

**A SOCIAL COGNITIVE INVESTIGATION OF DRINKING AND
DRIVING AMONG YOUNG MALES IN PIETERMARITZBURG**

by

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Declaration

I, Sibonelo Shozi, hereby declare that this dissertation is my own, unaided work and that all sources used or quoted are acknowledged by means of complete references. It was conducted under the supervision of Mark Rieker. It has not been submitted before for any degree or examination in any other university.

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Abstract

Responding to a body of literature that identifies road crashes caused by drinking and driving as a serious social and economic issue in South Africa, this research aims to investigate behaviour and beliefs relating to drinking and driving among young males in the Pietermaritzburg area of KwaZulu-Natal, South Africa. This sampling criterion emanates from the identification of this group as an at-risk demographic for alcohol-related road accidents and fatalities.

Underpinned by Albert Bandura's Social-Cognitive Theory, which explores the reciprocal relationship between beliefs, behaviour and environment to explain behaviour, the research surveyed 190 young males between the ages of 18 and 35 years that self-identify as drunk drivers. The research focused on determining and describing the constraining and enabling factors contributing to drinking and driving among the group.

The findings explore the high frequency of drinking and driving in the sample which is found to be, to varying degrees, informed by their relationship to their family, peer groups and social context. The research also uncovers a concerning trend of overestimating driving ability when drunk. It further identifies a lack of perceived risk relating to law enforcement.

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List of Abbreviations

BAC	Blood Alcohol Content
BAL	Blood Alcohol Level
BMA	.....	British Medical Association
CDC	.....	Centres for Disease Control
DUI	.....	Driving Under the Influence
EBT	.....	Evidential Breath Testing
GRSP	.....	Global Road Safety Partnership
ITSD	.....	Interrupted Time Series Design
LTL	.....	Lithuanian <i>Litas</i>
MADD	.....	Mothers Against Drunk Driving
NHTSA	.....	National Highway Traffic Safety Administration
NIDA	.....	National Institute on Drug Abuse
NRTA	.....	National Road Traffic Act
SANDOT	South African National Department of Transport
SCT	Social Cognitive Theory
RBT	Random Blood Testing

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Chapter 1: Introduction and Background

1.1 Introduction to topic

Reducing the number of fatal road accidents due to young drunken drivers, a persistently important policy issue in South Africa, has been chronically understudied in the social sciences, in criminology and, to some extent, in academic law. Traffic safety is regarded as a serious problem by the South African national government and the general public, with drunk driving being one of the biggest threats to road safety in the country.

Research indicates that 50% of people who die on South African roads have a blood alcohol concentration above the legal limit of 0.05 grams per 100 millilitres (Arrive Alive, b, n.d.). The South African National Department of Transport estimates that motor vehicle collisions cost the country R13.8 billion per year (SANDOT). Alarmingly, over 50% of these accidents are alcohol related (Hammond, 2004, in Burnard, 2008) and every year about 10 000 people are killed and 15 000 are injured in approximately 500 000 road accidents.

The aim of this chapter is to lay the foundation of the study, by providing reasons for the study; what theory has been employed and the reasons thereof; who the sample is; and an overall look at the research questions that have formed the basis for the direction of the study.

Roads in South Africa provide a mixture of First and Third World traffic conditions. As a result there exist variations in the general population's awareness of road safety hazards and its capacity to cope with the different traffic conditions. In response to the increase in road traffic fatalities, the provincial Department of Transport has initiated road safety campaigns. One such campaign is the KwaZulu-Natal Department of Transport's *Asiphephe* (let us be safe) campaign, which is geared towards the enforcement of traffic rules and the prevention of the overloading of goods vehicles (Global Road Safety Partnership, b, n.d.).

In addition, the Global Road Safety Partnership (GRSP), in association with the South African National Department of Transport, has implemented the *Arrive Alive* campaign, as a preventative measure, to curb drunken driving. The Arrive Alive campaign focuses primarily on punishment as a punitive measure to drunken driving. Currently, if a person is caught driving a motor vehicle over the legal limit in South Africa, he/she faces a fine (maximum R120 000), jail time (maximum six years) or the suspension/permanent cancellation of their driver's license (South African Police Service, 2007: 6).

The National Injury Mortality System states that drunken driving accidents are amongst the major causes of deaths in South Africa (Wanda, 2000). However, despite the magnitude of the problem and constant media coverage, there appears to be little improvement. Levy *et al.* (2002) and Room (2000), warn that although the externalities and consequences of alcohol abuse are important to policy-makers there is little research that meaningfully addresses these issues.

Of all the contexts in which alcohol use results in harm in the community, road traffic injury (RTI) has had the most attention from researchers, public health advocates and policy-makers. This is partly due to the fact that “traffic injuries occur in a regulated public environment, where there is more scope for direct intervention to reduce injury risk, than for example, falls in the home” (Rossow and Hague, 2004, pg 1099). Therefore interventions to improve road safety are generally accepted by the public to be for the protection of innocent road users.

It is not surprising that alcohol use has been a focus of attention in attempts to reduce RTI for many decades, given the evidence of its major contribution to injuries. Debate continues concerning regulations such as the legal blood alcohol driving limit or most effective approach for repeat drunken driving offenders. As will be demonstrated in later chapters, the research base is expanding to inform better policy.

Drinking and driving is the primary focus of the study. This research project investigates some of the reasons why people drink and drive, despite the apparent danger of this risky behaviour. A social cognitive theory (SCT) developed by social psychologist, Albert

Bandura, will be presented and used as a theoretical and analytical framework. The SCT defines human behaviour as a triadic, dynamic and reciprocal interaction of personal factors, behaviour and the environment (cf. Bandura, 1986; 1989). According to this theory, an individual's behaviour is determined by the interaction of these three factors. The theory complements the sociological nature of the study because of its evaluation of environmental factors in understanding the motivation of behaviour. The following section gives justification for undertaking the study; a brief synopsis of the theory that is adopted and an evaluation of the research questions that the study is trying to answer.

1.2 Rationale and Purpose of Study

Lack of traffic safety in South Africa is regarded as a serious problem by the national government and the general public. The Global Road Safety Partnership (GRSP, b, n.d.) records that the cost of crashes in 2005 was estimated at R15.3 billion. In addition to this, according to statistics presented by the National Department of Transport (SANDOT, n.d.), in the period between December 2005 and 2006, the number of fatal crashes increased by 6.12% and the number of road traffic related fatalities increased by 8.9% (National Department of Transport). Of these fatalities, the number of driver fatalities increased by 15.49%, passenger fatalities increased by 18.20% and pedestrian fatalities increased by 2.26% (SANDOT, n.d.). Rieker (2005) points out that South Africa fares comparatively poorly in international comparison. Authorities conservatively recorded a death rate of 11.7 per 100 million kilometres driven in 1998. This exceeds the rate for the United States of America by a factor of ten (ibid).

The phenomenon of alcohol-related problems is at present an area of special concern in most Western, as well as many Eastern countries because of a general increase in the incidence and range of these problems and, consequently, an increase in the impairing effects of these problems on not only individuals but also on the wider socio-structural context within which they occur (Roch-Silva, 1987).

The government of KwaZulu-Natal has pledged itself to a long-term commitment to road safety in the province and aims to reduce the death and crash toll in the province. The Asiphephe project is the initiative of the Provincial government and currently works closely with the national Arrive Alive campaign and road safety projects in other provinces to ensure a cohesive national approach to road safety and crash reduction.

This study focuses on drinking and driving among young males. Burnard (2008) found that almost three times more men than women die in transport-related accidents, with male drivers accounting for 80.6% of collisions in South Africa in 1998. In 1999 the ratio between male and female driver deaths was 8 to 1, highlighting the vast difference in transport-related fatalities between men and women (Buchard, 2000: 27).

In Britain, in the year 2003, the majority of drivers (85%) who were caught driving under the influence of alcohol were male and half of them were aged between 17 and 30 years (Drive and Stay Alive, 2004:1). In addition, Wilsnack (2003), in his meta-analyses of international longitudinal surveys has found that, uniformly across cultures, men drink more alcohol than women. Males between the ages of 17 and 29 years were twice as likely to have reported at least one accident when compared to males older than 50 years. Furthermore, the above trend appears to be apparent in almost every country and it is highlighted in a World Health Organization publication, which summarizes data from 70 countries and shows that many more males under the age of 25 die in motor-vehicle accidents compared to females in the same age group (Jernigan, 2001).

According to the Global Road Safety Partnership (2007), the primary contributory factors in fatal crashes or factors that impact on the seriousness of injuries include excessive speed, the non-wearing of seatbelts and drinking and driving.

The project responds to the increase in road accidents due to drinking and driving, despite the implementation of several intervention campaigns such as Arrive Alive, The Road to Safety 2001-2005 and the promulgation of the Road Traffic Management Corporation.

This research project investigates the reasons why people negate responsibility on the roads by driving under the influence of alcohol. Despite the problem, there is a relative paucity of research that has been conducted pertaining to this subject, more especially in the Pietermaritzburg area.

1.2.1 Research Questions

The focus of the study is guided by the following research questions:

1. What is the frequency and nature of drinking driving amongst young men?
2. What are the beliefs and norms that are held by young men who drink and drive?
3. What is the nature and role of the social context in enabling or constraining drinking and driving among young men?
4. What are the perceptions and roles of enforcement activity and road safety interventions in the behaviour and decision-making processes among young males?

Chapter 1 has provided a rationale and outline of the research problem and has delineated the focus and guiding questions of the study.

Chapter 2: Literature Review

2.1 Introduction

Road safety issues, particularly those that deal with drinking and driving amount to a diverse plethora of problems. Newspaper and other popular media are inundated with drunken-driving related fatal road accidents that claim millions of lives annually.

Caswell and Corner (2009) found that more than 40% of alcohol-related crash injuries are suffered by people who are not under the influence of alcohol. While the rate of road traffic injuries and the involvement of alcohol significantly peaks amongst young adults, so too does the proportion of all road traffic crash injuries that are due to other people's drinking, reaching one in five in the 15–19-year age group (ibid). The authors assert that most innocent victims are car passengers and this includes children who are injured by drunken driving. Though the behaviour of drunken driving is receiving attention from national transport departments and health organizations, much empirical research is still lacking especially that which is intervention-orientated in nature. The purpose of this chapter is to review literature pertinent to the topic. Journal articles and studies that assess risky behaviour using the Social Cognitive Theory will be reviewed.

2.2 Drinking and Traffic Accidents

The safety of drivers relies heavily on appropriate human performance and is thus highly sensitive to alcohol-related impairment of performance (Hartshone, 2000). Ten percent of all people who receive injuries in traffic accidents do so in alcohol-related crashes, according to the National Highway Traffic Safety Administration (NHTSA, 2000). In addition the NHTSA (2000) reports that a motor vehicle crash is considered to be alcohol-related if at least one driver or non-occupant (such as a pedestrian or pedal cyclist) involved in the crash is determined to have had a blood alcohol concentration (BAC) of .01 gram per decilitre (g/dl) or higher. The NHTSA estimate that 7% of all traffic accidents involve alcohol use (ibid). It is estimated that 2.25% of all vehicular crashes involve intoxicated drivers (ibid).

Brewer and Sandow (1980), in a study entitled '*alcohol effects on driver performance under conditions of divided attention*', examined whether or not the correlation between accident involvement and intoxicated drivers could be attributed to errors involving divided attention. They found that one source of driving impairment after ingesting alcohol is reduced ability to allocate cognitive resources to more than one task at a time.

The British Medical Association (BMA, 1963) points out that even having an alcohol-induced hangover may diminish driving ability by as much as 20%, even when the blood alcohol level is 0 mg/dl. Based on a study involving 22 volunteers (six women and sixteen men), it was concluded that a person's ability to carry out complex driving manoeuvres is significantly reduced for at least three hours after the blood alcohol level has reached zero (ibid).

Several studies have shown that the risk of road traffic accidents increases exponentially with the blood alcohol level of the driver and a blood alcohol level as low as 10-40 mg/dl is associated with an increased risk (Hartshone, 2000). It is apparent that impairments (both of a physiological and psychological nature) persist as blood alcohol levels decrease. In practice, this implies that blood alcohol levels will often under-estimate impairments (Delin and Lee, 1992).

There are several studies that link binge drinking to fatal car accidents. Binge drinking is defined by Naimi, Nelson and Brewer (2009) as the consumption of five or more drinks during a drinking occasion. Although binge drinking is strongly associated with alcohol-impaired driving, little is known about the prevalence of, or risk factors for, driving after binge drinking. A study conducted by Naimi, Nelson and Brewer (2009) assessed the prevalence of, and risk factors for, driving during or shortly after a specific binge drinking episode. Data from 14,085 adults from 13 states in 2003 and 14 states in 2004 who reported binge drinking was gathered. The results of this study showed that, overall, 11.9% of binge drinkers drove during, or within, two hours of their most recent binge drinking episode. Those drinking in licenced establishments (bars, clubs and restaurants) accounted for 54.3% of these driving episodes. Significant independent risk factors for driving after binge drinking included male gender; being aged 35–54 or ≥ 55 years,

compared to 18–34 years; and drinking in bars or clubs compared to drinking in the respondent's home (Naimi, Nelson and Brewer, 2009). The study found that drivers who drank most of their alcohol in licenced establishments consumed an average of 8.1 drinks and 25.7% of them consumed ≥ 10 drinks. The conclusion reached was that because binge drinking and subsequent driving were common in establishments licensed to sell alcohol, and because licensing is conditional on responsible beverage service practices (i.e., not selling to intoxicated people), efforts to prevent impaired driving should focus on enforcing responsible beverage service in licenced establishments.

A complementary study was conducted by Nelson, Zimring, Hang, Weitzman and Wechsler (2009). The purpose of this study was to examine drinking levels, related harms and secondhand effects of alcohol use at colleges with high levels of drinking between 1993 and 2005. Students attending 18 colleges with high levels of heavy episodic drinking (50% of students or more) from the 1993 Harvard School of Public Health College Alcohol Study were surveyed in 2005 ($n=4,518$). The authors collected data through mailed and web-based questionnaires and compared it with responses from students at the same schools in 1993, 1997, 1999, and 2001 ($N = 13,254$) using time trend analyses. Overall, levels of alcohol consumption, experience of problems and levels of secondhand effects remained high among students attending heavy drinking colleges. More than four of five students at these schools drank alcohol (range: 85%-88%) and more than half engaged in heavy episodic drinking (range: 53%-58%) (Nelson *et al*, 2009). The few statistically significant changes occurred mainly between 1993 and 1997. A decline in driving after drinking between 1997 and 2005 was observed, but no similar decline was found in two other measures of drinking and driving.

The conclusion of this study was that heavy drinking and associated problems continue unabated, with few exceptions, at colleges that are most in need of intervention: those with high levels of heavy episodic drinking. Therefore, addressing student alcohol use at heavy drinking colleges may require stronger, more consistent and more comprehensive approaches, with increased emphasis on the alcohol environment.

Some studies show that road trauma and alcohol-related crash injuries are also suffered by people who have not themselves been drinking. Casswell and Connor (2009) conducted a study the aim of which was to estimate the burden of road traffic injury due to alcohol consumption by someone other than the injured party. The authors estimated the number and proportion of these traffic deaths and non-fatal traffic injuries and the associated social costs, for a five-year period (2003–2007) in New Zealand.

They found that more than 60% of alcohol-related crash injuries in New Zealand are suffered by people who have not themselves been drinking. While the rate of road traffic injuries and the involvement of alcohol peak amongst young adults, so too does the proportion of all road traffic crash injuries that are due to other people's drinking, reaching one in five in the 15–19-year age group. Most innocent victims are car passengers and this includes almost all children who are injured by drink driving (Fiellin, Reid and O'Connor, 2000). For a large majority of the children injured, the driver affected by alcohol is the driver of their own car. Using official cost figures, alcohol-related injuries to innocent victims cost the country more than half a billion dollars per year. Based only on the three above-mentioned studies, it is clearly apparent that alcohol negatively impairs one's driving ability, sometimes at the expense of other people's lives.

A rising trend that is closely related to alcohol and which also leads to traffic accidents, is that of sensation-seeking, especially amongst young males. Accidents stemming from alcohol-impaired driving are the leading cause of injury and death among college students. Research has implicated certain driver personality characteristics in the majority of these motor vehicle crashes. Sensation-seeking, in particular, has been linked to risky driving, alcohol consumption and driving while intoxicated (Moscowitz, 1989).

Mundt, Balousek, Wilson and Fleming (2009) conducted a study in which sensation-seeking was a factor in young adults who admitted to driving while under the influence of alcohol. The study specifically investigated the effect of sensation-seeking on self-reported, alcohol-impaired driving behaviour in a college student population while adjusting for demographics, residence and drinking locations.

A total of 1587 college students over the age of 18 completed a health screening survey while presenting for routine, non-urgent care at campus health services centres. Student demographics, living situation, most common drinking location, heavy episodic drinking, sensation-seeking disposition and alcohol-impaired driving behaviour were assessed in the study. Using a full-form logistic regression model to isolate sensation-seeking, after adjusting for co-variates, the study found that sensation-seeking remains a statistically significant independent predictor of alcohol-impaired driving behaviour. In addition, older, white, sensation-seeking college students who engage in heavy episodic drinking, live off-campus and go to bars are at highest risk for alcohol-impaired driving behaviours. The study concludes by suggesting that interventions should target sensation seekers and environmental factors that mediate the link between sensation seeking and alcohol-impaired driving behaviours (Mundt, *et al*, 2009).

The rationale for selecting young males as the population for the study has been stated as being that young males are the most vulnerable group to the behaviour of drunken driving. A study by Sun and Longazel (2008) bears this out. The study examined binge drinking, drinking-driving and other negative behaviours among college students. Specifically, this study tested the explanatory power of three criminological theories: self-control, social bonds and routine activities. Data used in this research were collected from a survey of 558 students in a state university.

Findings indicated that college students with low self-control were significantly more likely to engage in binge drinking, drinking-driving and negative behaviours. Students who rarely participated in university-organized events or frequently attended parties, were more likely to have problems of binge drinking, drinking-driving, and negative behaviour (Sun and Lungazel, 2008). Several control variables, such as gender and location of residence, were also predictive of alcohol-related problems among college students. The authors reveal pertinent findings regarding gender, race, age, place of residence and amount of alcohol consumed. Regarding gender, men were identified as heavier drinkers than women and more inclined to engage in subsequent negative behaviour, including drunk driving (Wechsler, Lee, Nelson and Lee, 2003).

Research indicated that gender roles were responsible for these stark contrasts (e.g. Wilsnack, Vogeltanz, Wilsnack and Harris, 2000). Farrow (1990) found that males drive after drinking more often than females, because they were more likely to feel competent in driving under risky circumstances and they tended to use the automobile as a way to enhance their self-efficacy.

Racial differences had also been reported, as white students tended to drink more than their non-white counterparts (Wechsler *et al.*, 2003) and African American students reported fewer negative consequences from drinking than whites (Siebert, Wilke, Delva, Smith, & Howell, 2003). These racial differences in alcohol consumption had also been found in an all-female sample (Madison-Colmore, Ford, Cooke and Ellis, 2003).

Regarding age, differences in both drinking practices and subsequent behaviours are apparent between those older than the legal drinking age and their younger counterparts. Although underage students drank less frequently than those over the legal drinking age (Smeaton, Josiam, & Dietrich, 1998), they were more likely to drink excessively and with abandon (Wechsler & Wuethrich, 2002). This might be the result of motivations for drinking, as underage students were more likely to drink with the hopes of becoming intoxicated (Wechsler, Lee, Nelson and Kuo, 2002). Despite this, findings indicated that the percentage of students who drove drunk was higher for students age twenty-one to twenty-three than it was for students below the legal drinking age (Wechsler, *et al.*, 2002). Such differences are attributed, in part, to underage students being subject to strict drinking and driving laws i.e. zero tolerance laws (Wechsler *et al.*, 2003).

Research had also shown that place of residence was an important indicator for college drinking behaviour. Residence has important implications for drunk driving specifically, as a student's decision to drive home is often affected by the commute. It was reported that the majority of students who did not drive home after drinking did so out of convenience, while those who travelled in a vehicle did so because no feasible alternatives existed (McCormick and Ureda, 1995). Findings also indicated that students

residing off-campus without their parents, compared to students living in single-gender dorms, reported higher levels of drinking and driving (Harford, Wechsler and Muthen, 2002), and dorm students drove drunk less than those living in fraternity and sorority houses (Wechsler *et al.*, 2003).

The amount of alcohol one has consumed plays an important role in determining the extent to which college students partake in driving after drinking, as well as in other negative alcohol-related behaviour. Much of the explained variance in drinking and driving could be attributed to drinking patterns (Gruenewald, Mitchell and Treno, 1996). Total monthly alcohol consumption was found to be a strong predictor of drinking and driving (Berger & Snortum, 1986). In testing the interaction effect between self-control and binge drinking, Gibson *et al.* (2004) found that binge drinking was a more important predictor of alcohol-related behaviour for students possessing low self-control compared to their high self-control counterparts, although it was a significant predictor of negative alcohol-related behaviour for both groups.

2.3 The Way Forward: Preventative Measures towards Drunken Driving

An assessment of deterrence theories in the present context is particularly interesting, as drinking and driving differs from many other crimes, so it presents a unique test of deterrence theories. Kenkel (1993) believes that, unlike many property and most violent crimes, the overwhelming majority of drunk-driving trips go undetected; only a small percentage of impaired driving trips result in an arrest, crash, or fatality that is officially recorded (Kenkel, 1993). Therefore the perception of punishment severity is not as likely to be influenced by particularly egregious, high-profile cases or media attention to specific incidents that create temporary or persistent framing effects (*ibid*). A factor with regards to deterrence attempts for drunken driving is that self-detection of illegal behaviour can be difficult for drinking and driving, because blood alcohol content involves a complex set of factors, including body weight, rate of consumption, time and type of drink consumed and it can be difficult for drinkers to know when they have had

too much to drive (Kenkel and Stephen, 2001). Furthermore, an individual's experience with alcohol and tolerance of its effects, can influence a person's ability to determine the level of impairment.

With regards to studies pertaining to the deterrence of drunken driving, there exist conflicting perspectives as to the efficacy of deterrence efforts. For instance, many studies report that traffic safety improvements are associated with the implementation of deterrent policies (Kenkel, 1993; Neustrom and Norton, 1993; Sloan & Githens, 1994; Wagenaar, Zobeck, Williams and Hingson, 1995). Other analyses, however, indicate that coercive policies have not reduced alcohol-impaired driving (Evans, Neville and Graham, 1991; Meier, 1994, 1999; Ross & Klette, 1995; Whetten-Goldstein, Sloan, Stout and Liang, 2000). Still other studies find that increased deterrence efforts produce initial, but temporary, reductions in impaired driving largely because such efforts increase perceptions of the probability of detection with short-term publicity efforts (Chaloupka, Saffer and Grossman, 1993; Moskowitz, 1989; Ross & Klette, 1995).

There has also been a rising trend in implementing deterrence efforts that are cognitive orientated in nature. In a study entitled, '*A cognitive therapy treatment programme for repeated driving under the influence offenders*', Moore, Harrison, Scott-Young and Ochshorn (2008), describe a cognitive treatment programme aimed at repeat drinking and driving offenders. In the study, 63 participants were court mandated to a four-month outpatient treatment programme. While drug and alcohol use were monitored by the programme, the primary focus was on identifying and correcting cognitive distortions most repeat DUI offenders exhibit to support continuation of their criminal behaviour. Before entering and after completing treatment, participants were administered self-report instruments measuring alcohol problems, readiness to change, self-esteem/efficacy and criminal thinking patterns. Additionally, arrest histories were examined.

The findings suggested that participants were characterized not only by repeated arrests, but elevated blood alcohol content and high levels of self-reported alcohol dependency and problem-drinking behaviour. The majority of clients expressed a readiness to change their drinking and driving behaviour, with 87 percent graduating from the programme. A

DUI recidivism rate of 13 percent was found for graduates of the programme at a 21 month follow-up. The results demonstrated that the cognitive-therapy treatment programme is a valuable tool in the battle to reduce criminal recidivism (Moore *et al.*, 2008).

Alcohol policy evaluation of drinking and driving is another component of preventative measures that is receiving considerable attention. Grohosky, Moore and Ochshorn, (2007), in their study on policy evaluation for drinking and driving, found that there are several gaps in policy, enforcement and treatment that need to be addressed before any substantial progress can be seen in the decrease of drinking and driving offences. To this end, 15 key stakeholders involved in alcohol policy were interviewed about law enforcement, judicial and treatment issues. Several obstacles to reducing DUI crime emerged: inadequate case preparation time, case overload, prosecution challenges such as leniency and inconsistency in sentencing and the need for more collaboration between law enforcement, the judicial system and treatment providers (Grohosky *et al.*, 2007). Suggested recommendations in the study included the addition of a specific DUI court, stricter legal and treatment requirements and mandatory blood testing.

In most countries, laws have been developed that target drunken drivers. The effectiveness of these has come under scrutiny. In South Africa, legislation guiding drinking and driving is found in the National Road Traffic Act (NRTA), Act 93 of 1996, as amended. Specifically, Section 65 deals with driving while under the influence of intoxicating liquor, or drugs having a narcotic effect, or with excessive amount of alcohol in the blood or breath. The basis of law in this regard stems from section 65, which states:

No person shall on a public road:

(a) Drive a vehicle; or

(b) Occupy the driver's seat of a motor vehicle, the engine of which is running, while under the influence of intoxicating liquor or a drug having a narcotic effect.

Lewis (2006) assessed the impact of Pennsylvania's zero-tolerance juvenile drunk driving law. Enacted in Pennsylvania in 1996, the law lowered the Blood Alcohol Concentration (from .10 mg/ml to .02 mg/ml) necessary to charge a juvenile (under age 21) with the offence of drunk driving. The intent of the law, which was enacted nationally, was to lower motor vehicle fatality accident rates involving juveniles who consumed alcohol and then drove. Using interrupted time-series designs (ITS), two outcome measures (PA juvenile drunk driving arrest rates and PA juvenile alcohol-related motor vehicle fatality accident rates) were used to assess the law's impact. Additional ITS designs, as well as informal, semi-structured interviews with law enforcement supervisors and an archival data review (various newspapers published within Pennsylvania) were employed to control for validity threats to the research findings. The data indicated that the law was ineffective in reducing juvenile alcohol-related motor vehicle fatality accident rates. In both Pennsylvania and the control state of Ohio, the data revealed that over a seven-year span after the law was initiated juvenile alcohol-related motor vehicle fatality accident rates increased slightly (statistically insignificant), mirroring the effect of juvenile non-alcohol-related motor vehicle fatality accident rates.

