accident” (reflection 24).

This unfortunately does not happen; officers refer the people “especially when they attend to the scene they find one party and the other party is gone...” (reflection 26). Respondents further elaborated on this issue explaining that “if the parties have already started giving details they stop there and say can we help and they say no it’s fine they say they have to report it within 24 hours” (reflection 27). One participant is concerned about a “new tendency” that’s busy developing: “When metro police officers refer drivers involved in crashes to the SAPS, they refer these motorists again to report the accident at the metro police.” This is unacceptable practice and the cause of enormous delays in the registration process of the AR Forms. According to the information obtained from the quantitative study, parties involved in crashes are referred to the nearest SAPS, because 63 per cent of all crashes are reported at the SAPS (vide section 4.3.8.1).

No participant made mention of the current Standing Order policy document, which clearly states: “An officer dispatched to, or arriving at the scene of an accident shall take the particulars of such accident. An officer shall under no circumstances refer the participant/s to the SAPS” (vide chapter 2, section 2.4.2).

### 5.3.1.6 Breakdowns and private ambulances

Emanating from personal communication between the researcher and operational members from the EMPD regarding this issue of breakdowns, it was decided to formalise it into an unstructured interview. The question posed was:

- What is your experience with breakdowns?

Table 5.7 reflects a précis of this study.

**Table 5.7: Breakdowns and private ambulances**

Reflection	Interview	Participant	Extraction
30	IV3	1,2	“On numerous occasions when arriving at the scene of the crash the breakdown has already removed the party as well as his vehicle from the scene.”
31	IV3	1	This creates a huge problem, because the details of only one party is available and will be recorded as such. Statistics will be affected. One participant stated that “All that he can say is that a breakdown from a company has

			removed the person, which was under the influence as well as his vehicle. He doesn't know the name of the driver or the registration number of the vehicle."
32	IV3	2	"The reason why the breakdown company removed the vehicle is ascribed to the fact that he 'bargains' with the driver of the vehicle to get the vehicle for repairs."
33	IV7	1	"The problem areas that we have these days are the towing companies. They try to get people away as quickly as possible, your private ambulances trying to get people away as quickly as possible. So that makes it difficult to actually engage in prosecution at the scene itself."

The South African public is subjected to numerous incidents involving breakdown companies at the scene of a crash. The following is an excerpt from an article prepared by Anderson (2001) that appeared on the News24 network. This incident happened as far back as 2001:

A TOW TRUCK operator has been arrested after it is believed he and a rival drew firearms on each other at an accident scene in Ohrtmann Road on Friday night.

Sources on Monday told the Witness that the two operators started fighting about who was going to tow the crashed vehicle even before the body of the victim was removed from the car.

The argument got out of control and began to get violent, according to the source. Both operators are said to have then drawn firearms and threatened to shoot each other over the wreckage.

This sub-category was identified as a serious concern by respondents and highlighted that both the recording process, as well as the investigation of the more serious type of crash, is affected to such an extent that nothing can be done about it. This category refers to the so-called "welfare" removal of vehicles and drivers, which creates a huge problem, because "the details of only one party is available and will be recorded as such". Over and above the impossibility to investigate such a crash, statistics are affected. "All that he can say is that a breakdown from a company has removed the

person, which was under the influence as well as his vehicle. He doesn't know the name of the driver or the registration number of the vehicle" (reflection 31).

It is clear that "on numerous occasions when arriving at the scene of the crash, the breakdown has already removed the party as well as his vehicle from the scene" (reflection 30). An obvious explanation for the removal of vehicles and persons from the scene prior to the arrival of law enforcement practitioners, is that the tow truck operator "bargains with the driver of the vehicle to get the vehicle for repairs" (reflection 32). A senior official from the EMPD (Anon, personal communication, 29 May 2014) told the researcher that the problem with breakdowns has escalated to a level where law enforcement officials rent out their two-way radios to the breakdown companies to ensure that the tow truck operators are first on the scene before law enforcers arrive.

A senior manager in the traffic profession also emphasised the fact that "one of the problem areas that we have these days are the towing companies" (reflection 33). Their main purpose is to remove the people as quickly as possible from the scene prior to the arrival of law enforcement, for the obvious reasons as explained above. Classified in the same category are "your private ambulances trying to get people away as quickly as possible" (reflection 33).

### **5.3.2 Prosecution**

The possible institution of prosecution forms part of the duties of law enforcement practitioners. The researcher is of the opinion that the institution of a prosecution at the scene of a crash requires a higher level of cognitive interpretation. The successful prosecution of an offender who is cause to a crash, contributes to the process of remedial actions and deterrence. In this category, the researcher obtained information from the experts in the field concerning the prosecution of offending motorists. Information concerning predetermined prosecution procedures was also obtained and interpreted (vide 1.5, objective g).

#### **5.3.2.1 Conviction rate of dockets**

Respondents were requested to answer a relatively subjective question:

- What percentage of dockets would you say result in formal prosecution?

The researcher endeavoured to obtain first-hand information from the operational personnel dealing with crashes where dockets are opened on a daily basis, as well as their experiences with the formal court processes.

Table 5.8 represents a synopsis from the study of this sub-category.

**Table 5.8: Conviction rate of dockets**

Reflection	Interview	Participant	Extraction
34	IV1	1	"I'll say 20% and it will take you over a period of five years."
35	2	1	"50%"
36	2	3	"I would say uhhh 10 or less. People are not prosecuted because even if they committed uhhh culpable homicide the lawyers will dispute it at court."
37	IV2	1	"Especially here in Boksburg if you come go to court for say for a fatal accident the first question they ask of you are you an reconstruction expert? If you say no then automatically almost the case...the case is already being thrown out. Because most of the time they want to know the speed of the vehicles, which we can't work out."
38	IV12	1	"...crash investigation is not taken seriously in the police."

Respondents had different interpretations, ranging from between 10 to 50 per cent. It is, however, clear that they all agree that the conviction rate is on an unacceptable level. Moreover, these responses are an overestimation if compared against the empirical findings in section 4.3.8.3. Driver violations are a national and international concern to which many strategies and interventions have been applied to eradicate offending driving behaviour. Risky driving behaviour contributes significantly to injury-related road crashes, which requires enforcement intervention strategies to correct deviant driver behaviour (Sukhai & Seedat, [sa]:1). Comments such as: "I'll say 20 per cent and it will take you over a period of five years" are a clear example of this unfortunate situation (reflection 34). On the conviction rate of dockets concerning road crashes, the participant from the SAPS indicated that "...crash investigation is not taken seriously in the police" (reflection 38).

An interesting but alarming aspect was raised about the attitude of prosecutors towards road crash dockets. “Especially here in Boksburg if you come go to court for say for a fatal accident the first question they ask of you are you an reconstruction expert? If you say no then automatically, almost the case...the case is already being thrown out. Because most of the time they want to know the speed of the vehicles, which we can’t work out” (reflection 37). It is obvious that cases are built purely on expert witnesses alone. This unhealthy practice resulted in an observation such as: “People are not prosecuted because even if they committed uhhh culpable homicide the lawyers will dispute it at court” (reflection 36). Lawyers are quick to sense the attitude of the prosecutors and use it to their advantage.

### 5.3.2.2 Importance to prosecute offenders

The researcher is of the opinion that the current unprofessional state of crash scene management precipitated an unacceptable situation where an offender’s chances of being prosecuted for causing a crash are far less than being confronted by the normal day-to-day traffic offenses. Risky driving behaviour contributes significantly to injury-related road crashes, which requires law enforcement intervention strategies to correct deviant driver behaviour (Sukhai & Seedat, [sa]). A précis of this study is provided in Table 5.9.

**Table 5.9: Importance to prosecute offenders**

Reflection	Interview	Participant	Extraction
39	IV1	1	“Yes.”
40	IV2	1,2,3,4,5	“Yes, definitely.”
41	IV6	1	“...very important and you will have to analyse the situation on scene and prosecute.”
42	IV7	1	“...prosecution is very important. It is important because that becomes part of visible policing, every spectator can see that prosecution is taking place.”
43	IV12	1	“I think there should be a prosecution process for uhhm for all crashes yes.”

A detailed discussion on prosecutions is provided in chapter 3, section 3.5. Participants commented that it is important to prosecute offenders “because that becomes part of visible policing, every spectator can see that prosecution is taking place...” (reflection 43). For a prosecution to be instituted “...you will have to analyse the situation on scene and prosecute”. Prosecutions should not be limited to certain offenses only, “I think there should be a prosecution process for uhhm for all crashes” (reflection 43).

### 5.3.2.3 Do officers institute prosecutions?

This sub-category emanated from the previous sub-category (section 3.5.2.2). The following question was asked of participants:

- Do your officers institute prosecutions against offending drivers involved in crashes?

Table 5.10 provides a précis of the data gathered.

**Table 5.10: Do officers institute prosecutions?**

Reflection	Interview	Participant	Extraction
44	IV1	1	“Yes, I will say 50%. In the past I had a problem where people come and complain they said I told my officers this guy drive like this and this and this. It is his fault but your officer refused to opened a ‘reck and neg’ case against him and then I intervene and I inform the officer to open a case.”
45	IV1	1	“I intervene and I inform the officer to open a case...and I say it with all due respect, that some of them just do not want to do their work.”
46	IV1	2	“...it is very seldom that you get an officer that will charge a person for skipping a red robot, they don’t just do it anymore.”
47	IV2	4,5	“No.”
48	IV2	2,4	“Even if you get the fines they are writing now all is being withdrawn because of faults defects on the on the 56...there is no law enforcement on it. So they can make what do what they want to do.

49	IV2	2	"...they don't issue tickets even if there was an offense."
50	IV4	1	In the event of a person sustaining serious injuries in a crash, the officer is "too lazy to open a docket because it is a lot of work and they are afraid to testify in court."
51	IV12	1	"The problem is that a lot of the guys like to buck pass. So you got metro police and traffic guys don't want to do the job, they say no the SAPS must do it and the SAPS just say ah no listen we got other priorities because driving under the influence and crashes isn't part of the police priority programme."

The general opinion of the participants was that law enforcement practitioners do not institute prosecutions for obvious offenses, unless they have to open a docket in the unfortunate event of a crash involving fatal injuries. One of the participants made a strong point "...it is very seldom that you get an officer that will charge a person for skipping a red robot, they don't just do it anymore" (reflection 46).

Another participant contradicted himself indicating, "Yes, I will say 50 per cent" (reflection 44); referring to the percentage of his officers instituting prosecutions against offending drivers involved in crashes. Later he stated "I intervene and I inform the officer to open a case...and I say it with all due respect, that some of them just do not want to do their work" (reflection 45).

Should prosecutions be instituted, they often get withdrawn because of errors on the written notice, which is issued in terms of section 56(1) of the Criminal Procedure Act (CPA), Act 51 of 1977 (South Africa, 1977). This means that motorists can do "what they want to do". A participant raised the point: "The problem is that a lot of the guys like to buck pass. So you got metro police and traffic guys don't want to do the job, they say no the SAPS must do it and the SAPS just say ah no listen we got other priorities because driving under the influence and crashes isn't part of the police priority programme." This point was deliberated in section 5.3.1.1 above. For a detailed description concerning on-scene prosecution, see chapter 3, section 3.5. According to the data collected during the quantitative phase of the study, in 97 per cent of all the cases no prosecution was instituted (vide section 4.3.8.3).

### 5.3.2.4 Post-crash roadworthiness of vehicles

Participants were requested to respond to the main question:

- Is the use of motor vehicles that sustained serious damages during a crash, discontinued in terms of the NRTA, Act 93 of 1996?

Table 5.11 provides a précis to this extent.

**Table 5.11: Post-crash roadworthiness of vehicles**

Reflection	Interview	Participant	Extraction
52	IV1	1,2	"I will say 80% not. Some officers that know their work will do it. There is the other officers that will not even think of it."
53	IV2	1,2,3,4,5	"Yes."
54	IV2	1,2,3,4,5	"You will see the corruption increases."
55	IV2	1,5	"They must take that car and crush it, strip it demolish it completely."

Section 31(c) of the NRTA, Act 93 of 1996 (South Africa, 1996b) prescribes the following about the powers and duties of a traffic officer:

"In addition to the powers and duties conferred upon him or her or under this Act, a traffic officer may, subject to the provisions of this Act or any other law:

- (c) inspect and test or cause to be inspected and tested by a person whom he or she considers competent to do so, any part and the functioning of any vehicle, and the equipment thereof, with a view to ascertaining whether the vehicle concerned or the functioning thereof and the equipment comply with the provisions of this Act."

The roadworthiness of vehicles is a crucial component of road safety in this country, so much so that the AR Form provides for the discontinuation of a vehicle that was involved in a crash. Participants agreed in essence that "accidents should be categorised" to ensure that when a vehicle is removed by a breakdown vehicle, such

a vehicle is at least subjected to a roadworthy examination. Furthermore, there should also be a category that caters for the immediate discontinuation of crash-damaged vehicles. A counter argument raised by the participants was that “You will see the corruption increases” (reflection 54).

Two of the participants agree that at least 80 per cent of crash vehicles are not discontinued, because “There is the other officers that will not even think of it” (reflection 52). Actually, this is a bad reflection on supervisors as it confirms that the work of their officers is not being verified. The analysis and interpretation process of the quantitative study reflected that 62 per cent of all crashes recorded are not verified (vide section 4.3.8.2).

According to the participants, any vehicle that is **written-off** by an insurance company should not be repaired, because unregistered or “back-yard” panel beaters repair these vehicles. Quite often, vehicles which are obviously not roadworthy are observed operating on public roads, because they are “crabbing” (a term that is used when the suspension of a vehicle is damaged). This is dangerous as it contributes towards road crashes. One participant also stated that: “They must take that car and crush it, strip it, demolish it completely.”

#### **5.3.2.5 Testify in court**

This sub-category consisted of two questions. Although they differ in structure, the two questions are related. Operational officers were asked:

- During the focus groups interview I have noticed that the crash investigators are uncomfortable when they have to testify in court. Do you experience fear when you have to testify in court regarding a crash that was investigated?

Training officials were asked:

- Do you provide any training course on how to testify in court?

Table 5.12 provides a précis of this study conducted.

**Table 5.12: Testify in court**

Reflection	Interview	Participant	Extraction
56	IV3	1,2	“No, not fear to testify, but fear of being humiliated and labelled as incompetent.”
57	IV3	2	“If you testify for example about the speed of a motor vehicle, the prosecutor will ask us whether we are experts and if you say no the case is withdrawn. Therefore, you have to be careful as to how you testify. You testify on the basics of the investigation.”
58	IV3	1	“We have experience it in numerous cases that the prosecutors are totally incompetent when it get to accidents. They have no knowledge how to defend a case when it gets to accidents. In some instances, you get the idea that they don’t even know what an accident is. All they want to know is whether you are an expert. Unfortunately, we are not seen as experts because we haven’t done the specialised training.”
59	IV7	1	“We need to enhance skills so that whoever the traffic officer is or who take that accident can stand up in court to testify in court so that we have a sound and seal case in court without any flaws”
60	IV11	1	“We started specifically after the Oscar Pistorius case.”
61	IV11	1	“...had a huge interest in giving evidence and I do believe it is because of the broadcasting of the Oscar Pistorius case...and many of them realised that their giving evidence in court actually makes or breaks a case.”

An anonymous participant (Personal conversation on 01 October 2013) told the researcher that one of his traffic officers responded to him that he would rather resign than to testify in court about a crash he had attended to. The operational participants stated: “No, not fear to testify, but fear of being humiliated and labelled as incompetent” (reflection 56). A participant elaborated even further on the issue: “If you testify for example about the speed of a motor vehicle, the prosecutor will ask us whether we are experts and if you say no the case is withdrawn. Therefore, you have to be careful as to how you testify. You testify on the basics of the investigation” (reflection 57).