The data further revealed that monthly juvenile drunk driving arrest rates in both Pennsylvania and Ohio significantly increased after the law was enacted, but the perceived increase in certainty and severity of punishment failed to deter juvenile drivers from drinking and driving (Lewis, 2006). A brief policy analysis is offered as to why deterrence theory failed to reduce incidents of juvenile drunk driving, along with policy recommendations about how to reduce juvenile alcohol-related incidents and accidents by taking an educational approach to juvenile alcohol use, instead of a punitive approach.

The impact of state laws on individual behaviour and attitudes receives considerable attention in a study by Durna (2006). Durna's study reiterates the dominant concern that drunk driving is a primary cause of highway traffic accidents causing deaths and injuries, with enormous monetary costs to society and a major concern for the public and elected officials at every level of government. With the effect of Mothers Against Drunk Driving (MADD) and some other citizen activist groups, drunk driving has been conceptualized

as a criminal justice issue in which drunk drivers are seen as irresponsible 'sinful killers', who claim lives of 'innocent' victims. The study asserts that “framing the issue as of 'sin' led to adoption of punitive policy tools to deter undesired behaviour” (Durna, 2006, pg 300). Based on deterrence theory, these policies aim to reduce drinking and driving by imposing certain, swift and severe penalties.

Research findings on the effects of deterrent-based laws are mixed and cannot explain the decline of alcohol-related fatalities over the last two decades. Moving beyond the published literature on this topic, Durna (2006) hypothesized that deterrent-based laws not only have a simple deterrent effect through the threat of punishment, but also have a moralizing and educative effect on individual attitudes and behaviour, which would contribute to explaining the long-term decline in alcohol-related fatalities. Unlike the previous research, Durna uses both aggregate level and individual level data together to test the effectiveness of deterrence laws. Second, not only policy outputs---reduction in fatalities---but also policy outcomes---normative effects of the laws---are evaluated (ibid). Thirdly, the effects of the laws are examined over time and not cross-sectional. Moreover, the impact of MADD on state adoption of drunken driving laws is empirically evaluated for the first time.

The results of Durna’s research provided strong evidence for effectiveness of deterrent-based laws on individual attitudes and behaviour, as well as on alcohol-related fatality rates. The findings also indicate that MADD is an important factor in shaping drunken driving policies in American states. Deterrent-based policies, which increase the certainty of punishment, appear to be more effective than policies aiming to increase punishment severity. Sobriety checkpoints, the most costly policy, seem the most promising policy tool to reduce drinking and driving (Durna, 2006).

2.4 Road Accidents and Costs: The Global Context

Road safety issues, particularly those that deal with drinking, and driving are a problem in all countries. It has been estimated that by 2020, traffic crashes will be the third biggest cause of health and disability in the world (Waller, 2002). Each year the global

figures of people who perish in automobile traffic accidents reach 700 000, next to 15-20 million of the injured ones (Pikunas and Pumputis, 2005). In other words, more than 1100 people are killed in the world every day and more than 40 000 are injured (ibid). To add to the problem, the rapid increase of automobilisation causes an increasing number of problems in the efforts to ensure safe traffic on roads and streets. Ensuring safe traffic and minimizing road accidents is one of the most urgent traffic problems internationally. For instance, in Lithuania about 122 000 road accidents were registered from the year 1982 to 2004, during which 18 216 people were killed and about 130 500 were injured (Lithuanian National Road Safety Programme, Online). In the year 2004, 796 people were killed on Lithuanian roads and streets (ibid). As a result, the annual losses caused by road traffic accidents in Lithuania amount to approximately US\$1.3 billion (Road Safety policy in Lithuania, 2004).

In the United States of America, underage drinking costs an estimated US\$53 billion annually in losses stemming from traffic fatalities, violent crime and other behaviour that threatens the well-being of America's youth (American Research Council, 2003). Alcohol is the drug of choice for American adolescents, with an average age at first use of 13.2 years (Sheehan *et al.*, 1996). In addition, alcohol use progressively increases with age; between 80% and 90% of high school seniors report having experimented with alcohol (Centers for Disease Control and Prevention [CDC], 2004; Hollis, 2002; Nygaard, Waiters, Grube and Keefe, 2003). Binge drinking amongst the youth of America is becoming a national problem and nearly a third admit to binge drinking (10 or more drinks on one occasion) (Centers for Disease Control and Prevention (CDC), 2001).

Motor vehicle-related crashes in the United States are the leading cause of death for persons 15 to 20 years of age (Dougherty, 2004). Salazar *et al* (2006) reported that in 2003, 3 608 drivers between the ages of 15 and 20 were killed and an additional 337 000 were injured in motor vehicle crashes. Approximately 25% of drivers between the ages of 16 and 19 who are killed in crashes are legally intoxicated (Insurance Institute for Highway Safety, 2002). Driving after drinking or riding with a drinking driver is particularly common among high school students, but participation in this risky behaviour has decreased by less than 10% since 1991 (CDC, 2002; Werch *et al*, 2003). In

2001, 13% percent of high school students reported driving a vehicle one or more times while drinking alcohol and 31 % reported riding with someone who had been drinking (CDC, 2002). Although adults are more likely than teens to drive after drinking, teens are much more likely to be involved in a crash when combining drinking and driving (Insurance Institute for Highway Safety, 2002). The increased risk for teens begins with even low levels of alcohol consumption and may result from the combination of alcohol-impaired judgment and driver inexperience. For instance, female teen drivers with blood alcohol levels between 0.05% and 0.08% were found to be seven times more likely to be involved in a crash than sober teen drivers; male teen drivers are 17 times more likely to be involved, under the same BAL (Insurance Institute for Highway Safety, 2002).

2.4.1 Background

The National Highway Traffic Safety Administration's (NHTSA) mission is to save lives, prevent injuries and reduce traffic-related health care and other economic costs. The goal was to meet the U.S. Secretary of Transportation's objective of reducing alcohol-related fatalities to 11,000 by the year 2005. Slight changes in the survey design and methodology in 1999 limit direct comparisons in some areas to the data collected during previous administrations.

In order to plan and evaluate programmes intended to reduce alcohol-impaired driving, NHTSA needs to periodically update its knowledge and understanding of the public's attitudes and behaviour with respect to drinking and driving. In 1991 NHTSA began measuring the driving age public's attitudes and behaviours regarding drinking and driving. This study represents the fifth of these biennial surveys designed to track the effectiveness of current programmes and to identify areas in need of attention. Telephone interviews were conducted with a nationally representative sample of 5,733 persons of driving age (age 16 or older) in the United States, between 12 October and 12 December 1999 (NHTSA, 2000). Findings from the survey conducted by the NHTSA are presented below.

2.4.2 Drinking and Driving Behaviour in the United States

About 21% of the driving-age public had driven a motor vehicle within two hours of consuming alcoholic beverages in the past year. These persons are referred to as drinker-drivers throughout this report. Males are more than twice as likely to have driven within two hours of drinking as are females (31% compared to 13%). Adults aged 21 to 45 are the most likely to be drinker-drivers, with 37% of males and 18% of females driving within two hours of alcohol consumption. On average, drinker-drivers consume 2.7 drinks prior to driving; drinker-drivers under the age of 21 consume an average of 6.3 drinks prior to driving.

According to the NHTSA, drinker-drivers made between an estimated 840 million and 1.1 billion driving trips within two hours of consuming alcohol in the year 1998. Those aged between 21 to 29 make a disproportionately high number of drinking-driving trips (21% of trips, while they are 16% of the driving age population).

Drinker-drivers operate a motor vehicle with an average blood alcohol concentration (BAC) of .03%, which is below the legal limit for those age 21 or older; however, about 5% of drinker-drivers are estimated to have a BAC of .08% or higher. While those aged between 16 and 20 make only about 1% of all drinking-driving trips, they do so at a BAC level three times that of legal age drinkers; around .10 BAC.

In one year, about one in ten (11%) persons age 16 or older has ridden with a driver they thought might have consumed too much alcohol to drive safely. This number rises to about two in ten among those aged 21 to 29 and to one in four among those aged 16 to 20 (23%). Of those who rode with unsafe persons, four in ten riders decided that their drivers were unsafe before they rode in the vehicle, but still rode with them.

2.4.3 Attitudes about Drinking and Driving

The driving age public sees drinking and driving as a serious problem that needs to be dealt with. Virtually all (97%) see drinking and driving by others as a threat to their own personal safety and that of their family and nearly three-quarters (73%) feel reducing drinking and driving is extremely important in terms of where tax dollars should be spent.

Large proportions of the ages 16 and older are supportive of zero tolerance for drinking and driving. Nearly seven in ten (68%) agree that people should not be allowed to drive if they have had any alcohol at all. Non drinker-drivers (76%) are more supportive of this belief than are drinker-drivers (33%).

A majority (63%) of persons of driving age believes that they, themselves, should not drive after consuming more than two alcoholic beverages. In contrast, male drinker-drivers under the age of 30 feel that they can safely drive after consuming about four drinks within two hours. An average 170-pound male would still be below the legal limit (either .08 or .10) after four drinks.

2.4.4 Prevention and Intervention of Drunken Driving

Half of drivers 16 or older who consume alcoholic beverages report at least one occasion where they refrained from driving when they thought their judgement may have been impaired. Most of these persons rode with another driver instead. Virtually all (98%) of those 16 and older feel that they should prevent someone they know from driving if their judgement is impaired (Jacombs, 1989). Thirty-two percent (32%) of persons of driving age have been with a friend who may have had too much to drink to drive safely. Most of these (82%) tried to stop the friend from driving. Intervention was successful about 80% of the time (ibid.)

Jacombs (1989) reveals that three in 10 (31%) of those 16 years or older have ridden with a designated driver in the past year, with those under age 30 most likely to have done so. Four in 10 drivers have acted as a designated driver in the past year. Designated drivers were reported to have consumed less than one-half of one alcoholic drink, on average, prior to driving. In this report zero tolerance refers to no driving after drinking by anyone, of any age. All states have zero tolerance laws which refer specifically to drivers under 21.

2.4.5 Enforcement

About 1% of the driving age public reported being arrested for impaired driving in the past two years. Males under age 30 were most likely to have been arrested (NHTSA,

2000). This, Jacombs (1989) explains, is consistent with the higher average calculated BAC levels of young drinker-drivers. In addition, Six of 10 (60%) believe that a conviction is very likely or certain if they were arrested for a drinking-driving violation, while one in seven (15%) feel that a conviction would be unlikely (ibid).

The driving age public generally feels that an impaired driver is more likely to have a crash than to be stopped by police. On average, the public feels that about 43% will be involved in a crash, while the police will stop about 33%. About 64% feel that current drinking and driving laws and penalties are effective at reducing drinking and driving. Yet, three of four (75%) persons aged 16 or older feel that drinking driving penalties should be more severe.

One in three (34%) persons of driving-age have seen a sobriety checkpoint in the past year. About 19% have been through such a checkpoint themselves. A majority (64%) feel that sobriety checkpoints should be used more frequently.

2.5 The Role of Social Influences in Drunken Driving

The social environment plays an important role in shaping underage drinking. The drinking behaviour of teens is influenced by friends who drink; liberal attitudes of parents toward drinking; and alcohol advertising (Grube and Wallack, 1994). Most high school students (71%) report that alcohol is easy to obtain, primarily from friends and at parties, and that drinking is common among their peers (Liu, 2002). Bandura (1995) firmly believed that the environment was a crucial component in shaping and regulating human behaviour. With regards to the social environment influencing and determining human behaviour, Bandura says, “human expectations, beliefs, and cognitive competencies are developed and modified by social influences and physical structures within the environment. These social influences can convey information and activate emotional reactions through such factors as modelling, instruction, and social persuasion” (Bandura, 1995, pg: 201).

Compounding the risk of the social ease and acceptability of alcohol use among teens, is their perception that events such as car crashes will not happen to them; this perception is

fuelled by their 'inflated confidence' in their ability to drive skillfully (Nygaard, Waiters, Grube and Keefe, 2003). This 'inflated confidence' forms part of what Bandura calls self efficacy beliefs: "people's judgments of their capabilities to organize and execute courses of action required for attaining designated types of performances" (Bandura, 1997, p.391). In other words, people have an inclination to engage in behaviour which they think and believe they will execute successfully.

This same study indicates that adolescents were well informed about zero tolerance and blood alcohol concentration laws but at the same time doubted that they would be stopped or ticketed by police. Once again this line of rationalization is in accordance with Bandura's key contention regarding the role of self-efficacy beliefs in human functioning, that "people's level of motivation, affective states, and actions are based more on what they believe than on what is objectively true" (Bandura, 1997, pg 2). Adolescents reported strong reluctance to confront a peer about alcohol-impaired driving (Nygaard *et al.*, 2003). Interventions designed to reduce underage drinking and alcohol-impaired driving must effectively address such interpersonal, intrapersonal and environmental influences.

2.6 Drunken Driving in the Netherlands and Great Britain

In the Netherlands, as a response to the increase in road traffic accidents, the two following approaches were implemented to combat the increase of drunken driving related accidents and fatalities. The first was an introduction of a statutory Blood Alcohol Concentration (BAC) limit. In the early 1970s, the Netherlands had not yet imposed a legal limit on the alcohol consumption of drivers, which was at a very high level at the time (Mathijssen, 2005). National roadside surveys preceding the introduction of the legal limit (1970–1974) showed that an average of 15% of the drivers surveyed had a BAC > 0.5 g/l (Bartl and Esberger, 2000). On 1 November 1974, a statutory BAC-limit of 0.5 g/l came into effect. The police were given chemical test tubes for detecting suspected offenders and, if found positive, a blood test was conducted for evidential purposes. The introduction of a legal limit in the Netherlands was relatively late, but the legal limit was lower when compared to other developed countries. In most of these

countries, the legal BAC-threshold was set at 0.8 or even 1.0 g/l. The reason for setting the relatively low limit in the Netherlands was that it was not based on epidemiological research on the relative accident risk of drink driving but on experimental research on the dose-related effects of alcohol consumption on driving skills and performance (Levine, 1973; Borkenstein *et al.*, 1974).

The short-term effect of the introduction of the BAC law was huge: shortly after the introduction, only 1% of motorists exceeded the legal limit, but by 1975 the proportion of offenders had again risen to 11% (Ajzein and Fishbein, 1980). Roadside surveys conducted in 1981 and 1983 indicated a stabilisation around this level (DeYoung, 2002), despite annual large-scale publicity campaigns aimed at changing attitudes towards drink driving. Although the very favourable short-term effect could not be maintained, the long-term effect was still substantial and statistically significant ($\chi^2 = 28.39$; $df = 1$). This effect was probably due less to the introduction of the legal limit *per se* and more to the increased risk of apprehension and punishment, which may also explain the huge short-term effect: the publicity that accompanied the introduction of the legal limit and chemical screening devices for the police had resulted in an overestimation of the risk of apprehension by the general public, thus creating a much higher perceived risk than actual risk.

The second approach that was implemented in the Netherlands as a result of the increase in road accidents and fatalities was the introduction of Evidential Breath Testing (EBT). Between 1987 and 1989, evidential blood testing was replaced by evidential breath testing. This facilitated not only the random testing of larger numbers of drivers, but also a quicker administration of penalties. After the introduction of evidential breath testing, the proportion of drivers with an illegal BAC steadily and significantly decreased from 8% in 1987 to 3.9% in 1991 ($\chi^2 = 46.97$; $df = 1$), raising high expectations for a further drop in the years to come (Mathijssen and Noordzij, 1992). A further decrease of drunken driving was, however, prevented by a reorganization of the Dutch police, which came into effect in 1992. As a result of this reorganization, nearly all former traffic police departments were abolished and traffic law enforcement was integrated into general

police duties. This change led to a significant drop in the (Random Blood Testing) RBT levels (Mathijssen, 1995).

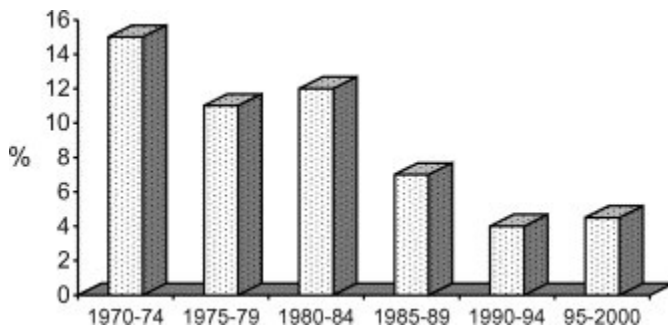


Fig. 1. Proportion of drivers with a BAC > 0.5 g/l in the Netherlands, on autumn weekend nights, 1970–2000.

Figure 1 shows the trend of drink driving in the Netherlands between 1970 and 2000. In the second half of the 1990s, the proportion of motorists with a BAC > 0.5 g/l had decreased by 70% when compared with the first half of the 1970s.

In Great Britain, alcohol is associated with a large proportion of road accidents. In fact, Harrison (1987, pg, 203) concludes that “of all alcohol-related problems, drinking and driving has the highest public visibility, possibly because of the heavy third party costs involved”. Drinking and driving casualties (deaths, serious injuries and minor injuries) decreased significantly during the 1980s, but rose by nearly a third between 1993 and 2002 (from 14,980 to 20,140). Drunken-driving deaths account for one in six road deaths in the United Kingdom (Department for Transport UK, online).

These Government statistics only include casualties caused by drivers over the drinking and driving limit, yet many more drunken driving crashes are caused by drivers who only have small amounts of alcohol in their blood. An estimated 80 road deaths per year are caused by drivers who are under the drunken driving limit, but who have a significant amount of alcohol in their blood (ibid)

According to a survey of 1,000 drivers by Brake (a United Kingdom-based charity aimed at increasing road safety awareness), half of drivers in the United Kingdom admit to drunken-driving and one in four drivers admit to driving after drinking an amount of alcohol they know is affecting their driving. More than one in four drivers (28%) admit driving the morning after having a lot to drink. This is particularly dangerous because it is during this time that they are likely to still be over the limit (Department For Transport, UK, Online).

The World Bank reports that 1.7 million people die in road crashes, globally, per annum (World Bank, n.d.). The resultant human casualties and injuries represent a major drain on the workforce and impose a significant strain on the economy as a whole (Rieker, 2003). Unless action is taken, global road deaths are forecast to double by 2020 and yet many of these deaths and injuries are known to be preventable (Arrive Alive, b, n.d.). The total global economic cost of these crashes is estimated to be about US\$500 billion per annum and at national level these costs equal approximately 1 to 3 percent of a country's Gross National Product. In response to this, among other projects, the World Bank has established a Global Road Safety Facility to generate increased funding and technical assistance for global, regional and country level initiatives to build capacity and implement road safety programmes in low and middle income countries (World Bank, n.d.). In a study undertaken in the United States of America in the late 1990's, it was found that speed contributes to 18,7% of road crashes (Arrive Alive, a, n.d.). The contribution of alcohol was in the order of 18,2%. In Australian research in the 1990s it was found that the risk of involvement in a crash in a 60 km/h zone doubles for every 5 km/h in excess of the speed limit.

2.7 Worldwide Trends in Impaired Driving

In the decade of the 1980s, there were declines in drinking and driving in much of the industrialized world. The declines included about 50% in Great Britain, 28% in Canada and the Netherlands, 32 % in Australia, 37% in Germany and 26% in the United States (Sweedler, 2002). However, these declines did not continue in the early part of the 1990s.

In some countries there were actually increases in drunken driving offences (ibid). Towards the middle and the latter part of the decade the increases stabilized and there were again some decreases. Approaching the end of the 1990s and early in the new century, the record has been mixed. Some countries (France and Germany (until 2002)) continued to reduce drinking and driving, while in other countries (Canada, the Netherlands, Great Britain and the United States) there has been stagnation and in some cases small increases or even large increases, as was the case in Sweden. The following is an analysis of the drunken driving trend as studied by Sweedler, (1995, 1997, 2000, and 2002).

In Canada previous research has shown that during the 1980s there was a reasonably consistent and rather dramatic decline in the percent of fatally injured drivers who were positive for alcohol (Mayhew, Simpson and Beirness, 2002). The downward trend was interrupted in 1991, when the percentage of fatally injured drinking drivers positive for alcohol increased to 48%. In 1992 the percentage of fatally injured drinking drivers remained at 48% (ibid). From 1992 to 1999 there was an annual decline in the percentage of fatally injured drivers who tested positive for alcohol, which is a decrease from 48% in 1992 to 33% in 1999.

Since 1999 the percentage of fatally injured drivers with positive BACs had increased to 38% in 2001 (Sweedler, 2002). From 2001 to 2002 the number of non-drinking driver fatalities dropped, but the number of drinking driver fatalities increased slightly. Mayhew, Simpson and Beirness (2002) stress that the recent upward trend in the alcohol-fatal crash problem suggests that progress witnessed in much of the 1990s has halted. Additional data needs to be made available, however, in order to establish whether this constitutes a new trend.

In France, from 1983 to 2002, the number of alcohol-related injury accidents reduced by more than half and from 1990 by almost one third. The number of fatally injured victims in alcohol-related crashes has also been reduced (from 11.946 in 1983 to 10.289 in 1990, and 7.242 in 2002) (Sweedler, 2002). The data supplied by Sweedler indicates that there

has also been a reduction in seriously injured victims. The lowering of the BAC legal limit to 0.05% from 1996 logically ought to have increased the proportion of drivers over the legal limit, but this does not appear to be the case. The data shows that the prevalence of illegal alcohol levels tended to diminish since the end of the 1990s, especially for fatal accidents. From 5% to 6% of drivers involved in injury accidents are over the legal limit (with a mean level of .0173); this proportion rises for fatal accidents from 16% to 17% (with a mean level of .082). Approximately 10 % of injury accidents involve a driver over the legal limit; the proportion for fatal accidents is 30%. Mayhew (2002) says in France the future focus will continue to be on young drivers as the relevant target group because of their well-identified excess risk.

In Germany, the figures from 1994 to 2002 show, in general, a stabilization and improvement of road accident development, especially with respect to related injuries and fatalities. However, in 2002 the decrease of alcohol-related accidents and casualties was lower than expected after the lowering of the BAC limit to 0.05%. In 2002 the share of alcohol-related accidents, as well as injuries and fatalities, increased slightly. At the current point in time one cannot clearly assess if the figures in 2002 indicate a turn of the tide, or if the recent development is a short-term deviation from a positive trend in the long-term, as in 1999 (Mayhew, Simpson and Beirness, 2002). Sweedler (2002) pointed out that the frequency distribution of the BAC level of involved car drivers influenced by alcohol, suggests that the problem is not to be solved only by lowering the legal BAC limit. From this perspective, it is not only the problem of the 'low level driver', but also of driving alcoholics, especially within the age group of 25 years and older.

In Sweden, for a number of years, the reputation as an example of successful work against drunk driving and its consequences has been steadily maintained. In the years around 1990 the proportion of alcohol-related fatalities declined sharply, coming down from 31% in 1989 to 18% in 1997. This decline can be attribute to a multitude of causes, for instance the lowering of the legal limit from 0.05% to 0.02% in 1990; the massive increase of police enforcement, going from approximately 600 000 breath tests per year

to 1.8 million in 1994; augmented resources for latitudinal campaigns and tougher penalties for DUI (Sweedler, 2002).

Sweden joined the European Union in 1996. As a result, many of its restrictive policies were lost. For instance, the ban on alcohol advertising now only applies to hard liquor; the import restrictions have been reduced and the alcohol monopoly was partly broken. In conjunction with the recent reduction of alcohol taxes in Denmark and Germany, the pressure is now tremendously high on the Swedish government to lower alcohol taxation. The percentage of fatally injured drivers who had been drinking had risen from 18% in 1997 to 28% by the end of 2002. The gravity of this development is slowly being realized by the authorities but many of the traditional tools to combat the problem are no longer available. As a result Mayhew, Simpson and Beirness (2002) suggest that the most badly needed deterrence to drunken driving behaviour in Sweden is a tangible increase in the number of random breath tests.

2.8 Road Accidents and Costs: The Local Context

In comparing the South African road infrastructure to that of other countries in the western world in terms of accident inclination and the cost thereof, it is important to note that South Africa is a developing country. As developing country, road infrastructure and road safety education has been sporadic, non-continuous and in some parts non-existent (Arrive Alive, nd). South African transport does play an important dual role in the economy, both as a direct provider of service and as a catalyst for economic integration.

When compared to other countries, South Africa has a poor record of road safety. The Global Road Safety Partnership (GRSP, c, n.d.) records that the cost of crashes in 2005 was estimated at R38 billion per annum and road accidents cost the South African economy an estimated R581bn between 1996 and 2006, according to a report by the National Department of Transport. In addition to this, according to the statistics presented by the South African National Department of Transport (SANDOT), in the period between December 2005 and 2006 the number of fatal crashes increased by 6.12% and

the number of road traffic-related fatalities increased by 8.9% (SANDOT). The report includes the cost of injuries in its assessment of the economic toll of road accidents and it states that more than 13 000 people are killed on South African roads each year, making the country one of the most dangerous in the world for drivers (ibid). The estimated total costs (R581 billion) of road accidents over the eleven-year period (1996 to 2006) gives an idea of how much South Africa has lost out on potential production input or skills.

The first road crash recorded in South Africa happened in the evening on 1 October 1903 in Maitland, Cape Town. The driver of the vehicle entered a level crossing through an opening gate only to find the opposite gate closed. The enquiry into the crash revealed a remarkably casual attitude by drivers of motorcars towards law compliance and level crossings. Since this crash in 1903 to the end of 2003, one century later, a total of about 393 977 persons (1.31% of the world total) were killed in crashes on South African roads, mainly as a result of the “remarkably casual attitude by drivers of motorcars” towards law compliance (Arrive Alive, d, n.d.).

There is a great variety of contributory factors that lead to road traffic crashes, most important of which are the level of driver training, the general attitude of drivers, driver behaviour and the level of driver self-discipline, self-regulation and finally, law compliance. An important fact to note is that all of these relate to human factors in the road traffic environment.

Table 1 : Estimated Number of Fatal Crashes involving Drivers and Pedestrians suspected to be under the influence of alcohol										
2004	GA	KZ	WC	EC	FS	MP	NW	LI	NC	RSA
Drivers	45	32	24	19	13	20	13	19	12	197
Pedestrians	19	9	14	16	3	10	3	6	0	80
Total crashes	2,340	2,313	1,280	940	744	966	866	890	290	10,629
2005	GA	KZ	WC	EC	FS	MP	NW	LI	NC	RSA
Drivers	75	18	65	38	28	15	14	15	5	273
Pedestrians	48	10	35	32	7	6	6	5	2	151
Total crashes	2,642	2,498	1,363	1,108	789	1,129	938	985	284	11,736
2006	GA	KZ	WC	EC	FS	MP	NW	LI	NC	RSA
Drivers	61	30	53	35	27	30	32	25	19	312
Pedestrians	34	18	27	42	12	11	28	4	4	180
Total crashes	2,910	2,465	1,350	1,415	890	1,132	996	1,001	295	12,454

Table 1 shows that in South Africa, on a national basis, the number of fatal road accident in which drivers are suspected to be under the influence of alcohol increased from 197 in 2004 to 273 in 2005 and to 312 in 2006; and the number of fatal road accidents in which pedestrians are suspected to be under the influence of alcohol increased from 80 in 2004 to 151 in 2005 and to 180 in 2006 (SANDOT, n.d. Online).

Table 2 : Estimated Percentage (%) of Fatal Crashes involving Drivers and Pedestrians suspected to be under the influence of alcohol										
2004	GA	KZ	WC	EC	FS	MP	NW	LI	NC	RSA
Drivers	1.91	1.40	1.88	2.01	1.78	2.08	1.55	2.18	4.23	1.86
Pedestrians	0.82	0.39	1.06	1.74	0.45	1.04	0.39	0.62	0.00	0.75
2005	GA	KZ	WC	EC	FS	MP	NW	LI	NC	RSA
Drivers	2.86	0.74	4.77	3.46	3.53	1.32	1.50	1.54	1.69	2.31
Pedestrians	1.81	0.40	2.58	2.91	0.83	0.53	0.60	0.46	0.56	1.26
2006	GA	KZ	WC	EC	FS	MP	NW	LI	NC	RSA
Drivers	2.10	1.24	3.93	2.51	2.99	2.67	3.17	2.54	6.55	2.55
Pedestrians	1.16	0.74	1.96	2.94	1.31	1.00	2.85	0.42	1.31	1.48

Table 2 shows the estimated percentage (%) of fatal crashes, expressed as a percentage of the total number of fatal crashes for the particular year, in which drivers are suspected to be under the influence of alcohol, increased from 1,86% in 2004 to 2,31% in 2005 and to 2,55% in 2006; and the number of fatal road accidents in which pedestrians are suspected to be under the influence of alcohol increased from 0,75% in 2004 to 1,26% in 2005 and to 1,48% in 2006 (SANDOT, n.d, Online).

2.9 Drinking and Driving and the Social Cognitive Theory

The Social Cognitive Theory (SCT) essentially purports triadic reciprocity between behaviour, personal factors and the environment. The theory has evolved over the years. In a recent article, Bandura (2004) identified the primary constructs or determinants of this theory. These are knowledge of health risks and benefits of healthy practices, self-efficacy or behaviour-specific confidence in one's ability to influence one's habits, outcome expectations about expected costs and benefits for different health habits, goals that a person sets for himself or herself, perceived facilitators and impediments or obstacles.

Knowledge is the prerequisite for any behaviour change and self-efficacy is a fundamental requirement for behaviour change. In the book 'Social Foundations of Thought and Action', Bandura (1986) explains that outcome expectations are of three kinds, those that pertain to physical outcomes, social outcomes of approval and disapproval, and positive and negative self-evaluative reactions. In behaviour modification, Bandura believes that goals and intentions are fundamental when setting the course for change. In other words, perceived facilitators and impediments pertain to personal/situational factors more than anything else.

The SCT has been applied in alcohol and drug education literature. There are three kinds of publications: review articles, descriptive studies and intervention studies. Several review articles in alcohol and drug education literature have talked about the SCT. For example, Botvin (1983) summarized the theories and models for alcohol prevention among youth for the Alcohol, Drug Abuse and Mental Health Administration's Office for Substance Abuse Prevention .

Likewise, Vakalahi (2001) used Social Cognitive Theory while discussing adolescent substance use, family-based risk and protective factors. Similarly, Botvin (1983) has also employed Social Cognitive Theory while reviewing prevention approaches for adolescent substance abuse. In alcohol and drug education, descriptive studies have been carried out

that have utilized SCT as a framework. For example, a study by Burke and Stephens (1999) examined the relationship between social anxiety and heavy drinking in college students, using the SCT model. In another study, Williams and Kleinelter (1989) examined the relationship between social learning theory, postulated problem-solving skills and drinking among college students. The study found lower self-efficacy in problem-solving skills resulted in higher consumption of alcohol.

In alcohol and drug education, intervention studies have been done that have been based on SCT. For example, Wilhelmsen, Laberg and Klepp (2004) implemented and tested school-based alcohol prevention programmes for seventh grade students that were based on the SCT. Twelve schools were recruited and four were assigned to a highly role-specified version of the intervention, another four to a less role-specified version of the intervention and the remaining four served as no-treatment comparison groups. Pre-test and post-test measurements were taken on alcohol use, self-efficacy, expectations, intentions, norms and attitudes. The results indicated that a highly role-specified version had a higher degree of student involvement and was more successful in engaging students in alcohol-prevention activities (ibid).

Newman, Anderson and Farrell (1992) developed and evaluated a ninth grade alcohol education programme that was based on problem behaviour theory, social cognitive theory and role theory. Students' knowledge, skills and practices were measured before the programme, six weeks after the programme, and one year after the programme. Significant increases in knowledge and perceived ability to resist pressures to drink were found among experimental students but no significant differences were found for drinking or drinking and driving practices. However, one year after the programme, it was found that significantly fewer experimental students reported riding with a driver who had been drinking. In another work, Ramirez, Gallion, Espinoza and Chalela (1999) developed substance abuse prevention intervention for low-income Mexican American youth aged 9-13 years. The intervention was distributed via a satellite television network and featured social models with cognitive behavioural skills and conservative norms regarding substance abuse.

Most useful among the types of studies represented in the application of SCT for alcohol and drug education are the intervention studies. Bandura (2004) used a three-level, stepwise implementation model to enhance the effectiveness of interventions. At the first level, the target audience includes people with knowledge, high outcome expectations and high self-efficacy for whom minimal guidance interventions that remove impediments are helpful. At the second level, the target audience includes people with knowledge but low self-efficacy and low outcome expectations, for whom tailored print or telephone counselling that enhances self-efficacy, increases outcome expectations, sets goals and removes impediments are helpful. At the third level, the target audience includes people who do not believe that health behaviour is in their control and for whom personal guidance and mastery programmes involving all constructs are helpful. Regarding channels for delivery of effective interventions, Bandura (2004) advocates the use of interactive computer technologies, internet-delivered guidance sessions and serial dramas. Utilizing some of this guidance, the practitioners and researchers in alcohol and drug education can benefit, and need to apply the SCT more in their work.

2.10 Effects of Alcohol

Drivers younger than 21 years of age are more vulnerable than older drivers to the impairing effects of alcohol. At the same blood alcohol concentration (BAC), young drivers are far more likely to be involved in fatal or nonfatal crashes (Zador, Krawchuck and Voas, 2000; Peck, Gebers, Voas and Romano, 2008). Alcohol is water soluble and is absorbed into the blood. More blood is supplied to the brain than other organs, with the result that alcohol impairs brain functions within minutes. The very same properties of alcohol which have long favoured its use underlie the problems of this paper. Alcohol impairs the relationship of man with himself and his environment. It has properties “intermediate between the addiction-producing and habit-forming drugs” (British Medical Association, 1963, pg: 3). The physiological and psychological effects of alcohol are varied, complex and subtle. Nonetheless, research has produced a large body of consistence evidence documenting a number of indisputably pharmacological effects of

alcohol. The first of these concerns functions pertinent to driving and secondly on driving performance under simulated and the actual experimental field conditions (ibid).

In a study entitled, “*The effects of alcohol on the cognitive function of males and females and on skills relating to car driving*”, Hindmarch *et al*, (1992) conducted research in which nine males and nine females received one of four doses of alcohol (0.25, 0.5, 0.75 or 1 g per kg of bodyweight for male subjects: females received 92% of these values) or a placebo. Similar blood alcohol concentrations (BAC) for males and females were reached. Subjects were then tested on two batteries of psychological tests related to skills involved in driving. These included psychomotor, cognitive and subjective assessment tasks. The results showed a linear increase in the disruption of performance with dose for many of the tests, particularly those involving psychomotor function. It was demonstrated that in performing certain tasks males were affected more by alcohol than females. The study concluded that moderate doses of alcohol (resulting in BACs of 0.05 to 0.08g/100ml) can produce significant deficits in perceptual and motor skills related to driving a vehicle.

Mitchell (1997) notes that the effects of alcohol on many psychological functions of importance in driving have been studied in the laboratory using human subjects. Many of these psychological functions have been found to begin to deteriorate at surprisingly low blood alcohol level concentrations. Delin and Lee (1992) and Finnigan and Hammersley (1992) are just a few of the many researchers who have come to acknowledge, as accumulating evidence shows, ‘that alcohol in excess negatively affects the brain, both immediately and in the long run’. Work in aviation research has demonstrated that pilot errors increase on some tasks in flight simulation the day after moderate alcohol consumption (Hartshorne, 2000). Arrive Alive (a, n.d.) has produced statistics on the effects of alcohol on driver performance in the following ways, at a breath-alcohol level of 0.38:

- Reaction times doubles, muscle co-ordination diminishes and a driver is more likely to respond incorrectly to stimuli.

- Alcohol affects the forebrain by suppressing caution, carefulness, concentration, self-criticism and self-control.
- It is a mood changer, leading to a feeling of well-being and recklessness, aggression and carelessness, all of which are highly likely to negatively affect judgment.
- Alcohol affects vision: depth perception deteriorates, making it impossible to judge accurately how far away objects are. Eye muscles lose their precision and when both eyes cannot focus on the same object, vision becomes blurred or one sees double.
- Alcohol results in tunnel vision. At night, pupils do not adapt from darkness to light and a drunk driver will be dazzled by oncoming headlights much more severely than a sober driver. Alcohol also exacerbates night blindness.

2.11 Effects of Alcohol by Dosage

Different concentrations of alcohol in the human body have different effects on the subject. Rohers, Papineau, Rosenthal and Roth (1999) provide the following lists of the effects of alcohol on the body, depending on the blood alcohol concentration, or BAC. The authors stress the importance of acknowledging that tolerance varies considerably between individuals. For example, their research shows the impact of varying BAC levels as follows:

Euphoria (BAC = 0.03 to 0.12%).

- Subject may experience an overall improvement in mood and possible euphoria.
- They may become more self-confident or daring; they may become more friendly or talkative and/or social.
- Their attention span shortens. They may look flushed.
- Their judgment is not as good; they may express the first thought that comes to mind, rather than an appropriate comment for the given situation.
- They have trouble with fine movements, such as writing or signing their name.

Lethargy (BAC = 0.09 to 0.25%)

- Subject may become sleepy.
- They have trouble understanding or remembering things, even recent events. They do not react to situations as quickly.
- Their body movements are unco-ordinated; they begin to lose their balance easily, stumbling; walking is not stable.
- Their vision becomes blurry. They may have trouble sensing things (hearing, tasting, feeling, etc.).

Confusion (BAC = 0.18 to 0.30%)

- Profound confusion—uncertain where they are or what they are doing. Dizziness and staggering occur.
- Heightened emotional state—aggressive, withdrawn, or overly affectionate. Vision, speech and awareness are impaired.
- Poor co-ordination and pain response. Nausea and vomiting sometimes occurs.

Stupor (BAC = 0.25 to 0.40%)

- Movement severely impaired; lapses in and out of consciousness.
- Subjects can slip into a coma; will become completely unaware of surroundings, time passage and actions.
- Risk of death is very high due to alcohol poisoning and/or pulmonary aspiration of vomit while unconscious.
- Loss of bodily functions can begin, including bladder control, breathing, heart rate.

Coma (BAC = 0.35 to 0.50%)

- Unconsciousness sets in.
- Reflexes are depressed (i.e. pupils do not respond appropriately to changes in light).
- Breathing is slower and shallower. Heart rate drops. Death usually occurs at levels in this range (Rohers and Roth, 2001).

2.12 Over the legal limit

While it is advisable that one should rather not consume any alcohol before driving, the legal blood alcohol limit in South Africa is 0.05 g per 100ml of blood. For a person weighing 70 kg, this can be reached by consuming the following:

- Two glasses of wine.
- Two tots of liquor, or
- Two cans beer.

(Hartshorne, 2000)

It is important to note that one should not rely on the above indicators, as one's actual blood alcohol level can be higher than expected and is influenced by many factors. These include the type of alcoholic beverage, time of one's last meal, the speed at which one drinks, one's age, sex, fitness level, type of build, the use of medication and presence of illness (Hartshorne, 2000). This means that one person's blood alcohol levels could actually be higher than another person's blood alcohol levels, even after consuming the same volume of alcohol.

2.13 Conclusion

In conclusion, this chapter has fulfilled its objective of extensively reviewing literature that is pertinent to the research topic. This was achieved by firstly laying the foundation with regards to the state of the global trend in road accidents as a result of drunken driving. The literature seems to indicate that males are the most vulnerable group to drunken driving with sensation seeking (especially amongst college students) being the leading cause of engaging in this form of behaviour. The literature also made an effort to explore deterrence efforts aimed towards drunken driving. Implementing stricter state laws and policy regulations are suggested as the primary means of fulfilling this objective. However, there also seems to be a rising trend of implementing deterrence efforts that are cognitive orientated in nature (Ochshorn, 2008). The literature then goes on to make a comparison of 'road accidents and costs' between the global context and the South

African context, paying particular emphasis on attitude towards drunken driving, road infrastructure and the demographic profile of the most vulnerable group to drunken driving. The following chapter will examine the theoretical framework employed in the study.

Chapter 3: Theoretical Framework

3.1 Introduction

The theoretical framework aims to provide a logical sense of the different factors that have been deemed relevant to the problem being investigated. It aims to achieve this through conceptualizing different components of the proposed theory (Social Cognitive Theory) in relation to the problem being studied (drunken driving).

This particular theoretical framework will cover some justification for the use of a psycho-social theory in a sociological study, a look at possible sociological theories that could have been considered and the different components of the SCT and how they relate in better understanding the problem of drunken driving. Lastly, a look at the strengths and the weaknesses of the theory will be taken. The aim of this chapter is to firstly look at sociology in terms of its role in society and to look at a possible sociological theory that could have been used for analysis. Following, this the chapter will critically explore the SCT and the different components that make up the theory. Lastly, the strengths and the weaknesses of the theory will be discussed.

The primary intent in conducting the study was to find reasons why people drive under the influence of alcohol (which has been defined previously as a form of irresponsible behaviour) and from these reasons and the theoretical framework to be adopted the study hopes to make suggestions for regulating this form of irresponsible behaviour.

3.2 The Role of Sociology

It is important to note that the study is done under the discipline of sociology. However what is sociology and what is the task of the sociologist? Sociologists focus on the reality that people are located in a social world and that, in order to understand what they feel, believe and do, people need to examine that social world (Doob, 2000). Bauman and May (1990: 15) state that “sociology is first and foremost a way of thinking about the human world, it asks us how does it matter that humans live always in the company of, in communication with, in exchange with, in competition with, in cooperation with other human beings? Its questions defamiliarise the familiar”. Another concisely appropriate sociological definition is that given by Abercrombie (2004: 232) who says that, “the term has two stems, namely the Latin ‘socius’ (companionship) and the Greek ‘logos’ (study of). It literally means the study of the process of companionship. In these terms, sociology may be defined as the study of the bases of social membership. More technically, sociology is the analysis of the structure of social relationships as constituted by social interaction”. However, no definition is entirely satisfactory because of the diversity of perspectives. Another way to rephrase the task of the sociologist is to say that they are particularly interested in how structural features of a society change and what impact these changes have on everyday life, particularly the behaviour of people.

It is apparent from the above descriptions of the sociologist that sociology is indeed a science of society, mainly because it investigates the social, religious, political, economic and governmental institutions of a society.

Despite the sociological framework of the study, it has nonetheless adopted a psycho-social theory for analysis, a psycho-social theory referred to as the Social Cognitive Theory.

The first justification for the use of a psycho-social theory in a sociological study is that if any theory takes into account environmental or external factors (as is the case with the social cognitive theory) then that theory can be considered to be sociological. Secondly, there are very few theories in sociology that take into account the dynamic interplay of behavioural (agent), environmental (structure) and personal factors in regulating human functioning.

3.3 Agency and Structure

In sociology, agency refers to the capacity of individual humans to act independently and to make their own free choices, whereas structure refers to those factors such as social class, religion, gender, ethnicity and customs, which seem to limit or influence the opportunities that individuals have (Haralambos and Holborn, 2004). The debate surrounding the influence of agency and structure on human thought and behaviour is one of the central issues. In the writings of most major theorists, from Marx, Weber and Durheim, to a variety of contemporary authors, this problem is raised and, according to the respective theorist, resolved in one way or another. However, Thompson (1989) cautions that such resolutions generally amount to the accentuation of one term over another or at the expense of the other. In agreement to the above statement, Layder (2006) feels that either social structure is taken as the principal object of analysis and the agent is effectively eclipsed, or individuals are regarded as the only constituents of the social world and their actions and reactions, their reasons, motives and beliefs are perceived as the sole ingredients of social analysis. As a result, the key question arising from the agency-structure debate is whether or not humans are free to choose how to think or whether there are wider deeper forces which influence their thoughts and behaviour.

This line of questioning gives rise to three possible theoretical positions within sociology. The first theoretical system is that of structuralism and some forms of Marxism and functionalism (who opine that social existence is largely determined by the overall structure of society), the second is that of methodological individualism, social phenomenology and ethno-methodology (the primary focus of which is on the capacity of

individual agents to construct and reconstruct their social world) and, finally, the third theoretical system is one adopted by many modern theorists.

3.4 Structuration Theory

The closest that a sociological theory has come to accounting for the dynamic interplay of behavioural, environmental and personal factors in exploring human behaviour is the structuration theory by Anthony Giddens. This theory aims to reconcile the agency and structure debate and find a point of balance between the two. What must be grasped when looking at the structuration theory is not how structure determines action or how a combination of actions make up structure, but rather ‘how action is structured in everyday context and how the structured features of action are, by the very performance of an action, thereby reproduced’ (Giddens, 1984). Human social practices, Giddens states, like some self-producing items in nature, are recursive. That is to say they are not brought into being by social actors, but continually recreated by them via the very means whereby they express themselves as actors. In other words, in and through their activities agents reproduce the conditions that make these activities possible (Giddens, 1984).

What is clear about structuration theory is its clear rejection of Durkheim’s sociological positivism paradigm, which attempted to identify laws which will predict how societies will operate, without looking at the meanings understood by individual actors in society (Layder, 2006). Giddens contrasted Durkheim with Weber’s approach-interpretive sociology, which was focused on understanding agency and the motives of individuals. Although Giddens is closer to Weber than Durkheim in his analysis of society and conception of structuration theory, he rejects both of these approaches, stating that while society is not a collective reality, nor should the individual be treated as the central unit of analysis (Layder, 2006). He says that “society only has form and that form only has effects on people, in-so-far as structure is produced and reproduced by what people do” (Giddens, 1984: 94). Agency, apart from reproduction of society, can also lead to the transformation of society. One way to explain this concept is by, what Giddens calls, the ‘reflexive monitoring of actions’. (Giddens, 1984). Reflexive monitoring examines at the

ability to look at actions to judge their effectiveness in achieving their objectives; therefore if agents can reproduce structure through action, they can also transform it.

Margarette Archer is one author who does justice to the reflexivity of the agent. The main thesis in sociological analysis should, concern she says, the indispensability of investigating human reflexivity if we are to explain what ‘active agents’ do, rather than treating human beings as ‘passive agents’, subject to the ‘hydraulic pressures’ of society (Archer, 2000). Three years later, in the publication of the book, *Structure, Agency and the Internal Conversation*, Archer defines reflexivity as “the regular exercise of the mental ability, shared by all normal people, to consider themselves in relation to their (social) contexts and *vice versa*” (Archer, 2003, pg: 112). It is exercised through the ‘internal conversations’ we all hold about our personal concerns (what we care about most) and how to realize them in a social order that is not of our making or choosing (Archer, 2003).

Agency and structure (behaviour and environment) cannot be analyzed separately as Giddens says, since structures are created, maintained and changed through actions, while actions are given meaningful form only through the background of the structure. This is where structuration theory takes form. The reconciliation between structure and agency occurs through powerfully reflexive agents acting within systems and using the rules and resources inherent within these systems to guide their actions towards the desired outcome.

Again one might be compelled to ask, ‘but if under sociology there are theories that incorporate behavioural (agent) and environmental (structure) factors in exploring the behaviour of individuals, then why adopt a psychological theory? Two reasons: The first being that no sociological theory accounts for personal factors (cognition, affect and biological events) in exploring human behaviour. This means that, as impressive as this theory might appear to be in accounting for why people do the things they do, it does very little to account for the life-long process of development, which Baltes and Reese (1984) say the social cognitive theory is concerned with, because it covers changes in the

psycho-social functioning of adults as well as with those occurring in childhood. The second reason is that my research is a form of explanatory research. In other words, the study aims to explain a certain behaviour in relation to certain factors that come into play before the manifestation of that behaviour. Structuration theory on the other hand, is a form of exploratory theory, so it is not very effective in explanatory studies such as the present one.

3.5 Social Cognitive Theory (SCT)

Now that a concise justification for the negation of sociological theories, and an exploration of a possible sociological theory that could have been used, have been given, an explanation of the theory to be applied will be provided.

There have been many theories that have been proposed over the years in an attempt to explain human behaviour. These theories differ in their conceptions of the nature of human beings and 'in what they regard to be the basic causes and mechanisms of human motivation and behaviour'. The SCT of behaviour emphasizes the dynamic relations between self-efficacy, outcome expectancies, perceived barriers and self-regulatory behaviour in the efforts to alter and/or maintain behaviour (Bandura, 1997). The SCT defines human behaviour as a triadic, dynamic and reciprocal interaction of personal factors, behaviour, and the environment (Bandura, 1986; 1989). According to this theory, an individual's behaviour is uniquely determined by each of these three factors.

While the SCT upholds the behaviourist notion that response consequences mediate behaviour, it also contends that behaviour is largely 'regulated antecedently through cognitive processes' (Bandura, 1986). Therefore response consequences of behaviour are used to form expectations of behavioural outcomes.

The SCT posits that most behaviour is learned vicariously. The SCT's strong emphasis on one's cognitions suggests that the mind is an active force that constructs one's reality, selectively encodes information, performs behaviour on the basis of values and expectations and imposes structure on its own actions (Calfee, eds). Through feedback

and reciprocity, a person's own reality is formed by the interaction of the environment and one's cognitions. However, “cognitions change over time as a function of maturation and experience (i.e. attention span, memory, ability to form symbols, reasoning skills)” (Calfee, pg: 63). It is through an understanding of the processes involved in one's construction of reality that enables human behaviour to be understood, predicted and changed.

It is for this reason that the present study has adopted the SCT as a form of analysis for the behaviour of drinking and driving. SCT describes learning in terms of the interrelationship between behavioural, environmental and personal factors.

3.5.1 Reciprocal Determinism

In SCT, people are viewed as self-organizing, proactive, self-reflecting and self-regulating, rather than as reactive organisms shaped and shepherded by environmental forces, or driven by concealed inner impulses, as is the case with many sociological theories. From this theoretical perspective, human functioning is viewed as the product of a dynamic interplay of personal, behavioural and environmental influences.

This is the foundation of Bandura's conception of *reciprocal determinism*, the view that (a) personal factors in the form of cognition, affect and biological events, (b) behaviour, and (c) environmental influences create interactions that result in a *triadic reciprocity* (Bandura, 1986). It has been acknowledged by many proponents of the SCT that Bandura altered the label of his theory from social learning to social "cognitive", to distance it from prevalent social learning theories of the day and to emphasize that cognition plays a critical role in people's capability to construct reality, self-regulate, encode information and perform behaviours. This is the element that the present research intends to incorporate in an attempt to explain the behaviours of those that drink and drive.

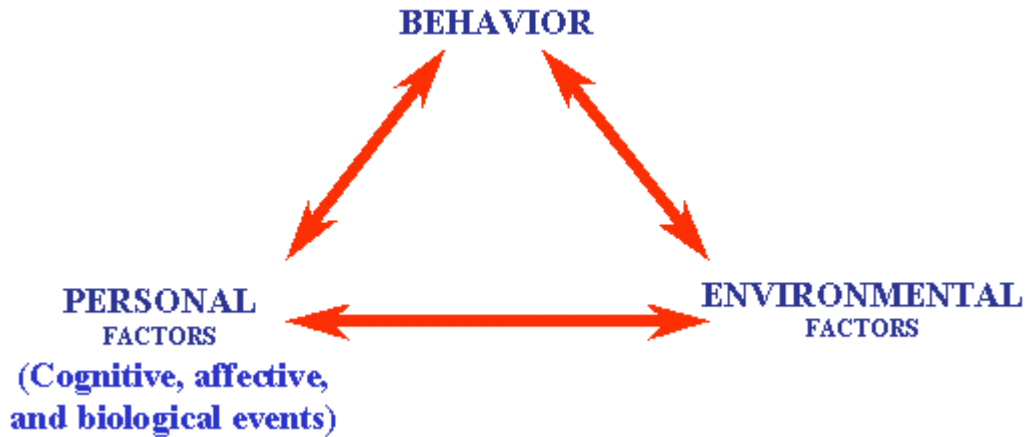


Figure 3: Triadic representation of reciprocal determinism

Concerning the efficiency and effectiveness of the theory, Pajares (2002) states: ‘The reciprocal nature of the determinants of human functioning in social cognitive theory makes it possible for therapeutic and counselling efforts to be directed at personal, environmental, or behavioural factors. Strategies for increasing well-being can be aimed at improving emotional, cognitive, or motivational processes, increasing behavioural competencies, or altering the social conditions under which people live and work’.

Because the SCT is based on understanding an individual’s ‘reality construct’, it is especially useful when applied to interventions aimed at personality development and health promotion through behavioural regulation. For example, SCT could be used to help a person who usually drives under the influence of alcohol to stop this form of irresponsible behaviour, in-so-far as the person may be more willing to learn from an ex-drunken driver who may share experiences that resonate with the person’s unique personal history.