A major point of concern for the participants was the fact that they do not receive any assistance from the prosecutors. One participant argues: “We have experience it in numerous cases that the prosecutors are totally incompetent when it get to accidents. They have no knowledge how to defend a case when it gets to accidents. In some instances, you get the idea that they don’t even know what an accident is. All they want to know is whether you are an expert. Unfortunately, we are not seen as experts because we haven’t done the specialised training” (reflection 58).

Training of officers, especially concerning court protocol and how to testify in court, forms a crucial part of the CJS. Should officers be unsuccessful in court, convictions will be non-existent, resulting in lawyers having a field day in court, especially concerning road crashes. One participant stated: “We need to enhance skills so that whoever the traffic officer is or who take that accident can stand up in court to testify in court so that we have a sound and seal case in court without any flaws” (reflection 59).

A participant commented that the broadcast of the Oscar Pistorius case was such a revelation and that it placed the focus on training concerning testifying in court. The participant said: “We started specifically after the Oscar Pistorius case” (reflection 60). Officers suddenly realised the importance of testifying and showed a “huge interest in giving evidence and I do believe it is because of the broadcasting of the Oscar Pistorius case” (reflection 61). It seems as if the broadcast of the Pistorius case was most advantageous, because many of the officers “realised that their giving evidence in court actually makes or breaks a case” (reflection 61).

### **5.3.3 Injury severity**

The level of injuries sustained, or the degree of severity of the injuries sustained by inhabitants involved in road crashes, will determine the action of the law enforcement practitioner at the scene of the crash during the attendance and recording of road crashes (vide 5.1, objective d). In this category, the researcher interviewed participants about certain aspects of injury severity.

#### **5.3.3.1 How is injury severity determined?**

Participants were asked:

- How does an officer, at the scene of a crash, determine the degree of injury severity?

Information gathered from this sub-category, as well as additional information tendered by participants, is summarised in Table 5.13.

**Table 5.13: How is injury severity determined?**

Reflection	Interview	Participant	Extraction
62	IV1	1,2	“He calls the medical experts they come and see.”
63	IV2	1,2,3,4,5	“Actually, the information of the degree of they get it from the paramedic. That’s when the paramedic tells you.”
64	IV4	1	“...a driver sustained for example a leg break, or the one or other broken bone/s, it is regarded as slight.”

The participants all indicated that there is no prescribed document, procedural manual or policy in place to assist operational officers in determining the degree of seriousness of injuries sustained at the scene of a crash. Officers are subjected to the information when: “He calls the medical experts they come and see” (reflection 62). Other respondents confirmed this, stating: “Actually, the information of the degree of they get it from the paramedic. That’s when the paramedic tells you” (reflection 63).

A problem highlighted by the personnel from the Accident Bureau was that officers do not use the information provided from the paramedics; when informed by paramedics “a driver sustained for example a leg break, or the one or other broken bone/s, it is regarded as slight” (reflection 64).

### **5.3.3.2 Seriousness of injuries intentionally reduced**

The following question was posed to participants:

- Think back over all the years as supervisor and tell me if you have ever noticed an officer intentionally decreasing the degree of seriousness of injuries sustained during the recording phase?

In this sub-category, a précis of the data collected is reflected in Table 5.14.

**Table 5.14: Seriousness of injuries intentionally reduced**

Reflection	Interview	Participant	Extraction
65	IV2	3	“Yes. Unfortunately, the officers do not indicate when there are serious injuries.”
66	IV2	2,4	“Actually it usually happens because laziness of officers they don’t want to open the case it’s a lot of the paper work.”
67	IV2	4	“Ja, they don’t want to open a case.”
68	IV4	1	“From time to time members of the public will request an AR Form and simultaneously hand in a Death Certificate. The AR Form reflects a slight injury.”
69	IV4	1	“...the officers are too lazy to open a docket because it is a lot of work and they are afraid to testify in court.”
70	IV1	1	“...not to do his work not to open a docket or just fill in an accident form and then afterwards after a week or so...the police come and say ok you must open a docket and then you realise that from the first instance this officer was supposed to open a docket.”

Law enforcement practitioners do not indicate the correct degree of injury severity on the AR Forms. All participants agree on this. One participant stated: “Yes, unfortunately, the officers do not indicate when there are serious injuries.” The problem associated with this is that it creates huge time delays, because the officer is recalled to redo what he was supposed to do in the first place. Another respondent ascribed this to the “laziness of officers they don’t want to open the case it’s a lot of the paper work” (reflection 66). Any crash where a party suffered a broken bone should be treated as serious. Unfortunately, over and above the fact that the officers are too lazy to open a docket, they are too afraid to testify in court: “...the officers are too lazy to open a docket because it is a lot of work and they are afraid to testify in court” (reflection 69).

It seems as if officers do not understand the complexities involved in crashes where people are seriously injured, or even killed. Those involved, either directly or indirectly, have many arrangements and there is no time to be wasted because of the incompetence of officers. A participant stated: “From time to time members of the

public will request an AR Form and simultaneously hand in a Death Certificate. The AR Form reflects a slight injury” (reflection 68).

Statements such as: “Ja, they don’t want to open a case” (reflection 67); and “...not to do his work not to open a docket” (reflection 70) is a clear indication that law enforcement practitioners are underperforming. Another concern associated with this unacceptable practice is that officers are not properly supervised and their work is not being verified by supervisory personnel. The analysis and interpretations of this section are affirmed by that of the quantitative findings where nearly 75 per cent of all the AR Forms registered indicate damage only crashes (vide section 4.3.3.3).

### 5.3.4 Administrative responsibility

This category involves an administrative component of crash management where the supervisor has to verify the AR Forms completed by law enforcement practitioners. The supervisor will be able to determine whether a law enforcement practitioner deliberately failed to investigate and prosecute an offending driver, but also to determine the quality of the work performed by sub-ordinates (vide 1.5, objective e). The researcher interviewed participants about these aspects.

#### 5.3.4.1 Verification of completed AR Forms

Questions in this sub-category were directed at operational supervisory officials. The main question was:

- How often do you inspect the AR Forms for accuracy and completeness?

A synopsis of the information collected is depicted in Table 5.15.

**Table 5.15: Verification of completed AR Forms**

Reflection	Interview	Participant	Extraction
71	IV1	1	“I have no time to do it.”
72	IV1	2	“I don’t.”

The verification process forms a crucial part of the day-to-day functions of a supervisor. This is where the performance of officers may be determined and early

problem behaviour identified. Participants clearly stated: “I have no time to do it” (reflection 71). Another participant just stated: “I don’t” (reflection 72). The lack of verification from supervisors will have a ripple effect; the **quality of the information** recorded on the AR Forms will be compromised and prone to error and/or incompleteness.

By implication, this means that officers in the southern region of the EMPD operate in a fashion that is not conducive to best practice. The majority of the problematic issues identified and addressed in sections 5.3.1 and 5.3.2 above are ascribed to a lack of proper verification. This was affirmed during the quantitative data-collection phase, where the data reflected that in more than 60 per cent of all crashes attended and/or recorded, the AR Forms were not verified by supervisory personnel (vide section 4.3.8.2).

### 5.3.5 Departmental policies

This category is directed at information regarding the required assistance as prescribed by existing policy to officers in the completion and registering of crashes (vide 1.5, objective h).

#### 5.3.5.1 Availability of departmental policies

The main question posed to participants was:

- Are there any departmental policy/procedural manuals in place to explain the procedure/s for the completion of the AR Form to officers?

The data collected in this sub-category are summarised in Table 5.16.

**Table 5.16: Departmental policies**

Reflection	Interview	Participant	Extraction
73	IV1	1	“Yes, Standing Orders.”
74	IV1	2	“Ja there is a part that talks about accidents and the taking of accidents.”

This sub-category should be read with chapter 3; section 3.2.4 where it is indicated that “each officer shall comply with the approved policy regarding the completion and

registering of accidents” that has not yet been developed (vide chapter 3, section 3.3.2).

The researcher endeavoured to acquire information from the operational officers to ascertain the level of knowledge concerning departmental policies. Participants mentioned the policy document “Standing Orders” that is in place. One stated: “JA there is a part that talks about accidents and the taking of accidents.” Unfortunately, the supervisors are not knowledgeable enough to realise that the referred to policy has not yet been developed.

### 5.3.6 Data management

Data, with special reference to accurate and quality traffic safety data, can be described as “the primary source of our knowledge” about the traffic safety environment, human behaviour and vehicle performance entails (Pollack et al, 2010:2). Road safety administrators will not be able to improve problem identification, prioritisation of various road safety problems and the implementation of effective countermeasures, without proper data (Pollack et.al, 2010:2). Supervisors have a responsibility to access and interpret crash statistics in the quest towards effective road safety management (vide 1.5, objectives c & f). Information was collected on numerous aspects of data management.

#### 5.3.6.1 Availability of crash data

The main question directed at participants was:

- How available is crash data from the Accident Bureau?

The data recorded are summarised in Table 5.17.

**Table 5.17: Availability of crash data**

Reflection	Interview	Participant	Extraction
75	IV1	1,2	“At this stage, we get it weekly. Every Wednesday here after our meeting...”
76	IV1	2	“Weekly yes, but only your serious accidents ja.”
77	IV1	1	“There is a backlog of over a year and it is going by the day.”

78	IV1	1	"I want to know what happened last week. I can only know what happened last year for the same week."
79	IV5	1	"...supervisors do not request any statistics for their respective regions."

Available crash data are crucial for the planning of day-to-day activities and short-term intervention strategies by supervisors. Participants were unanimous that crash data are available, although: "At this stage, we get it weekly. Every Wednesday here after our meeting..." (reflection 75). The extent of the data though, covers only "serious accidents" (reflection 76).

According to the participants, the current available data cannot assist them much, because: "There is a backlog of over a year and it is going by the day" (reflection 77). One participant further stated: "I want to know what happened last week. I can only know what happened last year for the same week."

Although the Accident Bureau provides data in the form of statistics on a monthly basis to supervisors, it is their responsibility to request detailed data to be able to draw inferences concerning trends and patterns. A respondent stated: "Supervisors do not request any statistics for their respective regions" (reflection 79).

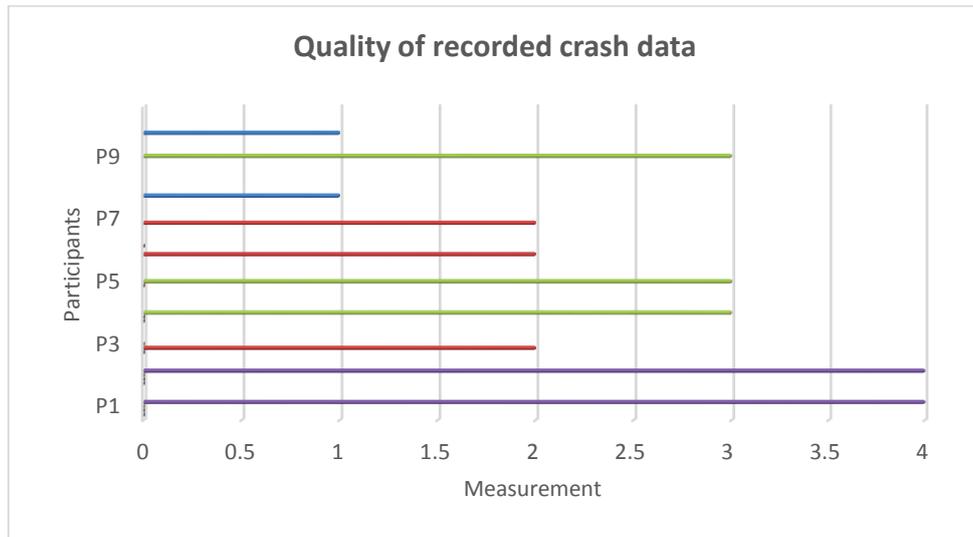
### 5.3.6.2 Quality of officer-recorded crash data (AR Form)

In this sub-category, the researcher requested participants to rate the quality of the information that is recorded by the officer on the AR Forms. Participants were asked:

- How would you rate the quality of recorded crash data provided by the Accident Bureau on a scale of 1-5, where 1=Extremely poor, 2=Below Average, 3=Average, 4=Above Average and 5=Excellent?

The researcher then compiled the information received on a graph, which is presented in graph 5.1. A summary of the responses from the participants is presented in Table 5.18.

**Graph 5.1: Quality of officer-recorded crash data (AR Forms)**



**Table 5.18: Quality of officer-recorded crash data (AR Forms)**

Reflection	Interview	Participant	Extraction
80	IV1	1	“I will say 4, above average because I don’t check it and uhhh, ja and uhh the little complaints that I do get shows me there is officers [little chuckle] that’s doing it correct.”
81	IV5	1	“...the information that is recorded on the forms are of a bad quality not portraying the correct picture as to what the true state of affairs concerning traffic crashes are.”
82	IV5	2	All information not recorded on the AR Form “is captured as unknown.”

Based on the responses received from the participants, the average rating for the quality of the data that they receive is at level 2.4, which falls in the category of “below average”. Although very uncertain, the one participant motivated his reply stating: “I will say 4, above average because I don’t check it and uhhh, ja and uhh the little complaints that I do get shows me there is officers [little chuckle] that’s doing it correct” (reflection 80).

The reply from the accident department was that “the information that is recorded on the forms are of a bad quality not portraying the correct picture as to what the true state of affairs concerning traffic crashes are” (reflection 81). Another participant substantiated this statement explaining that any information not recorded on the AR

Form “is not captured. The operator captures all missing information as unknown” (reflection 82). This point was confirmed during the analysis phase of the quantitative data-collection process, where 74 per cent of all information recorded on AR Forms could be regarded as within the “unsatisfactory” bracket (vide section 4.3.9.1).

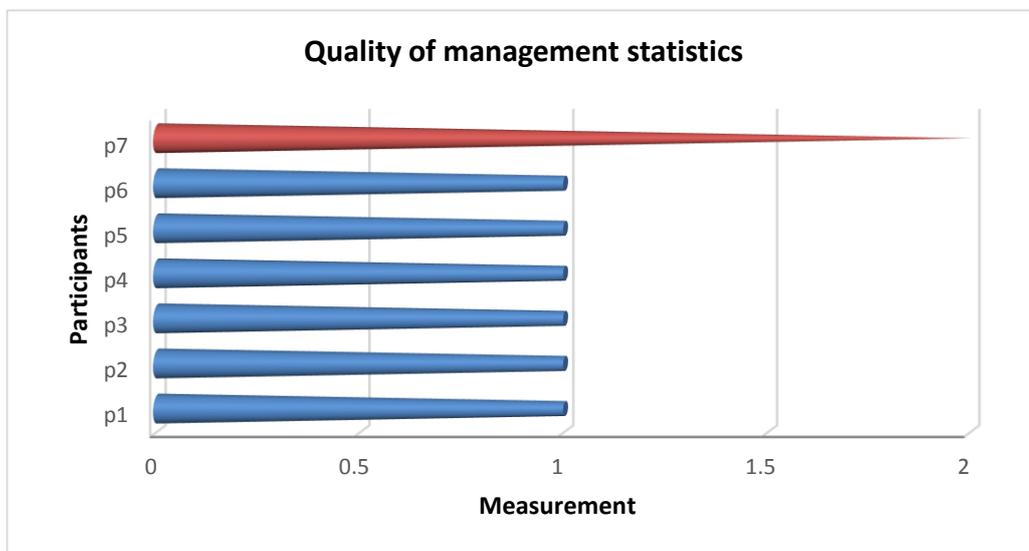
### 5.3.6.3 Quality of management statistics

Participants were requested to rate the quality of the management data available from the Accident Bureau. The question posed was:

- How would you rate the quality of recorded crash data provided by the Accident Bureau on a scale of 1-5, where 1=Extremely poor, 2=Below Average, 3=Average, 4=Above Average and 5=Excellent?

The researcher then compiled the information received on a graph, which is depicted in graph 5.2. Table 5.19 is a précis of the main question asked.

**Graph 5.2: Quality of management statistics**



**Table 5.19: Quality of management statistics**

Reflection	Interview	Participant	Extraction
83	IV2	3	"I don't think the capturing ladies are up to date so it shouldn't be good information that you get because they're not up to date."
84	IV8	1	"In the majority of the cases, extremely bad. Forms are incomplete and information needed to perform a proper investigation is missing to the extent that the reconstruction of the crash is impossible."
85	IV5	1	"...statistics are unreliable, Because the information that is recorded on the forms are of a bad quality not portraying the correct picture as to what the true state of affairs concerning traffic crashes are."
86	IV5	1	"Another problem that we experience is the fact that the system is producing incorrect stats." "It's making calculation errors. The problem has been reported to the developer of the system but nothing has been done to correct the problem." This is a major concern and problematic "as the statistics are inaccurate and worthless."
87	IV7	1	"I regard it as very important in the view of you have to deploy your resources at the most effective places in your jurisdiction area."

Graph 5.2 portrays that all the respondents were of the opinion that the statistics provided by the Accident Bureau are unreliable. To substantiate his rating, one participant stated: "I don't think the capturing ladies are up to date so it shouldn't be good information that you get because they're not up to date" (reflection 83). According to another participant: "In the majority of the cases, extremely bad. Forms are incomplete and information needed to perform a proper investigation is missing to the extent that the reconstruction of the crash is impossible" (reflection 84).

It was also emphasised that the statistics are unreliable because of the bad information recorded on the AR Forms. The information is of such a poor quality that it is "not portraying the correct picture as to what the true state of affairs concerning traffic crashes are" (reflection 85). A major concern was raised by a participant from the

Accident Bureau, in that “the system is producing incorrect stats. It’s making calculation errors. The problem has been reported to the developer of the system but nothing has been done to correct the problem” (reflection 86). The participant implied that all statistics must be calculated by hand “as the statistics are inaccurate and worthless” (reflection 86).

The value of statistics should not be underestimated. Administrators and effective supervisors regard accurate statistics as extremely important, and they utilise statistics to “deploy your resources at the most effective places in your jurisdiction area” (reflection 87).

### **5.3.7 Training**

Training forms the backbone of the modern law enforcement practitioner. Without properly trained law enforcement practitioners, our society could not successfully function (Hawkes, 2014). It is imperative to train our practitioners extensively in the law of the country and many other important areas. An important goal of a training academy or department is to ensure that law enforcement practitioners are properly trained and certified as competent, with the focus on research objectives c – g in section 1.5.

In this category, the researcher sought to obtain first-hand information from the experiences of operational officers, but also the training personnel.

Training departments or academies play a major part in equipping their officers. The better equipped they are, the less the chances are of civil liabilities against the institution (Hawkes, 2014).

#### **5.3.7.1 Basic and in-service training on crash attendance and recording**

This sub-category consists of two main questions. The first question was directed at the operational personnel:

- After officers qualify from the training academy, are there sufficient in-service-training programmes available with special reference to crash management?

The second main question was posed at a participant from the training academy:

- Do you provide training directed at road traffic crash attendance?

Information was complemented with subsequent questions and probes relevant to the category. A précis is presented in Table 5.20.

**Table 5.20: Basic and in-service training on accident attendance and recording**

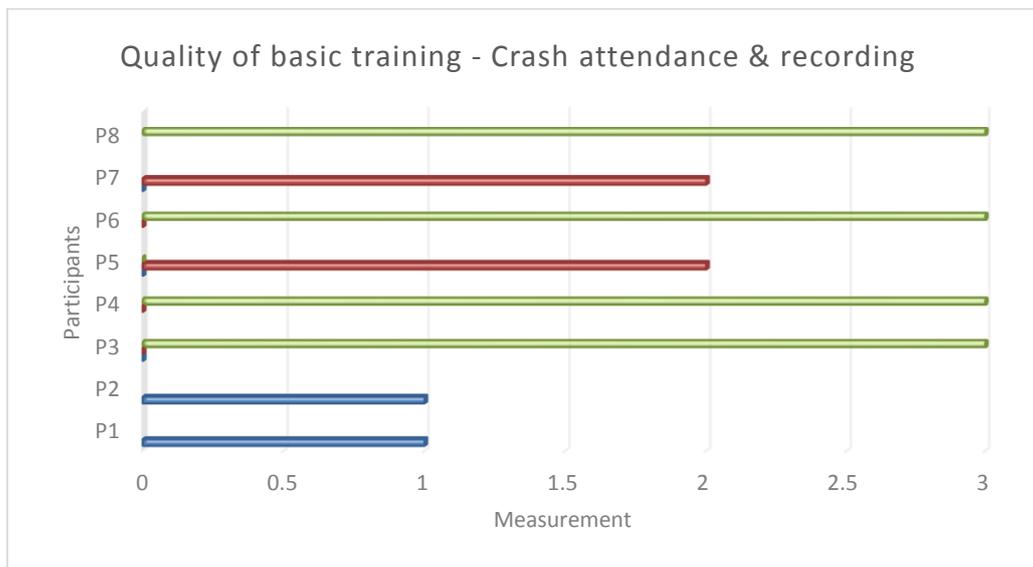
Reflection	Interview	Participant	Extraction
88	IV1	1	"...we select on the precinct uhh people that's that's quite clever with accidents and then as the officers get to the precinct we give them in-house training."
		2	"Field Training Officers."
88	IV11	1	"We do...in terms of the recruits...part of their qualification is to do accident recording."
89	IV11	1	"I must also say that there are some of and I don't mean to to to downgrade anybody but there are some of the officers that we train here that just do not have what it takes to become that kind of excellent person."
90	IV11	1	"Up to a very short while ago there was no consequences to a person not attending training."
91	IV11	1	"Non-attendance can be ascribed to numerous problems such as lack of communication to members, too short notice to attend, and arguments from supervisors that 'they do not have enough staff members to do their day-to-day functions; therefore, they cannot afford to let them go to training.' IV11-T/A The cooperation of precinct commanders towards in-service training was rated as extremely poor. IV11-T/A
92	IV1	1	"Cannot recall. It's too long ago."
93	IV11	1	"Officers can only attend in-service training, once nominated by the relevant regional commanders."
94	IV11	1	"It is not in their syllabus."
95	IV12	1	"Ja. That's a very controversial thing. We are very upset that it was done and we start to make waves but...they said no that they mustn't study that at the police college they must do that later."
96	IV12	1	"...they just tell us that it is not a specialised field."

97	IV12	1	"...crime scene investigation especially it requires a high level of expertise and the guys must get the best possible training and...that should be supported by management."
98	IV11	1	"...as intensively as ours because remember in terms of the traffic qualification its part of the requirement for a traffic officer."
99	IV11	1	"I am ashamed to say that of our officers that are dishonest that the majority of them feel it actually the training actually interferes with their collection of their additional bonuses for their work."
100	IV1	1	"...send them for more training, uhhmmm refresher courses."

Participants from the operational sections are of the opinion that recruits do not receive proper training at the training academy during their basic training phase: "...we select on the precinct uhh people that's quite clever with accidents and then as the officers get to the precinct we give them in-house training" (reflection 88). The basic training that new recruits undergo concerning crash scene attendance is insufficient, because eventually when they are deployed at the shifts, they need to be re-trained on how to complete an AR Form (Roets, H. 2013). To substantiate the poor level of training, Toroyan (2013:7) states that non-fatal injuries are poorly documented, which can be ascribed to insufficient training of law enforcement practitioners.

All participants rated the quality of basic crash attendance and recording training on a scale of 1-5, where 1=Extremely poor, 2=Below Average, 3=Average, 4=Above Average and 5=Excellent. The researcher then compiled the information in graph 5.3 below.

**Graph 5.3: Quality of basic crash attendance and recording training**



Based on the responses from all the operational participants, the average rating is at level 2.3, which falls in the category of “below average”. New recruits receive 12 months of training for registration as a traffic officer, of which crash scene attendance is only one week. That relates to a mere 1.92 per cent of the total training period. When probed whether an officer who has completed the basic training, will be able to attend to a crash scene, the response was: “I must also say that there are some of and I don’t mean to to downgrade anybody but there are some of the officers that we train here that just do not have what it takes to become that kind of excellent person (reflection 89).

A respondent was of the opinion that the attendance of in-service training is poor. This problem is associated with the fact that: “Up to a very short while ago there were no consequences to a person not attending training” (reflection 90). Non-attendance is ascribed to numerous problems such as lack of communication to members, too short notice to attend, and arguments from supervisors that “they do not have enough staff members to do their day-to-day functions; therefore, they cannot afford to let them go to training” (reflection 91). A participant stated: “I am ashamed to say, that of our officers that are dishonest that the majority of them feel it actually the training actually interferes with their collection of their ‘additional bonuses’ for their work” (reflection 99). The cooperation of precinct commanders towards in-service training was rated as extremely poor. This is in contrast to the statement of one participant that he: “Cannot recall. It’s too long ago” (reflection 92), since his officers went on a refresher in-service

training course. A participant from the training academy explained: “Officers can only attend in-service training, once nominated by the relevant regional commanders” (reflection 92). A participant indicated that the SAPS also arranges for external crash training through a process of outsourcing to specialists, and usually EMPD is invited to nominate members. Interestingly, SAPS members are not trained in any form of crash attendance, as “It is not in their syllabus” (reflection 94).

With regards to the training of their own members, a participant indicated that during these training sessions, the SAPS members are not trained “as intensively as ours because remember in terms of the traffic qualification its part of the requirement for a traffic officer” (reflection 98). This is in contrast to section 1 of the NRTA, Act 93 of 1996 (South Africa, 1996b), which defines a traffic officer as “any member of the Service, and any member of a municipal police service, both as defined in section 1 of the South African Police Service Act 68 of 1995...” (South Africa, 1995).

A participant from the SAPS stated that “they said no that they mustn’t study that at the police college they must do that later” (reflection 95). It is furthermore the view of the SAPS that road crashes are “not a specialised field” (reflection 96), but the participant pointed out that “crime scene investigation especially, it requires a high level of expertise and the guys must get the best possible training and...that should be supported by management” (reflection 97). It is imperative that training is improved. Participants agree that the only way to do this is to “send them for more training, uhhmmm refresher courses” (reflection 100).

### **5.3.7.2 Specialist training**

During the discussion of the investigation of traffic crashes, the researcher probed the respondents:

- Do you do reconstruction as well?

In Table 5.21, the researcher provides a précis of the data gathered.

**Table 5.21: Specialist training**

Reflection	Interview	Participant	Extraction
101	IV2	3 (All other confirmed)	"...they block us everywhere they can uhmm and courses like accident investigation uhmm vehicle uhmm examiner of vehicles they said no. So we're sitting with that problem also."
102	IV11	1	"...they also have courses where they do accident reconstruction as well."
103	IV11	1	"It's interesting that's never requested for it."
104	IV11	1	"...minimum requirements many of these guys need in order to do the course. It's changed a lot and...many of our officers do not comply with the minimum requirements."
104-1	IV11	1	"Yes, but the thing is even with our officers ... that have criminal records and its one of the things they check."

To obtain a better understanding of the experience of the investigators, the researcher requested participants to provide their years of experience as an investigator in the field of road crashes. Graph 5.4 provides a summary of the investigators' years of experience.

**Graph 5.4: Investigators' years of experience**



The investigators' years of experience range from three to 15 years. This represents an average of 9.2 investigating years in the field of road crashes. Participants were in unison that the courts do not acknowledge them as experts in the field of crash investigation, because a person should be a qualified accident reconstructionist, and none of them have completed the course. The researcher addressed the issue surrounding testifying in court in section 5.3.2.5 above. Participants all agree that they want to the training but "they block us everywhere they can uhmm and courses like accident investigation uhmm vehicle uhmm examiner of vehicles they said no. So we're sitting with that problem also" (reflection 101).

A senior official did not reply as to why the investigators are not sent for the Reconstructionist course, as it is available: "...they also have courses where they do accident reconstruction as well" (reflection 102). The "they" referred to, is the Council for Scientific and Industrial Research (CSIR).

With reference to the Examiner of Motor Vehicles training, the reply was: "It's interesting that's never requested for it" (reflection 103). Another crucial point identified is that the "minimum requirements many of these guys need in order to do the course (reflection 104) are not met; "...many of our officers do not comply with the minimum requirements" (reflection 104). Another pitfall preventing many of the officers from attending these courses is the fact that these institutions do checks to determine whether applicants "have criminal records and its one of the things they check" (reflection 104-1).

### **5.3.8 Insurance**

South Africa is in the unfortunate situation that of the estimated 10 million vehicles on the roads, only an approximate 35 per cent are insured (SAIA, 2014:37). Vehicle insurance is important, because approximately 75 per cent of all vehicles using the road network are uninsured and this creates a feeding ground for vehicle crime and insurance fraud (SAIA, 2014:37). This situation also contributes to the underreporting of road traffic crashes, because uninsured drivers involved in crashes are often referred to report the crashes themselves. Unfortunately, the risk of road traffic crashes increases because motor vehicles involved in crashes are not repaired by accredited panel repair companies. Unfortunately, the current financial climate in South Africa results in many vehicle owners cancelling vehicle insurance with

disastrous results, especially in the event of a crash. SAIA (2014:35) is clear that “affordable comprehensive motor insurance may not be sustainable in the future because of the number of claims and the cost of claims”. A worrying factor is that “around 80% of all motor claims in South Africa are accident related” (SAIA, 2014:36). In this category, the researcher sought to obtain first-hand information from the experiences of operational officers who deal with these kinds of situations on a daily basis (vide 1.5, objective i).

### 5.3.8.1 Is vehicle insurance necessary?

The main question posed to participants was:

- I want you to think a moment about vehicle insurance and tell me whether you think it is necessary that motor vehicles using the road infrastructure should be insured.

Reflections are summarised in Table 5.22.

**Table 5.22: Is vehicle insurance necessary?**

Reflection	Interview	Participant	Extraction
105	IV2	All participants	“...must be a rule in South Africa that if you own a vehicle it must be registered and must have insurance...”
106	IV1	1	“South Africa must put down a policy by a law that says if you’ve got a vehicle on the road don’t care what vehicle it is it must be insured. There is too many uninsured vehicles driving around in South Africa at this stage.”
107	IV1	1	“This guy cannot pay me and I’ll never get my money on my vehicle back again.”
108	IV2	2	“The levy from petrol is supposed to be used for the purpose of the insurance.”
109	IV2	4,5	“People will keep up there roadworthy vehicles and they will drive safer and the accident rate will come down.”

This sub-category should be read in conjunction with chapter 3, section 3.5.4. Participants were in unison that vehicle insurance is an absolute necessity and there “...must be a rule in South Africa that if you own a vehicle it must be registered and

must have insurance” (reflection 105). One participant stated: “South Africa must put down a policy by a law that says if you’ve got a vehicle on the road don’t care what vehicle it is it must be insured. There is too many uninsured vehicles driving around in South Africa at this stage” (reflection 106). One of the biggest problems associated with uninsured vehicles is that when the driver of such a vehicle is involved in a crash, “This guy cannot pay me and I’ll never get my money on my vehicle back again” (reflection 107). Underreporting is another associated problem, as uninsured drivers do not care to register a crash, especially when referred to a SAPS office, or when a law enforcement practitioner does not attend to the crash scene.

The participants agree that insurance is a costly expense, and when people become unemployed “they cannot insure their vehicles”. Government should produce a scheme to assist in this matter, because they impose heavy levies on the fuel price and: “The levy from petrol is supposed to be used for the purpose of the insurance” (reflection 108). All participants accept in essence that there are definite advantages when vehicles are insured, because: “People will keep up their roadworthy vehicles and they will drive safer and the accident rate will come down” (reflection 109).

### 5.3.9 Additional information

In this category, no specific questions were asked. Participants were requested to add any additional information, which may contribute to the study. A précis of the responses is set out in Table 5.23.