3.5.2 Reciprocal Determinism and Behaviour

The following discussion is based on Figure 2 which shows the ‘triadic reciprocal determinism’ upon which the SCT is founded. SCT favours a model of causation involving triadic reciprocal determinism. As Bandura stresses, ‘in this model of

reciprocal causation, behaviour, cognition and other personal factors, and environmental influences, all operate as interacting determinants that influence each other bidirectionally' (1989). In other words the social cognitive theory takes into account three factors (behavioural, environmental and personal factors) in accounting for behavioural change and modification and human development (Bandura, 1997).

Human behaviour has often been explained in terms of one-sided determinism. In such modes of 'unidirectional causation', behaviour is depicted as being shaped and controlled either by environmental influences or by internal dispositions. Bandura coined the term, 'reciprocal causation', to refer to how behavioural, environmental and personal factors combine in affecting behaviour. As Bandura puts it, 'reciprocal causation does not mean that the different sources of influence are of equal strength. Some may be stronger than others. Nor do the reciprocal influences all occur simultaneously. It takes time for a causal factor to exert its influence and activate reciprocal influences' (1997).

In an attempt to further disseminate the impact of reciprocal determinism on behaviour, let us consider briefly the major 'interactional links' between the different subsystems of influence. The personal and behavioural aspects of reciprocal causation reflect the interaction between thought, affect and action (Bandura, 1986). This is the basis for Bandura's assertion that expectations, beliefs, self-perceptions, goals and intentions give shape and direction to behaviour. What people think, believe and feel affects how they behave (Bandura, 1986). The natural and extrinsic effects of their actions, in turn, partly determine their thought patterns and emotional reactions. This may be one reason why people who drink and drive engage in this form of behaviour, despite knowing the legal implications and the high probability of a road accident occurring.

The environmental and personal aspects of reciprocal causation are concerned with the interactive relation between personal characteristics and environmental influences.

Human expectations, beliefs, various emotional states and cognitive competencies are developed and modified by social influences that convey information and activate

emotional reactions through modelling, instruction and social persuasion (Bandura, 1986). Interestingly, enough people evoke different reactions from their social environment by their physical characteristics, such as their age, size, race, sex and physical attractiveness, quite apart from what they say and do (Lerner, 1982). People similarly activate different social reactions depending on their socially conferred roles and status.

The behavioural and environmental aspects of reciprocal causation in the triadic system represent the two-way influence between behaviour and the environment. Giddens (1984), as the basis of his structuration theory, believes that, in the transactions of everyday life, behaviour alters environmental conditions and is, in turn, altered by the very conditions it creates. According to this perspective, the environment is not a fixed entity that inevitably impinges upon individuals. If this were the case, some aspects of the physical and social environment may encroach on individuals, whether they like it or not.

The SCT has a view of human agency in which individuals are agents proactively engaged in their own development and can make things happen by their actions. In any case, most aspects of the environment do not operate as an influence until they are activated by appropriate behaviour (Lerner, 1982). Because of the bidirectionality of influence between behaviour and environmental circumstances, people are both products and producers of their environment. They affect the nature of their experienced environment through selection and creation of situations. Thus, behaviour determines which of the many potential environmental influences will come into play and what forms they will take.

The growing recognition and acceptance of reciprocal causation has altered the conventional unidirectional way in which behaviour is viewed and offers us the opportunity to better comprehend the process of behaviour and its modification from the personal, behavioural and environmental points of view.

3.5.3 Self Efficacy Beliefs

Of all the thoughts that affect human functioning, and standing at the very core of social cognitive theory, are self-efficacy beliefs: "people's judgments of their capabilities to organize and execute courses of action required for attaining designated types of performances" (Bandura, 1997, p.391). Self-efficacy beliefs provide the foundation for human motivation, well-being and personal accomplishment. In fact, much empirical evidence now supports Bandura's contention that self-efficacy beliefs touch virtually every aspect of people's lives—whether they think productively, self-debilitatingly, pessimistically or optimistically; how well they motivate themselves and persevere in the face of adversities; their vulnerability to stress and depression and the life choices they make (Pajares, 2002).

Among the types of thoughts that affect action, none is more central or pervasive than people's judgment of their capabilities to exercise control over events that affect their lives (Bandura, 1982; 1986). The self-efficacy mechanism plays a central role in human agency. According to Bandura (1997, 36), 'self judgments of operative capabilities function as one set of proximal determinants of how people behave, their thought patterns, and the emotional reactions they experience in taxing situations'.

In their daily lives, people continuously have to make decisions about what courses of action to pursue and how long to continue those that they have undertaken. Because acting on misjudgments of personal efficacy can produce adverse consequences, accurate appraisal of one's own capabilities has considerable functional value. It is partly on the basis of judgments of personal efficacy that people choose what to do, how much effort to invest in activities and how long to persevere in the face of obstacles and failure experiences (Bandura, 1997). People's judgments of their capabilities additionally influence whether or not their thought patterns are self-hindering or self-enhancing and how much stress and despondency they experience with their environment.

Self-efficacy is a critical determinant of self-regulation. Bandura's (1997, pg. 2) key contentions, as regards the role of self-efficacy beliefs in human functioning, is that

"people's level of motivation, affective states, and actions are based more on what they believe than on what is objectively true". For this reason, how people behave can often be better predicted by the beliefs they hold about their capabilities than by what they are actually capable of accomplishing, for these self-efficacy perceptions help determine what individuals do with the knowledge and skills they have. This might perhaps help to explain why people's behaviour is sometimes disjoined from their actual capabilities and why their behaviour may differ widely, even when they have similar knowledge and skills.

An important point to acknowledge, according to Pajares (2002), is that people's self-efficacy beliefs should not be confused with their judgments of the consequences that their behaviour will produce. Typically, of course, self-efficacy beliefs help determine the outcomes one expects. Of course we know that confident individuals anticipate successful outcomes. Because the outcomes we expect are themselves the result of the judgments of what we can accomplish, our outcome expectations are unlikely to contribute to predictions of behaviour.

Efficacy and outcome judgments are sometimes inconsistent. A high sense of efficacy may not result in behaviour consistent with that belief, however, only if the individual also believes that the outcome of engaging in that behaviour will have undesired effects. Self-efficacy beliefs can enhance human accomplishment and well-being in countless ways. They influence the choices people make and the courses of action they pursue (Bandura, 2002). Individuals tend to select tasks and activities in which they feel competent and confident and avoid those in which they do not.

According to Bandura, unless people believe that their actions will have the desired consequences, they have little incentive to engage in those actions. Another aspect of these self efficacy-beliefs is that they help determine how much 'effort' people will expend on an activity, how long they will 'persevere' when confronting obstacles and how 'resilient' they will be in the face of adverse situations. The higher the sense of efficacy, the greater the effort, persistence and resilience. Therefore people with a strong

sense of personal competence approach difficult tasks as challenges to be mastered rather than as threats to be avoided. How exactly do these self-efficacy beliefs become created?

3.6 The Creation of Self-Efficacy Beliefs

Bandura (1995) proposed that 'Individuals form their self-efficacy beliefs by interpreting information primarily from four sources'. The most influential source is the interpreted result of one's previous performance, or mastery experience. Individuals engage in tasks and activities, interpret the results of their actions, use the interpretations to develop beliefs about their capability to engage in subsequent tasks or activities and act in concert with the beliefs created. This is the basis for Bandura's statement that what people think and believe affects how they behave. It verifies what Bandura believed, that individuals engage in tasks and activities, interpret the results of their actions, use the interpretations to develop beliefs about their capability to engage in subsequent tasks or activities and act in concert with the beliefs created.

Typically, outcomes interpreted as successful raise self-efficacy; those interpreted as failures lower it. Of course, people who possess a low sense of efficacy often discredit their successes rather than change their self-belief. Even after individuals achieve success through dogged effort, some continue to doubt their efficacy to mount a similar effort. Consequently, mastery experiences are only raw data and many factors influence how such information is cognitively processed and affects an individual's self-appraisal.

In addition to interpreting the results of their actions, people form their self-efficacy beliefs through the *vicarious experience* of observing others perform tasks. This is dealt with in detail in the following paragraphs. This source of information is weaker than mastery experience in helping create self-efficacy beliefs, but when people are uncertain about their own abilities, or when they have limited prior experience, they become more sensitive to it.

The effects of modelling are particularly relevant in this context, especially when the individual has little prior experience of the task. Even experienced and self-efficacious

individuals, however, will raise their self-efficacy even higher if models teach them better ways of doing things. Conversely, watching models with perceived similar attributes fail can undermine the observers' beliefs about their own capability to succeed. When people perceive the model's attributes as highly divergent from their own, the influence of vicarious experience is greatly minimized. People seek out models who possess qualities they admire and capabilities to which they aspire. A significant model in one's life can help instil self-beliefs that will influence the course and direction that life will take.

Individuals also create and develop self-efficacy beliefs as a result of the *social persuasions* they receive from others. 'These persuasions can involve exposure to the verbal judgments that others provide, in addition persuaders play an important part in the development of an individual's self-beliefs' (Bandura, 1995). Effective persuaders must cultivate people's beliefs in their capabilities, while at the same time ensuring that the envisioned success is attainable. However, as Pajares (2002) cautions, 'just as positive persuasions may work to encourage and empower, negative persuasions can work to defeat and weaken self-efficacy beliefs'.

Somatic and emotional states such as anxiety, stress, arousal and mood states also provide information about efficacy beliefs. People can gauge their degree of confidence by the emotional state they experience as they contemplate an action. Strong emotional reactions to a task provide cues about the anticipated success or failure of the outcome. What this basically means is that "When they experience negative thoughts and fears about their capabilities, those affective reactions can themselves lower self-efficacy perceptions and trigger additional stress and agitation that help ensure the inadequate performance they fear" (Bandura, 1997, pg: 89). One way to raise self-efficacy beliefs is to improve physical and emotional well-being and reduce negative emotional states. It was Bandura's firm belief that, because individuals have the capability to alter their own thinking and feeling, enhanced self-efficacy beliefs can, in turn, powerfully influence the physiological states themselves. As Bandura (1997) has observed, people live in psychic environments that are primarily of their own making.

The SCT has a view of human agency in which individuals are agents proactively engaged in their own development and can make things happen by their actions. Key to this sense of agency is the fact that, among other personal factors, individuals possess self-beliefs that enable them to exercise a measure of control over their thoughts, feelings and actions, that "what people think, believe, and feel affects how they behave" (Bandura, 1997, p. 25). Bandura provided a view of human behaviour in which the beliefs that people have about themselves are critical elements in the exercise of control and personal agency. Individuals are viewed both as products and as producers of their own environments and of their social systems. Pajares (2002) states that 'Environments and social systems influence human behaviour through psychological mechanisms of the self system' and, hence, social cognitive theory posits that factors such as economic conditions, socioeconomic status and educational and familial structures do not affect human behaviour directly. Instead, the author says, they affect it to the degree that they influence people's aspirations, self-efficacy beliefs, personal standards, emotional states and other self-regulatory influences.

3.7 Self-Efficacy and Life Situations

The purpose of this section is to examine how self-efficacy beliefs affect the constantly changing situations of life, using Bandura's 1997 book called *Self-Efficacy in Changing Societies*. These "milieus" of life (p. 163), which Bandura discussed in his book '*Self Efficacy in Changing Societies*', included resources of self-efficacy in infancy (p. 164), family relations (p. 168), peer relations (p. 173), school (p. 174), adolescence (p. 177), adulthood (p. 184) and advancing age (p. 198).

With regards to infancy, Bandura (p. 164) explains that, immediately after birth, infants do not have a sense of self or personal agency. They do not yet know their actions can influence the physical and social environments. Soon, however, "Manipulating physical objects produces quick, predictable, recurrent, and easily observable effects . . . infants cannot help but notice that their actions produce environmental effects" (p. 165). A key to this new awareness is that the actions and effects are proximate in both space and time (p. 166). The awareness of personal agency and powers of causality for social actions

develop afterward, when the infant is able to rely on memory and make more abstract associations between cause and effect. With the development of representational capabilities, Bandura asserts that infants can begin to learn from probabilistic and more distal outcomes of personal actions. Before long, the exercise of control over the social environment begins to play an important role in the early development of self-efficacy (p. 166).

Bandura is in agreement with Kegan on the development of abstraction (Kegan, 1982, p. 19). Once initiated with agency into the social world, Bandura (1997) noted, the infant does not continue to build the agentic sense merely by his/her own actions. "After infants discover they can exercise some control over aspects of their immediate environment, they draw on vicarious experiences to expand and verify their sense of personal efficacy" (p. 167). By observing others around them, infants have models of what effects can be produced by particular sets of actions. "When the modelled strategies are within the infant's capabilities they adopt the same strategies to achieve similar results. With a growing sense of reflexivity about how their actions affect the environment, the self, rather than merely the infant's actions, becomes seen as the source of causality. Bandura cited studies (p. 167) that showed how at 18 months infants can apply self-differentiating verbal labels and, by 20 months, the infant can "spontaneously" identify as their own, not only actions, but the intentions and other "psychological states" that coincide and follow upon actions (p. 167).

Within the family context, and because of their dependency on adults, "infants quickly learn how to influence actions of those around them by their social and verbal behaviour". According to Bandura, this is crucial, because of research that demonstrated parents can create the development of their infant's efficacy by being "responsive" to "communicative behaviour" and also creating "opportunities for efficacious actions by providing an enriched physical environment, freedom for exploration, and varied mastery experiences" (p. 168). According to the study cited, these strategies can result in greater rates of social, linguistic and cognitive growth. Participation in guided mastery experiences is a key determinant in self-efficacy theory, along with vicarious experience,

verbal persuasion and physiological and affective states (p. 19). Early vicarious experiences can be gained through parents and also through siblings (p. 169). With the introduction of the multiple sources of "efficacy information" the formation of self-efficacy in various domains becomes increasingly complex. Bandura described this complexity:

“How children learn to use diverse sources of efficacy information in developing a stable and accurate sense of personal efficacy is a matter of considerable interest. Functional self-appraisal is no easy matter. Accurate appraisal of one's capabilities depends on a number of constituent skills that develop through direct and socially mediated experiences. While engaging in activities, children must attend simultaneously to multiple sources of efficacy information conveyed by the nature of the task, situational factors that aid or impede performance, the characteristics of their actions and the results they produce. Because activities are performed on repeated occasions, children must be able to transcend particular instances and integrate efficacy information from rises and falls in performance, over time. The presence of many interacting determinants places heavy demands on children's ability to monitor ongoing events, to evaluate the causes of fluctuations in performances and outcomes and to represent and retain efficacy information derived from numerous prior experiences under varying circumstances” (p. 170).

Bandura next considered self-efficacy in the context of developing relationships with peers. The efficacy functions reinforced in the peer context include contact with competent models within strata organized by age, social learning and comparative efficacy and validation (p. 173). Bandura noted the effects of individual interests in the selection of peers and that the influences between peers are "bidirectional." The ability to display effective coping behaviour varies widely between individuals, with children tending to interact for problem-solving with peers in a behavioural mode with which they feel competent. As a result, outcomes range from coercive-aggressive displays, where the child feels competent with aggression, to more efficacious displays of friendliness. Bandura noted that such preferences can lead to splintering into multiple peer groups

with diverging behavioural styles. The result is that "Such [aggressive] conduct provokes rejection from prosocial peers . . . In the pre-delinquent phase, peer rejection, academic failure, and poor parental monitoring of the child . . . foster selective association with a delinquent peer group" (p.174).

To Bandura, the importance of the school milieu is that "School is the place where children develop the cognitive competencies and acquire the knowledge and problem-solving skills essential for participating effectively in society" (p. 175). Formal instruction is but one part of the milieu that forms competencies. Bruner (1966, p.2) pointed out that the instruction should generate a synergistic result, where the learning outcome is more than the separate components of the milieu, combining the elements of learning and encouraging students to interact with learning problems in a way that goes "beyond the information given" (p. 2). It was also stated by Bandura(1997) that those who have a sense of efficacy in mastering academic tasks tend to learn better in formal school environments, as well as in informal environments outside the school. This positive spiralling of efficacy seems to make Bandura sympathetic to concerns of critical theory regarding the adequacy of the school milieu to meet the needs of every individual.

Bandura elaborates:

Students who come well prepared cognitively and motivationally learn quickly and are adequately served by the prevailing educational practices. There are numerous social critics, however, who believe that, for many children, the school falls short of accomplishing its purposes. Not only does it fail to prepare the youth adequately for the future, but all too often it undermines the very sense of personal efficacy needed for continued self-development. Recurring difficulties encountered with low achieving students erode teachers' sense of instructional efficacy . . . Inefficacy feeds on itself. (1997,pg.175).

Acknowledged problems in the adolescent milieu include avoiding health risks such as risky sexual and other behaviours, including drug abuse. However, Bandura cautioned that the characterization of adolescence as a risky and turbulent period was somewhat

overstated (p. 177) and that "Individuals play a proactive role in their adaptation rather than simply undergoing happenings in which environments act upon their personal endowments" (p. 177). Personal efficacy is a factor in this adaptation, because "The success with which the risks and challenges of adolescence are managed, depends . . . on the strength of personal efficacy built through prior mastery experiences." A deficit in self-efficacy is problematic when "Youngsters who enter adolescence beset by a disabling sense of efficacy transport their vulnerability to stress and dysfunction to the new environmental demands and to the pervasive biopsychosocial changes they find themselves undergoing" (p.178). In addition to avoiding health risks such as risky sexual and other behaviours, including drug abuse, the adolescent milieu requires individuals to devote attention and forethought to potential career paths. Bandura noted that - Efficacy beliefs influence the range of career options seriously considered, the degree of preparation for them and the vocational paths that are likely to be pursued . . . A low sense of efficacy to master academic subjects forecloses a variety of vocational options. The self-impeding consequences of perceived inefficacy are fully experienced in young adulthood when individuals confront their options in seeking employment (p. 184).

With regards to self-efficacy beliefs and adulthood, Bandura noted that the passage to adulthood is less well marked than it was in the past. Family patterns have become more varied, occupational pursuits are less stable and predictable and normative consensus is harder to come by. Given the increased ambiguity of society, individuals have more leeway to determine the course their lives take by cultivating their competencies and selecting, shaping and modifying their environments. As in earlier mastery challenges, a sense of efficacy is an important contributor to the type of social reality individuals construct for themselves (p. 184)

Bandura criticized the process of transition to adult occupational roles, because it does not reinforce motivations to do well in academics for individuals who may not take the path of higher education (p. 185). This is in spite of the fact that secondary school academic performance is shown to be a valid predictor of vocational productivity. Bandura described the disconnection between industry and the educational system as a systemic problem for the United States. In terms of family roles, onset of the adult

responsibilities of family life "suddenly thrusts young adults into the expanded roles of both parent and spouse" (p. 190) and escalates the need for the individual to display coping skills. Bandura explained that efficacy is not only important for parenting in general, but that strong efficacy leverages outcomes in cases where children have special needs (p. 191). The changed role of women is indicated by their dual roles. Many manage a career and still carry the bulk of the responsibilities for maintaining children and home. With regards to income levels, a study is cited which shows that parental efficacy mediates successful child-raising outcomes where parents: (a) promote their children's competencies, (b) exercise control against children's high risk behaviour and (c) model involvement in the community (p.193).

Bandura pointed out that the positive effects that such strategies may have on the community as a whole, not just for particular families. In cases where inefficacy in parenting is rampant, efficacious families are often forced into migration. Bandura wrote toward debunking the high frequency of the "midlife crisis" as a myth portrayed in "the popular literature" (p. 196-7). His writing on this subject has much in common with Maslow's (1968) "Self-actualization". Self-actualization is defined in various ways, but a solid core of agreement is possible. All definitions accept or imply (a) acceptance and expression of the inner core or self, i.e. actualization of these latent capacities and potentialities, "full functioning," availability of the human and personal essence and (b) they all imply minimal presence of ill-health, neurosis, psychosis, or loss or diminution of the basic human and personal capacities (Maslow, 1968, p.218).

Bandura's (1997) description was similarly evocative of stability: "By the middle years, people settle into established lifestyles that stabilize their sense of efficacy in major areas of functioning" (p. 196). He reiterated his rejection of the notion of set stage progression in human development, "Human development is a lifelong process rather than one that is arrested at a midlife stage with an arbitrary beginning and end" (p.196).

Bandura offered many strategies to deal with the threats to self-efficacy inherent in advancing age. He saw those key threats as expectations of the loss of memory and also the expectation of losing healthy physical functioning. Concerning this, he says that:

Intellectual development is multifaceted and encompasses different types of abilities that vary in how heavily they draw on such component cognitive processes as attention, memory, time-sharing, information integration, and level of knowledge and expertise. Cognitive functioning is multi-directional, following different trajectories of change for different abilities. Some improve, others remain stable, and still others decline with age. (p. 199). Efficacious strategies involve a focus not only on those abilities which have declining trajectories, but to promote awareness of those abilities which remain stable or even increase their trajectories as age advances. For instance, with memory, there are choices between perceiving memory as a controllable skill or innate ability. Expectation that memory naturally declines precludes many from exercising "deeper cognitive processing," (p. 203) upon which memory relies, regardless of age. In the same way, social comparison of the self with younger individuals creates the expectation of loss of physical vitality which precludes activity and physical exercise, known to be beneficial to all ages. The true cause of memory decline, Bandura believes, is lack of physical activity (p. 205).

3.8 Vicarious Learning

Bandura proposed that people learn not only from their own experience but by observing the behaviour of others. This 'vicarious learning' permits individuals to learn a novel behaviour without undergoing the trial and error process of performing it. In other words, it keeps them from risking costly and potentially fatal mistakes. The advanced capability for vicarious learning or observational learning is another distinctive human quality that receives considerable emphasis in social cognitive theory.

Psychological theories have traditionally emphasized learning through the effects of one's actions and, in some cases, in relation to their mind. If knowledge and skills could be acquired only by direct experience, the process of cognitive and social development would be greatly retarded, not to mention exceedingly tedious and hazardous. In the book *'Self Efficacy in Changing Societies'*, Bandura gives the following example to further illustrate the tedious consequence of direct learning; 'A culture could never

transmit its language, morals, social practices, and other essential competencies if they had to be shaped tediously in each new member by response consequences’.

Because mistakes can produce costly or even fatal consequences, the prospects of survival would be slim indeed if one had to rely solely on trial and error experiences. Moreover, the constraints of time, resources and mobility impose severe limits on the situations and activities that can be directly explored for the acquisition of new knowledge. Human beings have evolved an advanced capacity for observational learning that enables them to expand their knowledge and skills on the basis of information conveyed by modelling influences or vicarious learning. Indeed, virtually all learning phenomena resulting from direct experience can occur vicariously by observing people's behaviour and its consequences for them (Bandura, 1995). Much social learning occurs either deliberately or inadvertently by observing the actual behaviour of others and the consequences for them. Bandura (1995) stresses that a great deal of information about behaviour patterns and the effects they have on the environment is gained from models portrayed symbolically through verbal or pictorial means.

A major significance of symbolic modelling lies in its tremendous multiplicative power. Unlike learning by doing, which requires altering the actions of each individual through repeated trial-and-error experiences, in observational learning a single model can transmit new ways of thinking and behaving simultaneously to many people in widely dispersed localities.

There is another aspect of symbolic modelling that magnifies its psychological and social effects. During the course of their daily lives, people have direct contact with only a small sector of the environment. Consequently, their conceptions of social reality are greatly influenced by vicarious experiences--by what they see and hear--without direct experiential correctives (Bandura, 1995). The more people's images of reality depend upon the media's symbolic environment, the greater is its social impact.

Most psychological theories were formulated long before the advent of enormous advances in the technology of communication. As a result they give insufficient attention to the increasingly powerful role that the symbolic environment plays in present-day human lives. The television system, for instance, has become the dominant vehicle for disseminating symbolic environments, both within and across societies. Through such vicarious arousal, people acquire attitudes, values and emotional dispositions toward persons, places and things. In summation, 'modeling influences can serve as instructors, motivators, inhibitors, disinhibitors, social facilitators, and emotion arousers' (Bandura, 1995).

Observational learning is governed by the processes of attention, retention, production and motivation (Bandura, 1997). Attention refers to one's ability to selectively observe the actions of a model. For their part, observed behaviour can be reproduced only if they are retained in memory, a process made possible by the human capability to symbolize. Production refers to the process of engaging in the observed behaviour. Finally, Bandura notes that if engaging in the observed behaviour produces valued results and expectation, the individual is motivated to adopt the behaviour and repeat it in the future.

3.9 Strengths and Weaknesses of Social Cognitive Theory

What are the strengths of the theory? The social cognitive theory provides a framework that simultaneously addresses psychological, social and environmental factors that influence physical activity. In addition to providing a conceptual framework, the social cognitive theory provides an empirically validated model of behavioural change (Bandura, 1997). We can thus conclude that the social cognitive theory provides not only a model that successfully predicts behaviour, but also a model that guides the development of interventions that are designed to change behaviour.

However as with all theories, the cognitive perspective is not free from criticism. First, behaviourists see this theory as weak due to the 'abstract nature' of thoughts and the difficulty in defining them. This means that what may be seen as self-critical by one

researcher may look like a rational remark by another. Second, there is no agreed upon definition or application of the theory (Pajares, 2002). It is seen as fairly new and, while it receives a great deal of research, the underlying theory of personality development is weak at best. So while it may have very positive outcomes in treatment, it does not provide a solid understanding of development. For the neo-Freudian, this might mean that cognitive therapy is only a temporary approach and does not address the real reason behind a personality issue (Pajares, 2002).

The SCT explains behaviour in terms of a triadic, dynamic and reciprocal interaction of the environment, personal factors and behaviour. However, this reciprocal interaction does not imply that all sources of influence are of equal strength. The SCT recognizes that some sources of influence are stronger than others and that they do not all occur simultaneously. In fact, the interaction among the three factors will differ based on the individual, the particular behaviour being examined and the specific situation in which the behaviour occurs (Bandura, 1989). Thus this model of causation, as proposed by the SCT, is extremely complex. Furthermore the theory's comprehensiveness and complexity also make it difficult to operationalize. Many applications of the SCT focus on one or two constructs, such as self-efficacy, while ignoring the others.