**Table 5.23: Additional information**

Reflection	Interview	Participant	Extraction
110	IV2	4	“...half work on something that is actually very serious.”
111	IV2	3	“Ja, we’re not allowed more than 40 hours overtime.”
112	IV3	2	“Another huge problem we are facing is the theft from people killed or seriously injured in accidents. In certain areas, especially close to informal settlements people that were killed in accidents are being robbed of all their possessions they have on their person [sigh]. I have personally experienced it where the people’s pockets were searched for money and other valuables.”

113	IV3	2	“There is nothing you can do because the person disappears either into the squatters camp or when there is a crowd into the crowd.” It is impossible to request assistance from the crowd, “they are aggressive and prevent you from following the robber. Even with the presence of the MPOs at the scene, the numbers of the crowd are too big.”
114	IV3	1	“I have attended to the scene of crash and in the process of recording the particulars of the eyewitnesses I noticed that one in particular was very familiar. When I started to ask questions in this regard, I remembered that I have seen him on another scene as well. When I mentioned this, he disappeared. Upon closer investigation, one of the injured parties acknowledged that the guy was working for an attorney that do claims against the RAF and that he will testify that the person sustained serious injuries in the accident provided that he may hand the particulars of the injured to the attorney.”
115	IV11	1	“...70% of those people were politically appointed. Many of them were appointed in fact in spite of the fact that they had criminal records, in spite of the fact that they didn't had driving licences, in spite of the fact that they did not comply to all the minimum requirements.”

Participants feel they cannot focus full attention to their work, which implies that the output rate is affected, as one said that you do “half work on something that is actually very serious (reflection 110). A participant ascribes this to the fact that: “Ja, we’re not allowed more than 40 hours overtime” (reflection 111).

Some participants had a serious issue with crash victims being robbed at the scene whilst still trapped in the vehicles: “Another huge problem we are facing is the theft from people killed or seriously injured in accidents. In certain areas, especially close to informal settlements people that were killed in accidents are being robbed of all their possessions they have on their person [sigh]. I have personally experienced it where the people’s pockets were searched for money and other valuables” (reflection 112). Usually a crash attracts crowds, which is problematic for officers. The participant

stated: “There is nothing you can do because the person disappears either into the squatters’ camp or when there is a crowd into the crowd.” It is impossible to request assistance from the crowd, “they are aggressive and prevent you from following the robber. Even with the presence of the MPOs at the scene, the numbers of the crowd are too big” (reflection 113).

Authorities will have to address or revise this whole issue regarding the Road Accident Fund. “I have attended to the scene of crash and in the process of recording the particulars of the eyewitnesses I noticed that one in particular was very familiar. When I started to ask questions in this regard, I remembered that I have seen him on another scene as well. When I mentioned this, he disappeared. Upon closer investigation, one of the injured parties acknowledged that the guy was working for an attorney that does claims against the Road Accident Fund (RAF, 2011) and that he will testify that the person sustained serious injuries in the accident provided that he may hand the particulars of the injured to the attorney” (reflection 114).

Alpert, Dunham and Stroshire (2006:96) are of the opinion that politics should be kept out of police departments. A participant raised the issue of politics and explained that politicians put undue pressure on metro police departments to employ certain people. The following example was mentioned about an intake of 300 new recruits, of which “...70% of those people were politically appointed. Many of them were appointed in fact in spite of the fact that they had criminal records, in spite of the fact that they didn’t have driving licences, in spite of the fact that they did not comply to all the minimum requirements” (reflection 115). Regulation 11 of the Regulations for Municipal Police Services (South Africa, 1999b) prescribes that:

- “(1) Subject to the provisions of [sections 64D](#) and [64Q](#), a person may be appointed as a member of a municipal police service, if such person:
  - (a) is registered as a traffic officer in terms of the Road Traffic Act, 1989 (Act No. 29 of 1989);
  - (b) applied in the form set out in Annexure 7 and affirms under oath or by way of solemn declaration that the particulars furnished in the application, are the truth;
  - (c) has permanent residence in the Republic of South Africa;

- (d) is at least eighteen (18) years old of which documentary proof must be furnished;
- (e) submits himself or herself to a medical examination as determined by the Executive Head and is found to be physically and mentally fit for appointment as a member of a municipal police service;
- (f) is in possession of at least a senior certificate or equivalent qualification, of which documentary proof must be furnished;
- (g) has no previous criminal convictions (excluding previous convictions relating to political activities in the previous dispensation) and such a person shall allow his or her fingerprints to be taken;
- (h) has successfully completed the training determined by the National Commissioner;
- (i) is proficient in English;
- (j) takes the Oath of Office determined by the municipal council concerned; and
- (k) complies with the requirements determined by the municipal council concerned in addition to the requirements set out in subregulations (a)-(j).”

According to Alpert et al (2006:96) “a fundamental value of our society is that policing should be subject to and under the control of the public” and not that of politicians who want to control police operations.

#### **5.4 CONCLUSION**

The researcher analysed and interpreted the data collected through a process of numerous interviews based on the experiences of the research participants, which are skilled practitioners in their field of expertise. Analysed data were presented in table format followed by interpretations based on the information acquired from the research participants. Relevant findings from the quantitative nature of the study, chapter 4, are also incorporated into the interpretations. In chapter 6, the researcher provides a detailed discussion on the findings of this chapter.

## CHAPTER 6

### FINDINGS, RECOMMENDATIONS AND CONCLUSION

#### 6.1 INTRODUCTION

In chapter 1 the researcher explicated the problem underlying the research. The problem statement and the rationale were presented (vide section 1.3) and the research objectives (vide section 1.5) identified in accordance therewith. Chapter 1 also incorporated the approach (vide section 1.6) towards the research study and the plan (or design) and accompanying methodological interpretations (vide section 1.7).

An extensive literature study was conducted in chapter 2 to indicate that road traffic crashes are a major concern to the national health care system and economic development on a macro level, which may have a severe impact on the victim and the family on a micro level.

Another comprehensive literature study was undertaken in chapter 3, where the operational variables of road traffic crashes were studied. Issues concerning the recording of road traffic crashes and the reporting and registration process thereof, were addressed. The importance of correctly recorded road crash data was discussed and the relevance of prosecution from a South African context highlighted.

Chapter 4 focused on the quantitative empirical research of the study. The fact that the study was directed at elements in the form of completed AR Forms, necessitated the researcher to use the information schedule as data-collection method. Data were analysed and interpretations made in line with the stated objectives.

In chapter 5, the focus was on the empirical evidence based on the qualitative nature of the study. Numerous role players in the field of traffic law enforcement were interviewed to collect the data. The remainder of this chapter will focus on the findings emanating from this study, as well as recommendations that emanated from the research findings.

## 6.2 RESEARCH FINDINGS

The literature study comprised hard copy documents, information obtained from the internet, books, newspapers and any other relevant literature that served a purpose in this study. A mixed-methods approach was followed, in that the researcher used both quantitative and qualitative methods to collect the data.

The researcher opted to start with the quantitative collection of data first. Questions that arose from this phase were incorporated into interview schedules to be used in the subsequent qualitative phase of the study. The elements tested on the information schedule were in line with the prescriptions from the Accident Bureau of the EMPD southern region. The participants in the study were selected from persons who fulfil duties within different functionaries in the EMPD, which necessitated the researcher to use a different interview schedule for every interview conducted. Although different interview schedules were used, all questions were structured to answer the objectives described in section 1.5.

The conclusions and findings will be addressed under the following headings, in line with the research objectives of this study:

- Significance of road traffic crash data in relation to effective road safety management.
- Demographical information.
- Attendance and recording procedure of road crashes.
- Supervisors' responsibility in relation to the quality of crash data.
- The effectiveness of crash statistics accessed by management.
- The prosecution procedure/process as part of the CJS.
- Existing policy about the crash-recording process.
- The current state of and the necessity for motor vehicle insurance.
- Additional information.

## **6.2.1 Significance of road traffic crash data in relation to effective road safety management**

Road safety management is dependent on complete and accurate crash data. No specific questions were asked and the data used to answer this objective are primarily literature based. The findings in this category are to a limited extent supplemented with qualitative and quantitative findings from the data gathered.

### **6.2.1.1 Significance of traffic crash data**

The research results show that traffic crash data are the primary source of information available to improve the traffic safety environment. This information is essential to address road safety problems. Unfortunately, road traffic professionals focus all their attention on fatal road crash incidents, with the resultant effect of the underreporting of non-fatal crashes.

Road safety management in South Africa is in a state of crisis (Adams, 2001:5) and the extent of road traffic crashes remains unclear. The results also show that South Africa has no comprehensive crash statistics available, except for seasonally bound statistics, which indicate fatalities only. The national picture in relation to all categories of traffic crashes, i.e. fatal, serious, and minor and damage only, is unknown and does not depict a true reflection of the actual state of affairs about road traffic crashes in South Africa. This is confirmed by the Automobile Association (AA, 2014), which states that since 1999, data are available only on fatal crashes, instead of all crashes.

The last national statistics released by the RTMC, were printed in an annual report for the period 2010-2011, which referred to fatalities only. It is also questionable to what extent a nationalised system would be able to timeously identify or be sensitive towards local traffic trends and patterns that would require remedial interventions. Consequently, all the road safety plans and initiatives planned by the South African government are implausible, because formulating strategies with no scientific data will inevitably lead to ineffective road safety management. To substantiate this statement, research results show that 78 per cent of all recorded crash data are of such a poor

quality that analysis, which is essential for effective safety strategies in the development of intervention programmes, can be considered impossible.

The results also show that the recorded data are of such a sub-standard that administrators are in no position to indicate the true state of road crashes in the EMPD. The significance of crash data was confirmed when a participant stated that crash data are regarded as: "...very important in the view of you have to deploy your resources at the most effective places in your jurisdiction area. So if you do not manage your crash data properly how will you be able to effectively deploy your resources and also manage dangerous intersections, portions of road and see to it that road safety is been kept."

The research results furthermore reflect that good quality data are necessary to identify problem areas and through analysis to prioritise those specific safety problems, which must be addressed through properly developed intervention programmes.

#### **6.2.1.2 Validity of crash data**

The results indicate that the value of data should not be underestimated, as administrators and supervisors use the analysed data in the form of statistics to deploy resources at the most effective places in a jurisdictional area. A lack thereof will result in managers and supervisory personnel not being able to manage dangerous locations (HAZLOCs), making it difficult to determine trends and patterns, which renders the concept of road safety management ineffective.

Managers of local traffic law enforcement agencies are dependent upon crash data recording systems of their jurisdictions, due to the unavailability of nationalised comprehensive data statistics that include all crash data and not only fatalities. Research results show that the available data are of no value and assistance to the supervisors' planning phase in the quest to improve road safety management, primarily because of the out-dated nature of the data. Supervisors furthermore do not request crash statistics from the Accident Bureau, which makes their planning of road safety strategies and interventions questionable. A problem identified is that available

crash data are approximately two years out-dated, because of a backlog in the capturing of crash data. Even so, through the experience of the researcher, who used to oversee the functions of the Accident Bureau, this is an age-old problem with supervisors failing to utilise relevant crash data.

Participants in this study emphasised the fact that effective crash data will always be a requirement in any road safety approach. The current state of data recorded by the metropolitan police officers of the eastern region of the EMPD, is of such a questionable standard that the statistics available to management and other role players serve little purpose in developing intervention strategies. The fact that administrators have not yet addressed the issue regarding the poor state of data recorded, is an indication of the haphazard management of road safety in the southern region of the EMPD.

### **6.2.1.3 Anomalies discovered during the course of the study**

The following elements indicate anomalies detected, which affect the end-result of the processed statistics in terms of reporting, accuracy, reliability and validity. Even though this section addresses all the objectives in general, it specifically deals with the following:

- Paragraph 6.2.1.3.1 deals with the effectiveness of crash statistics that are accessed by management and/or officials (vide 1.5).
- Paragraph 6.2.1.3.2 reflects on the current prosecution procedures, which form an intricate part of the CJS (vide 1.5).
- Paragraph 6.2.1.3.3 addresses the attendance and recording procedures of road crashes and the responsibility of the supervisor concerning the quality of crash data recorded, as well as an evaluation of current policy about the crash-recording process that is applicable to operational law enforcement practitioners (vide 1.5).
- Paragraph 6.2.1.3.4 deals with the criminological significance of road crash data concerning effective road safety management (vide 1.5).

Some of these aspects will be discussed in more detail in the sections to follow.

#### **6.2.1.3.1 Statistical anomalies**

- In 94 per cent of all the crashes recorded, incorrect statistics are obtained.
- In 62 per cent of all the crashes reported, the completed AR Forms are not verified by supervisors.
- Supervisors are unaware of the quality of the information recorded on AR Forms.
- The capturing of AR Forms, which provides managerial statistics, are approximately two years behind, hence providing out-dated statistics.
- Only statistics relating to serious and fatal injuries are provided to supervisors, making planning, investigation and prosecution efforts an arduous task.
- Statistics are unreliable and do not portray a true reflection of the current state of road crashes, because of the poor state of crash recording by law enforcement practitioners.
- In 56 per cent of all the crashes reported, law enforcement institutions will not be able to institute administrative prosecutions against offending drivers, as a result of unreliable data.
- The system (software program) is unreliable and provides incorrect statistics due to calculation errors.

#### **6.2.1.3.2 Legal anomalies**

- Law enforcement practitioners neglect their legal duties in terms of section 89 of the NRTA, Act 93 of 1996 (South Africa, 1996b) to institute prosecutions against offending drivers. In 93 per cent of all the crashes recorded, no prosecutions were instituted.
- Subsequent to motor vehicle crashes, a large percentage of drivers (63%) are unnecessarily and “illegally” referred to the SAPS to report the incidents.
- Determining the use of alcohol by drivers of motor vehicles involved in road traffic crashes, is based on the suspicion of a law enforcement practitioner, resulting in no indication of alcohol abuse in nearly all the crashes attended to (99%).
- There is no registration of road crashes at the EMPD after hours.

- AR Forms need revision to include obvious elements not catered for.
- AR Forms are not included as a legal form in the NRTA, Act 93 of 1996 (South Africa, 1996b).
- Numerous drivers are removed from the crash scene by “welfare” breakdown companies and private ambulance organisations prior to the arrival of law enforcement practitioners at the scene of the crash.
- The renting of official radios to breakdown companies must be eliminated.
- Vehicles involved in crashes are not examined for obvious defects.
- The whole system concerning the Road Accident Fund should be revisited to eliminate the use of “field agents” by private attorneys.
- Prosecutors refuse to prosecute criminal dockets if law enforcement practitioners are not declared “specialists”.

#### **6.2.1.3.3 Procedural and operational anomalies**

- There is no procedural manual to assist law enforcement practitioners in identifying the degree of seriousness.
- There is no policy in place to prescribe the correct proceedings during the attending, recording and registering of a crash.
- The registration of road crashes at “outside police stations” results in several AR Forms being lost – this needs revision.
- The different Accident Bureaus within the EMPD do not function in synchrony.
- A culture of a lack of discipline exists concerning the submission of completed AR Forms to the Accident Bureaus.
- The use of traffic law enforcement practitioners as first responders to crash scenes, results in numerous crashes being classified as “serious” and referred to the SAPS for action.
- Crashes referred to the SAPS, are referred to the EMPD – which is problematic because the EMPD does not function as a 24-hour service.
- Supervisors have no access to current up-to-date crash data covering the whole spectrum of road crashes, and not only serious and fatal crashes.
- The operational effectiveness of law enforcement practitioners is affected due to the lack of verification from supervisors.

- The high percentage of uninsured motor vehicles using the road network contributes to the unroadworthiness of vehicles.
- Law enforcement practitioners fail to confirm the correctness of information provided at the scene of the crash.

#### **6.2.1.3.4 Training anomalies**

- There is a need for continuous in-service training and refresher training (on crash scene attendance and recording as well as the accurate completion of AR Forms) of all law enforcement practitioners legally mandated to attend, investigate and record road traffic crashes.
- Basic crash scene attendance as well as crash recording were removed from the training curriculum of the SAPS, and both need to be reinstated as a matter of urgency.
- The quality of basic training in crash scene attendance and crash recording at the EMPD needs improvement.
- The level of training concerning testimony in court is below standard.
- EMPD members are to a limited degree subjected to specialist training.
- “Political” appointments should be eradicated, as those appointees in many cases do not comply with regulation 11 of the Regulations for Municipal Police Services (South Africa,1999b) concerning the prescribed requirements for appointment as a member of a municipal police service (vide section 5.3.9).

#### **6.2.2 Crash and road data elements**

This category describes the general characteristics of the crash, the road and associated infrastructure at the place and the time of the crash. The information contained in this category forms part of the research study as a whole. Data were primarily gathered through the information schedule and complemented with information from the literature and interviews.

### **6.2.2.1 Conclusion relating to crash locations**

Research results show that 73 per cent of all crashes occur in urban areas and 20 per cent on freeways. The high incidence of crashes in urban areas can be ascribed to the high volume of vehicles that use urban roads, as well as the introduction of the E-Toll system, which resulted in large numbers of the motoring public now using urban roads rather than freeways. This sudden increase of traffic volumes on urban (residential) roads places an unexpected strain on already scarce resources of law enforcement institutions. The situation seems to be uncontrolled and in some instances chaotic because motorists start using “rat-run” techniques, i.e. traditionally “quiet” residential areas are suddenly utilised as thoroughfares; abnormal increase in traffic flow patterns (congestion), and so forth. The emotional intelligence of drivers is suddenly being questioned, because of the increase in incidences of road rage, aggressive driving and high risk driver behaviour.

### **6.2.2.2 Road type**

The results of this study show that in 50 per cent of cases the type of road on which a crash had occurred, was not indicated. In 16 per cent of the cases it was recorded that crashes had occurred on freeways, which contradicts the 20 per cent indicated in section 6.2.2.1. This bears evidence that the information was incorrectly recorded.

### **6.2.2.3 Junction type**

The research results show that this specific variable is problematic for law enforcement practitioners, with a large percentage of erroneous information being recorded. In 67 per cent of the recorded cases no information was recorded, which shows that law enforcement practitioners do not complete the AR Forms correctly. Although the AR Form provides a space for practitioners to indicate “Not a junction”, the person completing the form will either leave open the required space, or indicate it as “other”.

The results also show that the SAPS and role players from the Department of Transport were responsible for developing the current AR Form. Unfortunately,

comments and input from the traffic profession were not obtained. This research study shows that the form in its current format has opportunities for improvement.

### **6.2.3 Demographic profile**

This category does not resort under any specific objective as expounded in section 1.5 and no specific question/s were asked. The information contained in this category forms part of the research study as a whole. Data collection primarily occurred through the information schedule, complemented with information from the literature. The results are addressed below.

#### **6.2.3.1 Age and gender**

The results show that male drivers (61%) have a tendency to be more involved in crashes than female drivers (39%). The results furthermore indicate that figures for the crash risk tendency between the age groups 16-39 (54%) are in line with international figures (50%) identified by the World Health Organisation (Peden et al, 2004:4). The results show that both male and female drivers show an equal crash risk tendency (3%) for the age group 20-24, as compared to the 10 per cent for male drivers in the age group 25-29 and the four per cent of female drivers. Although this is contrary to the popular perception that younger persons (with less driving experience) contribute to more traffic crashes, this phenomenon could be imputed to the high unemployment rate amongst young people.

The research results show an interesting development in that white drivers contribute to approximately three per cent (3.4%) of crashes in the age group 20-24, against the two per cent (2.2%) of black drivers; whereas the opposite is the case with black drivers in the age group 25-29, who contributed to almost nine per cent (8.8%) of the crashes, against close to five per cent (4.6%) of white drivers. The results show that black drivers contribute to 53 per cent of crashes against the 37 per cent of white drivers, which is to be expected because of the increase in vehicle use by the black population. The results also show that black drivers have a high crash risk tendency of 11 per cent between the ages of 35-39, compared to a risk of three per cent for white drivers.

The results furthermore show that the crash risk tendency for drivers in the age group 60+ is 13 per cent, which is pro-rata exceptionally high to the other age groups (vide 6.3.2.1). This trend is in line with international trends, which reflect an international increase in crashes for this age group (ITF, 2014:12). There are clear indications that both the perceptual and reactive abilities of drivers in this group may be affected. According to ITF (2014:12) a vast majority of international countries have seen continuous growth in the elderly population since 2000 – United States, Canada, Europe and Japan by more than 10 per cent.

#### **6.2.4 Attendance and recording procedure of road crashes**

The attendance of road crash scenes by law enforcement practitioners and the recording of the information at the scene form a crucial part in the provisioning of accurate data. Crashes involving slight injuries or damage only, tend to be underreported by law enforcement practitioners. Underreporting is a concept that refers to situations where not all the crashes attended to by law enforcement practitioners, are being documented in the data system. The unfortunate result of underreporting is that it affects the statistical output of the data system, which is supposed to reflect the reality on our road network (Evgenikos et al, 2010:33).

##### **6.2.4.1 Obligation to attend a crash scene**

The results indicate that there is confusion as to which law enforcement institution should legally attend to and record the crash scene. The results also show that according to the current policy of the SAPS, any crash with serious or fatal injuries is regarded as a crime scene and must be attended to by the SAPS. This argument is founded in section 205(3) of the Constitution of the Republic of South Africa Act 108 of 1996 (South Africa, 1996a), which prescribes that: “The objects of the police service are to prevent, combat and investigate crime...”. Members of a traffic department or a metropolitan police department’s primary role are then that of first responder, whose primary function is to safeguard the scene.

This contradicts section 61(1)(f) of the NRTA, Act 93 of 1996 (South Africa 1996b), which prescribes that:

- “(1) The driver of a vehicle at the time when such vehicle is involved in or contributes to any accident in which any **person is killed or injured** or suffers damage in respect of any property, including a vehicle, or animal shall:
- (f) if he or she has not **already reported the accident to a police or traffic officer at the scene of the accident**, and unless he or she is incapable of doing so by reason of injuries sustained by him or her in the accident, as soon as is reasonably practicable, **and in the case where a person is killed or injured**, within 24 hours after the occurrence of such accident, or in any other case on the first working day after the occurrence of such accident, report the accident to **any police officer at a police station** or at **any office set aside by a competent authority for use by a traffic officer**”  
[own emphasis].

Over and above the impracticality thereof, there is a strong possibility that law enforcement practitioners from a metropolitan police department or a traffic department will increase the degree of severity of crashes to serious, not to record the crash (vide section 6.2.3.5). Another point, which causes considerable frustration, is the potential lack of training of SAPS members concerning crash scene attendance and recording. Indications are that SAPS members may be ill-trained concerning crash scenes, because of the removal thereof from the training curriculum as not being a SAPS core function.

This unsatisfactory situation is often the result of unnecessary tension between law enforcement practitioners. The results also show that SAPS members attending the specified crash scenes often have to request their counterparts from the metropolitan police or traffic department to assist them, due to their lack of knowledge. The investigation of a crash scene differs in essence from that of a crime scene, and it requires a different kind of specialist to investigate; the SAPS are in dire need of well-trained crash reconstructionists, should they pursue this unfeasible practice.

There is a “gentlemen’s agreement” in existence between the SAPS and the southern region of the EMPD; whenever an EMPD official investigates a crash, close

cooperation between the official and the detective investigating the docket is in place. Cooperative governance as emphasised in section 41(1)(h) of the Constitution of the Republic of South Africa, Act 108 of 1996 (South Africa, 1996a) is underscored due to the “agreement”.

#### **6.2.4.2 Responsibilities at the crash scene**

Research results show that supervisors reflect knowledge about the responsibilities of metropolitan police officers at the scene of a crash; however, there was disparity amongst supervisors about the sequence of events.

The literature shows that there is a procedure followed by members of the EMPD (vide section 3.2.3.2), although it is not incorporated in any policy or procedural document. Basic training of EMPD officers concerning crash attendance and recording is of a sub-standard, to such an extent that they need re-training when posted to shifts – a situation which is regarded as unacceptable. Officers are subjected to refresher training course on an ad-hoc basis, resulting in officers not receiving refresher training for some years. An alternative to refresher training could be the implementation of policies and procedures. This highlights the need for a prescribed policy to ensure standardised conduct at the scene of a crash (vide section 6.2.8).

#### **6.2.4.3 Recording process of a crash**

There is no legal prescription concerning the procedure that law enforcement practitioners follow when attending and recording road crashes. Results show that supervisors are well **aware** of the process when recording information at crash scenes.

The completion of the Accident Report Form (AR Form) is problematic because of its demanding and user-unfriendly nature. The results show that the AR-Form is a tedious document to fill out and cannot accurately be completed at the scene of a crash – often amid chaos, disorder, confusion, possible darkness and dangerous conditions typical of a serious crash scene. The results indicate that all law enforcement institutions should develop a Crash Recording Book, which enables officers to record all the required information in the quickest possible time, where after the AR Form can be

completed in the safety of the officer's vehicle or office and the attention can be focused on specifics. The southern region of the EMPD uses this document with great success.

#### **6.2.4.4 Reporting and registration of crashes**

From the collection point (road crash) to the distribution point (capturing authority), the process is tedious and challenging. According to the research results, the reporting of crashes to the EMPD is problematic due to the lack of a 24-hour service, which is a legal requirement in terms of section 64 of the SAPS Act 68 of 1995 (South Africa, 1995). The research also shows that the Accident Bureaus of the different previously disestablished local municipalities still operate independently, and that the motoring public and officers are required to register crashes at the EMPD office in the area that they occurred.

The results show that EMPD officers attending crash scenes fail to (1) register the AR Forms, or (2) delay the registering of the AR Forms, which is problematic for those involved in the crashes, especially with recurring problems about insurance and medical claims. The capturing capacity of the EMPD is also unnecessarily strained and not properly controlled by supervisors.

This research indicates that legislation concerning the registration of crashes needs revision to include the reporting of crashes in the area where the crash occurred. The current problem experienced by the EMPD is that drivers involved in crashes (within areas that fall outside their residing area), tend to register the crashes at police stations closest to their abodes. This results in AR Forms getting lost or a lengthy delay in reaching the relevant registering authority. During the collection of the data, a case study involving an interview with a member of the public emphasised the difficulty in obtaining the requested crash register number, which at that point was an on-going affair of three months. The difficulty experienced in instituting an insurance claim due to this delay, was also expressed.

#### **6.2.4.5 Referral of parties to the SAPS**

There is both a legal and procedural limitation placed on a metropolitan police officer to refer the parties involved in a crash to the nearest SAPS. Section 61(1)(f) of the NRTA Act 93 of 1995 (South Africa, 1996b) prescribes that “if he or she has not already reported the accident to a **police or traffic officer at the scene of the accident...**” [own emphasis]. Standing Order 18.28 of the EMPD prescribes that “an officer dispatched to, or arriving at the scene of an accident shall take the particulars of such accident. An officer shall under no circumstances refer the participant/s to the SAPS”.

Through the quantitative data obtained, in 63 per cent of all the crashes the SAPS was the reporting institution, which is a clear indication that in many instances the drivers are unnecessary and illegally referred to the SAPS. This is contrary to the consensus amongst the participants interviewed, that parties may only be referred in absolute extraordinary circumstances; and then an entry should be made in the Occurrence Book. In 56 per cent of the cases reported at the SAPS, the driver was requested to complete the form, of which the SAPS members then signed the vast majority of the completed forms as if so completed. This practice is highly irregular, which should be abolished with immediate effect.

Another point of concern is that officers refer involved parties to the SAPS when arriving at the scene and one party has already left the scene, or when parties are busy exchanging information. A new and alarming tendency is developing where the SAPS will refer drivers reporting crashes at the SAPS office to the metro police to report. In this manner the responsibility is shifted from the one institution to the other at the cost of the driver.

#### **6.2.4.6 Training of EMPD officers**

According to the data, participants who were interviewed rated the quality of basic crash attendance and recording training as below average, which is alarming if taken into account that officers attend to crash scenes on a daily basis. The results indicate that officers need re-training in completing AR Forms prior to deployment on the shifts.

Results furthermore show that recruit officers undergo 12 months basic training of which crash scene attendance and recording represents a mere 1.92 per cent (1 week). Participants interviewed indicated that basic in-service training is of a poor and unacceptable level, especially concerning crash scene attendance and recording. This is evident when referring to the 94 per cent of recorded crash data that are unusable (vide section 6.2.3.2).

Results show that the attendance of in-service training is inadequate, mainly because of two reasons:

- Lack of proper communication to officers.
- Officers refuse to attend because of selfish and unethical reasons.

Supervisors have an obligation to subject their officers to continuous in-service training. Research results show that supervisors have a poor recollection about the in-service training cycle of officers. It has become customary for supervisors to await nominations for in-service training from superiors or the training academy, which is irregular and should be abolished with immediate effect. Should a supervisor identify that a subordinate is in need of in-service training, such training must be arranged without any delay. Over and above the advantage it holds for the CJS in general, it also ensures the integrity of the EMPD and protects the officer against undue civil liability.

The research results show that the average number in years of experience of participants in the field of crash investigation, is nine years. Specialised training is a necessity, especially because the prosecutors do not recognise them as specialists (vide section 6.2.5.4). The results also show that there is a breach in communication, as operational participants reflected that no specialised training is available in their respective fields; participants from the training division indicated that no requests for such training had been received. The fact that specialised training is primarily presented by private companies, makes for unforeseen problems such as officers not meeting the minimum prescribed requirements laid down for such courses.

#### **6.2.4.7 Breakdowns and private ambulances**

Through experience, the researcher is well aware of problems surrounding the “welfare” removal of vehicles by breakdown operators, where a driver who is either responsible for the crash or under the influence will be removed from the scene of a crash; subject to the vehicle being repaired by the breakdown company or referral company with which business ties exist.

Through the data obtained, the participants interviewed judged this as a serious problem, which renders the recording of data extremely difficult. In the majority of the cases, the remaining driver is unable to provide the particulars of the removed driver, because the information is withheld. The problem has escalated to the extent that metropolitan police officers rent out two-way radios to breakdown companies, when off duty. Supervisors are responsible to monitor the response times of their officers. It is imperative that officers respond as quickly as possible to the scene of a crash in an endeavour to curb this welfare removal of vehicles.

#### **6.2.5 Supervisors’ responsibility in relation to the quality of crash data**

This objective inquired about the role of the supervisor in ensuring that accurate and complete data will be made available for processing and accessibility. The results on the role of the supervisors are primarily based on the qualitative data obtained during interviews with the supervisors, where they were asked about the verification of the AR Forms. The qualitative data information schedule was used to supplement the supervisor’s role in determining the quality of the recorded data in the database.

##### **6.2.5.1 Verification of completed AR Forms**

The research found that supervisors have a responsibility to verify the AR Forms for completeness and accuracy. Notwithstanding this important determination, the research furthermore indicated that supervisors do not verify AR Forms because of the excuse that they do not have time for it.

Data collected during the quantitative phase show that in 62 per cent of all the crashes recorded, supervisory personnel did not verify AR Forms. The research also shows that when AR Forms were indeed verified, SAPS supervisors verified 22 per cent; alarming is the fact that the EMPD supervisors verified only 16 per cent of the completed documents. This is a clear indication of the neglect of duties from supervisors, which should be addressed as a matter of urgency since the different law enforcement departments are being subjected to unnecessary civil liability.