Rather than seeing the “self” as a repository for “our personality”, Bandura argues that personality is an integrated internal system involving beliefs, systems and structures. He stresses the importance of cognitive factors in developing our sense of self and argues that the key components that make up this integrated system included:

- Observational learning.
 - Self-efficacy (the beliefs we have concerning our ability to cope with a particular task or situation and whether or not we think we will achieve the desired outcome).
 - Self-regulation (using our cognitive processes to regulate and control our behaviour)
- (Bandura, 1995).

Another strength of the SCT is that Bandura's social cognitive perspective articulates five fundamental human capabilities. These capabilities are what define what it is to be human. These are the capability to (1) symbolize, (2) plan alternative strategies (forethought), (3) learn vicariously, (4) self-regulate and (5) self-reflect. These capabilities provide human beings with the cognitive means by which they are influential in determining their own destiny. Learning vicariously is considered by some to be the cornerstone of Bandura's SCT. This is because children do not need to receive specific reinforcement for their behaviour in order to learn, but rather they learn much in the social world merely by observing others. Bandura stated that self-reflection is the capability that makes people most “distinctly human”.

3.10 Conclusion

This chapter has examined sociology as a subject discipline and the role it plays in explaining society. It critically analyses the Social Cognitive Theory and its components. Lastly, the strengths and the weaknesses of the theory were discussed. The following chapter will explore the methodology employed in the present research.

Chapter 4: Methodology

4.1 Introduction

The present study is a quantitative research study. This means it is based on a systematic approach and employs clear, explicit and formal procedures in all aspects of the study. Quantitative data-gathering methods allow a researcher to gain the opinions of respondents on a larger scale (Neuman, 2006). The intention is to arrive at a set of logically interrelated propositions that explain and predict social phenomena, so that they can be assessed, reassessed and ultimately lead to the development, acceptance, rejection or modification of the hypothetical theory (Terreblanche and Durrheim, 1999). Quantitative research was employed because research can be planned in detail prior to data collection and analysis thus not only making it a deductive approach but one that overcomes the constraints of time. This chapter will examine the procedure by which the study was carried out in terms of the method used, the sampling technique, the measures, data capture and analysis. Finally this present chapter will examine the limitations that were faced as a result of carrying out the study.

4.2 Method

The survey method was the research method used in this study, the reason being that surveys are useful in learning people's beliefs or opinions in any research situation. Because the questions in a survey research are standardized, measurements become more precise, by enforcing uniform definitions upon the participants. The standardization ensures that similar data can be collected from groups and then interpreted comparatively (between-group study). Usually, high reliability is easy to obtain; by presenting all subjects with a standardized stimulus, observer subjectivity is greatly eliminated.

The instrument to be employed will be that of a questionnaire, specifically a self-administered questionnaire. Validity is used to determine whether the research measures what it intended to measure and to approximate the truthfulness of the results,

and since the researcher is not present to personally collect data for self-administered questionnaires, validity becomes highly questionable. Neuman (2006) says that researchers can use their own definition when it comes to what is considered valid. For the purpose of this study validity was ensured by grouping the questions according to the three components of the SCT. For instance, under the 'behavioural' component of the SCT there were questions that tried to discover the reasons for the behaviour of drunken driving, what motivates this type of behaviour and whether or not the participants think it is dangerous.

Under the 'personal factor' component of the SCT there were questions that dealt with the beliefs and the thoughts that the participants had towards drinking and driving. These questions were tailored in such a way to solicit the information that would show what the beliefs, feelings and thoughts the participants had towards drinking and driving.

Under the 'environmental' component, there were questions that asked whether there were contextual factors that contributed or played a prohibitory role in drunken driving.

The final section of the questionnaire dealt with enforcement data. These questions explored the role that enforcement activity, existence, awareness and avoidance strategies played in decreasing drunken driving occurrences.

The nature of this study is generally sensitive. Therefore one of the advantages of self-administered questionnaires is that they provide considerably more privacy for the respondent than face-to-face interviews (Dane, 1990, pg 133). Taking into consideration the sensitive nature of the study, respondents might not feel comfortable enough to share certain information, in fear of being negatively judged or perceived in a negative way. Neuman (2000, pg: 257) refers to this phenomena as 'social desirability bias'.

Respondents might feel the need to give what they believe to be a normative or socially desirable response.

The questionnaire will consist of a combination of both open and closed questions. Closed questions have the advantage of soliciting a standardized set of responses from all the respondents and thus allow for easier comparative data analysis. Open questions, on

the other hand, have the advantage of revealing a respondent's logic, thinking process, and frame of reference. This would be particularly relevant to the findings of the study because the theory adopted by the study asserts that people possess self-beliefs which allow them to exercise a measure of control over their 'thoughts, beliefs and feeling'. Open questions can lead to unanticipated answers being discovered and they provide richness of detail.

4.2.1 Sampling

The research was conducted in Pietermaritzburg and focused on young males who drive under the influence of alcohol. The population of the study was made up of males between the ages of 19 and 35. The reason is that Arrive Alive (a South African intervention campaign for road safety) has stated that young male drivers are most likely to be involved in fatal accidents where speeding and alcohol are involved.

The sampling method that was employed was that of non-probability. The justification for this is that non-probability samples are not selected according to the principle of statistical randomness. This would be of great advantage, since there is a lack of a coherent sampling frame for the study. In other words, there is no list of people who drink and drive in Pietermaritzburg.

The sampling technique employed by the study was the snowball technique, which is based on the analogy of a snowball which begins small but becomes larger as it is rolled on wet snow and picks up additional snow. In other words, snowball sampling begins with one or a few people and spreads out, but on the basis of links to the initial case (Neuman, 2006).

4.2.2 Data Capture and Statistical Analysis

After the data was collected it was checked and cleaned for analysis. The entering of the data into the computer followed the setting up of a database using the Statistical Package

for the Social Sciences (SPSS). The closed questions were analyzed using SPSS and the open-ended questions were analyzed using thematic analysis.

4.2.3 Measures

The survey questionnaire included questions seeking demographic information, the frequency of drinking and driving amongst the participants per month, the effects of alcohol, perceptions of alcohol consumption and driving thereafter, and the knowledge of road safety interventions. The questions were grouped according to the three components of the SCT. For instance, under the ‘behavioural’ component of the SCT there were questions that tried to discover the reasons for the behaviour of drunken driving, what motivates this type of behaviour and whether or not the participants think it is dangerous.

Under the ‘personal factor’ component of the SCT there were questions that dealt with the beliefs and the thoughts that the participants had towards drinking and driving. These questions were tailored in such a way to solicit the information that would show what the beliefs, feelings and thoughts the participants had towards drinking and driving.

Under the ‘environmental’ component, there were questions that asked whether there were contextual factors that contributed or played a prohibitory role in drunken driving. The final section of the questionnaire dealt with enforcement data. These questions explored the role that enforcement activity, existence, awareness and avoidance strategies played in decreasing drunken driving occurrences.

4.3 Limitations of the Study

The sample consisted of males aged between 19 and 35. All the participants had to drink and drive. The difficulty in this was that not all the participants were comfortable in divulging this information to strangers, as many of them were aware that drunken driving is illegal. This was overcome by ensuring the participants of the confidentiality and anonymity of the research and bringing to their awareness their freedom to withdraw at

any time they felt uncomfortable in any way. Another problem encountered was the actual acquisition of participants for the study, as this is a very sensitive topic and because of the illegal aspect of drunken driving. This was overcome by applying the snow-ball sampling technique, which is based on the analogy of a snowball which begins small but becomes larger as it is rolled on wet snow and picks up additional snow. In other words snowball sampling begins with one or a few people and spreads out, but on the basis of links to the initial case (Neuman, 2006).

Reliance on self-reported behaviour is often problematic, especially when dealing with a topic that is as sensitive as drunken driving. Therefore, whether or not the participants were completely truthful becomes difficult to establish. As a result the validity and reliability of the study becomes questionable, however the only effective measure that could be taken to ensure validity and reliability was to assure the respondents of the confidentiality and anonymity of the research.

Chapter 5: Findings and Analysis

5.1 Introduction

The purpose of this chapter is to provide an analysis of the findings of the survey. Where applicable, the SCT and its components will be employed in an attempt to link the findings to the overall purpose of the study, which is to explain the reasons for drinking and driving among young males in Pietermaritzburg.

5.2 Demographic Profile of Sample

This section will detail the demographic characteristics of the sample. The sample of the study consisted of 190 males (n=190) between the ages of 19 and 35, with a mean age of 27.2 years. As previously discussed, the motivation behind this is that several studies have identified young males as the most vulnerable group to drunken driving behaviour, with the highest incidences of recorded offences.. All the participants were from the Pietermaritzburg area and all admitted to drinking and driving. In terms of the racial make-up of the sample, 41.6% of the respondents were African, 20.5% were Coloured, 9.5% were Indian and 28.4% were White.

5.3 Reported Behaviour and Beliefs regarding Drunk Driving

This section will examine the reported behaviour and beliefs that the respondents engage in and hold with regards to drinking and driving. Beliefs are an integral part of Bandura's theory, so much so that he devised a concept called self-efficacy in order to explain people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Pajares (2002) said that people's self-efficacy beliefs should not be confused with the judgments of the consequences that their behaviour will produce.

Respondents were asked to report the frequency with which they drink and drive per month. The frequency ranged from 1 to 12, with a mean frequency 6.72 drinking and driving instances per month

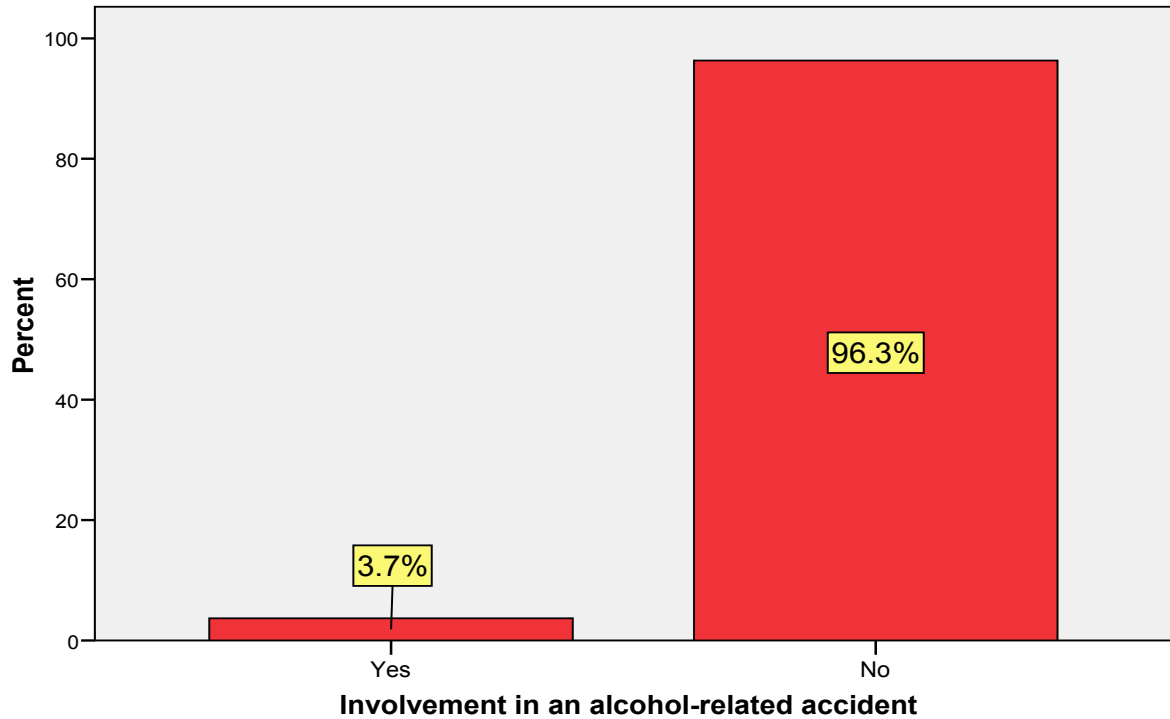


Figure 5.1: Reported involvement in an alcohol related accident.

Figure 5.1 represents responses to a question regarding involvement (in any sense) in an alcohol-related accident. It shows that 3.7% (7) of the respondents have been involved in an alcohol-related car accident and 96.3% (183) have not been involved in an alcohol-related accident.

A follow-up question asked respondents who had been in an accident to elaborate on the circumstances. In some cases, the respondent was driving and in others the driver was a friend or family member. These accidents were often attributed to circumstances outside of drinking and driving, as the following excerpts indicate:

'I was driving but the other driver was in the wrong'.

'My friend was driving but it was the other driver who made a wrong turn'.

Rationalising drinking and driving is easier as blame is shifted from the driver to external factors.

Another respondent reflected on a friend who had died while under the influence of alcohol:

'I lost a friend as a result of drunken driving, he had drunk too much despite being warned by friends, but he assured us he was fine and that he could get home safely'.

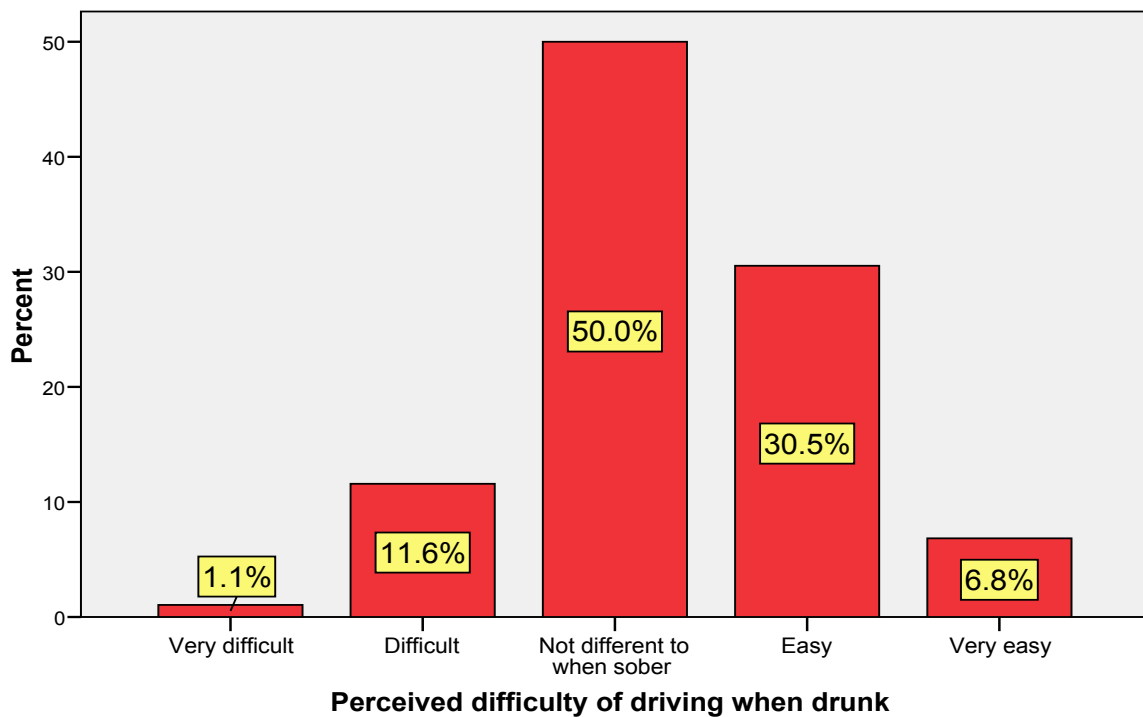


Figure 5.2: Perceived difficulty of driving when drunk.

The participants were asked how they perceive the difficulty of driving drunk. Figure 5.2 shows the results. Responses show that 1.1% of the respondents said it was very difficult, 11.6% of them said it was difficult, 50.0% of them said it was not different to when sober, 30.5% said it was easy and 6.8% said it was very easy. Thus a full 87.3% of respondents indicate that driving under the influence of alcohol is easier or no different to driving sober.

In addition to being asked about their perceived difficulty of drunken driving, the participants were further interrogated as to their perceptions of whether or not their driving skill is impaired in any way by driving drunk. The graph below shows the results.

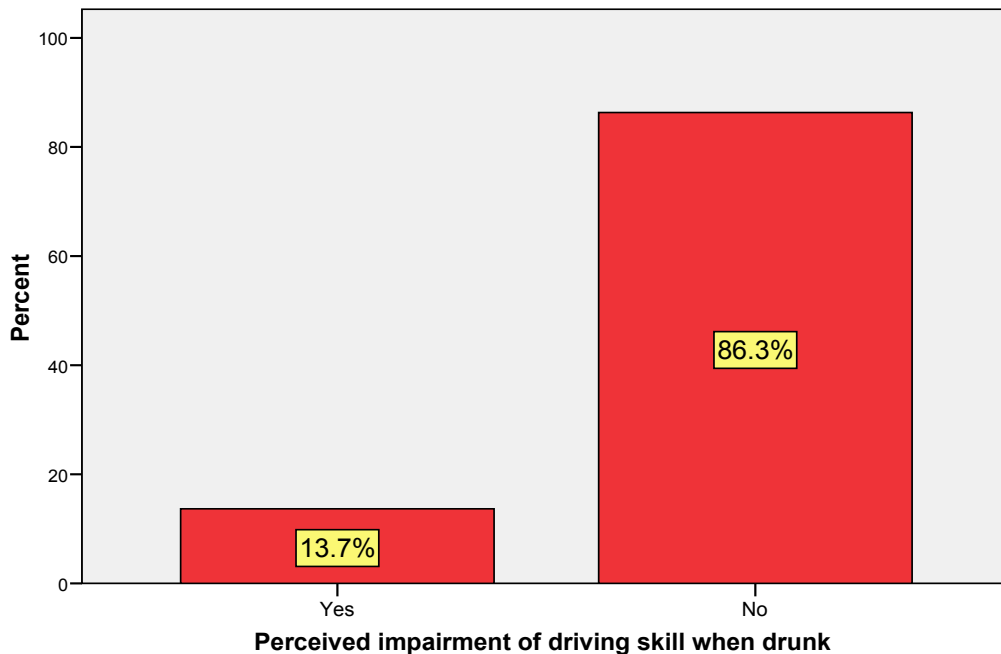


Figure 5.3: Perceived impairment of driving skill when drunk.

Figure 5.3 shows that 13.7% of the participants said ‘yes’, their driving skill is impaired by alcohol and 86.3% said ‘no’, their driving skill is not affected by alcohol.

This was further explored by a question asking if respondents perceive there to be a difference between driving sober and drinking and driving.

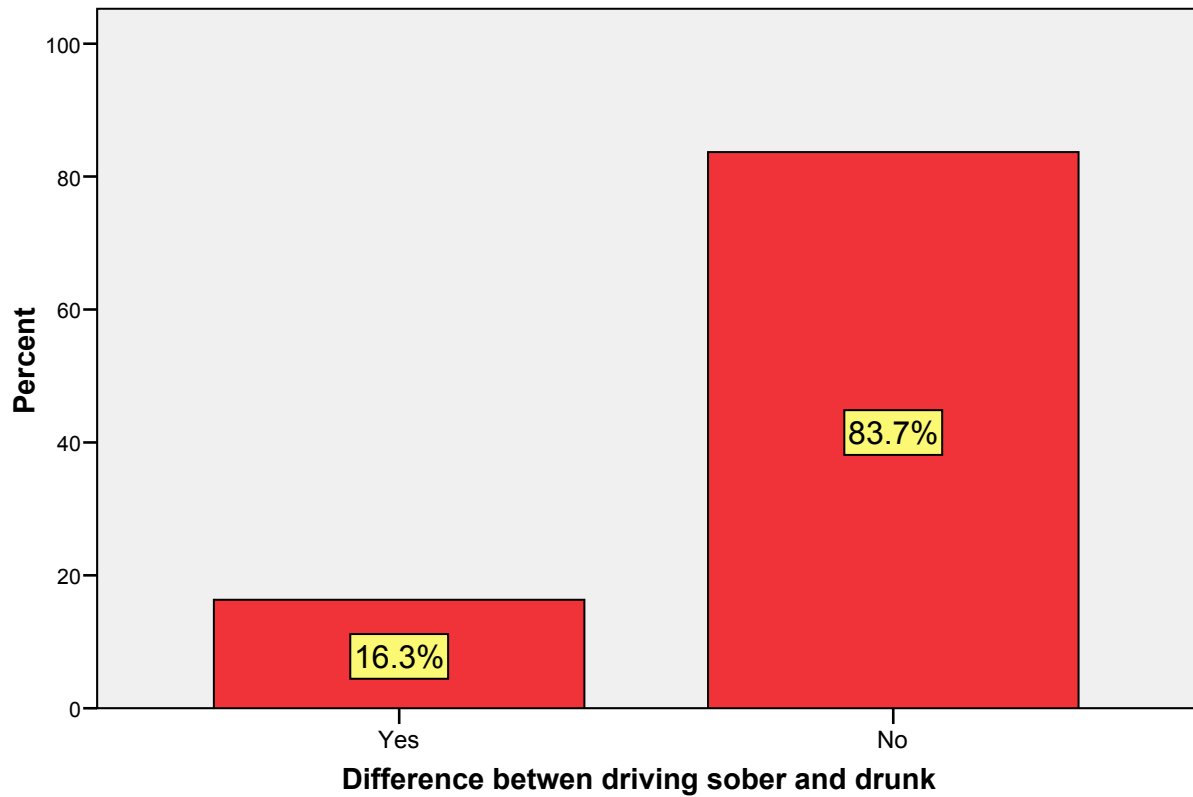


Figure 5.4: Difference between driving sober and drunk

According to Figure 5.4, 16.3% of respondents said there is a difference between driving drunk and driving sober and 83.7% of respondents indicated that there is no difference between the two.

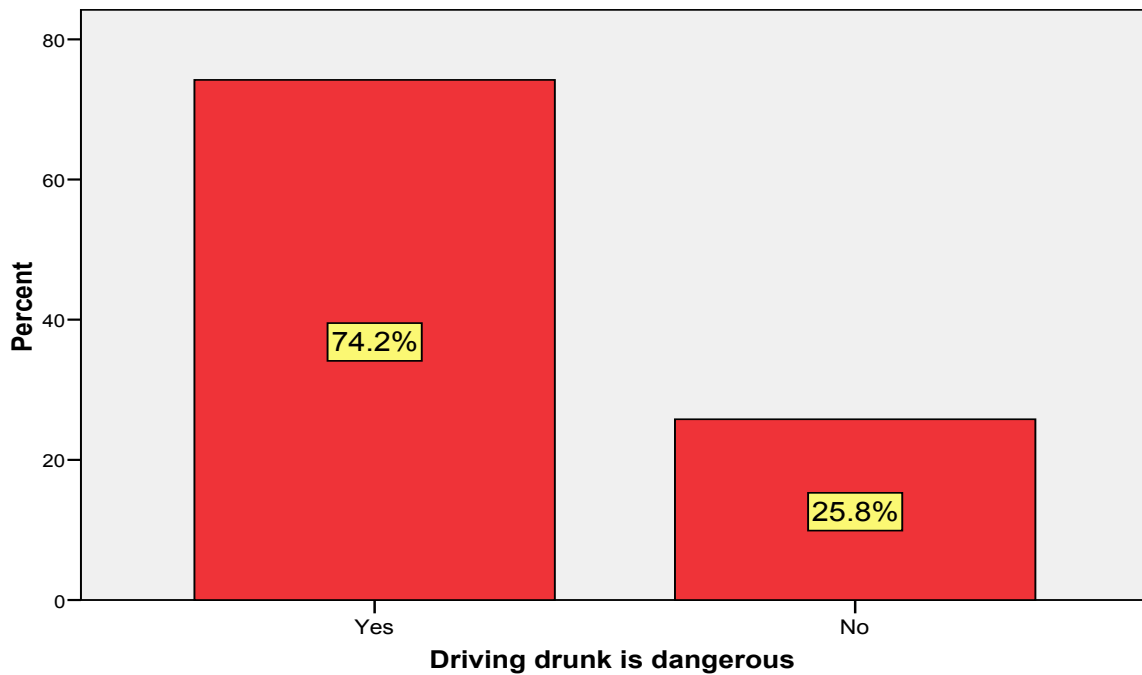


Figure 5.5: Driving drunk is dangerous

When asked if driving drunk is a dangerous activity or not, three quarters (74.2%) of the respondents agreed that it is a dangerous activity and a quarter (25.8%) disagreed.

This finding, when compared to Figures 5.2 to 5.4, indicates that there is a disjuncture between self-efficacy beliefs and general risk beliefs among respondents. In other words, respondents are more likely to agree that drinking and driving is dangerous when applied as a general statement (Figure 5.5) than if it is asked in relation to them specifically (Figures 5.2 to 5.4).

Bandura's key contention as regarding the role of self-efficacy beliefs in human functioning is that people's level of motivation, affective states and actions are based more on what they believe than on what is objectively true (Bandura, 1997). The above figures point to a worrying trend of the non-perception of drinking and driving as a dangerous behaviour among those who drink and drive.

This is a worrying finding in light of studies which show that even with blood alcohol levels below the legal limit (0.05 g/100ml), neuropsychological functioning and brain activity are negatively affected (cf. Delin and Lee, 1992).

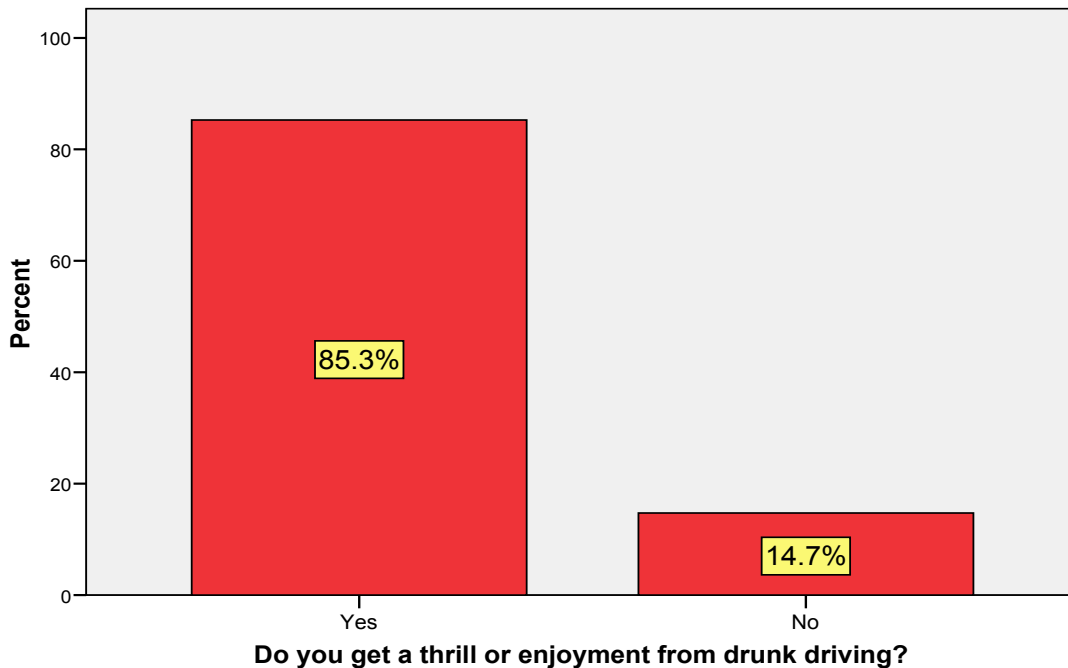


Figure 5.6: The thrill or enjoyment of driving drunk

Respondents were asked to report whether or not they receive any thrill or enjoyment from drunken driving. The vast majority (85.3%) said ‘yes’, they do get some enjoyment from drunken driving and 14.7% indicated that they do not.