A case study performed by the researcher also found a serious dereliction of duty with potential far-reaching and actual consequences for the public. The fact that the completed documents are not verified, enables personnel to use irregular methods concerning the completion of AR Forms, with possible far-reaching results. This dereliction of supervisory duty is inexcusable because of the far-reaching consequences for the public, and must be abolished with immediate effect.

#### **6.2.5.2 Quality of information**

The quantitative results show that in total 94 per cent of all the crash data recorded are of such a sub-standard that the data may be considered useless for any intervention. The qualitative research results indicate that the quality of information recorded by officers is inadequate. Shockingly, one participant reflected that he is in no position to comment on the quality of the data recorded by his officers, because he does not examine the data recorded by his officers: "...it must be correct because of no complaints received." It is deploring that supervisors of this quality are responsible for the quantification of road safety in its entirety.

Results also show that the information captured on the AR Forms is of such a poor quality that it does not portray a true reflection as to what is actually transpiring on our roads concerning road crashes. It is self-explanatory that this type of information does not contribute to the improvement of the current road safety situation in the country. Coetzee (2007) states that: "Suid-Afrikaanse owerhede weet nie hoeveel ongelukke daar elke jaar op die land se paaie is nie [*South African government authorities do not know how many accidents occur annually on the country's roads*] [own translation]"

and that record-keeping of road crashes by authorities is unacceptable and of a poor standard, especially those not involving injuries (vide also section 6.2.1.1).

The researcher believes that if the crash statistics are in such a deplorable condition, then surely the senior management of the EMPD is not investing efficiently in road safety management in the quest towards the improvement of road safety. The quality of information is a direct consequence of the non-verification of the information recorded on the AR Forms (vide section 6.2.3.1).

### **6.2.5.3 Analogue between driver action, crash type and crash description**

The research found that in 67 per cent of the data recorded, there is no analogue between the action of what the driver was doing at the time of the crash, the type of crash that the driver was involved in, and the description of what happened at the time of the crash. It would be extremely difficult, if at all possible, to determine cause and effect in such instances. Reliable data are a pre-requisite to identify problems, risk factors and priority areas. Therefore, the accurate recording of crash data is an important characteristic of data quality. Sensible and effective statistics in this instance will not be possible.

### **6.2.5.4 How is injury severity determined?**

International best practice indicates that law enforcement officials receive proper formulated procedural manuals explicating injury categories, inclusive of the type of injury that resorts within each category. The research shows that in South Africa there is no procedural manual available to assist local law enforcement practitioners in determining the correct category of injury, let alone the type of injury.

Participants from the Accident Bureau indicated that often law enforcement practitioners obtain information about the injury severity of crash victims from the professional evaluation of paramedical officials on the scene; which law enforcement practitioners generally ignore.

### **6.2.5.5 Injury severity intentionally reduced**

According to the data, nearly 75 per cent of all the cases reflect damage only crashes, 14 per cent slight injuries, three per cent serious injuries and two per cent fatal injuries, which suggests that law enforcement practitioners intentionally reduce the severity of crashes. Unfortunately, due to the unavailability of national crash statistics, the researcher is not in a position to compare inferences between the different categories of injury.

The qualitative research results show that officers do not indicate when there are serious injuries during the recording of the crash. The reason being the apathy of officers to register a criminal docket. Some of the participants were of the opinion that this unacceptable practice is directly associated with the incapability of the supervisors to prevent underperformance of subordinates. Supervisors must account for the reprehensible state of crash data, mainly because of non-verification of the completed AR Forms as explained in section 6.2.3.1 above.

### **6.2.6 The effectiveness of crash statistics accessed by management**

This category relates to the availability of data (information), which is a requirement for road safety administrators to prioritise specific road safety problems and implement appropriate countermeasures. To answer this objective, information obtained from the literature study is used, and in addition the researcher asked a range of questions to the different participants during the qualitative data-gathering phase. The following sub-categories contain the results relevant to this objective.

#### **6.2.6.1 The availability of crash data**

Research results indicate that participants receive crash data weekly during the management meeting. The extent of the crash data provided is insufficient and covers “serious accidents” only. The results show that the crash data provided to supervisors are at least two years out-dated, and that supervisors do not plan properly. The results from the literature study confirm this and show that road crash data in Africa is problematic with data being years out-dated.

Research furthermore shows that the information (recorded crash data) must be submitted to the RTMC on a monthly basis. This never occurs; the backlog currently experienced by the EMPD is definitely one of the reasons. Until such time that all crash information in the country is captured on an integrated system, the RTMC will never be able to provide reliable and accurate data.

Road traffic administrators are in no position to develop accurate preventative road safety measures because of unreliable and deplorably sub-standard data. Results also show that senior managers from the RTMC confirm the inefficiency of road safety management in the EMPD. South Africa can only guess at what is happening on our roads, due to non-credible statistics (AA, 2014). Nakahara and Wakai (2001) confirm the importance of crash data towards road safety and reveal that the average police report system is in need of improvement, and that a comprehensive trauma registry should be established to include data from hospitals as well as insurance companies.

Research results indicate that supervisors do not request statistics from the Accident Bureau at all, which is understandable because of the out-dated status thereof, thereby compromising the aim and objectives of effective planning in the quest to improve road safety.

#### **6.2.6.2 Quality of management statistics**

The data obtained from the supervisory participants reflect that the quality of the information available to the administrators is in an extremely poor state. The poor state of information reverts to the collection (recording) of the data (vide section 6.2.3.2).

The research also shows that the Accident Bureau is unable to provide accurate statistics, mainly because the computer system calculates totals incorrectly, thus building incorrect statistical reports. The researcher experienced it first hand when an operator had to manipulate a statistical software program manually to provide accurate statistics. Therefore, the results show that management statistics available to administrators are inaccurate and worthless.

## **6.2.7 The prosecution procedure/process as part of the CJS**

This objective inquired about the institution of prosecutions against offending drivers involved in road crashes. Driving violations cause road traffic crashes. Not only does prosecution promote road safety, it is also a fundamental component of public confidence in the CJS. Prosecution also serves as a deterrence, because offenders and potential offenders are influenced and fear the resulting consequences. Traffic policing in the form of prosecution is necessary to remedy non-compliance of traffic laws with a specific view to create, promote and maintain a safe environment in an endeavour to ensure voluntary law adherence to traffic laws and regulations (Zaal, 1994:6). This relates not only to prosecutions instituted at the scene where the officer is present, but also to the institution of prosecutions from an administrative point of view where the information collected from the AR Forms is of crucial importance.

These research results are based on data gathered from the literature and supplemented with qualitative data obtained from interviews with numerous law enforcement practitioners active in the field of traffic law enforcement, as well as qualitative data obtained from the information schedule used as data-gathering technique.

### **6.2.7.1 Importance to prosecute offenders**

Section 89 of the NRTA, Act 93 of 1996 (South Africa, 1996b) creates a legal duty for a law enforcement practitioner to institute a prosecution for any offense committed in terms of this Act. The data show that a law enforcement institution has two methods available to institute prosecutions. On-scene (active) prosecutions are the most effective way to institute prosecutions because the officer is on-scene and in the best possible position to observe the scenario at hand. The AR Form also provides for the recording of any prosecution instituted at the scene of the crash. The second method is administrative (passive) in nature where prosecutions overlooked by officers on the scene, are instituted from an administrative capacity based on the information obtained from the recorded AR Form.

Although the focus of law enforcement institutions should never be prosecution only, the results show that the prosecution of offending drivers is important, for it creates a sense of omnipresence through visible policing. Therefore, the public perceive that high-risk behaviour does not go by undetected and that the “punishment” is intended as a warning to other road users. The research also recommends that remedial measures be followed for every crash. Although prosecution forms part of the remedy, additional remedial actions in the form of a detailed report should be addressed as an addendum attached to the AR Form that is inclusive but not limited to the following:

- Possible improvements of the road environment and road system if obvious shortcomings, which may have contributed to the crash, are visible.
- Detailed and systematic examination of the vehicle/s for obvious defects.
- The licensing of drivers to be confirmed at the scene.
- The need to re-test drivers, which is not customary practice anymore.
- The screening of drivers for alcohol impairment (DUI) should be compulsory and not based on the current practice of officer suspicion only.
- A detailed description including possible causes as well as details about the alleged offender who contributed to the crash.
- To determine the registration and licencing status of the motor vehicle at the scene (vide section 6.2.7.3)
- To determine whether the driver/s have outstanding warrants against them for driver violations.

Throughout this study, it became evident that the feasibility of such a process requires a paradigm shift towards crash scene attendance.

#### **6.2.7.2 Conviction rate of dockets**

The results also suggest that because the SAPS do not take crash investigation serious enough, this problem is aggravated when subjected to the legal system (vide section 6.2.2.1). The results show that prosecutors are unwilling to defend criminal cases involving road crashes if the testifying officer is not declared a reconstruction expert. This behaviour of prosecutors holds a serious threat with far-reaching consequences for the public as well as for road safety in its entirety. Unfortunately, the

research results reflect that criminal lawyers are perverting this fact to their advantage by pressurising prosecutors not to prosecute prior to the trial.

### **6.2.7.3 Do officers institute prosecutions?**

From the research results, it is obvious that the institution of prosecutions involving road crashes does not enjoy priority at all. The data show that in 93 per cent of the crashes reported, no prosecutions were instituted; which is hard to believe that no remedial interventions were warranted in all these cases. The qualitative data affirm that law enforcement practitioners do not institute prosecutions for obvious offences. The quantitative research results show that no prosecutions are instituted because of officer apathy and incompetence.

This is a classic example of trained incompetence where the training of officers results in operational ineffectiveness (cf. Van Heerden, 1994:114). The quantitative research results indicate that 97 per cent of the crashes reported at the SAPS resulted in no prosecution, with 80 per cent of the crashes reported at the EMPD resulting in no prosecution. Fostering a culture of non-prosecutions, creates the perception that the chances for an offending driver to be prosecuted, are extremely slim, except when serious or fatal injuries are sustained by a party in the crash. This contradicts the effect of deterrence and safe (defensive) driving explained in section 6.2.5.2.

The research results show that 63 per cent of the data required to institute administrative prosecutions, are so poorly recorded that from an administrative perspective, the institution of prosecutions is impossible. In 38 per cent of the cases, the results reflect that administrative prosecutions were possible, however no prosecutions were instituted (vide section 4.3.7.3). Although the data reflect that the required information is recorded, a major concern is that in the vast majority of the cases, the addresses provided are non-existent, or the vehicles are unregistered and do not correspond to the recorded information. The research results also show that up to 7 per cent of invalid drivers' licences were issued with up to 50 per cent of all drivers' licences issued being "suspect" (vide section 3.2.4.2).

#### **6.2.7.4 Testifying in court**

The results show that prosecutors are incompetent and have limited knowledge regarding the prosecuting procedure following road crashes; to the point that cases are being *nolle prosequi* because officers are not declared experts (vide section 6.2.5.1). This is a reason why law enforcement practitioners refuse to institute prosecutions because it appears to be a waste of time and resources.

A point of concern arising from the results is the fact that law enforcement practitioners have such an aversion to testifying in court, that resignation was offered as an option. The results indicate that testifying in court by officers forms a crucial part of the CJS. Unsuccessful convictions hold a serious concern with unforeseen ramifications for the CJS as a whole. Administrators and other role players will have an arduous task to implement interventions in reducing road crashes.

The results furthermore indicate that the broadcasting of the Oscar Pistorius case extracted huge interest amongst the officers. They suddenly realise that giving proper evidence forms an important part of the CJS and started requesting training on how to testify in court.

#### **6.2.7.5 Post-crash roadworthiness of vehicles**

Law enforcement practitioners have a legal responsibility towards road safety in the country. The state of roadworthiness of a vehicle is a key contributing factor in road crashes. The AR Form even provides for officers to record whether the use of a vehicle was discontinued or not. The results show that the vast majority of crash-damaged vehicles are not discontinued because of the incompetence of the officers attending to the crash scenes.

The research results show that the participants agree that all crash-damaged vehicles removed by breakdown vehicles, must be subjected to a roadworthy examination. The results show concern about vehicles written-off by insurance companies, which later re-surface, repaired by unregistered panel beaters. All such vehicles must be demolished and removed from the national motor vehicle register.

### **6.2.8 Existing policy about the crash-recording process**

This category relates to the availability of predetermined policy and/or procedural documents, which is a necessary tool to assist officers in performing the variety of functions required on a daily basis. Although not legally prescriptive in nature, such documents should provide officers with a systematic procedure and departmental directives in rendering a professional service. The literature forms the basis of the research results, supplemented with information gathered from the interviews conducted where the research question enquired about the existence of policy or procedural manuals to assist officers in the completion of AR Forms.

#### **6.2.8.1 Availability of departmental policies**

The results show that in terms of the approved Standing Orders of the EMPD, officers are obliged to record crash information according to an approved policy. However, this instruction is in vain, because the policy has never been developed, and serves no purpose. Therefore, to discipline officers in terms of the Standing Orders for the incomplete recording of AR Forms, will be extremely difficult, if at all possible.

The qualitative results indicate that participants are knowledgeable about the Standing Orders, but lack in-depth knowledge, as they are unaware of the deficiency of the policy that it still needs to be developed. This is evident when taking into account that in 94 per cent of all the cases, the data recorded are useless (vide section 6.2.3.2) for any statistical interpretation.

### **6.2.9 The current state of and the necessity for motor vehicle insurance**

This category relates to the financial burden placed on the economy because of a large percentage of uninsured motor vehicles using the road infrastructure. South Africa is in the unfortunate situation that of the estimated 10 million vehicles on the roads, approximately 35 per cent are insured (SAIA, 2014:37).

The results of this study show that in the vast majority of other countries in the world, motor vehicle insurance is compulsory to the point that motor vehicle owners are

prosecuted for non-compliance when involved in a crash. In South Africa, motor vehicle insurance is considered a privilege and is not compulsory. The unfortunate result is a large percentage of uninsured motor vehicles (65%) using the road infrastructure, which directly contributes to the ruinous financial impact on all motorists.

The research results also show that all participants are in favour of the introduction of a law that legally requires motor vehicle owners to insure motor vehicles that operate on South African roads. Reference was made to the levies attached to the fuel price; government should in some form assist motor vehicle owners with insuring motor vehicles. The literature study also confirms this finding and points out that government should not only get involved, but also remain involved.

The results furthermore identified underreporting as a major concern, in that uninsured motorists fail to report when involved in crashes. Taking into account the 65 per cent of motor vehicles currently uninsured; statistical information about crashes in South Africa will be disastrous for administrators having to implement interventions in the quest towards road safety. The results also show that insuring motor vehicles will increase the roadworthiness of motor vehicles, which will have a direct impact on driver safety and a reduction in the crash rate.

#### **6.2.10 Additional Information contributing to the study**

Research participants were requested to provide additional information, which they think might contribute to the objectives of this study in general. The results show that lawyers use scouts or crash chasers to get to crash scenes prior to the arrival of law enforcement practitioners. Should the targeted driver agree to apply the services of the specific attorney, the “scout” or “chaser” will testify and arrange that the actual level of injury severity be increased, where after such fraudulent claims will be submitted to the Road Accident Fund by such lawyer. This unacceptable practice should be eradicated as it corrupts the whole system restraining those who are in need thereof.

## **6.3 RECOMMENDATIONS**

In section 6.2 above the researcher elaborated on the interpretations of the literature study as well as the analysis regarding the quantitative and qualitative components of this study. These elaborations or results are important and should include real-life situations elucidating certain problems or shortcomings to ensure that the administrators of the EMPD better understand it (cf. Strydom & Delpont, 2012a:289). Taking into account the results of this study, certain recommendations were identified and will be elaborated on in the following sub-sections.

### **6.3.1 Legislative recommendations**

The text identified several anomalies, which necessitates mentioning thereof. The NRTA, Act 93 of 1996 (South Africa, 1996b) addresses the failure of the drivers of motor vehicles when involved in road crashes. An oversight from the legislator is that the NRTA, Act 93 of 1996 (South Africa, 1996b) is silent about the non-compliance of law enforcement practitioners when failing to record road crashes as prescribed in section 61 of this Act. The importance of crash recording and the contribution thereof towards road safety, which is a constitutional requirement, was emphasised in the text. Therefore, it is recommended that the NRTA, Act 93 of 1996 (South Africa, 1996b) be amended to include a legal penalty against ignorant or incompetent law enforcement practitioners.

Although the NRTA, Act 93 of 1996 (South Africa, 1996b) prescribes that a law enforcement practitioner at the scene of a crash shall record the crash “on the prescribed form and in the prescribed manner”, the legislator neglected to develop regulations specifying the prescribed manner. It is recommended that regulations be developed to expound the manner in which crashes should be recorded. This will also bring about a legal penalty for non-compliance. Although reference is made about a prescribed form, it can only be assumed that it refers to the AR Form. The AR Form currently holds no legal ground as it represents a form that was developed by the National Department of Transport with no legal duty. To “legalise” the AR Form it is recommended to include the AR Form in Schedule 2: Names of the Forms Referred to in these Regulations, of the NRTA, Act 93 of 1996 (South Africa, 1996b).

The term “crash” is an internationally accepted concept, which is locally used in all documentation and colloquial language. It is recommended that the NRTA, Act 93 of 1996 (South Africa, 1996b) be amended to replace the term “accident” with that of “crash”. The NRTA, Act 93 of 1996 (South Africa, 1996b) does not define or explain the meaning of different categories of injuries. It is recommended that the different categories be defined as follows:

- **Injury:** within the context of a traffic crash refers to any bodily harm to a human.
- **Killed (fatal injury):** refers to any traffic crash effecting any injury that results in death, immediately or within 30 days thereafter.
- **Serious (incapacitating) injury:** is any injury, other than a fatal injury, which prevents an injured person from walking, driving or normal continuing of the activities such a person was capable of performing prior to the injury occurring. This includes severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconscious at or when taken from the crash scene, and unable to leave the crash scene without medical assistance.
- **Slight (non-incapacitating) injury:** refers to any injury, other than a fatal or serious injury, which is evident to observers at the scene of the crash in which the injury was sustained. This includes a lump on the head, abrasions, bruises, and minor lacerations. Care should be taken when a person is limping and it should rather be recorded as serious, because the injury is not visible.
- **No injury:** refers to a motor vehicle crash in which there is no reason to believe that any person received any bodily harm from such crash. This usually happens when only property is damaged.
- **Property:** with reference to a road traffic crash, refers to any physical object other than a person, which includes inter alia real property, personal property, animals (wild or domestic), signs, guardrails, impact attenuators, trees, fences, traffic control devices, shrubs, and so forth.

The removal of vehicles from the scene of a crash prior to the arrival of law enforcement practitioners is highly irregular and in contravention with the prescriptions of section 61(2) of the NRTA, Act 93 of 1996 (South Africa, 1996b):

No person shall remove any vehicle involved in an accident in which another person is killed or injured from the position in which it came to rest, until such removal has been authorised by a traffic officer, except when such accident causes complete obstruction of the roadway of a public road, in which event the vehicle involved may, without such authority and after its position has been clearly marked on the surface of the roadway by the person moving it, be moved sufficiently to allow the passage of traffic.

It is recommended that the legal duty created by section 89(3) of the NRTA, Act 93 of 1996 (South Africa, 1996b), which sets the prosecution foundation for law enforcement practitioners, be followed robustly. Section 89(3) prescribes that “Any person convicted of an offence in terms of subsection (1) read with section...3A(3), 61(2)...shall be liable to a fine or to imprisonment for a period not exceeding three years.” It is furthermore recommended that, in addition to section 89(3), the NRTA, Act 93 of 1996 (South Africa, 1996b) be amended to include that no vehicle involved in a crash in which any person is killed or injured or suffers damage in respect of any property, including a vehicle or animal, be removed from such scene without the written permission by law enforcement practitioners. This will make it imperative for law enforcement practitioners to attend to the scenes, which will directly improve the investigation of the scene (vide section 6.2.7.3).

### **6.3.2 Crash data**

This study emphasised the importance of crash data and the relevance thereof in the development of intervention programmes in an endeavour to improve road safety throughout the country. The current state of out-dated crash data by the EMPD is counter-productive and it is recommended that it is investigated and addressed as a matter of extreme urgency, because it affects the planning of daily duties and focus areas by supervisory personnel (Precinct Commanders). Administrators are also in no position to strategically implement intervention programmes.

It is recommended that personnel from the Accident Bureau provide a detailed summary about the current state of affairs and that a short-term strategy of corrective measures will be introduced. It is also recommended that administrators ensure that

crash statistics are submitted to the RTMC on the requested monthly basis to ensure that national statistics are updated. It is also recommended that the average police report system be improved, and in addition that an integrated and comprehensive trauma registry is established to include data from hospitals as well as insurance companies.

It is recommended that the software developer responsible for maintaining the software, be apprised of current deficiencies in the program, which render the statistics inaccurate and ineffective.

#### **6.3.2.1 Age**

The high incidence of crashes in the 60+ age group is a concern for administrators. It is recommended that drivers in this age group be subjected more frequently to drivers' licence examinations and practical tests to ensure that perceptual abilities, reactive abilities and intellectual capacity do not deteriorate to such a standard where they become a danger to the individual and other road users.

#### **6.3.3 The AR Form**

As identified, the only means to record crash data is through the AR Form, which is used nationally. Over and above the fact that the form is not user friendly and tedious to complete, numerous shortcomings were highlighted that affect the accuracy of the information produced by the form. It is recommended that the concept "other" be removed from the AR Form as it opens an avenue for incorrect interpretation or uncertainty. Improving the AR Form to cater for all possibilities, will eliminate this concept.

It is recommended that the current AR Form be revised and that the inputs of role players from the traffic profession are obtained and incorporated. It is furthermore recommended that law enforcement agencies develop a departmentally approved Accident Book for use by practitioners in which to record the details of the crash. The information may then be recorded afterwards on the AR Form. In addition, this method can contribute towards improving the accuracy of information recorded on the AR

Form. In the event where such a register is already in place, supervisors must ensure that practitioners do indeed make use of the book.

#### **6.3.4 Attending a crash scene**

The text indicates that the system concerning the obligation to attend to a crash scene is ineffective and highly contentious amongst law enforcement practitioners. It is recommended that:

- Traffic law enforcement practitioners be allowed to attend to and record all crash scenes, including but not limited to crashes where serious and fatal injuries were sustained.
- Traffic law enforcement practitioners work in close cooperation with the detective responsible for the docket to ensure accuracy and completeness of the docket.
- Traffic law enforcement practitioners be trained by the SAPS in the completion of criminal case dossiers.
- All traffic law enforcement practitioners responsible for the investigation of crashes where serious or fatal injuries have been sustained, be trained in crash investigation.
- Current legislation be amended to allow traffic officers to investigate crash scenes where serious or fatal injuries were sustained.
- Agencies responsible for traffic law enforcement entered into a Memorandum of Understanding with the relevant SAPS offices in the area of responsibility, to ensure mutual cooperation regarding the investigation of road crashes where serious or fatal injuries have been sustained.

#### **6.3.5 Policies and procedures**

The value of policies and procedural manuals should not be underestimated. A policy is regarded as a document that is used as a guiding principle to determine the direction of the EMPD, whereas the procedural manual is a systematic document indicating an established manner of doing things. Therefore, it reflects a commitment to improve quality and to ensure consistency in an endeavour to reduce variation of a certain

process or procedure (Anderson, 2013). A procedural manual is nothing else than a training manual, which is subject to annual revision, or as deemed fit by the EMPD. It is also seen as an addition to the approved Standing Orders. Therefore, it is recommended that:

- A procedural manual be developed to assist practitioners in their responsibilities when attending to crash scenes.
- The procedural manual should in broad include the following criteria:
  - Pre-arrival at the scene;
  - Post-arrival at the scene;
  - Responsibilities at the scene;
  - Post-responsibilities after recording of the scene.

The researcher recommends that a procedural manual be developed **and** implemented concerning the recording and registering of AR Forms. Because a procedural manual is not cast in stone, the researcher developed the following concept policy for use by the EMPD as a way forward:

**Departmental policy: procedures concerning Accident Report Forms (AR FORMS)** (vide Annexure E).

### **6.3.6 Reporting and registering of road crashes**

The output result of a database is the recording of the data obtained from the AR Form. The text indicated that the Accident Bureau of the EMPD faces numerous challenges to capture the recorded information. It is recommended that:

- The EMPD institute a 24-hour service that is in line with the prescriptions of section 64 of the SAPS Act 68 of 1995 (South Africa, 1995) to ensure that crashes can be reported and registered at any EMPD office.
- All crashes within the Ekurhuleni municipal boundaries be reported and registered at any metropolitan police office within such boundaries.

- Supervisory personnel ensure that AR Forms recorded and registered by EMPD officers be submitted to the Accident Bureau within the predetermined time period.
- The NRTA, Act 93 of 1996 (South Africa, 1996b) be amended to ensure that all crashes within the boundaries of an area, be reported and registered at the nearest SAPS or Metropolitan Police office situated in that area. The current prescription that a crash should be reported closest to the residence of the involved parties, is a major cause of concern, because crashes are not registered or numerous forms are lost in the process of transit to the police office in whose area the crash occurred.

### **6.3.7 Referral of parties involved in crashes to the SAPS**

This research study recommends that law enforcement practitioners who attend to crash scenes do not refer the involved parties to the nearest SAPS, as it is against the prescriptions of the NRTA, Act 93 of 1996 (South Africa, 1996b). Supervisors should keep a close account of such illegal practices and take the necessary steps to prevent any such action.

It is also recommended that once a member of the public is requested to complete the AR Form, that law enforcement practitioners refrain from signing the form as if the completing authority. This is highly irregular and must be abolished with immediate effect. Furthermore, it is recommended that upon the arrival of the practitioner at the scene of the crash, and where the parties are busy exchanging information as prescribed in terms of section 61 of the NRTA, Act 93 of 1996 (South Africa, 1996b), that such parties not be referred to the SAPS. Such action results in duplication because of the drivers reporting the same crash at two different police offices. For parties to obtain the information from the Accident Bureau, predetermined fees are levied and therefore it is recommended that officers encourage the parties to exchange their personal details.

### **6.3.8 Training**

The effectiveness and conduct of law enforcement practitioners are dependent on the efficiency of the training programmes they are subjected to. It is recommended that:

- Administrators meet with the Director of Public Prosecutions to address the issue that prosecutors refuse to acknowledge crash investigators as specialists in their field. This is a serious issue, which is currently undermining the efficiency of the CJS.
- Prosecutors performing traffic-related functions, be subjected to training, especially concerning the essentials of road crashes. This will empower them to improve prosecutorial functions involving road crashes.
- EMPD officers be subjected to available specialist training in their respective fields of expertise.
- Practitioners be subjugated to a compulsory refresher crash attendance and recording training course at least once annually.
- Practitioners be subjected to annual refresher training courses concerning testifying in court.

### **6.3.9 The responsibility of the supervisor**

In terms of the research, it is highly recommended that:

- Supervisors monitor and improve the response times of practitioners to crash scenes to prevent involved drivers being removed from the scene by breakdown drivers or private ambulances prior to any information being recorded.
- Supervisors verify completed AR Forms on a daily basis. In the event where shift supervisors are entrusted with the verification of completed AR Forms, that supervisors perform ad hoc verification checks to confirm accuracy and completeness of completed AR Forms.
- Regional Directors draw samples from the completed AR Forms on a weekly basis to ensure that the required standards are maintained.

### **6.3.10 Post-crash roadworthiness of vehicles**

It is recommended that:

- A strategy be developed to address the discontinuation of the use of crash-damaged motor vehicles according to certain degrees of damage. Such a strategy should include:
  - No damage
    - No discontinuation of the use of the motor vehicle;
  - Slight damage
    - No discontinuation of the use of the motor vehicle ;
  - Multiple damage
    - Discontinuation of the use of the motor vehicle;
  - Serious damage
    - Discontinuation of the use of the motor vehicle;
  - Vehicle removed by breakdown vehicle due to serious damage
    - Discontinuation of the use of the motor vehicle;
- Any motor vehicle written-off by an Insurance Broker, is to be demolished and removed from the Electronic National Administration Traffic Information System (ENATIS).

## **6.4 RECOMMENDATIONS FOR FUTURE RESEARCH**

Emanating from the research conducted, further research is recommended concerning the investigation of traffic crashes. Traffic policing, which includes the prevention of traffic crashes, is the core function of the traffic profession, whilst the prevention of crime is the core function of the SAPS. Although a serious or fatal crash is regarded as a crime scene, it should be borne in mind that the investigation of a traffic crash requires a totally different approach, techniques and skills than an investigation directed at criminal charges. Unlike the SAPS, traffic officers all receive training in crash attendance and recording. Larger metropolitan and traffic departments have well established Crash Investigation units, which have been subjected to an advanced level of crash investigation training.

Research to evaluate the collection of national road crash data and how the data are integrated from local and provincial authorities, with special reference to the SAPS into a national database, will be beneficial to this unacceptable position the country is currently experiencing.

The whole aspect concerning testimony in criminal cases involving road crashes, needs further research. It is unclear why prosecutors refuse to prosecute dockets involving crashes based on declared expert witnesses. It is also unclear why law enforcement practitioners fear the legal system (courts) and the reasons why they (law enforcement practitioners) refuse to testify in such cases.

## **6.5 CONCLUSION**

The researcher followed a mixed-methods approach and through triangulation produced more complete and well-validated conclusions (Delpont & Fouché, 2012:442). In answering the research objectives, a multi-dimensional approach was followed; a quantitative information schedule was used as data-collection method through which secondary data in the form of AR Forms were studied. The qualitative method saw the researcher using different interview techniques to interact with numerous role players in the field under study.

The researcher sought answers to the questions highlighted at the start of this research study about the significance of road crash data within the criminal justice context. Questions were asked primarily to investigate the aspects surrounding road crashes, the impact of data on the system and the contribution of law enforcement practitioners towards the quest for road safety. The researcher is confident that the study answered all the posed objectives and questions.

This study reflected the consequences of road crashes and their effects on both the international and national markets. Intervention from role players in all spheres of government and the private sector is not only important, it is necessary. Road crash data form the backbone of statistical information, which is an essential component in the pursuit of improved road safety intervention programmes. Road safety

management is not negotiable; road traffic administrators have a constitutional mandate to secure and provide a healthy environment for citizens to function in.

Centre to the statistical information is the law enforcement practitioner, who is responsible for the accurate and complete recording of information when attending to crash scenes. The research reflects that practitioners have adopted a lackadaisical approach toward crash attendance and recording. Uninvolved and incompetent supervisors aggravate the problem. Comments such as “I am too busy”, or “my private car needs a battery”, or “I am not interested”, or “my private activities currently are taken up all my time” heard during the data-gathering phase, are but examples of the disinterest of supervisors to address the current state of affairs.

The data recorded from crash scenes are in such a poor state that administrators are in no position to develop and implement proper intervention programmes based on scientific information. The diminishing picture of road safety in South Africa is summarised by Dembovsky (in Joseph, 2013:4) stating that: “The sad fact is that South Africa is thrashing around in the dark and formulating strategies based on next to no scientific data and that is exactly why no progress is being made in reducing road fatalities in this country...I am of the firm conviction that we are going backwards when it comes to road safety in South Africa.” One of the participants stated that “the information that is recorded on the forms are of a bad quality not portraying the correct picture as to what the true state of affairs concerning traffic crashes are”.

What the research study did reveal, is that intervention from administrators is non-negotiable and that the level of performance is in dire need of improvement. Law enforcement practitioners perform according to the level of supervision they are subjected to.