Bandura believes that behaviour will be harder to discard if the person engaging in the behaviour values the outcomes or consequences that he or she believes will occur as a result. Outcomes may be classified as having immediate benefits or long-term benefits but, because these expected outcomes are filtered through a person's expectations or perceptions of being able to perform the behaviour in the first place, self-efficacy is believed to be the single most important characteristic that determines a person's behaviour change.

To explore more generally, the psychological terrain of the respondents' beliefs around risk, they were asked to report, through an open-ended question, as to what their beliefs are concerning accidents as a result of drunken driving. Again there emerges an apparent disconnect between beliefs on what applies to others and beliefs concerning what applies to their behaviour, specifically.

Many responses showed beliefs regarding the general risk of drinking and driving as high. They supported punitive measures, as evidenced by the following representative excerpts:

'It is extremely dangerous'

'People who are drunk should not drive'

'Everyone by now should know how dangerous drinking and driving is, we hear about it all the time'

'People who drive drunk should be seriously taken to jail and seriously punished because they put lives in danger'

Other responses, however, showed that these beliefs featured little when applied to their personal behaviour, as evidenced by the following representative excerpts:

'I'm very careful, so nothing can happen'

'It's easy, I do just fine'

'Only inexperienced drivers would crash or get caught as a result of drinking and driving'

'It will never happen to me, I don't feel different when drunk, it's about keeping your eye on the road'

This section has shown the role that beliefs play in influencing and justifying drinking and driving behaviour. The following section will show the role of social context concerning the behaviour.

5.4 Social Context Enabling or Constraining Drunk Driving

The aim of this section is to examine the social influences that play an enabling or constraining role in drunken driving behaviour. Two major sites of influence will be examined, namely the family and peer groups. The social environmental influence will be further explored by examining the context in which respondents engage in the behaviour.

5.4.1 Familial Support

The SCT describes learning in terms of the interrelationship between behavioural, environmental and personal factors. The family, as a social institution and important site of socialisation, is often regarded as the genesis of informal sanctions preventing anti-social behaviour.

The influence of the family in the decision-making process will be examined using four criteria: awareness of the behaviour; support for the behaviour; engagement of family in the behaviour (modelling) and sanctions employed against the behaviour.

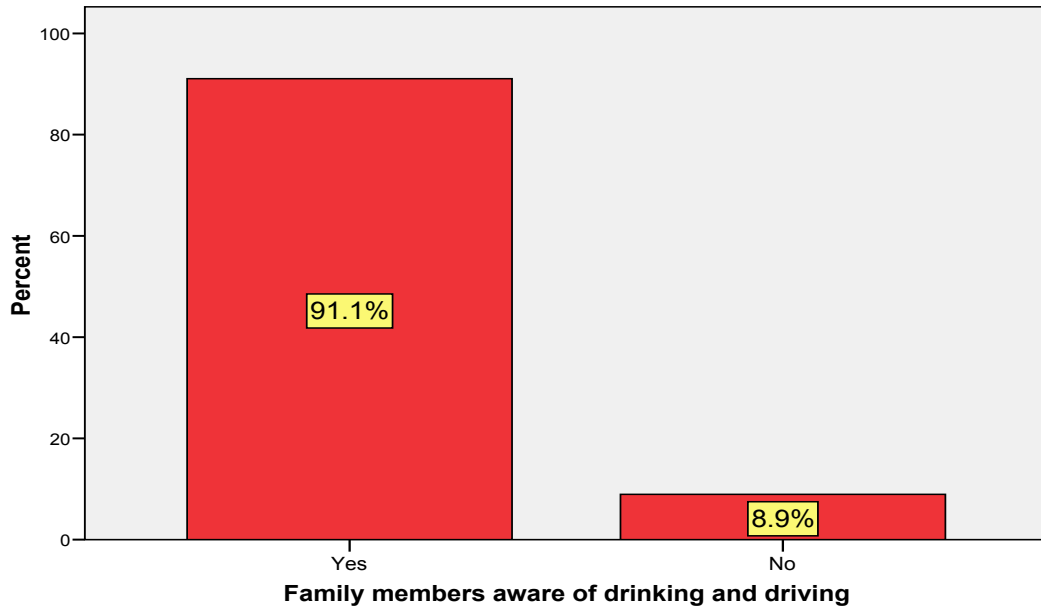


Figure 5.7: Family members' awareness of drinking and driving behaviour

Figure 5.7 shows the level of awareness of family members of respondents' drinking and driving. A full 91% of the participants indicated that their families are aware that they drink and drive and 9% of them said their families did not know that they drink and drive.

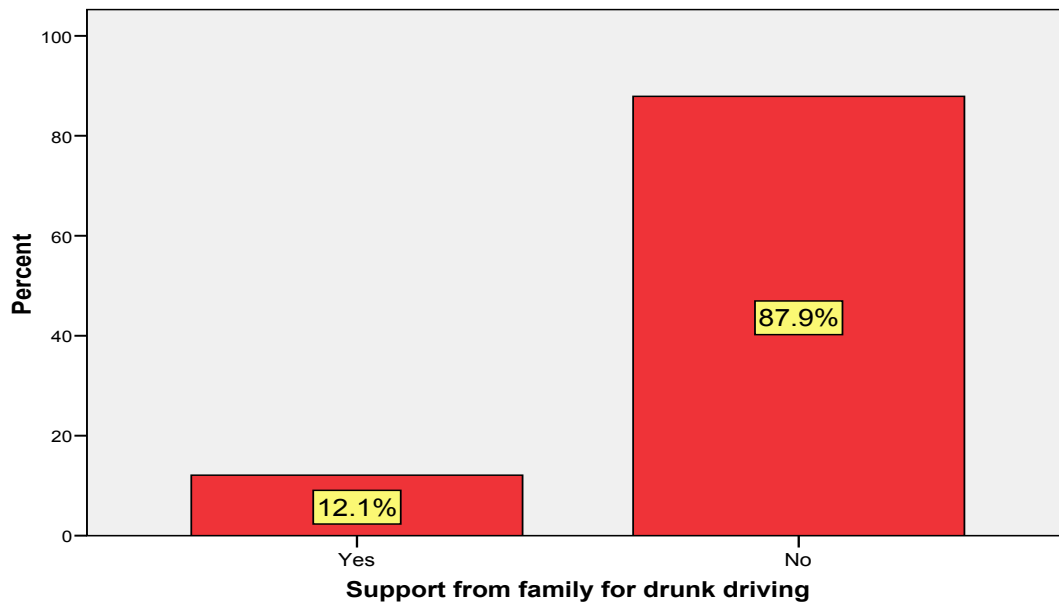


Figure 5.8: Support from family members for drunk driving

Respondents were asked whether or not they receive support from their family members with regard to their drinking and driving behaviour. Figure 5.8 shows that only 12% of the participants indicated that their families are supportive of their drinking and driving behaviour, with the majority (88%) indicating a lack of familial support for their drinking and driving.

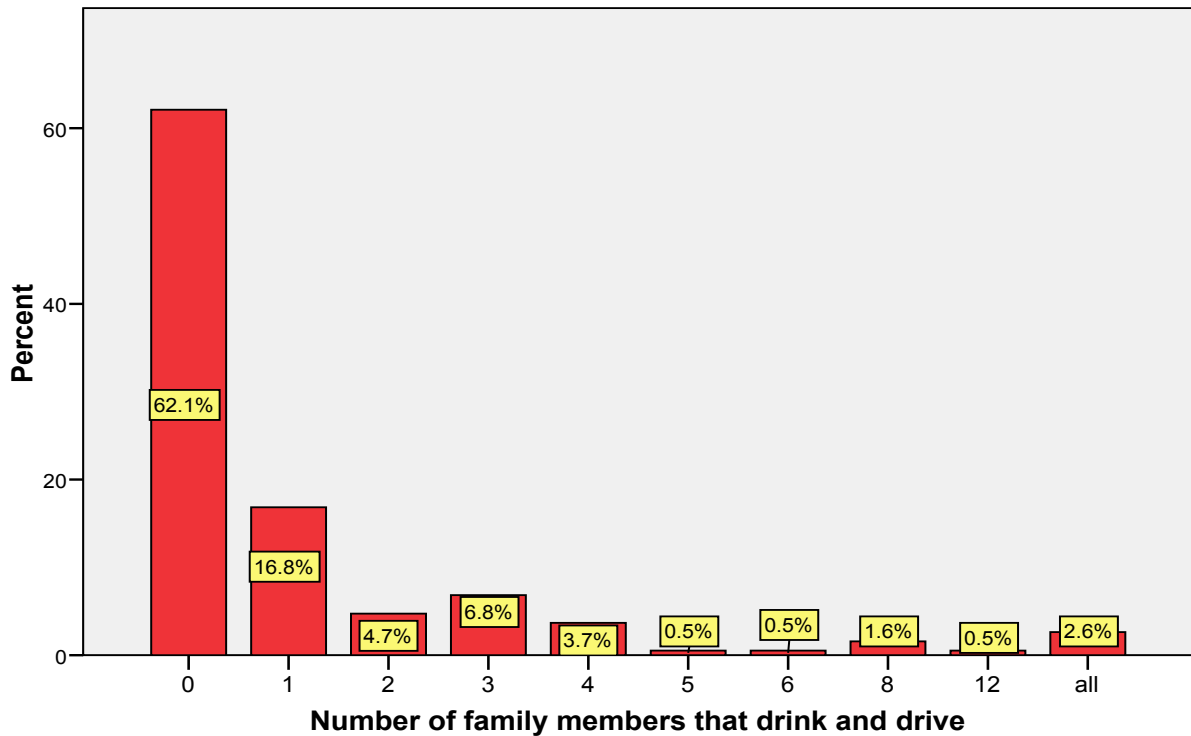


Figure 5.9: Number of family members that drink and drive

Respondents were asked how many of their family members drink and drive. Figure 5.9 shows that 38% of respondents have at least one family member that drinks and drives and 62% of respondents reported that none of their family members drink and drive.

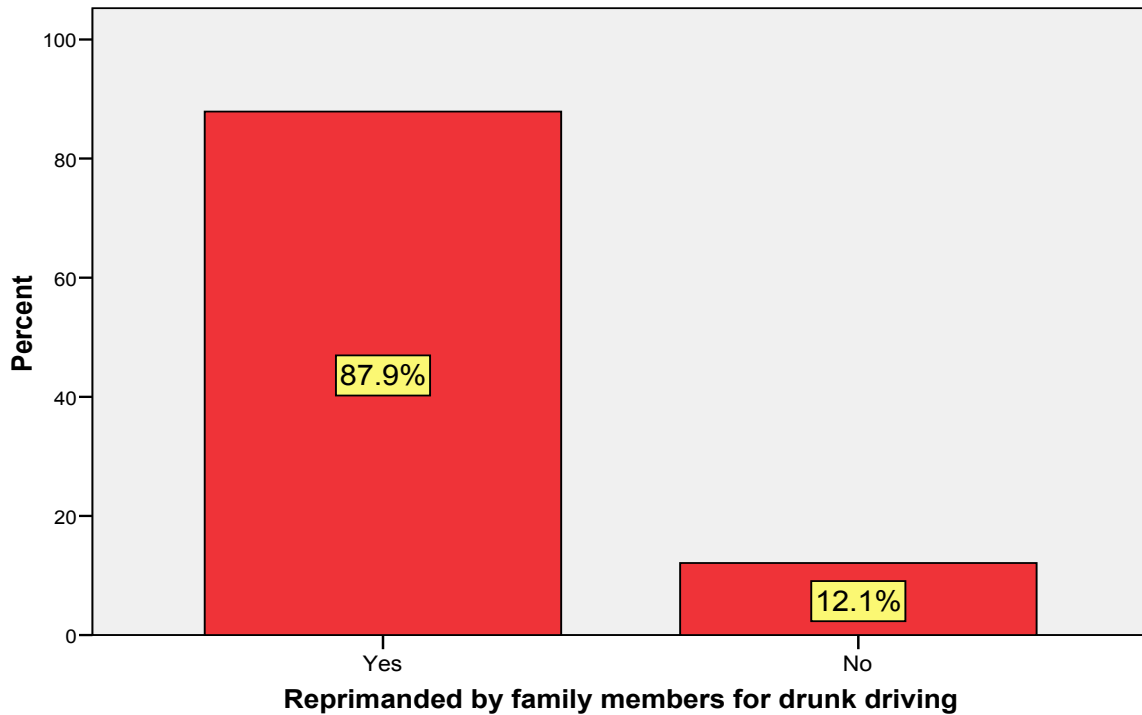


Figure 5.10: Reprimanded by family members for drunk driving

Respondents were asked to report whether they had ever been reprimanded in any way for drinking and driving by family members. Figure 5.10 shows that most (88%) reported some sort of reprimand and only 12% reported a lack of reprimand.

The SCT describes learning in terms of the interrelationship between behavioural, environmental and personal factors. The family, as a social institution and important site of socialisation, is often regarded as the genesis of informal sanctions preventing anti-social behaviour. In light of the persistent and frequent engagement of respondents in drunken driving behaviour, the family group seems less able to dissuade the behaviour, even though they engage in reprimanding the behaviour. This may be due to a combination of inconsistent modelling (some respondents indicating that family members who drink and drive themselves) and lower credibility as a punitive social group: these are adult males who are often living outside of the family homestead or away from constant surveillance.

The next subsection will examine the role of peers beliefs and norms in constraining or enabling drinking and driving among the respondents.

5.4.2 Peer support

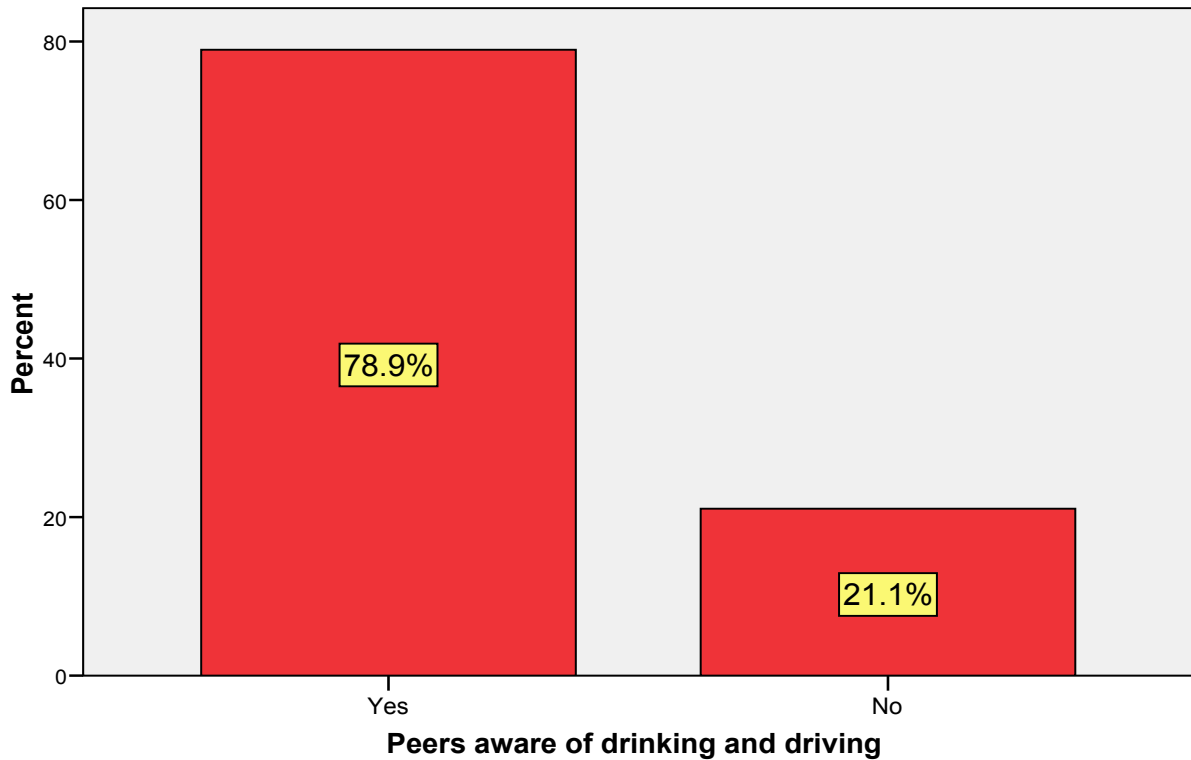


Figure 5.11: Awareness of peers of respondents drinking and driving

Figure 5.11 shows the level of awareness of peers of respondents' drinking and driving. About 79% of the participants indicated that their peers are aware that they drink and drive and 21% of them said their peers did not know that they drink and drive.

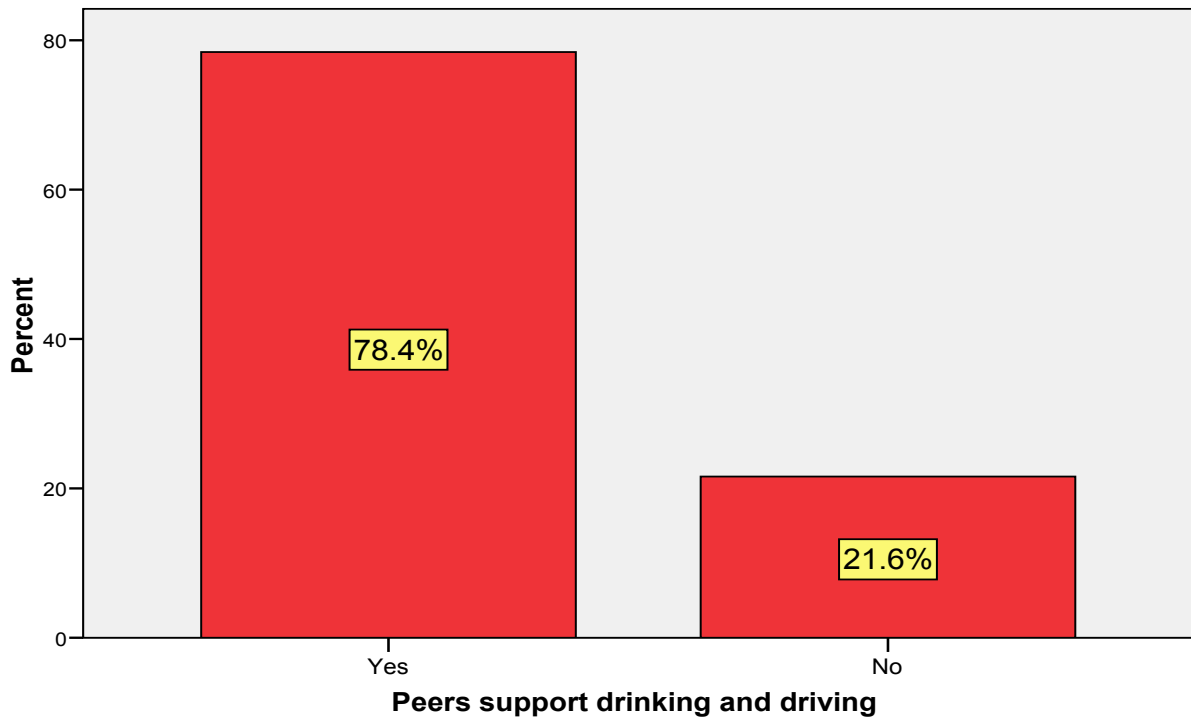


Figure 5.12: Peers support drinking and driving

Respondents were asked whether or not they receive support from their peers with regards to their drinking and driving behaviour. Figure 5.12 shows that 78% of the participants indicated that their peers are supportive of their drinking and driving behaviour, with only 22% indicating a lack of peer support for their drinking and driving.

This level of support is almost an inverse representation of the level of support of family members indicated earlier.

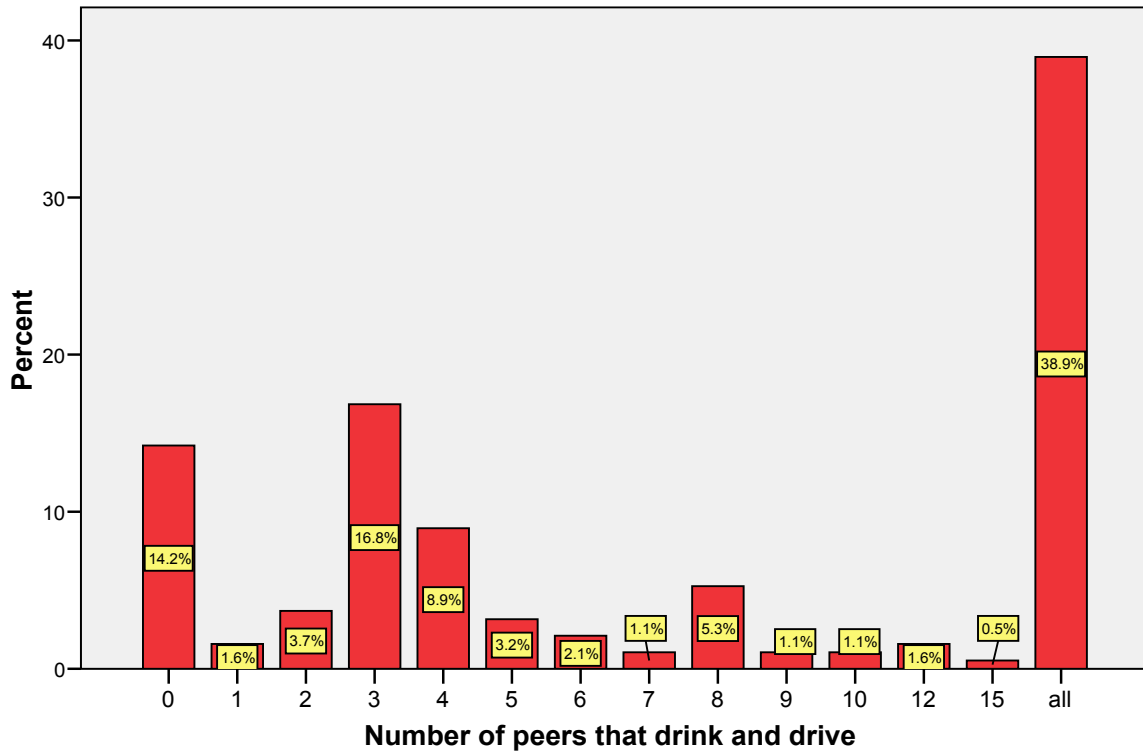


Figure 5.13: Number of peers that drink and drive

Respondents were asked to report how many of their peers drink and drive. Figure 5.13 shows that 86% of respondents have at least one peer that drinks and drives and 39% indicated that all their peers drink and drive. This allows insight into the scope of the problem among the network of young males in Pietermaritzburg.

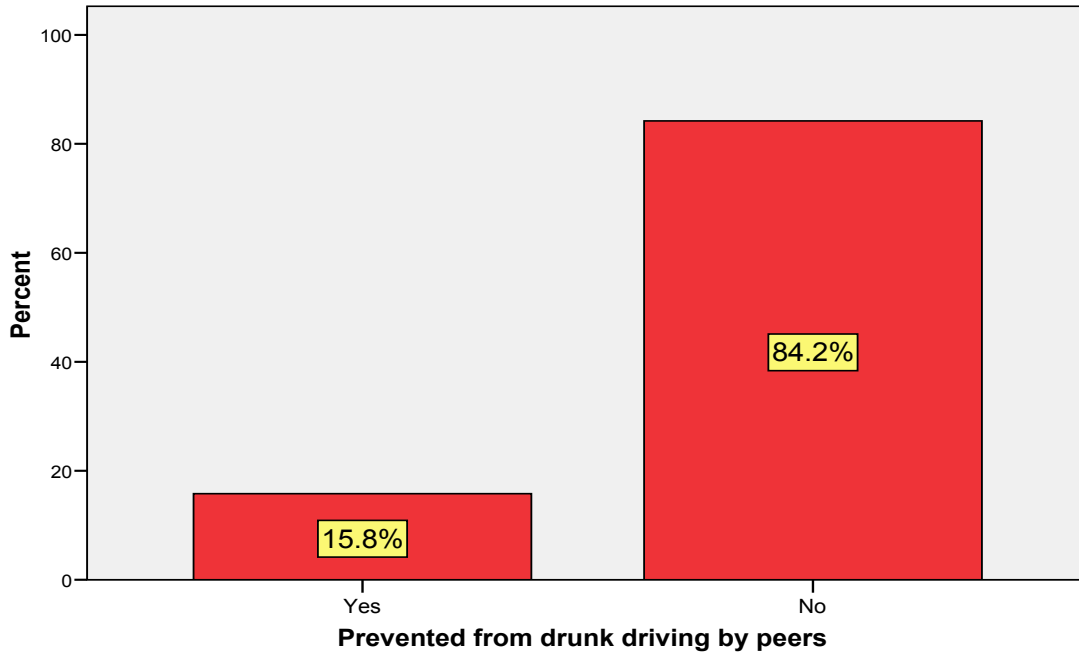


Figure 5.14: Prevented from drunk driving by peers

Respondents were asked to report whether or not they had ever been prevented from drinking and driving by their peers. Figure 5.14 shows that most (84%) respondents report no attempt to prevent drinking and driving by peers, with only 16% indicating an intervention by a peer or peers.