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## ANNEXURES

### ANNEXURE A: APPROVAL FROM ACTING COP I MAPIYEYE

**Andre Roets (Lyceum)**

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**From:** Liezel Tyers <Liezel.Tyers@ekurhuleni.gov.za>  
**Sent:** 11 September 2013 02:47 PM  
**To:** Andre Roets (Lyceum)  
**Subject:** FW: Documents  
**Attachments:** Letter of consent\_COP.pdf; Letter\_field work 20130819.pdf

Good Day Sir,

With regards to the attachments

Your application has been approved, please liaise with

- C/Supt Mkhwanazi [ Head: Accident Unit] @ 079 843 7814
- Supt H. Roets (Regional commander: Accident Unit)Elsburg/Germiston@ 083 509 7709

Kind regards

*Isaac Mapiyeye*  
**Acting Chief of Police**  
EMPD HQ



Telephone : +27 (0) 11 999 0186/2009  
Facsimile : +27 (0) 86 628 2904  
E-mail : [isaac.mapiyeye@ekurhuleni.gov.za](mailto:isaac.mapiyeye@ekurhuleni.gov.za)  
Website : [www.ekurhuleni.com](http://www.ekurhuleni.com)  
Postal : P.O. Box 415  
Germiston  
1400  
Physical : 03 Hawley Road  
Bedfordview

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**From:** Andre Roets (Lyceum) [mailto:[Andre.Roets@lyceum.co.za](mailto:Andre.Roets@lyceum.co.za)]  
**Sent:** Wednesday, September 11, 2013 2:37 PM  
**To:** Liezel Tyers  
**Subject:** Documents

Hi Liezel,

Attached please find the requested documentation.

Regards

*Andre Roets*  
*Head of School*

## **ANNEXURE B: THE INFORMED CONSENT FORM AGREED UPON TO PARTICIPATE IN THE RESEARCH**

**Informed Consent Form agreed upon to participate in the research, titled “An assessment of the criminological significance of road crash data within the criminal justice context”.**

Dear research participant

I thank you for participating in this research study. To ensure and maintain ethical standards throughout this study, it is imperative to obtain informed consent from you, the research respondent, and prior to the commencement of this research initiative.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have any questions later, you can ask them of me.

Informed consent for the purpose of this focus group interview entails the following:

### **1. Purpose**

I am André Roets and I am conducting research for the fulfilment of a Master's Degree in Criminology at the University of South Africa (Unisa). I am doing research on road traffic crashes, which is a common phenomenon in this country. The purpose of the research study is to assess the criminological significance of motor vehicle crashes within the criminal justice context.

### **2. Research intervention**

This research will involve your participation in a group discussion. In theory, a group discussion is termed a focus group interview. This group discussion will last for approximately 45 minutes to one hour and performed only once.

### **3. Participant selection**

You have been selected to participate in this research because I feel that your experience as a metropolitan police officer in a supervisory capacity will contribute much to my understanding and knowledge of road traffic crashes.

### **4. Procedures**

You will take part in a discussion with your colleagues with similar experience. I will guide this discussion. This discussion takes place at the regional head office of the southern region of the EMPD, situated in Vosloorus, Ekurhuleni. No one else but you, the respondent, who takes part in this discussion and myself, will be present during this discussion.

The entire interview will be tape-recorded, but no one is to be identified by name during the recording. The discussion is confidential and your name will not be written on anything or used in the final report. Only my supervisor, Prof. J. Prinsloo and I have

access to your responses and tape recordings. The tape recordings, notes and dictations will be stored for archiving purposes only. All recordings will be destroyed in accordance with Unisa's mandatory storage period, which is usually after the final approval of the submitted dissertation.

## **5. Risks**

There are no direct risks in participating in this study.

## **6. Benefits**

There will be no direct benefit to you, for your participation is likely to assist the researcher in clarifying uncertainties in respect of processes and procedures concerning road traffic crashes and the utilisation of crash data.

Indirectly, the community at large will benefit as well as the EMPD due to possible improvements in the system.

## **7. Voluntary participation**

Participation is voluntary based and you may withdraw from the study at any point by informing me that you no longer wish to participate. As participation is voluntary, your withdrawal from the discussion will have no negative consequences for you, the respondent.

## **8. Confidentiality**

As already stated in paragraph 4, all information is confidential and only those involved in the research study will have access to it. Any reference and/or information applicable to you as respondent emanating from this interview will have a number and not your name.

## **9. Sharing the results**

Results from the information gathered in this research will be documented in the form of a thesis and published so that other interested people may learn from the research.

## **10. Who to contact**

If you have any questions, you can ask them now or later. If you wish to ask them later, you may contact me at 083-785-2238 or [aroets@gmail.com](mailto:aroets@gmail.com). You may also contact my supervisor, Prof. Johan Prinsloo ([prinsih@unisa.co.za](mailto:prinsih@unisa.co.za) or 012-429-6003 / 6574) in this regard.

## **11. Ethics**

Please note that the Ethics Committee of the University of South Africa, that must ensure that all participants are protected from harm, has approved this research project.

**Certificate of Consent**

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Name of Participant : \_\_\_\_\_

Signature of Participant : \_\_\_\_\_

Date signed : \_\_\_\_\_ / \_\_\_\_\_ / 20\_\_\_\_\_

I have accurately read out the information to the potential participant. I confirm that the participant was given an opportunity to ask questions about the study, and all questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into given consent, and the consent has been given freely and voluntarily.

Andre Roets : \_\_\_\_\_

Date : \_\_\_\_\_ / \_\_\_\_\_ / 20\_\_\_\_\_

**PARTICIPANT NUMBER**

## ANNEXURE C: PERMISSION TO USE IMAGE

**From:** [Andre Roets](#)  
**Sent:** Monday, May 06, 2013 11:27 PM  
**To:** [info@sleeping-out.co.za](mailto:info@sleeping-out.co.za)  
**Subject:** Information

Good evening,

My name is Andre Roets, a master's student at the University of South Africa (UNISA). I am currently doing a dissertation on traffic crashes and through a search of the World Wide Web, I've found an image of the map of Ekurhuleni Metropolitan Municipality (<http://www.sleeping-out.co.za/Ekurhuleni-Map.asp>) that forms part of my study.

I hereby request your permission to use the mentioned image for inclusion in my study. Please note that due reference to such image will be cited accordingly.

Regards

*Andre Roets*  
**083-785-2238 (Cell)**  
**086-535-5238 (Fax to E-mail)**  
[aroets@gmail.com](mailto:aroets@gmail.com)

Hi Andre

Yes, you may use this image.

Best regards

Ken Nelson  
[Ken@dining-out.co.za](mailto:Ken@dining-out.co.za)  
Tel +27 21 7851606  
Cell +27 83 338 7511  
<http://www.sleeping-out.co.za>  
<http://www.dining-out.co.za>

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**ANNEXURE D: APPROVAL TO USE MATERIAL**

**From:** Jean-Paul Rodrigue [<mailto:Jean-paul.Rodrigue@Hofstra.edu>]  
**Sent:** 27 October 2012 06:44 PM  
**To:** Andre Roets  
**Subject:** RE: Permission requested for use of material

Greetings:

Please feel free to use the material as long as it is properly cited and used only for an unpublished dissertation.

Sincerely,  
Jean-Paul Rodrigue

	<p><b>Jean-Paul Rodrigue, Ph.D.</b> <i>Professor</i> Dept. of Global Studies &amp; Geography Hofstra University, New York, USA 11549 Tel: 516 463-5765 Fax: 516 463-6968 <a href="http://people.hofstra.edu/faculty/Jean-paul_Rodrigue/">http://people.hofstra.edu/faculty/Jean-paul_Rodrigue/</a></p> <p><a href="#">The Geography of Transport Systems, 2nd Edition</a> <a href="http://PortEconomics.eu">PortEconomics.eu</a></p>
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**From:** Andre Roets [<mailto:aroets@gmail.com>]  
**Sent:** Saturday, October 27, 2012 9:38 AM  
**To:** Jean-Paul Rodrigue  
**Subject:** Permission requested for use of material

Afternoon Dr Rodrigue,

My name is Andre Roets, a master's student at the University of South Africa (UNISA). I am currently doing a dissertation on traffic crashes and through a search of the world wide web I've found interesting material that forms an important part of my study with regards to the definition of a road. The material is from a book – The Geography of Transport Systems – authored by Dr Slack and yourself. I've found some interesting information and graphics with regards to the history of roads and railway systems, which I would like to incorporate in my study.

I hereby request your permission to use the material and graphics. Please note that due reference to all material and graphics used will be cited accordingly.

Regards  
**Andre Roets**  
**083-785-2238 (Cell)**  
**086-535-5238 (Fax to E-mail)**

**ANNEXURE E: DEPARTMENTAL POLICY: PROCEDURES CONCERNING  
ACCIDENT REPORT FORMS (AR FORMS)**

**DEPARTMENTAL POLICY: PROCEDURES CONCERNING ACCIDENT REPORT  
FORMS (AR FORMS)**

**1. INTRODUCTION**

The timeous registering and submission of AR Forms to the Accident Bureau is problematic and requires urgent intervention from Regional Commanders. Any undue delays are not only a cause of concern, but also induce frustration, especially for external organisations and role players. In improving the system, the following guidelines shall be followed:

- (i) Every weekday during the change of shifts, the completed AR Forms shall be handed to the relevant shift supervisors.
- (ii) The shift supervisors are responsible to verify the completed AR Forms for correctness and to sign the form in the space provided.
  - a. In the event of an incomplete AR Form, the concerned officer shall immediately be requested to rectify the form on the same day he/she received notification thereof.
- (iii) In the event where officers overlooked the institution of at-scene prosecutions, shift supervisors must endeavour to identify the party responsible for the crash from the information recorded on the AR Form. The supervisor of the Accident Bureau must be informed thereof, who will then arrange for an administrative prosecution through a section 54 summons.
- (iv) Regional Commanders shall weekly draw a sample of the completed AR Forms for perusal to determine accuracy and completeness. Each form verified shall be countersigned with the shift supervisor.
- (v) Every officer shall ensure that the AR Form is properly completed, prior to the commencement of his or her next shift.
- (vi) Officers scheduled for leave on the day following the recording of the AR Form, shall ensure that the completed document is handed to the relevant shift supervisor upon completion of the shift.

## **2. RECORDING OF INFORMATION AT THE SCENE OF THE CRASH**

- (i) Every EMPD officer shall be in possession of the departmentally approved Crash Recording Book (CRB).
- (ii) Every EMPD officer dispatched to, or arriving at the scene of a crash, shall be responsible to record the particulars thereof in as much detail as possible in the departmentally approved CRB.
  - a. The details of every witness shall be recorded in the CRB.
  - b. Statements from each witness shall be obtained within the confines of relevant legislation.
  - c. The parties involved in the crash must be encouraged to exchange personal information, as a charge will be levied to obtain the AR Form.
  - d. It must be emphasised that the Accident Bureau will provide the AR-Number, the MAS-Number or the OB-Number if requested, free of charge over the telephone.
  - e. Officers must refrain from comments such as “who was responsible for the crash”, as this not only constitutes unprofessional behaviour and damage to the image of the EMPD, but also civil liability. The approved departmental media policy should always be borne in mind.
- (iii) Upon completion at the scene of the crash, the concerned officer shall without delay pass along the particulars, including the specific number of the Crash Recording Book, to the relevant Communication Centre who will record the details in the Occurrence Book (OB). The officer shall record the OB-Number provided by the Communication Centre, both on the AR Form and in the CRB.
- (iv) Every officer shall ensure that at the end of his/her shift; the completed AR Form is handed to the relevant shift supervisor. The shift supervisor shall record the relevant details, including the OB-Number, in a register implemented by the shift supervisor for this specific reason.
- (v) Every member who submits a completed AR Form to his/her supervisor shall have his/her CRB signed by the relevant shift supervisor as acknowledgement of receipt thereof.

- (vi) The shift supervisor shall at the commencement of his/her next shift, hand the CRB including the verified AR Forms to a dedicated official in the Accident Bureau who will sign the register in acknowledgement of receipt of the AR Forms.
- (vii) No delay concerning the late submission of AR Forms shall be tolerated, for each delay results in someone being inconvenienced.

### **3. COMPLETION OF THE AR FORM**

- (i) The recording officer must complete all relevant sections legibly and in detail.
- (ii) Both residential and business addresses shall be recorded as complete as possible.
  - a. Only a physical address shall be recorded, and not a postal address.
- (iii) Officers should endeavour to request the registration details (Code 74) of the vehicles involved, to ascertain ownership and roadworthy status of the vehicle/s. This will also assist in confirming either the residential or the business address of the owner.
- (iv) Special attention should be given in the following instances:
  - a. Location.
  - b. Speed limit.
  - c. Road type.
  - d. Junction type (in the event of a freeway, mark criterion 7 – not a junction).
  - e. Seatbelts.
  - f. Liquor/drugs suspected.
  - g. Liquor/drugs tested.
  - h. Breakdown company.
  - i. Special observations.
  - j. Particulars of prosecution/s instituted.
  - k. Discontinue use of vehicle.
- (v) The mentioned areas were identified as problem areas, which are normally not completed.
- (vi) Officers shall provide a brief but detailed description of the crash.

- (vii) In the event of injuries, officers shall confirm the degree of injury severity with the paramedic on scene. The details of the paramedic must also be recorded in the CRB and on the AR Form. This is imperative, especially for future reference when the degree of seriousness is doubted.
- (viii) Officers shall complete the “Completed by” section and sign the form.
- (ix) Officers shall refrain from signing the AR Form as the completing official where a member of the public has completed the document.

#### **4. THE COMPLETION OF DOCKETS**

- (i) A docket shall be opened in the following instances:
  - a. Crashes involving fatal injuries.
  - b. Crashes involving serious injuries.
  - c. Crashes involving serious damage to vehicles and/or property.
  - d. Crashes involving driving under the influence/drugs.
  - e. Crashes involving reckless or negligent driving.
  - f. Crashes involving state vehicles.
  - g. Crashes involving any other circumstances, which require a docket to be registered.
- (ii) The same procedure is to be followed as explained in paragraphs 1-3.
- (iii) The docket will be registered at the nearest SAPS office without any delay.
- (iv) The relevant CAS-Number as well as CRB and Accident Register number shall be communicated to the Communication Centre.
- (v) The completed docket shall remain at the relevant SAPS office.
  - a. Should the SAPS office not be in a position to provide a copy of the completed AR Form, the officer shall submit the completed AR Form to his/her shift supervisor, who is responsible to submit the AR Form to the Accident Bureau without any delay. A member of the Accident Bureau will then submit the AR Form to the relevant SAPS office.
  - b. When an officer follows the steps in paragraph (a) above, he/she must record it accordingly in the Investigation Diary.
  - c. The following information should be recorded in the investigation diary:
    - i. The SAPS office.
    - ii. Time, date and place of the crash.

- iii. The Crime Administration System (CAS) number.
- iv. The Accident Register Number allocated by the SAPS.
- v. The relevant OB-Number obtained from the EMPD communication centre.
- vi. Any additional relevant information.

## **5. COUNCIL OWNED VEHICLES**

- (i) In the event where an EMPD vehicle is involved in a crash (Code 55), irrespective the severity, the following procedure will be followed:
  - a. The relevant Regional Commander shall attend the scene of the crash.
  - b. The same procedure shall be followed as stipulated in the above-mentioned paragraphs.
  - c. The Precinct Commander shall complete all prescribed council documentation in detail.
  - d. The crash shall be investigated by a council crash investigator.
  - e. In the event of any other council owned vehicle that was involved in a crash, the same procedure in paragraphs a-d will be followed. The relevant supervisor from the concerned department will then attend to the scene and not the Regional Commander.

## **6. NON-COMPLIANCE**

- (i) Any deviance from, or non-compliance with this policy will result in disciplinary action against the offending officer in terms of prescribed council or approved departmental policies or procedures, whichever the most appropriate for the circumstances.