A comparative analysis of familial and peer support clearly shows that family members are much less likely to support drinking and driving than peers. It appears that the peer network among the sample is a more enabling group in terms of support and engagement in drinking and driving behaviour. Any intervention aimed at social intervention would be wise to focus strongly on the peer group as a site of intervention.

5.4.3 The broader social context

This subsection will examine the reported contextual influences relating to drinking and driving.

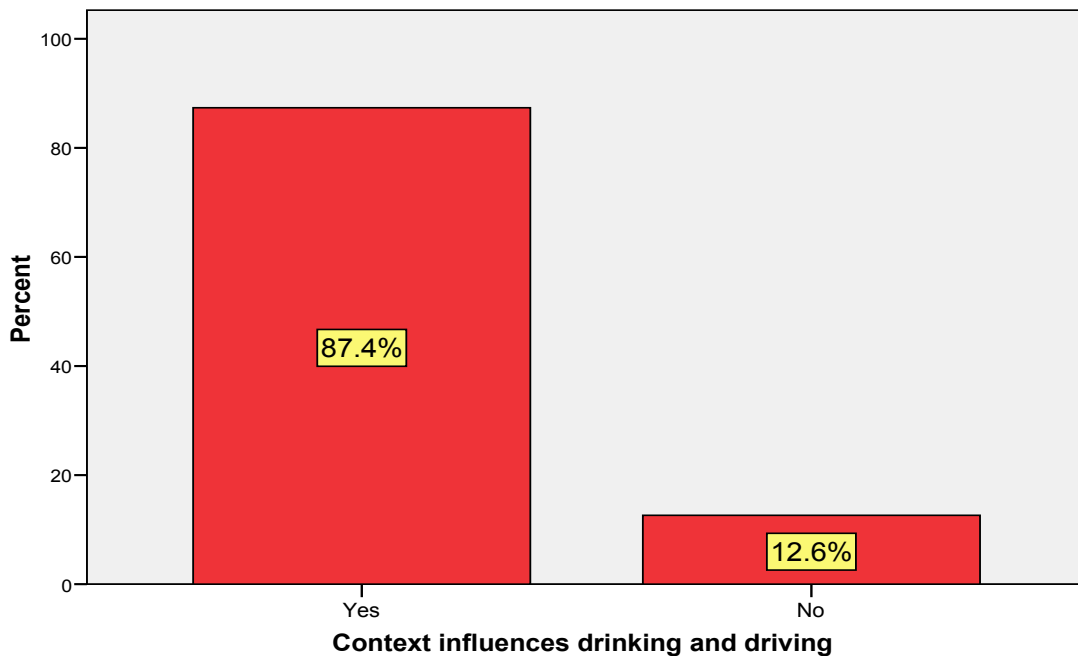


Figure 5.15: Does context influence drinking and driving?

Respondents were asked to self-report on whether or not context generally plays a role in their drinking and driving behaviour. Figure 5.15 shows that 87.4% recognized the role of contextual factors and only 12.6% of respondents denied this role.

An open-ended question asked respondents to elaborate on the role of context. It elicited a number of responses. Many respondents reiterated the role of peers and peer support in their responses. Typical responses are excerpted below:

'I drink a lot when I'm with my friends'.

'Drinking more is often done with friends'.

'My friends make it a challenge to stay sober'.

'My friends always tempt me to drive drunk and to prove my manhood I end up doing it'.

'My friends actually force me to drink and I usually have no one to drive me home'.

'If all your friends are drinking you also end up doing it just to fit in and be part of the crowd'.

Another theme is that of the influence of the situation specific to pubs and clubs and celebratory activity. Typical responses include:

'Whenever I go out I end up drinking a lot'.

'In clubs the alcohol is available and you end up drinking because all your friends are drinking and because the alcohol is there'.

'In clubs I drink more freely because everyone is doing it'.

'I always drink a lot when I am with friends or at a club or party'.

The lifestyle common to young males (often students and unmarried) seems to promote drinking in excess and driving thereafter. However, in some situations, respondents indicate they *do* refrain from this activity. This is particularly apparent when in the company of elders or family members. This is demonstrated through the following typical excerpts:

'[I drink] less with elderly people'.

'I don't drink with my parents'.

'I drink less when with elderly people or my parents'.

This section has demonstrated the roles played by family, peers and social context on drinking and driving behaviour. Generally, families are unsupportive of drinking and driving, while peers are more enabling in this regard. Other influences include the context in which the drinking takes place.

The following section will look at the alternatives employed by the respondents to drinking and driving.

5.5 Alternatives to Drinking and Driving and their Reported Use

This section will look at the reported use of alternatives to drinking and driving by members of the sample. The knowledge and availability of these alternatives can serve to curb the problem.

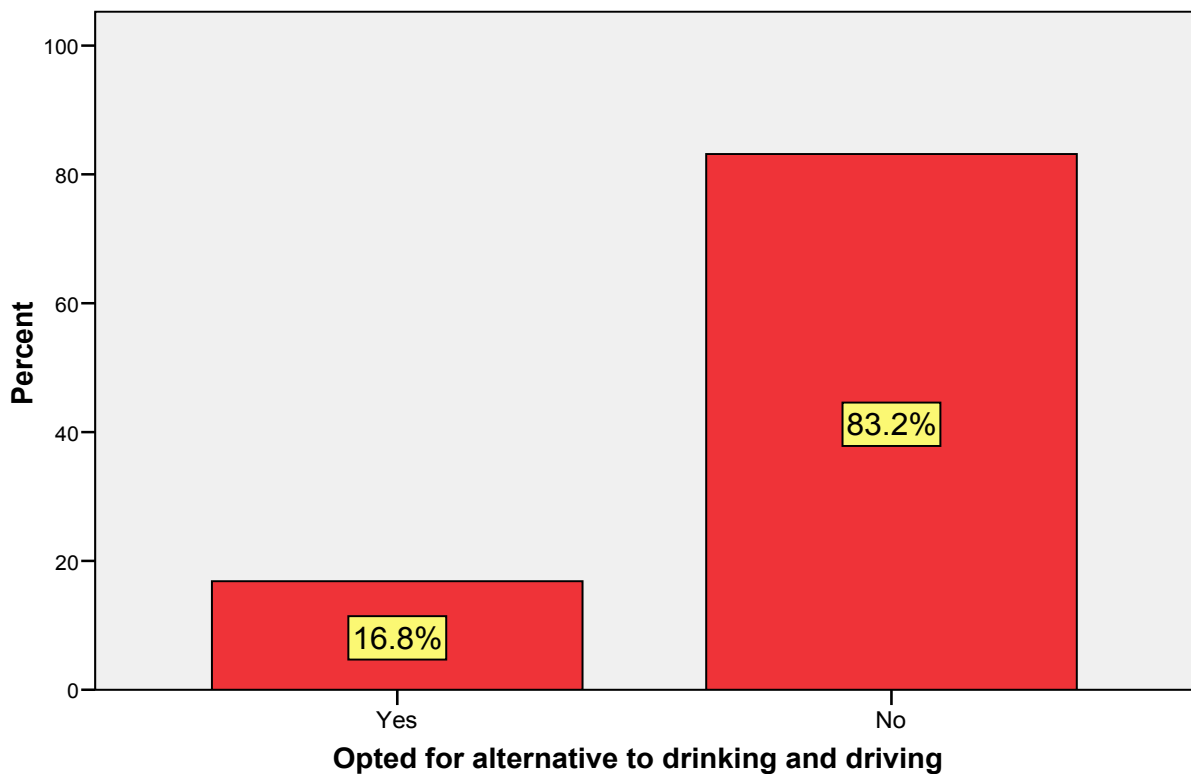


Figure 5.16: Opted for alternative to drinking and driving.

Respondents were asked if they had ever opted for an alternative to drinking and driving. According to Figure 5.16, only 17% reported using an alternative to drinking and driving.

Those who had opted for alternatives indicated their choices, which are presented in Figure 5.17.

		Responses		Percent of Cases
		N	Percent	
Alternate options employed	Designated Driver	16	44.4%	51.6%
	Public transport	4	11.1%	12.9%
	Meter taxi	16	44.4%	51.6%
Total		36	100.0%	116.1%

Figure 5.17: Alternate options employed by respondents

Figure 5.17 represents alternate options employed by those who had indicated they had elected for an alternative to drinking and driving. The alternate options included designated driver; public transport and meter taxi: 44% of the participants who opted for an alternative/s to drunken driving opted for a designated driver, 11% opted for public transport and 44% opted for a meter taxi. This was a multiple response variable and, as such, allowed respondents to select more than one option; explaining the percentage column which indicates percent of cases.

Qualitative data gave insight into the choices or lack of alternate use. Many respondents pointed to the perceived lack of options, as evidenced by this representative excerpt:

‘... sometimes you don’t have an option but to drive drunk, because you have to get home’.

Interestingly, a chi-square test measuring the relationship between perceived difficulty of driving drunk and whether or not respondents opted for an alternative to drinking and driving saw a significant relationship between the variables ($p < 0.05$, $p = 0.000$). This

indicates that those respondents who identified driving drunk as difficult are more likely to seek alternate behaviours.

5.6 Perceived Risk and Law Enforcement

The aim of this section is to examine the perceived risk of drunken driving by the participants and to examine their perceptions of the legal implications of drunken driving.

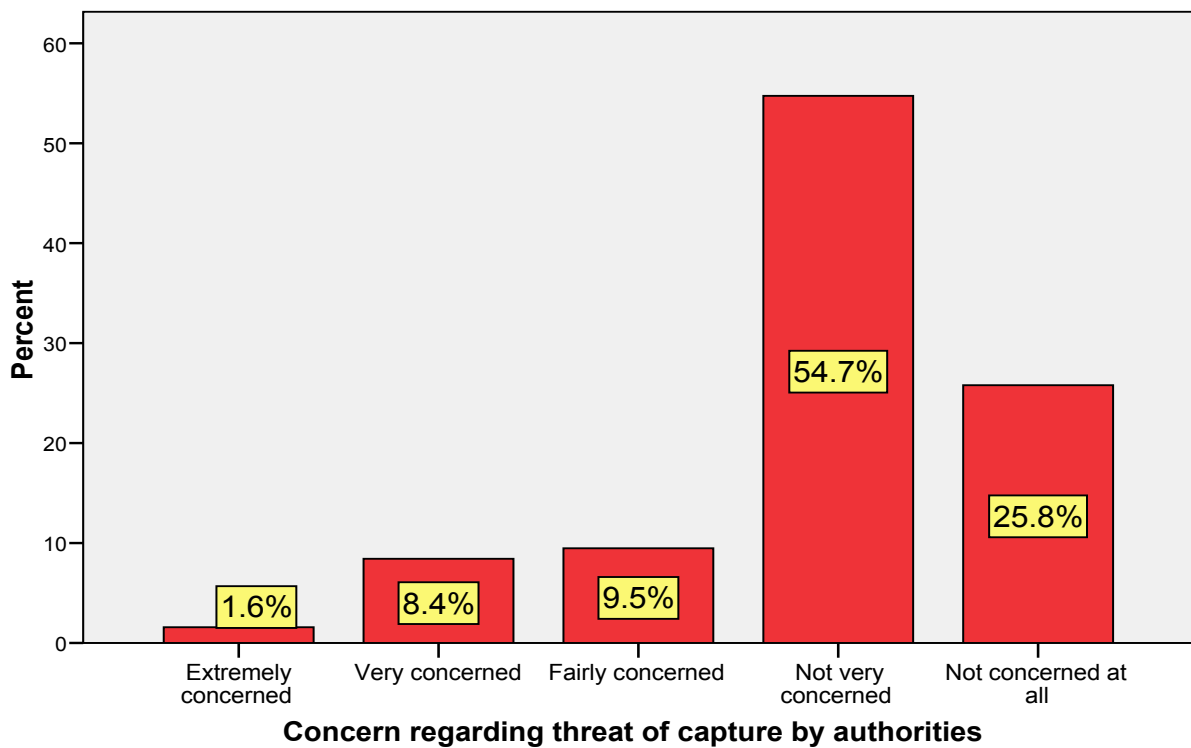


Figure 5.18: Concern regarding threat of capture by authorities

Figure 5.18 represents how the participants responded when they were asked what their level of concern for being apprehended by the police for drunken driving was. It is apparent that 80.5% of respondents are not very concerned, or not concerned at all, regarding the threat of capture. This is linked to the next figure (Figure 5.19), which examines the perceived likelihood of arrest for drinking and driving.

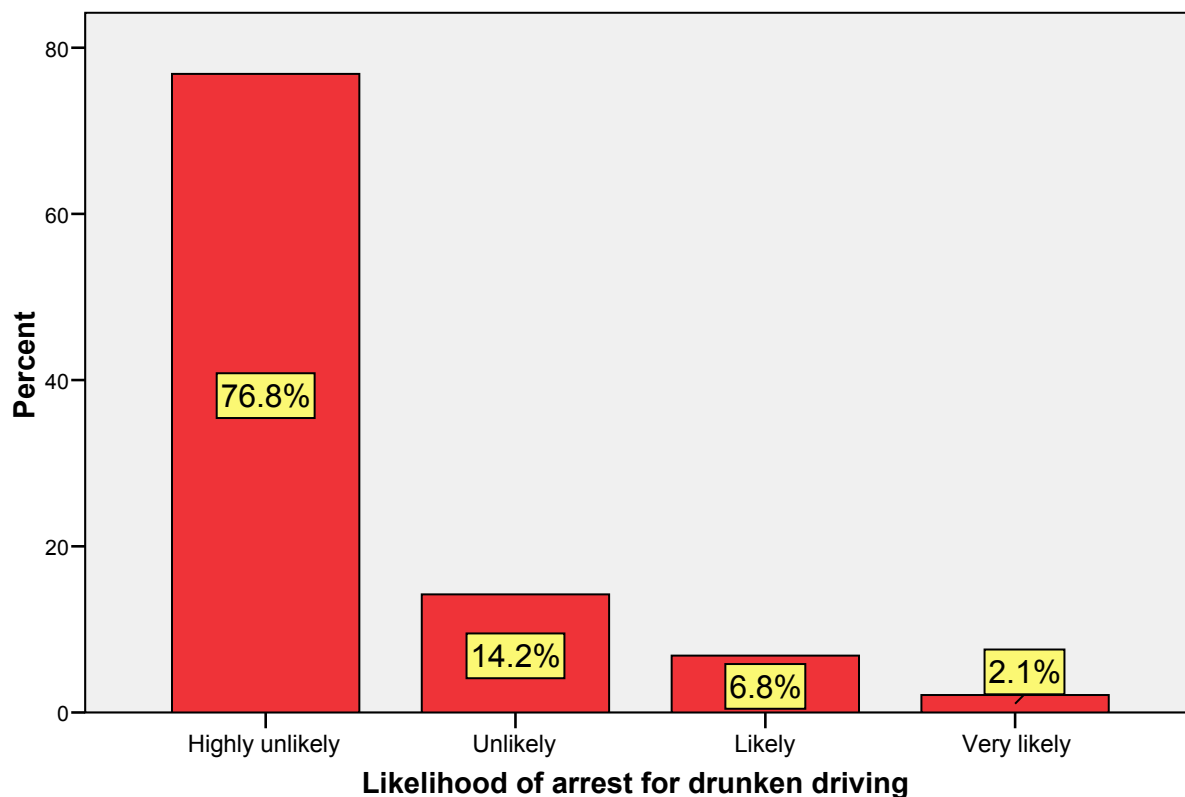


Figure 5.19: Likelihood of arrest for drunken driving

Respondents were asked to indicate the likelihood of their being arrested for drunken driving. According to Figure 5.19, 76.8% of the participants said it is ‘highly unlikely’ that they would be caught, 14.2% said it is ‘unlikely’, 6.8% said it is ‘likely’ and 2.1% said it is ‘very likely’ that a driver would be arrested for drunken driving.

This indicates that there is a low perceived risk of being caught and that what people believe affects how they behave. This has implications for the communicative and enforcement responses to drinking and driving. It is unlikely that behaviour will be disengaged from if there is a perceived likelihood of getting away with the behaviour.

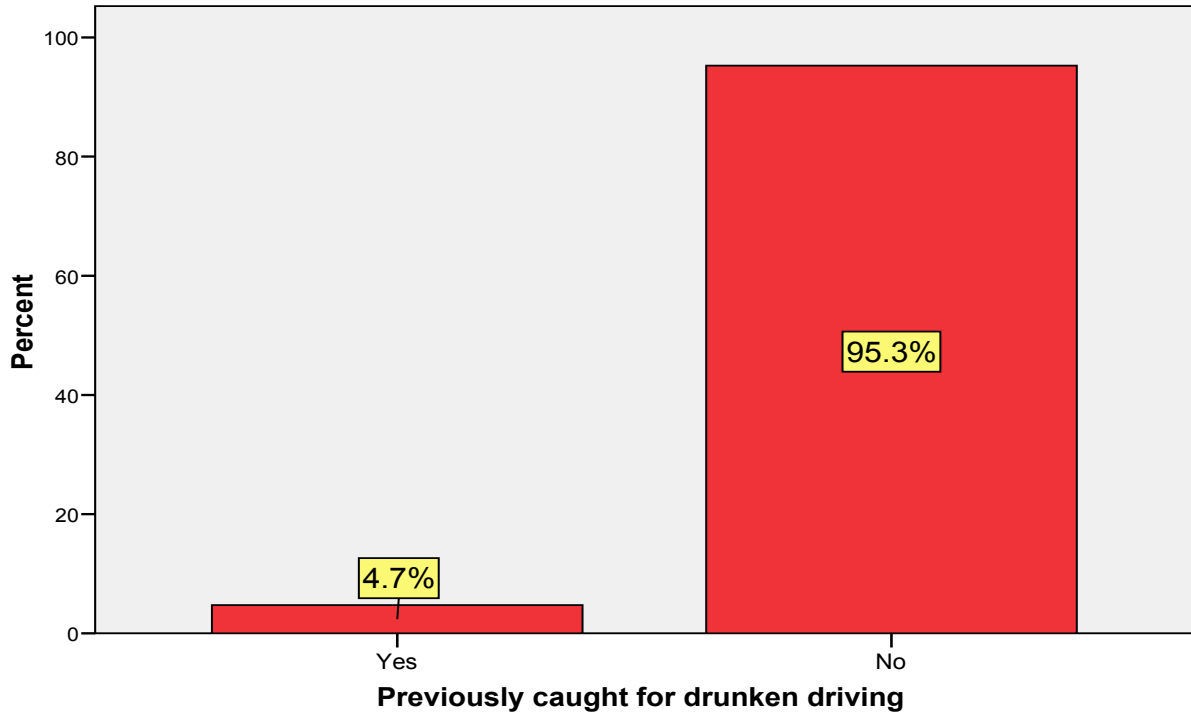


Figure 5.20: Previously caught for drunken driving

Respondents were asked if they had been previously caught for drunken driving. Figure 5.20 indicates that 4.7% (nine respondents) had been caught and 95.3% had not been caught.

This low capture rate among self-confessed repeat and frequent offenders indicates a lack of success on the part of traffic authorities and other groups and feeds into the perception of risk discussed in Figures 5.18 and 5.19 above.

Those who have been caught were asked to reveal the circumstances and the penalty received. Most received fines, two had their licences suspended for a year and only one reported any jail time (of only two days). These cases show a lack of the necessary punitive measures required to dissuade behaviour, as evidenced in the following figure.

		Likelihood of arrest for drunken driving				Total
		Highly unlikely	Unlikely	Likely	Very likely	
Previously caught for drunken driving	Yes	55.6%	22.2%	11.1%	11.1%	100.0%
	No	77.9%	13.8%	6.6%	1.7%	100.0%
Total		76.8%	14.2%	6.8%	2.1%	100.0%

Figure 5.21: Cross-tabulation between ‘previously caught for drunken driving’ and ‘Likelihood of arrest for drunken driving’

The cross-tabulation in Figure 5.21 shows that, of the respondents who have been caught for drinking and driving, 78% still feel that the risk of capture is highly unlikely or unlikely.

With regards to the reported knowledge of the blood alcohol limit (BAL) in effect in South Africa, the following figure shows the responses received.

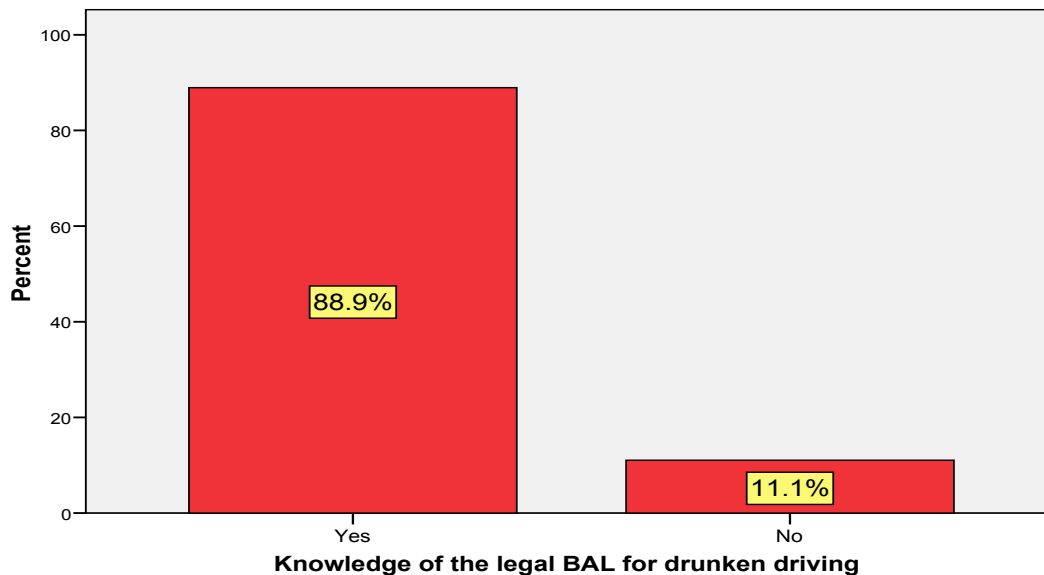


Figure 5.22: Knowledge of the legal BAL in South Africa

According to Figure 5.22, 89% of respondents report awareness of the BAL. This indicates that their behaviour is unlikely to be rooted in ignorance of road the traffic law.

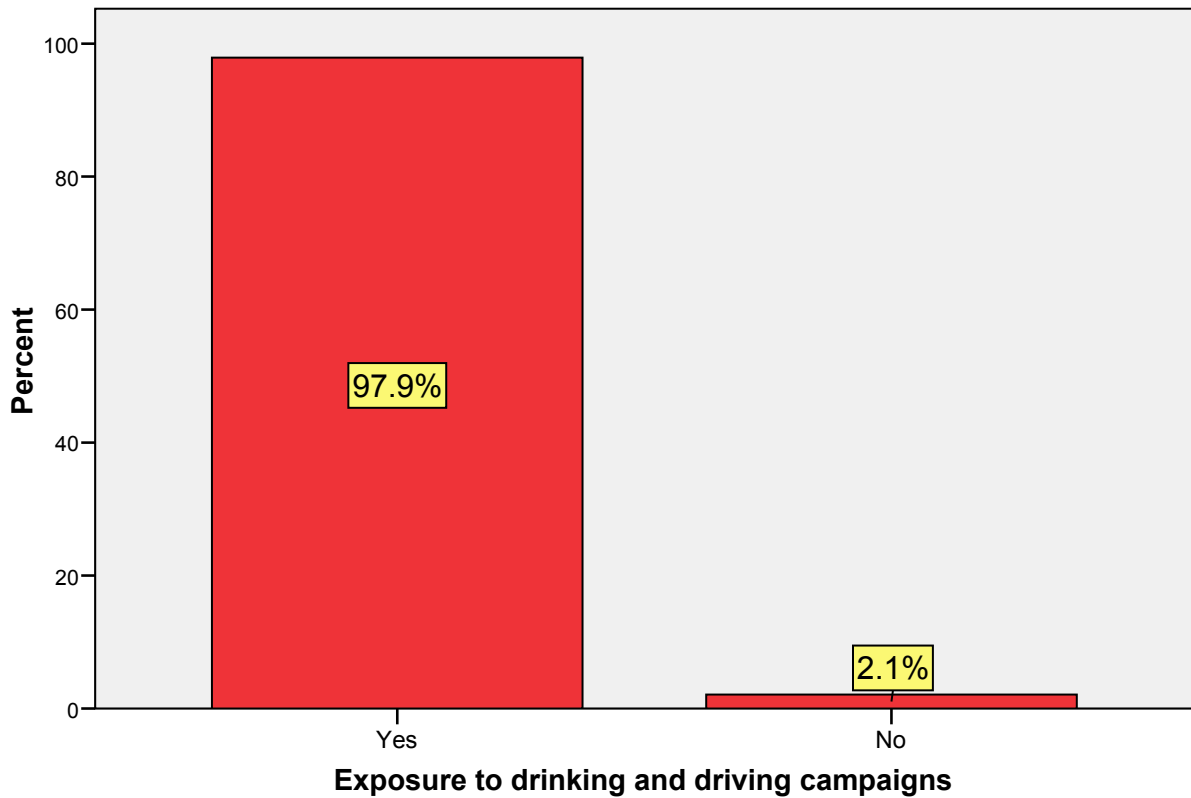


Figure 5.23: Exposure to drinking and driving campaigns

Respondents were asked to indicate whether or not they had been exposed to road safety campaigns concerning drinking and driving. As Figure 5.23 shows, only four respondents (2.1%) indicate that they have not been exposed to at least one of these campaigns. This implies an ineffectual impact of these campaigns for this group.

A finding that may underpin many of the attitudes towards drinking and driving is the perception of whether or not drinking and driving should be a criminal offence.

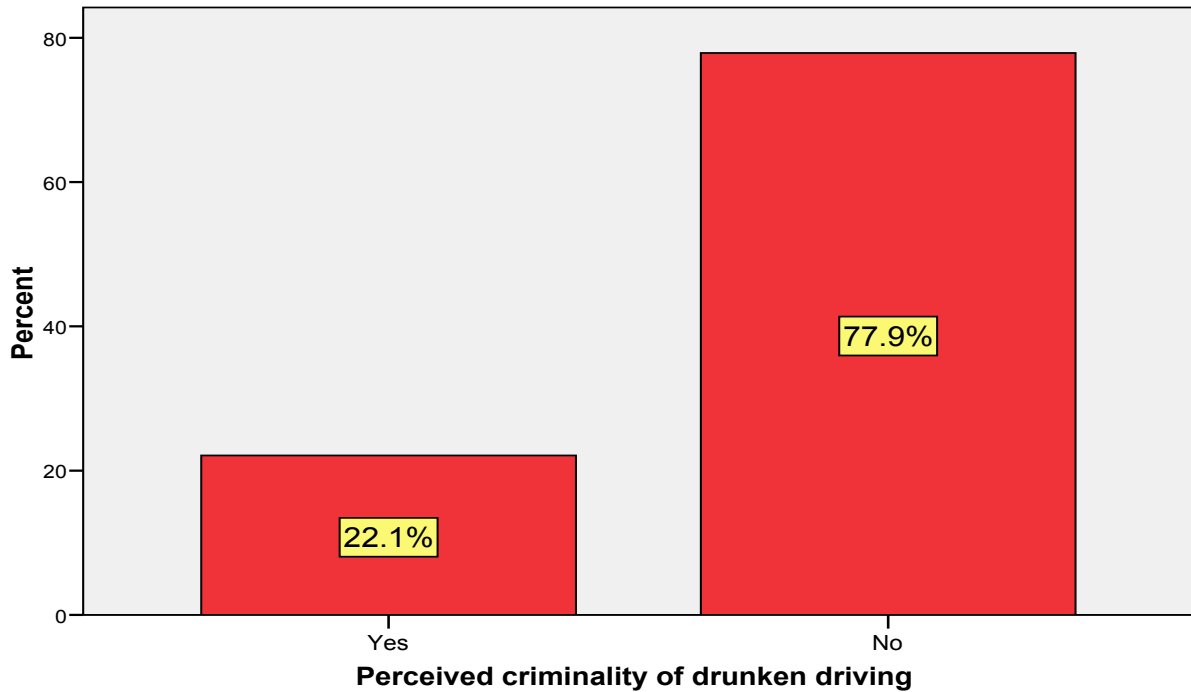


Figure 5.24: Perceived criminality of drunken driving

Respondents were asked if they feel as if they are breaking the law by drinking and driving. Figure 5.24 shows that only 22% feel they are breaking the law and a surprising 78% indicate a lack of perceived criminality when drinking and driving.

The findings of this question support the assertion of Bandura that self-efficacy beliefs provide the foundation for human motivation, well-being and personal accomplishments.

5.7 Summary

In conclusion, this chapter has provided a selected analysis of the relevant findings of the survey. Bandura’s SCT served as an analytical framework in the design of the survey and in the presentation of the findings.

The findings suggest that certain beliefs are prevalent among the sample that enable the continuation and rationalization of drinking and driving behaviour.

When self-efficacy is high regarding the successful carrying out of a task, then the likelihood of that task being done is greatly increased.

The findings also show that the social and legal environment does play a role in influencing drinking and driving among young males in Pietermaritzburg.

Chapter 6: Discussion and Conclusion

6.1 Discussion

The findings of this study are consistent with the research topic, which was to explore the drinking and driving behaviour of males in the Pietermaritzburg area. The study has conclusively shown that there is a pressing need to address the perceptions of those who drink and drive. This was evident in the findings of 50% of the participants admitting that drunken driving is not different to driving when sober; that 86.3% said their driving skill is not in any way impaired by drunken driving and that 83.5% of them experience a thrill or enjoyment when driving under the influence of alcohol. These false perceptions that people have regarding drunken driving will lead them to continuously engage in this behaviour. This study has pointed the way in which law enforcement and road safety intervention campaigns may be directed in regulating or minimizing incidents of drunken driving.

The theoretical perspective that was adopted by the study was the Social Cognitive Theory by Albert Bandura. It was adopted because of its triadic reciprocal determinism. In other words, when it comes to behaviour change the theory looks at three factors, namely behavioural factors, personal factors (in the form of cognition) and environmental factors. Since this is primarily a sociological study, the SCT complements it well, because it takes into account environmental factors in behavioural change. As Bandura puts it, 'reciprocal causation does not mean that the different sources of influence are of equal strength. Some may be stronger than others. Nor do the reciprocal influences all occur simultaneously. It takes time for a causal factor to exert its influence and activate reciprocal influences'.

Bandura makes it clear that how people behave can often be better predicted by the beliefs they hold about their capabilities than by what they are actually capable of

accomplishing. These self-efficacy beliefs help determine what individuals do with the knowledge and skills they have. Of all the thoughts that affect human functioning, and standing at the very core of social cognitive theory, are self-efficacy beliefs: "people's judgments of their capabilities to organize and execute courses of action required for attaining designated types of performances" (Bandura, 1997, p.391). The applicability of this assertion to human conduct was shown in Figure 5.1 to 5.24, where it was established that out of all the participants an alarming 86.3% said their driving skill is not in any way impaired by drunken driving and only 13.7% said it is impaired.

When asked if they were concerned about being captured by authorities, only 1.6% of the participants said they were 'extremely concerned', 8.4% said they were 'very concerned', 9.5% said they were 'fairly concerned', 54.7% said they were 'not very concerned' and 25.8% said they were 'not concerned at all'. A high 76.8% of the participants said it is 'highly unlikely' to be caught, 14.2% said it is 'unlikely', 6.8% said it is 'likely', and 2.1% said it is 'very likely' that they would be arrested for drunken driving. These findings show that self-efficacy is a critical determinant of self-regulation. Bandura's contentions regarding the role of self-efficacy beliefs in human functioning is that people's level of motivation, affective states and actions are based more on what they believe than on what is objectively true.

An important point to acknowledge, according to Pajares (2002), is that people's self-efficacy beliefs should not be confused with their judgment of the consequences that their behaviour will produce. Typically, of course, self-efficacy beliefs help determine the outcomes one expects. This was shown in the present study, when it was found that 4.7% of the participants had been caught for drunken driving and 95.3% of them had not been caught.

The following research questions were formulated to solicit the appropriate information that is pertinent to meeting the objectives of this study.

- What is the frequency and nature of drunken driving amongst young men?

- What are the beliefs and norms that are held by young men who drink and drive and what are the reasons for engaging in this form of behaviour?
- What are the social contexts (particularly those that serve as enablers or prohibitors to drunken driving) in which drunken driving takes place?
- What role does enforcement activity (awareness campaigns, police) play in the triadic (environment, beliefs and personal factors) decision making process amongst young males?

With regards to the research questions, it was established that the average number of times the participants drank per month was seven times, and that it was usually in the company of peers. This was because the findings indicate that 78.4% of the participants said ‘yes’ their peers are supportive of their drinking and driving behaviour, 21.6% said ‘no’ their peers are not supportive and that 38.9% said all of their peers drink and drive.

It was also established that many of the participants had wrong perceptions and false beliefs regarding drunken driving. For instance when they were asked what their beliefs concerning accidents as a result of drunken driving were, some said:

‘Only inexperienced drivers would crash or get caught as a result of drinking and driving.’

‘A lot of people are killed on roads, but people can also die from speed, etc.’

‘Many things can cause accidents it’s not only alcohol.’

‘You need to be very careful when you drive drunk because the chances of being caught these days is high.’

‘It is quite a challenge sometimes, if you are careful nothing will happen.’

‘It will never happen to me, I don’t feel different when drunk, it’s about keeping your eye on the road.’

With regard to social context, “Human expectations, beliefs, and cognitive competencies are developed and modified by social influences and physical structures within the environment. These social influences can convey information and activate emotional

reactions through such factors as modelling, instruction, and social persuasion” (Bandura, 1995, pg: 201). It was found that the family serves as a prohibitory factor to drunken driving, with 87.9% saying ‘no’, their families were against their drinking and driving behaviour and 87.9% of the participants saying they had been reprimanded by family members for drinking and driving, while 12.1% said they had not. Peers on the other hand were seen as an enabling factor in drunken driving, because 78.9% said ‘yes’, their peers knew that they drink and drive and 78.4% of the participants said ‘yes’, their peers are supportive of their drinking and driving behaviour, while a mere 21.6% said ‘no’, their peers are not supportive. Only 2.6% of the participants said all their family members drink and drive, when compared to peers it was found that 38.9% of the participants said that all of their peers drink and drive. This is a further illustration of how peers play an enabling role in drunken driving. Thus interventions aimed at reducing the carnage caused by road accidents would benefit tremendously by looking into the influence of peers on those who drink and drive.

Concerning the research question on enforcement activity, the findings indicated that 54.7% said they were ‘not very concerned’ about being arrested for drunken driving and 25.8% said they were ‘not concerned at all’; an additional 76.8% of the participants said it is ‘highly unlikely’ that they would be caught, 14.2% said it is ‘unlikely’, 6.8% said it is ‘likely’ and only 2.1% said it is ‘very likely’ that they would be arrested for drunken driving. Based on these findings, the study established that there exists a low perceived risk of drunken driving, which might explain why young males are perceived as the most vulnerable group to drunken driving. These findings have strong implications for law enforcement regarding drunken driving, because the majority of the respondents are not concerned about being caught for drunken driving. This shows that there is less probability that they will want to change their behaviour. It also implies that law enforcement must implement stricter laws and harsher penalties for drunken driving, in order to make it less desirable and to increase the concern that drunken drivers have about being caught.

When it comes to law enforcement and road safety intervention campaigns, the reciprocal nature of the determinants of human functioning in social cognitive theory makes it possible for therapeutic and counselling efforts to be directed at personal, environmental, or behavioural factors. Strategies for increasing well-being can be aimed at improving emotional, cognitive, or motivational processes, increasing behavioural competencies, or altering the social conditions under which people live and work.

This research has thus shown that, in order to effectively facilitate behaviour change, it is essential that interventions are research-based and emphasize the use of theory in practice.

6.2 Conclusion

Lastly, the project was carried out with the anticipation of gaining the reasons first hand why people negate responsibility on the roads by driving under the influence of alcohol, despite the many deaths attributed to this form of irresponsible behaviour. This it successfully achieved by showing that through the triadic reciprocal deterministic factors of the SCT behaviour change is best achieved when one analyses it from the standpoint of behaviour, the personal factors that come into play when the behaviour is being carried out and the actual environment in which the behaviour takes place (particularly enabling or prohibitory environments). The recommendations made are that road safety intervention campaigns must look at peer group support in changing drunken driving behaviour. Secondly, law enforcement needs to tighten its laws regarding drunken driving and the penalties need to be higher. Lastly, further research needs to be conducted to include other at-risk groups and contextual sites.

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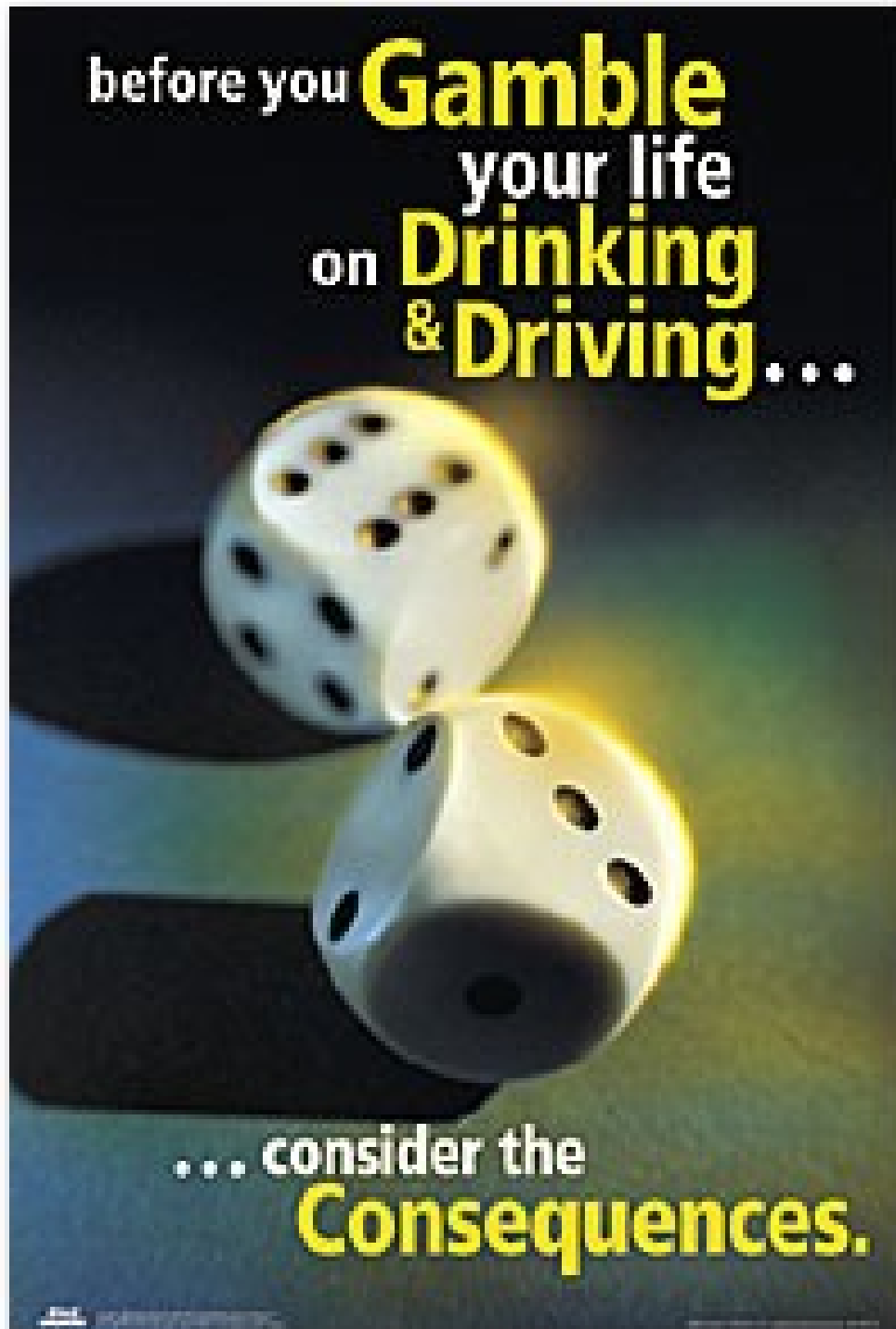
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Appendices

Appendix 1: Road Safety Intervention Campaigns



Appendix 2: Mothers Against Drunken Driving Campaign

Like Father, Like Son?



He's your pride and joy – Your son. From the moment he was born, he's been watching you. He has learned to mimic your every move. When he grows up, he wants to be just like you. If you think there's nothing wrong with impaired driving neither will he. If you endanger the lives of others by getting behind the wheel of a motor vehicle while impaired, chances are, so will he. Kids imitate their parents. What

Message Do You Want him to Receive?

Teach Him – Show Him – Not to Drink & Drive.



DID YOU KNOW?

- > Alcohol is the drug most widely used by African-American youth.¹
- > Alcohol use contributes to the three leading causes of death among African American 12-20 year olds.²
- > Approximately, 40% of all motor vehicle fatalities among African-American are alcohol related.³

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1.28. Williams, J. et al. "The Epidemiology of Alcohol-Related Death Among Black Youth." *Journal of Studies on Alcohol* 16 (1995): 402-406. National Center for Health Statistics and National Institute on Alcohol Abuse and Alcoholism. "Black Death Toll in Motor Vehicle Fatalities." *Journal of Health Politics, Policy and Law* 30 (2005): 107-120. <http://www.madd.org>

Appendix 3: Road Safety Intervention Campaigns



RETURNING VETERANS

Don't let this happen to you!

don't drink & drive

Home Safe. Drive Safe. Stay Safe.

Motor vehicle crashes are the leading cause of death in veterans in the early years after returning from deployment.

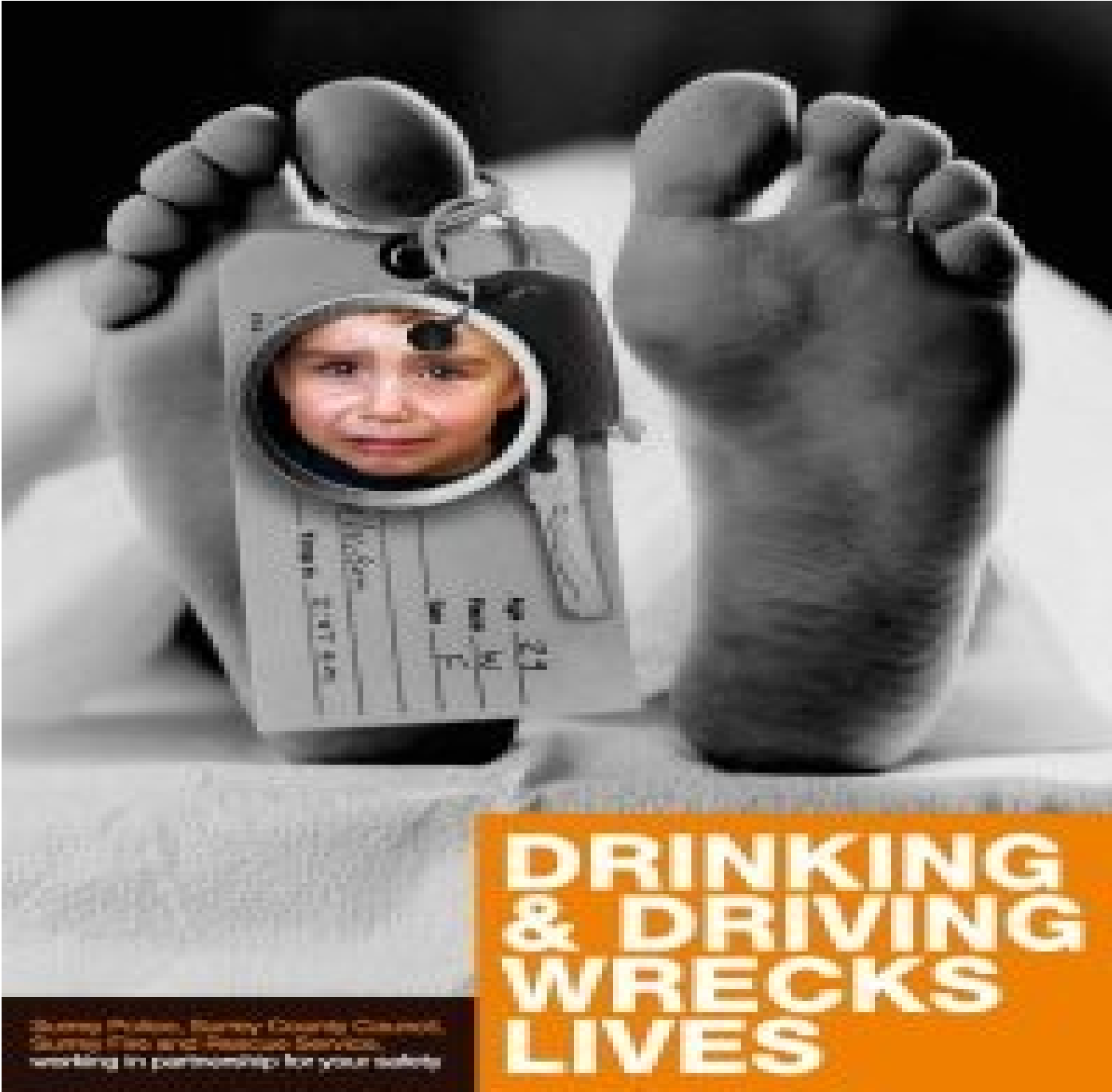
— VETERANS —
SAFE DRIVING
— INITIATIVE —

www.safedriving.va.gov



Department of Veterans Affairs

Appendix 4: Road Safety Intervention Campaigns




Appendix 5: SAB Drunken Driving Campaign

**I'LL ONLY
HAVE ONE
DRINK.**

The road to hell is paved with good intentions.
If you drink and drive, you'll be judged by your actions,
not your intentions. The reality is,
you won't call it a night after one drink.

**DRINK & DRIVE AND
YOU WILL GET CAUGHT.**

A reality check from 

The advertisement features a dark asphalt background with a yellow road line on the right. The text is in white and yellow. The SAB logo is a white circle with the letters 'SAB' inside. The bottom of the ad has a red background with a white grid pattern.

Appendix 6: Road Safety Intervention Campaigns

Friends
don't let
Friends Drive
drunk

DESIGNATE
BEFORE YOU
CELEBRATE™

National Association of
NAB
BROADCASTERS

RADD
Responsible Adults, Teens
& Children Against Drunk Driving

You Drink & Drive
YOU LOSE

U.S. Department
of Transportation

Ad
Council

Appendix 7: Save a Life Drunken Driving Campaign



**Not everyone who gets hit
by a drunk driver dies.**



Jacqueline Saburido was 20 years old when the car she was riding in was hit by a drunk driver. Today, at 23, she is still working to put her life back together.
Learn more at www.TexasDWI.org

DON'T DRINK & DRIVE

Save a Life
Texas Department of Transportation

Texas Department of Public Safety • Texas Alcoholic Beverage Commission • Texans Standing Tall • Partnership for a Drug-Free Texas • Texas Commission on Alcohol and Drug Abuse

Appendix 8: Research Questionnaire

Informed Consent

Explanation of the research project and the purpose of this interview

My name is Sibonelo Shozi and I am a student at the University of KwaZulu-Natal Pietermaritzburg Campus. I am doing a research project on drinking and driving behaviour amongst young males in Pietermaritzburg. I would like you to complete a questionnaire with questions relating to this.

Anonymity

Your answers are completely anonymous and no information you give can be traced back to you.

Voluntary participation

Your decision to participate or not in the study is completely voluntary. You are not required to answer any questions you don't want to. You could also decide to stop participating at any time. Your choice to participate or not, or to withdraw at any time will not be shared with anyone else. There are no right or wrong answers to any of the questions. I am interested to know your opinions and ideas.

Benefits

There are no direct benefits to you, but your participation will help me understand drinking and driving among young males in Pietermaritzburg.

If you have questions about this research project you may ask them now or you can call me later on 031-9072553 or e-mail me at 202500959@ukzn.ac.za. You can also contact Mr Mark Rieker who is my research project supervisor Telephone: +27 (0) 33 260 5619 or e-mail RiekerM@ukzn.ac.za

Before completing the survey, I will ask you to sign this form stating that I have informed you of your rights as a participant and that you have agreed to participate in today's discussion. This is the only place where your name will be entered.

Thank you for your time.

Participant Signature _____

Date _____

Researcher Signature _____

Date _____

My name is Sibonelo Shozi. I am a masters student from the discipline of sociology conducting research pertaining to some of the reasons why people (particularly young males) drink under the influence of alcohol. Please answer the questions to the best of your ability. Also keep in mind that you are free to withdraw from the study at anytime, without any penalty. To ensure that your identity remains anonymous, you are not required to fill in your name, however if you would like to be included in the draw for the R200 voucher please provide your contact details. The data collected from this questionnaire will be only used for the sole purpose of fulfilling the aim of the study.

Cell Number (only for the draw)-----

Section 1: Demographic information

- 1-). Please tick which gender you belong to? Male
 Female
- 2-). Please tick which racial group you belong to? African
 Coloured
 Indian
 White
 Other, specify.....
- 3-). What is your age? _____ Years
- 4-). Do you live in the Pietermaritzburg area? Yes or No
- 5-). What is your occupation -----?

Section 2: Behavioural inventory

This section will collect data relating to drinking and driving behaviour of the respondent to establish the frequency and nature of these behaviours. It will also explore other related risk behaviours with which drinking and driving is associated (from the literature).

- 6-). Do you drink and drive? Yes or No
- 7-). If the answer to the above question is 'yes' then please specify about how many times a month do you drink and drive? _____ per month
- 8-). Have you ever been in an accident in which alcohol was the cause? Yes or No
- 9-). If the answer to the above question is yes, then who was driving?

10-) How would you rate the difficulty of driving under the influence of alcohol? (Please tick the appropriate box).

Very difficult	Difficult	Not different to when sober.	Easy	Very easy

11-) Do you feel that your driving skill is impaired in anyway, when you drive under the influence of alcohol? Yes [] or No []

Section 3: Cognitive data

This section will explore beliefs and norms held by the respondent relating to drinking and driving. It will also unpack rationale and reasoning behind engaging in this behaviour.

12-) Do you think that alcohol affects your driving skill at all? Yes [] or No []

13-) In your opinion is there a difference between driving drunk and driving sober? Yes [] or No []

15-) What are your beliefs concerning road accidents as a result of drunken driving?

16-) Is driving drunk a dangerous activity? Yes [] or No []

17-) Is there any thrill or enjoyment that you get from driving drunk? Yes [] or No []

Section 4: Social data

This section will explore the social context (particularly of acceptance or sanctions) in which this behaviour takes place. It will include data on peer and family behaviours and beliefs of drinking and driving

18-) Does your family know that you drink and drive? Yes [] or No [].

19-) Is your family supportive of you driving under the influence of alcohol? Yes [] or No [].

20-) If not, have they ever reprimanded you for drunken driving? Yes [] or No [].

21-) Do your peers (friends and co-workers) know that you drink and drive? Yes [] or

No [] .

22-)Are your peers (friends and co-workers) supportive of you drinking under the influence of alcohol? Yes [] or No [] .

23-) How many of your family members drive under the influence of alcohol?

24-)How many of your peers (friends and co-workers) drive under the influence of alcohol? _____

Section 5: Contextual data

This section will explore the contextual factors limiting or promoting drinking and driving behaviour (e.g other options).

25-) Does where you are affect how much you drink? Yes [] or No []

Please

explain _____

26-) Have any of your friends ever stopped you from driving drunk? Yes [] or No []

27-) Have you ever opted for any of the following options, besides drinking under the influence of alcohol? [] Designated driver #

[] Public transport

[] Meter Taxi

(a designated driver is one who deliberately abstains from drinking alcohol for the purpose of safely driving those that do)

Section 6: Enforcement data

This section will explore the role of enforcement activity (existence, awareness, avoidance strategies etc) in the triadic decision making process.

28-) When you drive drunk how concerned are you about being caught by the police? (Please tick the appropriate box).

Extremely concerned	Very concerned	Fairly concerned	Not very concerned	Not concerned at all

29-) Have you ever been caught by the police for drunken driving? Yes [] or No []

30-) If the answer to the above question is yes, then what was your penalty?

31-) What do you think is the likelihood of you being arrested for drinking and driving?

Highly unlikely

Unlikely

Likely

Very likely

32-) Do you know what the legal limit for drunken driving in South Africa is?

Yes or No

33-) Have you ever come across any of the campaigns against drinking and driving in the media (Television, radio or newspaper) or anywhere else? Yes or No .

34-) Do you feel that you are breaking the law by drinking under the influence of alcohol? Yes or No

Your participation has been greatly appreciated.